UNIFORM SOUTHERN SOFT RED WINTER WHEAT FUSARIUM HEAD BLIGHT SCREENING NURSERY

2004 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 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, Richard Grey and Luis Lazoanaya
  Syngenta Seeds Inc.
- Reps: 2 Plot size: 4 rows 2 ft long. Seed date: 10/28/03. Harvest date: 5/28/04
- Inoculation method: Infected corn kernels, twice.
- Precipitation during grain fill: Misted daily morning and evening.
- Avg temp. during grain fill: April: 70^{o} average day, 50^{o} average night.
  May: Low 80's average day, 65^{o} average night.

Fayetteville, Arkansas

- Cooperators: Gene Milus.
- University of Arkansas
- Reps: 4 (field), 3 (greenhouse) Plot size: Single rows, 5' long
- Inoculation method: FHB-infected corn twice, total of 12 kernels/sq ft
- Date/Feekes growth stage when scored: 5/24/04 (Fayetteville), 5/10/04 (Kibler).

Urbana, Illinois

Cooperators: Fred Kolb, Eric Brucker, and Norman Smith

- University of Illinois
- Reps: 3. Plot size: 1 row x 3'. Seed date: 10/1/03. Harvest date: 6/29/04
- Fertilizer: 40 lb N/ac preplant. P and K okay; no spring topdress

Wooster, Ohio

- Cooperators: Clay Sneller, Pat Lipps
  Ohio State University
- Reps: 3. Plot size: 1 row x 3'.
- Inoculation method: FHB-infected corn kernels.

Lexington, Kentucky

- Cooperators: A. J. Stewart, D. Van Sanford
  University of Kentucky
- Reps: 2. Plot size: Two 4' rows. Seed date: 10/23/03.
- Fertilizer: P, K, acc. to soil tests, 110 lb N split application
- Inoculation method: Scabby corn
- Precipitation during grain fill: 9.3 in.
- Avg temperature during grain fill: 69.9^{o}F. Percentage of hours when temperature was 9-30^{o} c and RH > 90: 32.1%.
- Greenhouse Inoculation method; Point inoculation.

Blacksburg, Virginia

- Cooperators: Carl A. Griffey, and Jianli Chen.
  Virginia Tech
- Reps: 3. Randomized complete block. Plot size: 4 x 5 ft (20 ft^{2}).
- Inoculation method: Conidial suspension (5 x 10^{4} spores / ml) sprayed at anthesis (field), point inoculation (greenhouse).

Clayton, North Carolina

- Cooperators: Rene Navarro, Paul Murphy, Christina Cowger.
  North Carolina State University
- Reps: 2. Plot size: 4 rows x 3' long.
- Field Inoculation method: Conidial suspension (3×10^4 spores/ml) sprayed on plots at anthesis; irrigated for 14 d.
- New location with faulty irrigation system. Big mistake, no data, will return to old location in 2005.
- Greenhouse: point inoculation with 10 μL at 50,000 spores per ml.

Columbia, Missouri

- Cooperator: Anne L. McKendry.
  University of Missouri
- Reps: 4 RCB. Plot size: 4 rows x 3' long. Seed date: 10/14/03. Harvest date: 7/5/04
- Field inoculation method: Sprayed at 75% heading with a suspension of *Fusarium graminearum* macroconidia concentrated to 50,000 spores/ml
- Precipitation during grain fill: Overhead mist irrigation
- Greenhouse inoculations result from point inoculations of a basal central floret with 10 μL of a 50,000 spores/mL suspension of *Fusarium graminearum* macrodonidia

Salisbury,Maryland.

- Cooperator: Jose Costa, Aaron Cooper.
  University of Maryland.
- Reps: 3 RCB. Plot size: 2 rows x 4' long. Seed date: 10/21/03. Harvest date: 7/14/04.
- Fertilizer: 40 lbs N preplant. P and K OK. 60 lbs N spring topdress.
- Field inoculation method: Corn grain infected with fusariom one month before anthesis.

Szeged, Hungary.

Cooperator: Akos Mesterhazy.
Cereal Research Institute.

Fundulea, Romania.

Cooperator: Marianna Ittu.

Evaluation of the 2003-04 Uniform Southern FHB Nursery at Szeged, Hungary.

Top picture: Four random samples of heads within each plot were inoculated with four different isolates of *Fusarium graminearum* and *F. culmorum.* The inoculated heads were covered with bags for 48 hours. Subsequently, six ratings of FHB severity were taken on groups of inoculated heads over all three replications.

Left: The susceptible check cultivar Coker 9835 expressed FHB symptoms

Color photographs courtesy of Dr. A. Mesterhazy in web version of report at:
http://scabusa.org/research_var.html#nusery

Entry List, 2004 Nursery

ENTRY NO	CULTIVAR/ DESIGNATION	PEDIGREE	CONTRIBUTOR	IN NURSERY SINCE
1	ERNIE	PIKE /3/ STODDARD / BLUEBOY // STODDARD / D1707	CHECK(RES)	1999-00
2	COKER 9835	CK68-19 // CK61-19*3 / IN4946A4-18-2-10-2 /4/ Bb /3/ CK65-20*5 / W17-TRANS // TIFT /5/ P 2550	CHECK(SUS)	2000-01
3	B011117	YMI 6 / COKER 9877	HANCOCK	2002-03
4	B990081	L870537/PI382152	HANCOCK	2003-04
5	B006624	COKER 9474/COKER 9663	HANCOCK	2003-04
6	B006693	COKER 9663//IL 875250/YMI 6	HANCOCK	2003-04
7	B010098	ABI 89-4580/L911106	HANCOCK	2003-04
8	PAT	TERRAL 101/PIONEER 2548	BACON	2003-04
9	AR 857-1-1	MADISON / YMI 6	BACON	2002-03
10	AR 857-1-2	MADISON / YMI 6	BACON	2002-03
11	AR 93019-2-1	VA88-52-69 / LOUVRIN 34	BACON	2002-03
12	ARGE97-1022-5-1	MASON / CATBIRD (G49)	MILUS	2003-04
13	ARGE97-1043-6a-5	MASON / CATBIRD (G95)	MILUS	2003-04
14	ARGE97-1033-10-2	FREEDOM/CATBIRD (G82)	MILUS	2003-04
15	ARGE97-1064-13-5	MASON//FREEDOM/SUPER ZLATNO	MILUS	2003-04
16	ARGE97-1008-3-3	P2684/ER-MAI 9	MILUS	2003-04
17	VA00W-526	FFR555W/91-54-343//GA8619/D25, F10	GRIFFEY	2003-04
18	VA03W-647	GA891283LE18//SHAAN85-15(Scab-res)/GA891283LE18, BC1F5	GRIFFEY	2003-04
19	VA03W-646	VA96W234//NING9016/VA96W234, BC1F5	GRIFFEY	2003-04
20	VA03W-671	NING 7840/PION 2684//VA96-54-244(C9803/FREEDOM), F7	GRIFFEY	2003-04
21	VA03W-672	PAR-50(WUHAN1:Scab-res)//90-52-82/C9835/3/C9803, F9	GRIFFEY	2003-04
22	VA03W-652	PION 2684*2//NING 9016/PION 2684, BC2F5	GRIFFEY	2003-04
23	GA 951079-2E31	881130/GORE	JOHNSON	2003-04
24	GA 95652-2E56	C 9134//85410*2/FFR 518	JOHNSON	2003-04
25	GA951216-2E14	87110*2/T8724	JOHNSON	2003-04
26	GA951216-2E26	87110*2/T8724	JOHNSON	2003-04
27	GA951079-2A25	881130/GORE	JOHNSON	2003-04
28	MD27-37	LOV29/TYLER//RCT*2/GAINES/CK 9835	COSTA	2003-04
29	BERETTA	AW 91M*1365/T814	FOGLEMAN	2003-04
30	D00-6383	PION 2545/3/CHOTI LERMA/FUNK 5215//ARTHUR 71	FOGLEMAN	2003-04
31	D00*6847	JACKSON/PION 2545	FOGLEMAN	2003-04
32	D00*6874	IL77-2656/NK79W810//PION 2580	FOGLEMAN	2003-04
33	D99-5528	IL77-2656/NK79W810//MALLARD (MASON)	FOGLEMAN	2003-04
34	F96035G11-2	201R2-121/135U2-1	ITTU	2003-04
35	F96502G4-104	201R2-122/135U8//135U2-1	ITTU	2003-04
36	F98198G2-1	94714G-RB/135U3-1	ITTU	2003-04
37	NC01-26765	NC96BGTA5/PION 2628//VA94-52-68	MURPHY	2003-04
38	NC01-27308	NC96BGTD1/L890690//C9803	MURPHY	2003-04
39	NC01-27809	GA8619-D6/GORE//C9904	MURPHY	2003-04
40	LSU04FHB1	LA97432D-19-10 = (MASON/FREEDOM, popn from Gene Milus)	HARRISON	2003-04
41	LSU04FHB2	LA97448D-27-3 = (MASON/CATBIRD93, popn from Gene Milus)	HARRISON	2003-04

FHB Incidence (1-100)

	CULTIVAR/ DESIGNATION	BAY AR	RANK	COL'BIA MO	RANK	S'BURY MD	RANK	B'BURG VA	RANK	URBANA IL	RANK	W'STER OH	RANK	LEX'TON KY	RANK	MEAN ALL LOC.	RANK
1	ERNIE	93	16	100	15	21	6	10	3	6	3	92	16	76	5	43	5
2	COKER 9835	99	26	96	3	47	34	50	29	90	40	100	30	82	14	67	40
3	B011117	87	7	99	8	28	15	23	10	11	6	73	5	82	14	44	9
4	B990081	91	14	100	15	23	8	55	35	28	13	87	14	80	11	52	14
5	B006624	88	10	100	15	37	26	22	8	48	21	95	22	83	19	53	16
6	B006693	98	22	99	8	35	24	23	10	45	17	68	2	96	39	52	14
7	B010098	44	1	93	1	32	19	27	12	7	4	83	10	92	35	41	3
8	PAT	87	7	100	15	35	24	50	29	63	30	68	2	86	26	56	20
9	AR 857-1-1	88	10	96	3	16	4	18	7	.	.	73	5	69	1	43	5
10	AR 857-1-2	83	4	100	15	33	20	27	12	27	12	95	22	85	22	50	11
11	AR 93019-2-1	100	31	.	.	30	17	45	28	67	33	97	26	82	14	61	30
12	ARGE97-1022-5-1	88	10	96	3	22	7	7	1	23	11	57	1	76	5	39	2
13	ARGE97-1043-6a-5	62	2	94	2	13	2	10	3	3	1	85	13	91	29	38	1
14	ARGE97-1033-10-2	100	31	100	15	12	1	15	5	5	2	83	10	89	27	43	5
15	ARGE97-1064-13-5	83	4	96	3	23	8	17	6	19	10	77	6	74	4	42	4
16	ARGE97-1008-3-3	82	3	100	15	15	3	35	20	10	5	70	4	91	29	43	5
17	VA00W-526	87	7	99	8	27	12	42	25	63	30	93	21	78	8	56	20
18	VA03W-647	100	31	100	15	28	15	38	23	60	27	95	22	84	20	58	24
19	VA03W-646	100	31	100	15	23	8	7	1	18	8	82	9	78	8	44	9
20	VA03W-671	100	31	100	15	33	20	30	16	55	24	92	16	95	38	58	24
21	VA03W-672	94	17	100	15	43	32	80	40	55	24	100	30	85	22	65	35
22	VA03W-652	99	26	99	8	67	41	37	22	63	30	98	28	91	29	65	35
23	GA 951079-2E31	94	17	99	8	50	37	77	39	62	29	100	30	82	14	67	40
24	GA 95652-2E56	98	22	100	15	42	31	60	38	83	38	100	30	81	12	66	38
25	GA951216-2E14	99	26	100	15	33	20	50	29	53	22	100	30	85	22	60	28
26	GA951216-2E26	100	31	100	15	40	29	50	29	73	35	100	30	94	37	66	38
27	GA951079-2A25	99	26	100	15	53	39	87	41	18	8	100	30	85	22	63	32
28	MD27-37	100	31	100	15	37	26	55	35	40	14	97	26	79	10	58	24
29	BERETTA	98	22	99	8	27	12	38	23	47	19	95	22	70	2	54	17
30	D00-6383	83	4	100	15	50	37	33	19	53	22	98	28	82	14	57	22
31	D00*6847	95	19	100	15	47	34	43	26	80	37	80	8	97	40	63	32
32	D00*6874	99	26	100	15	47	34	32	17	57	26	92	16	81	12	58	24
33	D99-5528	95	19	100	15	43	32	32	17	47	19	100	30	84	20	57	22
34	F96035G11-2	98	22	100	15	25	11	22	8	14	7	100	30	91	29	50	11
35	F96502G4-104	91	14	96	3	33	20	52	34	73	35	92	16	91	29	62	31
36	F98198G2-1	90	13	100	15	37	26	57	37	87	39	92	16	91	29	65	35
37	NC01-26765	100	31	100	15	20	5	28	15	45	17	100	30	92	35	55	18
38	NC01-27308	100	31	100	15	30	17	27	12	60	27	100	30	99	41	60	28
39	NC01-27809	100	31	100	15	53	39	43	26	72	34	90	15	89	27	64	34
40	LSU04FHB1	100	31	99	8	27	12	35	20	40	14	83	10	73	3	51	13
41	LSU04FHB2	97	21	100	15	40	29	50	29	42	16	78	7	77	7	55	18
	Mean:	92		100		34		38		45		89		84		37.6	
	L.S.D. (0.05)	22		4		19		21		24		24		.		13	
	CV%	12.0		2.7		35.0		40.2		33.9		43.0		13.0		22.3	

FHB Severity (1-100)

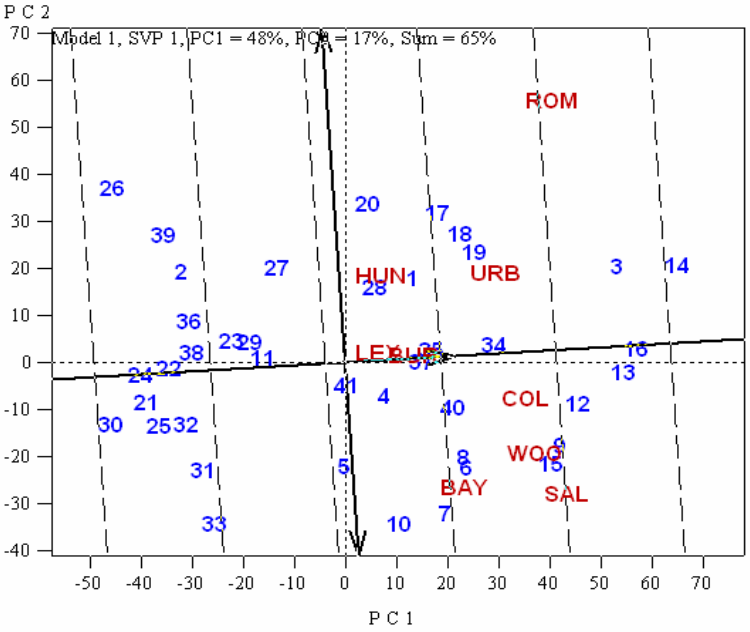
	CULTIVAR/ DESIGNATION	BAY AR	RANK	COL'BIA MO	RANK	S'BURY MD	RANK	B'BURG VA	RANK	URBANA IL	RANK	W'STER OH	RANK	LEX'TON KY	RANK	SZEGED[1] HUN	RANK	FUN'LEA ROM	RANK	MEAN ALL LOC.	RANK
1	ERNIE	26	5	58	23	65	22	6	2	38	15	36	21	18	1	17	27	25	8	32	11
2	COKER 9835	59	36	37	9	83	37	12	21	52	27	82	41	53	36	41	35	48	19	52	39
3	B011117	30	12	24	1	50	12	8	9	14	2	17	5	67	41	4	4	15	2	26	3
4	B990081	28	7	65	28	53	15	13	24	35	11	26	15	53	36	17	27	51	22	38	21
5	B006624	27	7	64	27	53	15	7	7	33	9	28	19	25	3	24	32	71	32	37	19
6	B006693	38	21	40	11	47	9	10	14	33	9	13	2	38	19	65	39	51	22	37	19
7	B010098	17	1	31	4	42	8	10	14	42	18	26	15	39	21	9	11	70	31	32	11
8	PAT	24	4	31	4	50	12	10	14	43	20	27	18	66	39	62	37	43	16	40	24
9	AR 857-1-1	35	16	38	10	17	1	6	2	.	.	17	5	47	31	16	26	42	15	28	7
10	AR 857-1-2	36	20	49	17	35	7	13	24	42	18	20	10	42	29	12	19	78	36	36	18
11	AR 93019-2-1	56	35	.	.	68	25	12	21	43	20	42	29	36	16	15	24	64	27	44	27
12	ARGE97-1022-5-1	33	15	40	11	27	4	6	2	30	8	11	1	40	25	4	4	40	12	26	3
13	ARGE97-1043-6a-5	18	2	35	8	29	5	5	1	39	16	14	4	33	10	2	1	23	6	22	2
14	ARGE97-1033-10-2	48	31	28	2	25	3	6	2	18	3	13	2	37	17	2	1	10	1	21	1
15	ARGE97-1064-13-5	19	3	44	14	23	2	8	9	37	14	18	8	40	25	9	11	48	19	27	6
16	ARGE97-1008-3-3	28	7	41	13	30	6	6	2	12	1	17	5	35	13	44	36	19	4	26	3
17	VA00W-526	39	22	57	22	75	29	10	14	28	6	24	13	42	29	15	24	16	3	34	14
18	VA03W-647	35	16	46	15	62	21	8	9	27	5	40	25	38	19	10	14	20	5	32	11
19	VA03W-646	50	32	54	20	53	15	7	7	19	4	26	15	28	7	8	9	28	9	30	9
20	VA03W-671	62	39	68	31	60	20	11	18	35	11	37	22	41	28	5	7	24	7	38	21
21	VA03W-672	35	16	76	36	80	35	25	41	54	33	49	34	39	21	13	22	75	34	49	32
22	VA03W-652	47	29	65	28	90	41	15	30	56	36	39	23	58	38	25	33	66	28	51	38
23	GA 951079-2E31	61	38	61	26	75	29	19	38	53	29	34	20	35	13	17	27	59	26	46	28
24	GA 95652-2E56	40	25	78	37	83	37	17	34	52	27	49	34	33	10	11	16	73	33	49	32
25	GA951216-2E14	42	26	81	39	67	24	13	24	57	37	50	36	39	21	25	33	75	34	50	35
26	GA951216-2E26	70	41	82	40	83	37	15	30	49	25	76	40	47	31	14	23	43	16	53	40
27	GA951079-2A25	60	37	56	21	73	26	20	39	36	13	48	32	30	8	19	30	46	18	43	26
28	MD27-37	27	7	60	24	65	22	15	30	46	24	41	26	24	2	12	19	29	10	35	16
29	BERETTA	28	7	50	18	83	37	11	18	53	29	52	37	34	12	7	8	56	24	41	25
30	D00-6383	43	27	75	34	77	31	14	28	57	37	54	39	35	13	9	11	86	38	50	35
31	D00*6847	39	22	60	24	73	26	18	37	61	39	42	29	66	39	62	37	69	30	54	41
32	D00*6874	53	33	53	19	78	33	11	18	55	35	39	23	30	8	12	19	83	37	46	28
33	D99-5528	39	22	68	31	47	9	17	34	67	40	41	26	39	21	11	16	88	39	46	28
34	F96035G11-2	30	12	48	16	50	12	8	9	28	6	19	9	26	5	3	3	39	11	28	7
35	F96502G4-104	26	5	29	3	73	26	14	28	44	22	23	12	48	33	8	9	41	14	34	14
36	F98198G2-1	55	34	75	34	78	33	21	40	53	29	41	26	49	34	11	16	58	25	49	32
37	NC01-26765	35	16	33	6	48	11	8	9	49	25	48	32	37	17	21	31	40	12	35	16
38	NC01-27308	47	29	68	31	77	31	16	33	53	29	46	31	40	25	4	4	66	28	46	28
39	NC01-27809	69	40	79	38	82	36	13	24	45	23	53	38	50	35	10	14	50	21	50	35
40	LSU04FHB1	31	14	34	7	53	15	12	21	41	17	24	13	27	6	.	.	.	.	30	9
41	LSU04FHB2	45	28	67	30	53	15	17	34	54	33	22	11	25	3	.	.	.	.	38	21
	Mean:	39		54		60		12		42		34		40		17		49		39	
	L.S.D. (0.05)	26		27		22		5		14		21		27		1		52.0		12	
	CV%	33.0		35.9		22.6		33.3		20.5		14.0		32.2		.		17.9		33.8	

[1]DATA BY INDIVIDUAL ISOLATES ON FOLLOWING PAGE

SEVERITY BY INDIVIDUAL ISOLATES, SZEGED, HUNGARY

	Cultivar/ Designation	*F. gramin.* Isol. 12377	*F. gramin.* Isol. 40	*F. culmor.* Isol. 12375	*F. culmor.* Isol. 12551	Mean All Isolates	*RANK*
1	ERNIE	36	29	2	2	17	*27*
2	COKER 9835	74	52	19	18	41	*35*
3	B011117	12	5	1	0	4	*4*
4	B990081	44	19	3	2	17	*27*
5	B006624	55	27	6	9	24	*32*
6	B006693	84	63	46	67	65	*39*
7	B010098	19	10	2	3	9	*11*
8	PAT	85	58	47	57	62	*37*
9	AR 857-1-1	40	20	2	1	16	*26*
10	AR 857-1-2	32	15	0	2	12	*19*
11	AR 93019-2-1	32	23	3	4	15	*24*
12	ARGE97-1022-5-1	9	8	0	0	4	*4*
13	ARGE97-1043-6a-5	7	1	0	0	2	*1*
14	ARGE97-1033-10-2	7	1	0	0	2	*1*
15	ARGE97-1064-13-5	25	8	2	1	9	*11*
16	ARGE97-1008-3-3	79	32	17	47	44	*36*
17	VA00W-526	42	18	0	1	15	*24*
18	VA03W-647	23	12	3	2	10	*14*
19	VA03W-646	23	7	0	0	8	*9*
20	VA03W-671	11	7	0	0	5	*7*
21	VA03W-672	32	18	1	1	13	*22*
22	VA03W-652	56	29	0	16	25	*33*
23	GA 951079-2E31	45	20	0	2	17	*27*
24	GA 95652-2E56	27	16	1	2	11	*16*
25	GA951216-2E14	49	28	13	10	25	*33*
26	GA951216-2E26	31	16	3	6	14	*23*
27	GA951079-2A25	47	25	3	3	19	*30*
28	MD27-37	26	17	1	3	12	*19*
29	BERETTA	18	8	0	1	7	*8*
30	D00-6383	27	9	0	0	9	*11*
31	D00*6847	84	59	45	61	62	*37*
32	D00*6874	31	15	1	2	12	*19*
33	D99-5528	29	14	0	1	11	*16*
34	F96035G11-2	9	4	0	0	3	*3*
35	F96502G4-104	22	11	0	1	8	*9*
36	F98198G2-1	30	11	2	1	11	*16*
37	NC01-26765	50	28	5	2	21	*31*
38	NC01-27308	5	1	0	8	4	*4*
39	NC01-27809	18	12	1	11	10	*14*
40	LSU04FHB1	.	.	.	.	.	.
41	LSU04FHB2	.	.	.	.	.	.
	Mean:	35	19	6	9	17	
	L.S.D. (0.05)	.	.	.	.	1	

FHB SEVERITY
GGE BIPLOT ANALYSIS[1]



The Average Environment Coordinate abscissa (single arrowed line passing through biplot origin) approximates the genotype (G) effect. Entries towards the right of the abscissa had lower overall severity scores (Entries 14,16, 13 and 3). Entries towards the left of the abscissa had the highest severity scores.

Lexington, KY and Blacksburg, VA were closest to reflecting the average environment for the entire nursery.

The Average Environmental Coordinate ordinate (double arrowed line perpendicular to the abscissa). approximates the genotype x environment (GE) interaction associated with each genotype. The greater the projection on to the ordinate, in either direction, the greater the instability of the genotype over locations. (For example, Entry 10 ranks from 7th in Saliabury to 36th in Romania). Entries 16 and 13 exhibited both low mean severity and relatively good stability over environments.

[1]Yan et al., (2000). Crop Sci. 40:597-605.

HEAD SEVERITY EXPRESSED AS AREA UNDER THE DISEASE PROGRESS CURVE (AUDPC)
FUNDULEA, ROMANIA

	CULTIVAR/ DESIGNATION	AUDPC[1]	RANK
1	ERNIE	209	*8*
2	COKER 9835	340	*18*
3	B011117	137	*2*
4	B990081	350	*19*
5	B006624	503	*32*
6	B006693	360	*20*
7	B010098	470	*28*
8	PAT	306	*15*
9	AR 857-1-1	318	*16*
10	AR 857-1-2	573	*35*
11	AR 93019-2-1	505	*33*
12	ARGE97-1022-5-1	299	*13*
13	ARGE97-1043-6a-5	200	*7*
14	ARGE97-1033-10-2	101	*1*
15	ARGE97-1064-13-5	369	*21*
16	ARGE97-1008-3-3	146	*4*
17	VA00W-526	140	*3*
18	VA03W-647	185	*5*
19	VA03W-646	212	*9*
20	VA03W-671	188	*6*
21	VA03W-672	577	*36*
22	VA03W-652	454	*27*
23	GA 951079-2E31	447	*26*
24	GA 95652-2E56	499	*31*
25	GA951216-2E14	530	*34*
26	GA951216-2E26	326	*17*
27	GA951079-2A25	375	*22*
28	MD27-37	234	*10*
29	BERETTA	403	*24*
30	D00-6383	664	*38*
31	D00*6847	470	*28*
32	D00*6874	617	*37*
33	D99-5528	678	*39*
34	F96035G11-2	301	*14*
35	F96502G4-104	293	*11*
36	F98198G2-1	407	*25*
37	NC01-26765	297	*12*
38	NC01-27308	483	*30*
39	NC01-27809	380	*23*
40	LSU04FHB1	.	*.*
41	LSU04FHB2	.	*.*

Mean:	368
L.S.D. (0.05)	312
CV%	7.0

[1]% SEVERITY 10 AND 20 DAYS AFTER INOCULATION

FHB Index (1-100)

	CULTIVAR/ DESIGNATION	BAY AR	RANK	COL'BIA MO	RANK	S'BURY MD	RANK	B'BURG VA	RANK	URBANA IL	RANK	W'STER OH	RANK	LEX'TON KY	RANK	F'VILLE AR	RANK	KIBLER AR	RANK	MEAN ALL LOC.	RANK
1	ERNIE	24	7	58	23	12	8	1	4	3	5	34	20	14	1	5	8	26	9	20	10
2	COKER 9835	58	36	36	10	41	39	6	29	47	39	82	41	44	33	45	41	65	41	47	41
3	B011117	26	9	24	2	14	10	2	10	2	4	14	6	56	39	4	4	31	27	19	6
4	B990081	27	10	65	28	12	8	8	35	10	12	24	17	42	32	6	10	26	9	24	15
5	B006624	25	8	64	27	26	27	2	7	15	14	27	19	21	5	4	4	23	2	23	14
6	B006693	37	22	40	12	24	24	3	14	15	14	10	2	36	27	4	4	30	16	22	13
7	B010098	8	1	30	5	20	15	3	13	3	5	23	15	36	27	21	40	30	16	19	6
8	PAT	21	4	31	6	23	22	5	25	27	25	22	13	57	40	16	35	45	36	27	22
9	AR 857-1-1	31	15	37	11	1	1	1	6	.	.	12	4	25	9	7	12	50	39	20	10
10	AR 857-1-2	30	14	49	17	11	7	3	16	11	13	19	10	27	12	8	16	35	29	21	12
11	AR 93019-2-1	56	35	.	.	20	15	5	24	29	26	41	29	30	17	9	20	45	36	33	29
12	ARGE97-1022-5-1	31	15	23	1	6	5	0	1	7	9	6	1	30	17	10	25	35	29	17	2
13	ARGE97-1043-6a-5	12	2	34	8	5	3	0	2	1	1	12	4	29	14	2	1	26	9	14	1
14	ARGE97-1033-10-2	48	31	28	3	4	2	1	5	1	1	11	3	33	21	2	1	31	27	18	5
15	ARGE97-1064-13-5	17	3	43	14	6	5	1	7	7	9	15	8	30	17	6	10	30	16	17	2
16	ARGE97-1008-3-3	23	5	41	13	5	3	2	12	1	1	14	6	31	20	3	3	35	29	17	2
17	VA00W-526	36	21	57	22	21	18	4	19	17	18	23	15	34	23	10	25	23	2	25	18
18	VA03W-647	35	19	46	15	21	18	4	17	16	17	38	25	34	23	9	20	23	2	25	18
19	VA03W-646	50	32	54	20	15	12	0	2	4	7	25	18	22	6	18	37	26	9	24	15
20	VA03W-671	62	39	68	31	21	18	3	15	18	19	35	22	39	30	7	12	23	2	31	25
21	VA03W-672	33	18	76	36	35	32	20	41	26	24	49	34	34	23	7	12	30	16	34	30
22	VA03W-652	47	29	65	28	60	41	5	26	36	35	38	25	53	38	9	20	40	35	39	38
23	GA 951079-2E31	58	36	61	26	39	36	15	39	31	27	34	20	29	14	10	25	26	9	34	30
24	GA 95652-2E56	39	25	78	37	36	33	11	37	44	37	49	34	27	12	10	25	35	29	37	35
25	GA951216-2E14	42	27	81	39	24	24	6	29	31	27	50	36	33	22	9	20	30	16	34	30
26	GA951216-2E26	70	41	82	40	34	31	8	33	36	35	76	40	44	33	16	35	30	16	44	40
27	GA951079-2A25	59	38	56	21	40	38	18	40	7	9	48	32	25	9	10	25	26	9	32	27
28	MD27-37	27	10	60	24	28	29	8	34	18	19	40	28	19	2	10	25	30	16	27	22
29	BERETTA	27	10	50	18	23	22	4	19	24	23	50	36	23	7	8	16	23	2	26	21
30	D00-6383	39	25	75	34	39	36	5	23	31	27	53	39	29	14	18	37	55	40	38	36
31	D00*6847	37	22	60	24	37	34	8	32	49	40	37	23	64	41	13	33	35	29	38	36
32	D00*6874	52	34	53	19	38	35	4	17	32	31	37	23	24	8	8	16	35	29	31	25
33	D99-5528	38	24	68	31	20	15	6	28	31	27	41	29	49	37	7	12	26	9	32	27
34	F96035G11-2	29	13	48	16	15	12	2	9	4	7	19	10	25	9	9	20	23	2	19	6
35	F96502G4-104	23	5	29	4	26	27	7	29	32	31	21	12	44	33	5	8	30	16	24	15
36	F98198G2-1	51	33	75	34	30	30	13	38	46	38	39	27	38	29	4	4	19	1	35	33
37	NC01-26765	35	19	33	7	14	10	2	11	22	21	48	32	34	23	10	25	30	16	25	18
38	NC01-27308	47	29	68	31	24	24	4	19	32	31	46	31	39	30	13	33	45	36	35	33
39	NC01-27809	69	40	79	38	45	40	6	27	32	31	50	36	47	36	19	39	30	16	42	39
40	LSU04FHB1	31	15	34	8	15	12	5	22	15	14	22	13	20	4	8	16	23	2	19	6
41	LSU04FHB2	44	28	67	30	21	18	8	36	23	22	18	9	19	2	10	25	30	16	27	22
	Mean:	38.0		54.1		23.8		5.4		20.8		32.9		34.0		9.9		31.9		27.7	
	L.S.D. (0.05)	29.8		27.5		16.5		5.1		12.6		24.7		27.4		10.0		12.0		9.7	
	CV%	39.2		36.3		42.5		70.1		37.8		46.9		37.8		.		.		38	

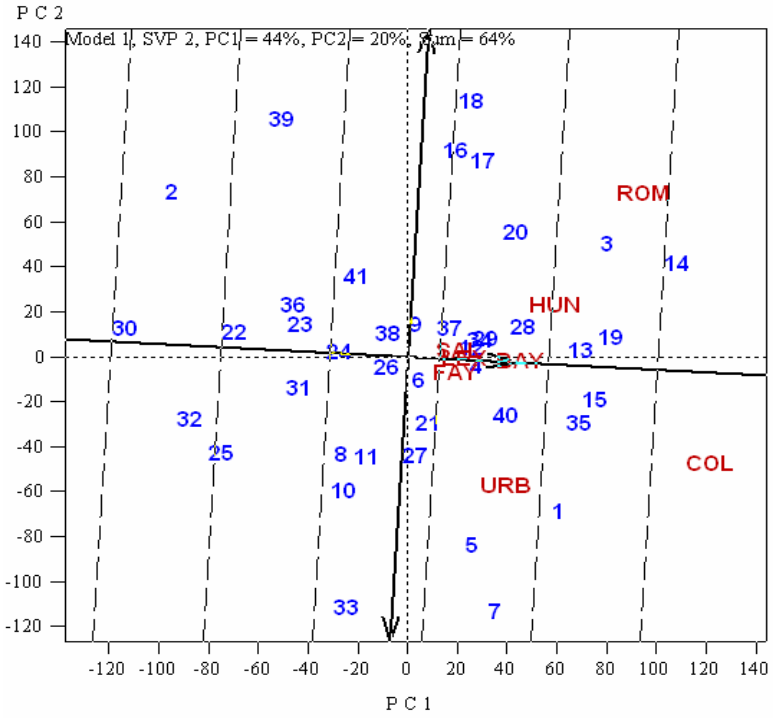
FIELD VISUAL RATING AND DISEASE SPREAD IN SPIKELETS

	CULTIVAR/ DESIGNATION	VISUAL SCORE (1-9) BAY AR	RANK	SPIKLET SPREAD (NUMBER) COL'BIA MO	RANK
1	ERNIE	3	3	9.1	25
2	COKER 9835	8	41	5.3	9
3	B011117	3	3	3.1	1
4	B990081	3	3	9.9	31
5	B006624	5	19	9.6	29
6	B006693	5	19	5.9	11
7	B010098	3	3	4.4	6
8	PAT	3	3	4.2	4
9	AR 857-1-1	4	10	5.8	10
10	AR 857-1-2	4	10	7.0	14
11	AR 93019-2-1	6	31	.	.
12	ARGE97-1022-5-1	3	3	3.9	2
13	ARGE97-1043-6a-5	2	1	5.9	11
14	ARGE97-1033-10-2	2	1	4.2	4
15	ARGE97-1064-13-5	4	10	7.2	16
16	ARGE97-1008-3-3	4	10	5.9	11
17	VA00W-526	4	10	8.0	20
18	VA03W-647	4	10	7.5	17
19	VA03W-646	5	19	7.9	19
20	VA03W-671	5	19	10.7	37
21	VA03W-672	7	38	10.6	34
22	VA03W-652	5	19	9.2	27
23	GA 951079-2E31	6	31	8.8	24
24	GA 95652-2E56	5	19	11.5	40
25	GA951216-2E14	5	19	11.3	39
26	GA951216-2E26	7	38	11.0	38
27	GA951079-2A25	7	38	8.3	22
28	MD27-37	5	19	9.1	25
29	BERETTA	3	3	7.6	18
30	D00-6383	4	10	10.6	34
31	D00*6847	5	19	8.4	23
32	D00*6874	6	31	8.1	21
33	D99-5528	6	31	10.4	33
34	F96035G11-2	5	19	7.0	14
35	F96502G4-104	4	10	3.9	2
36	F98198G2-1	6	31	10.6	34
37	NC01-26765	4	10	5.0	7
38	NC01-27308	6	31	9.2	27
39	NC01-27809	6	31	9.9	31
40	LSU04FHB1	5	19	5.1	8
41	LSU04FHB2	5	19	9.7	30
	Mean:	4		7.9	
	L.S.D. (0.05)	2		4.3	
	CV%	25.0		39.3	

FUSARIUM DAMAGED KERNELS %

	Cultivar/ Designation	BAY AR	RANK	COL'BIA MO	RANK	URBANA IL	RANK	F'VILLE AR	RANK	LEX'TON KY	RANK	S'BURY MD	RANK	SZEGED HUN	RANK	FUN'LEA ROM	RANK	MEAN ALL LOC.	RANK
1	ERNIE	19	1	25	9	13	1	3	4	88	16	1	5	36	31	45	14	29	3
2	COKER 9835	39	18	80	37	77	39	26	41	91	29	8	37	65	37	58	22	55	41
3	B011117	43	25	18	4	57	33	9	32	81	4	2	9	11	6	27	4	31	6
4	B990081	24	4	41	21	37	7	6	24	85	7	1	5	30	26	46	15	34	9
5	B006624	23	3	23	5	37	7	5	16	88	16	2	9	35	30	70	31	35	12
6	B006693	35	13	41	21	40	13	3	4	79	3	3	17	68	38	40	8	39	22
7	B010098	42	23	10	2	33	4	7	28	88	16	2	9	29	24	75	34	36	13
8	PAT	61	39	39	15	37	7	23	40	90	26	10	39	68	38	55	20	48	36
9	AR 857-1-1	35	13	49	25	.	.	6	24	85	7	0	1	27	20	51	18	37	17
10	AR 857-1-2	52	33	39	15	50	26	4	13	90	26	1	5	25	19	84	36	43	30
11	AR 93019-2-1	49	31	.	.	40	13	3	4	88	16	5	30	31	28	70	31	42	28
12	ARGE97-1022-5-1	28	7	35	12	53	30	13	37	87	13	3	17	20	14	55	20	37	17
13	ARGE97-1043-6a-5	38	15	23	5	40	13	3	4	92	33	3	17	6	2	41	9	31	6
14	ARGE97-1033-10-2	28	7	23	5	33	4	3	4	89	22	0	1	5	1	16	1	25	1
15	ARGE97-1064-13-5	27	6	16	3	40	13	8	30	89	22	0	1	16	10	44	11	30	4
16	ARGE97-1008-3-3	45	28	49	25	60	35	5	16	86	11	2	9	43	34	20	2	39	22
17	VA00W-526	60	38	50	28	47	20	11	35	85	7	2	9	17	12	22	3	37	17
18	VA03W-647	32	11	44	24	85	40	7	28	87	13	0	1	14	8	35	7	38	20
19	VA03W-646	38	15	25	9	30	2	5	16	83	5	3	17	8	4	31	5	28	2
20	VA03W-671	41	22	40	18	50	26	3	4	89	22	2	9	15	9	32	6	34	9
21	VA03W-672	30	10	40	18	47	20	2	2	83	5	1	5	16	10	70	31	36	13
22	VA03W-652	53	34	80	37	37	7	5	16	92	33	11	40	40	33	62	26	47	35
23	GA 951079-2E31	39	18	65	32	53	30	3	4	92	33	3	17	28	22	67	29	44	31
24	GA 95652-2E56	43	25	49	25	60	35	5	16	91	29	6	33	34	29	66	28	44	31
25	GA951216-2E14	59	37	68	35	37	7	6	24	92	33	4	25	49	35	77	35	49	38
26	GA951216-2E26	34	12	55	31	40	13	3	4	85	7	7	35	23	16	60	24	38	20
27	GA951079-2A25	54	36	40	18	30	2	2	2	92	33	3	17	30	26	60	24	39	22
28	MD27-37	25	5	41	21	37	7	1	1	73	1	2	9	18	13	41	9	30	4
29	BERETTA	42	23	35	12	47	20	5	16	91	29	2	9	13	7	50	17	36	13
30	D00-6383	46	29	88	37	63	37	13	37	97	41	3	17	29	24	91	38	54	40
31	D00*6847	62	41	50	28	50	26	11	35	86	11	5	30	63	36	59	23	48	36
32	D00*6874	61	39	78	36	40	13	5	16	87	13	18	41	27	20	85	37	50	39
33	D99-5528	38	15	39	15	33	4	3	4	88	16	4	25	24	18	95	39	40	25
34	F96035G11-2	51	32	37	14	40	13	4	13	91	29	5	30	20	14	44	11	36	13
35	F96502G4-104	39	18	9	1	47	20	8	30	77	2	8	37	28	22	46	15	33	8
36	F98198G2-1	43	25	66	33	57	33	4	13	90	26	6	33	23	16	68	30	45	33
37	NC01-26765	53	34	33	11	53	30	16	39	89	22	7	35	39	32	44	11	42	28
38	NC01-27308	39	18	54	30	47	20	10	33	95	39	4	25	6	2	64	27	40	25
39	NC01-27809	48	30	80	37	70	38	10	33	96	40	3	17	9	5	53	19	46	34
40	LSU04FHB1	29	9	24	8	47	20	6	24	92	33	4	25	.	.	.	.	34	9
41	LSU04FHB2	22	2	66	33	50	26	5	16	88	16	4	25	.	.	.	.	40	25
	Mean:	40		45		46		7		88		4		28		54		39	
	L.S.D. (0.05)	ns		27		17		11		11		7		.		34		12	
	CV%	35		43.7		23.0		.		5.6		98.4		.		16		31.1	

Fusarium Damaged Kernels %
GGE BIPLOT ANALYSIS[1]



The Average Environment Coordinate abscissa (single arrowed line passing through biplot origin) approximates the genotype (G) effect. Entries towards the right of the abscissa had lower overall FDK % (Entries 14, 19, 15, 13 and 35). Coker 9835 (Entry 2), the susceptible check, and D00-6383 had the highest FDK%.

Urbana, Illinois, Colombia, Missouri and Fundulea, Romania were outlier environments. Szeged, Hungary Entries 1, 7, 5, and 35 performed better in Missouri and Illinois than over the complete set of test locations.

The Average Environment Coordinate ordinate (double arrowed line perpendicular to the abscissa) approximates the genotype x environment (GE) interaction associated with each genotype. The greater the projection onto the ordinate, in either direction, the greater the instabilty of the genotype over locations. Although Entries 1 and 14 both had the same overall score of 26% FDK, Entry 1 was less stable in comparison to Entry 14.

B=Bay, C=Columbia, U=Urbana, F=Fayetteville, L=Lexington, S=Salisbury, H=Szeged, Hungary

[1]Yan et al., (2000) Crop Sci. 40:597-605

INCIDENCE, SEVERITY, KERNEL RATING (ISK) INDEX [1]
(0.3 * Incidence + 0.3 * Severity + 0.4 * Fusarium Damaged Kernels)

	CULTIVAR/ DESIGNATION	BAY AR	RANK	COL'BIA MO	RANK	S'BURY MD	RANK	URBANA IL	RANK	LEX'TON KY	RANK	MEAN ALL LOC.	RANK
1	ERNIE	43	4	57	12	26	14	19	1	63	2	42	4
2	COKER 9835	63	32	72	29	42	38	73	40	77	33	65	39
3	B011117	52	15	44	3	24	10	30	8	77	33	46	8
4	B990081	45	6	66	23	24	10	34	11	74	24	48	14
5	B006624	43	4	58	13	28	18	39	13	68	7	47	11
6	B006693	55	18	58	13	26	14	39	13	72	18	50	16
7	B010098	35	1	41	1	23	8	28	4	75	30	40	1
8	PAT	57	23	55	10	30	22	47	19	81	38	54	21
9	AR 857-1-1	51	10	60	17	10	1	.	.	69	10	45	7
10	AR 857-1-2	56	21	60	17	21	7	41	16	74	24	50	16
11	AR 93019-2-1	66	37	.	.	32	25	49	23	71	15	57	28
12	ARGE97-1022-5-1	47	7	50	8	16	6	37	12	69	10	44	6
13	ARGE97-1043-6a-5	39	2	48	4	14	3	28	4	74	24	41	2
14	ARGE97-1033-10-2	55	18	48	4	11	2	20	2	77	33	42	4
15	ARGE97-1064-13-5	41	3	48	4	14	3	33	10	70	12	41	2
16	ARGE97-1008-3-3	51	10	62	20	14	3	31	9	72	18	46	8
17	VA00W-526	62	29	67	25	31	23	46	18	70	12	55	25
18	VA03W-647	53	16	61	19	27	17	60	35	71	15	54	21
19	VA03W-646	60	26	56	11	24	10	23	3	65	3	46	8
20	VA03W-671	65	34	67	25	28	18	47	19	76	31	57	28
21	VA03W-672	51	10	69	28	38	31	51	29	70	12	56	27
22	VA03W-652	65	34	81	37	51	41	50	26	86	41	67	40
23	GA 951079-2E31	62	29	74	32	39	33	56	33	72	18	61	31
24	GA 95652-2E56	58	24	73	31	40	36	65	38	72	18	62	34
25	GA951216-2E14	66	37	81	37	32	25	48	22	76	31	61	31
26	GA951216-2E26	64	33	77	33	40	36	53	31	71	15	61	31
27	GA951079-2A25	69	39	63	21	39	33	28	4	74	24	55	25
28	MD27-37	48	8	65	22	31	23	40	15	60	1	49	15
29	BERETTA	54	17	59	15	34	27	49	23	68	7	53	20
30	D00-6383	56	21	88	40	39	33	58	34	74	24	63	36
31	D00*6847	65	34	68	27	38	31	62	36	83	40	63	36
32	D00*6874	70	40	77	33	45	40	50	26	68	7	62	34
33	D99-5528	55	18	66	23	29	20	47	19	72	18	54	21
34	F96035G11-2	59	25	59	15	24	10	29	7	65	3	47	11
35	F96502G4-104	50	9	41	1	35	29	54	32	73	23	51	18
36	F98198G2-1	60	26	79	36	37	30	65	38	82	39	64	38
37	NC01-26765	62	29	53	9	23	8	50	26	74	24	52	19
38	NC01-27308	60	26	72	29	34	27	52	30	80	36	60	30
39	NC01-27809	70	40	86	39	42	38	63	37	80	36	68	41
40	LSU04FHB1	51	10	49	7	26	14	43	17	67	6	47	11
41	LSU04FHB2	51	10	77	33	29	20	49	23	66	5	54	21
	Mean:	56		64		29		45		73		53	
	L.S.D. (0.05)	.		17		.		11		10		9	
	CV%	.		18.7		.		15.1		6.5		13.6	

[1]Kolb, F. L., and L. K. Boze. 2003. An alternative to the FHB index: incidence, severity, kernel rating (ISK) index In: Canty, S.M., J. Lewis, and R.W. Ward (Eds.), 2003 National Fusarium Head Blight Forum Proceedings. Dec 13-15, Bloomington, MN. Michigan State University, East Lansing, MI.

1000 GRAIN WEIGHT

	Cultivar/ Designation	1000 GR. WT. S'BURY MD	RANK	1000 GR. WT. SZEGED HUN	RANK	MEAN ALL LOC.	RANK
1	ERNIE	39	2	43.8	12	41.4	5
2	COKER 9835	31	23	36.1	39	33.6	37
3	B011117	34	11	43.7	15	38.9	11
4	B990081	33	15	41.4	24	37.2	19
5	B006624	32	18	44.1	9	38.1	16
6	B006693	35	6	42.0	20	38.5	13
7	B010098	28	36	38.5	34	33.3	38
8	PAT	29	30	39.0	32	34.0	35
9	AR 857-1-1	39	2	43.9	11	41.5	4
10	AR 857-1-2	35	6	41.6	22	38.3	14
11	AR 93019-2-1	35	6	43.8	12	39.4	9
12	ARGE97-1022-5-1	36	4	46.4	5	41.2	6
13	ARGE97-1043-6a-5	32	18	40.2	27	36.1	26
14	ARGE97-1033-10-2	36	4	38.6	33	37.3	18
15	ARGE97-1064-13-5	32	18	41.5	23	36.8	21
16	ARGE97-1008-3-3	34	11	39.1	31	36.6	22
17	VA00W-526	26	41	36.5	38	31.3	41
18	VA03W-647	32	18	41.2	25	36.6	22
19	VA03W-646	28	36	43.2	17	35.6	29
20	VA03W-671	29	30	45.4	6	37.2	19
21	VA03W-672	30	29	43.0	19	36.5	24
22	VA03W-652	35	6	49.7	3	42.4	3
23	GA 951079-2E31	29	30	40.2	27	34.6	33
24	GA 95652-2E56	34	11	45.2	8	39.6	8
25	GA951216-2E14	28	36	36.9	35	32.5	39
26	GA951216-2E26	32	18	45.4	6	38.7	12
27	GA951079-2A25	31	23	43.8	12	37.4	17
28	MD27-37	28	36	36.8	36	32.4	40
29	BERETTA	29	30	39.4	30	34.2	34
30	D00-6383	27	40	44.1	9	35.6	29
31	D00*6847	31	23	41.7	21	36.4	25
32	D00*6874	29	30	43.1	18	36.1	26
33	D99-5528	33	15	48.3	4	40.7	7
34	F96035G11-2	40	1	51.2	1	45.6	1
35	F96502G4-104	35	6	49.9	2	42.5	2
36	F98198G2-1	33	15	43.3	16	38.2	15
37	NC01-26765	31	23	39.6	29	35.3	31
38	NC01-27308	31	23	36.6	37	33.8	36
39	NC01-27809	29	30	40.9	26	35.0	32
40	LSU04FHB1	31	23	.		36.1	26
41	LSU04FHB2	34	11	.		39.1	10
	Mean:	32		42.3		37.2	
	L.S.D. (0.05)	5		.		4.9	
	CV%	10		.		6.6	

GRAIN YIELD AND QUALITY, SZEGED, HUNGARY

	Cultivar/ Designation	PLOT YIELD (kg/plot)	RANK	YIELD LOSS DUE TO FHB (%)	RANK	GRAIN EVAL. [1]	GRAIN COLOR [2]	NIR %WET GLUTEN	RANK	NIR HARD-NESS	RANK	NIR %GRAIN PROTEIN	RANK
1	ERNIE	3.48	18	47	34	5	vb	25.7	7	41.5	1	11.8	33
2	COKER 9835	3.90	7	67	39	3-4 M60	sb-vb	22.4	1	66.1	16	10.6	39
3	B011117	3.70	10	18	6	4	sb	32.3	25	89.9	38	12.8	19
4	B990081	4.56	1	42	32	3,5	vb	29.3	14	60.2	5	12.5	26
5	B006624	3.54	16	46	33	4,5 M80	b	31.2	20	63.7	11	12.9	18
6	B006693	3.19	24	56	36	3,5 M60	sb-b	33.0	29	71.2	22	13.4	9
7	B010098	1.71	39	37	28	3,5 M50	b-vb	27.6	11	47.6	2	12.2	27
8	PAT	3.59	14	63	38	3-4	b-vb	32.6	27	71.3	23	13.1	13
9	AR 857-1-1	3.16	26	28	19	3-4 M	b-vb	32.5	26	57.8	4	13.5	8
10	AR 857-1-2	2.98	33	32	26	3 M10	sb-b	37.3	37	80.0	33	14.2	3
11	AR 93019-2-1	3.48	18	37	28	4,5	sb-b	38.3	39	75.2	27	14.7	1
12	ARGE97-1022-5-1	3.10	29	21	12	3 A25	b	34.8	35	71.6	24	13.9	4
13	ARGE97-1043-6a-5	2.76	35	22	14	4 A30	b	37.3	37	67.4	18	14.6	2
14	ARGE97-1033-10-2	2.35	38	12	3	3,5 M1 A10	sb-b	33.2	30	82.5	35	13.4	9
15	ARGE97-1064-13-5	3.00	32	19	8	4 M5	b-vb	33.4	32	71.7	26	13.4	9
16	ARGE97-1008-3-3	2.46	37	53	35	3,5	sb-b	30.9	18	78.5	32	12.8	19
17	VA00W-526	4.23	2	31	24	3 M30	vb	28.1	12	77.4	29	11.9	32
18	VA03W-647	3.94	6	22	14	3	sb-vb	30.1	16	77.9	30	12.7	23
19	VA03W-646	3.13	28	11	1	4A1	b-vb	34.9	36	68.6	19	13.8	5
20	VA03W-671	3.07	30	20	10	4,5 A2	vb	31.3	21	65.3	14	13.1	13
21	VA03W-672	3.22	23	29	23	3 M50	b-vb	33.9	34	64.5	13	13.7	6
22	VA03W-652	3.55	15	39	30	5 M5	sb-b	31.3	21	78.0	31	12.8	19
23	GA 951079-2E31	3.46	20	18	6	4,5 A15	vb	31.7	24	61.8	7	13.1	13
24	GA 95652-2E56	3.83	9	28	19	4 M30 A2	b	26.5	8	62.7	9	12.1	28
25	GA951216-2E14	3.96	5	39	30	4 M5	b-vb	30.9	18	70.9	21	12.8	19
26	GA951216-2E26	3.87	8	35	27	3,5 A2 M20	b-vb	30.5	17	75.8	28	12.6	24
27	GA951079-2A25	3.40	21	11	1	4,5 A10	vb	27.5	9	60.5	6	12.0	30
28	MD27-37	3.16	26	19	8	4,5 M10	vb	25.1	5	70.0	20	11.3	37
29	BERETTA	4.13	3	16	4	3-4,5 M20	vb	23.5	2	54.2	3	11.2	38
30	D00-6383	3.51	17	24	16	4,5 A10	b-vb	24.6	4	63.9	12	11.4	35
31	D00*6847	3.64	12	62	37	5 M30	sb-vb	24.5	3	62.4	8	11.4	35
32	D00*6874	3.61	13	31	24	4 A2	sb-b	29.7	15	65.4	15	12.6	24
33	D99-5528	3.07	30	28	19	4	b	31.4	23	71.6	24	13.1	13
34	F96035G11-2	2.51	36	21	12	4-5 M1	sb	33.7	33	84.6	36	13.6	7
35	F96502G4-104	3.38	22	24	16	4,5 M10	sb	29.2	13	97.7	39	12.1	28
36	F98198G2-1	2.93	34	26	18	3-4 M2	sb	33.2	30	86.7	37	13.3	12
37	NC01-26765	3.19	24	28	19	3,5 M30	b	25.1	5	67.1	17	11.6	34
38	NC01-27308	3.70	10	20	10	4,5	b-vb	32.6	27	80.4	34	13.0	17
39	NC01-27809	4.08	4	17	5	4 M40	sb-b	27.5	9	63.4	10	12.0	30
40	LSU04FHB1	.	.	.	.	.	.	.	.	.	.	.	.
41	LSU04FHB2	.	.	.	.	.	.	.	.	.	.	.	.
	Mean:	3.4		30.7		.	.	30.5		69.9		12.7	
	L.S.D. (0.05)	.		.		.	.	.		.		.	
	CV%	.		.		.	.	.		.		.	

[1] 1=completely shriveled, 5=fully developed. M=yellow spots on dark background, A=alternaria black spot. Number=% grain with symptoms.

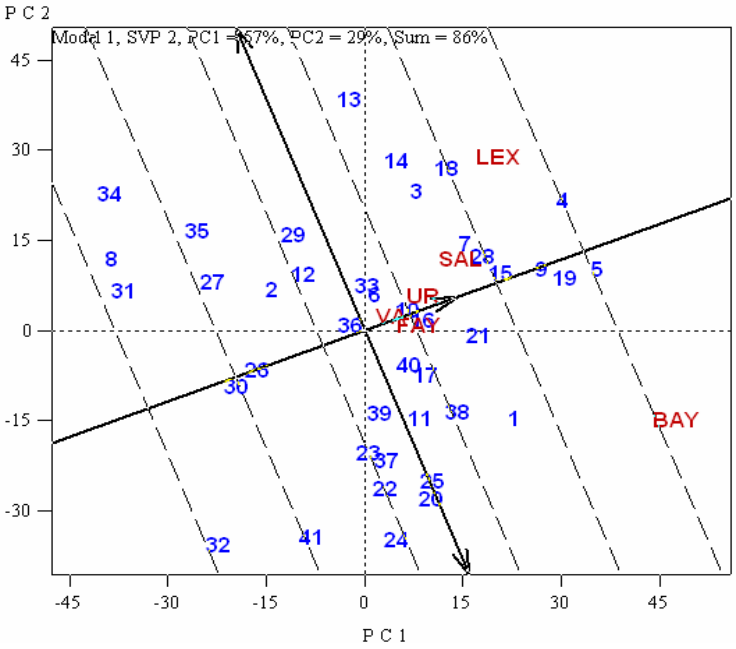
[2] Grain color: vb=light brown, b=brown, sb=dark brown, vb-b=light brown to brown, sb-vb=mixture, maybe segregation.

Vomitoxin (DON)*
(ppm)

	Cultivar/ Designation	BAY AR	RANK	B'BURG VA	RANK	URBANA IL	RANK	LEX'TON KY	RANK	F'VILLE AR	RANK	S'BURY MD	RANK	MEAN ALL LOC.	RANK
1	ERNIE	9.1	2	1.1	18	1.8	2	18.5	20	0.7	4	7.6	30	6.5	8
2	COKER 9835	24.7	31	1.6	28	14.5	40	16.0	14	4.9	39	8.5	34	11.7	37
3	B011117	18.9	25	0.5	7	7.6	31	10.0	3	2.6	31	4.9	14	7.4	12
4	B990081	10.8	5	1.9	33	2.7	7	8.0	1	1.6	23	2.6	7	4.6	3
5	B006624	7.1	1	0.4	5	1.7	1	9.5	2	1.4	18	5.3	17	4.2	1
6	B006693	19.6	26	1.3	20	4.7	21	17.0	16	1.7	26	5.1	15	8.2	17
7	B010098	15.4	16	0.3	3	2.9	8	13.0	10	5.2	40	2.6	7	6.6	10
8	PAT	34.8	40	1.8	30	8.5	33	21.0	27	9.7	41	7.3	25	13.9	40
9	AR 857-1-1	10.7	4	0.6	10	. .		12.5	8	1.4	18	0.7	1	4.5	2
10	AR 857-1-2	18.1	22	0.9	13	4.0	14	18.5	20	1.2	11	2.0	5	7.5	14
11	AR 93019-2-1	15.0	13	0.9	13	3.8	12	22.0	31	1.6	23	5.6	18	8.2	17
12	ARGE97-1022-5-1	24.7	31	0.7	12	3.9	13	19.0	24	2.7	32	4.1	12	9.2	24
13	ARGE97-1043-6a-5	25.8	34	0.2	2	2.0	3	10.0	3	0.7	4	2.7	9	6.9	11
14	ARGE97-1033-10-2	21.8	29	0.1	1	2.9	8	12.0	7	0.8	7	1.5	3	6.5	8
15	ARGE97-1064-13-5	13.5	10	0.6	10	2.6	6	14.5	11	0.9	9	1.3	2	5.6	5
16	ARGE97-1008-3-3	17.1	20	0.5	7	5.7	25	18.5	20	1.1	10	1.5	3	7.4	12
17	VA00W-526	15.2	14	1.6	28	12.3	39	18.5	20	1.3	17	3.8	10	8.8	22
18	VA03W-647	18.5	24	1.0	15	5.5	24	10.0	3	0.6	3	2.0	5	6.3	7
19	VA03W-646	9.5	3	0.3	3	2.4	4	11.5	6	0.5	2	4.4	13	4.8	4
20	VA03W-671	13.1	9	0.5	7	4.2	16	26.5	39	0.8	7	3.8	10	8.2	17
21	VA03W-672	12.9	7	3.7	40	6.3	29	14.5	11	0.7	4	7.4	26	7.6	15
22	VA03W-652	15.5	17	1.8	30	5.9	26	25.5	37	1.4	18	6.8	22	9.5	26
23	GA 951079-2E31	17.1	20	2.9	37	5.3	23	24.0	34	1.2	11	7.5	28	9.7	28
24	GA 95652-2E56	13.5	10	3.1	38	10.0	38	26.0	38	1.2	11	8.3	32	10.4	31
25	GA951216-2E14	13.0	8	1.0	15	4.0	14	24.5	35	1.8	27	5.9	20	8.4	20
26	GA951216-2E26	25.4	33	1.0	15	6.2	27	23.5	33	1.5	22	6.8	22	10.7	32
27	GA951079-2A25	30.1	37	3.9	41	2.9	8	21.5	29	1.4	18	5.8	19	10.9	33
28	MD27-37	14.7	12	1.9	33	2.5	5	12.5	8	0.4	1	5.1	15	6.2	6
29	BERETTA	25.8	34	1.5	25	4.2	16	15.5	13	2.2	29	8.0	31	9.5	26
30	D00-6383	26.1	36	1.3	20	4.2	16	24.5	35	3.5	36	8.5	34	11.4	34
31	D00*6847	34.5	39	1.3	20	8.8	36	22.0	31	2.1	28	9.3	37	13.0	39
32	D00*6874	23.0	30	3.1	38	9.5	37	27.5	40	3.7	38	17.8	41	14.1	41
33	D99-5528	20.7	28	1.3	20	4.2	16	16.5	15	1.2	11	6.6	21	8.5	21
34	F96035G11-2	37.5	41	1.1	18	3.4	11	19.0	24	1.2	11	8.9	36	11.9	38
35	F96502G4-104	31.2	38	1.8	30	7.1	30	17.0	16	2.8	33	9.3	37	11.5	36
36	F98198G2-1	20.6	27	2.3	35	6.2	27	18.0	18	1.2	11	7.5	28	9.3	25
37	NC01-26765	15.3	15	1.3	20	8.5	33	21.5	29	3.6	37	11.0	39	10.2	30
38	NC01-27308	12.5	6	0.4	5	5.0	22	19.0	24	2.2	29	8.4	33	7.9	16
39	NC01-27809	17.0	19	1.5	25	8.5	33	21.0	27	3.1	34	7.4	26	9.8	29
40	LSU04FHB1	16.4	18	1.5	25	7.8	32	18.0	18	1.6	23	7.2	24	8.8	22
41	LSU04FHB2	18.4	23	2.3	35	4.5	20	28.0	41	3.4	35	12.0	40	11.4	34
	Mean:	19.1		1.4		5.2		18.2		2.0		6.2		8.7	
	L.S.D. (0.05)	.		0.9		4.3		7.8		.		9.2		4.3	
	CV%	42.6		48.0		41.5		21.2		.		65.8		42.8	

*DON analysis conducted by Pat Hart, Dept of Plant Pathology, Michigan State University.

DON
GGE BIPLOT ANALYSIS



Lexington, Ky (LEX) and Bay, AR (BAY) were the most discriminating locations

Entries 5 (B006624), 4 (B990081) and 19 (VA03W-646) had the lowest and most stable DON content over the six environments reporting.

Other low DON levels were reported for entries 9 (AR857-1-1), 28 (MD27-37), 15 (ARGE97-1064-13-5) and 1 (Ernie). Ernie displayed relatively less stability for resistance than the other entries lying closer to the abscissa.

Entries 32 (D00*6874), 34 (F96035G11-2), 8 (PAT) and 31 (D00*6847) had the highest mean DON content.

Greenhouse Screening[1]

	Cultivar/ Designation	NC SEVERITY	RANK	VA SEVERITY	RANK	AR SEVERITY	RANK	KY SEVERITY	RANK	MO SEVERITY	RANK	MEAN ALL LOC.	RANK	NC SPREAD	RANK	MO SPREAD	RANK	MEAN SPREAD	RANK
1	ERNIE	11	20	19	13	10	1	25	6	36	21	20	5	1.8	18	4.1	18	2.9	16
2	COKER 9835	20	29	49	33	67	39	35	16	55	34	45	36	4.3	31	8.4	35	6.4	34
3	B011117	9	16	38	26	10	1	33	12	19	9	22	9	1.8	18	2.7	10	2.2	10
4	B990081	4	3	15	10	31	18	44	34	49	29	29	21	0.6	2	8.3	34	4.5	26
5	B006624	47	39	28	21	33	19	43	32	21	12	34	25	9.1	39	2.6	9	5.9	33
6	B006693	31	32	45	31	47	33	45	37	78	40	49	39	5.6	33	10.4	40	8.0	39
7	B010098	22	31	13	7	11	3	42	30	26	14	23	11	4.0	28	3.9	17	4.0	22
8	PAT	64	41	11	5	42	26	30	10	56	35	41	31	9.9	40	9.1	38	9.5	41
9	AR 857-1-1	14	22	20	14	34	20	19	2	14	7	20	5	2.4	22	1.6	4	2.0	7
10	AR 857-1-2	18	25	60	38	45	31	41	28	39	24	41	31	3.1	25	5.1	22	4.1	23
11	AR 93019-2-1	13	21	71	39	42	26	45	37	.	.	44	33	1.5	14	.	.	2.3	11
12	ARGE97-1022-5-1	5	4	51	35	42	26	37	21	47	28	36	26	1.0	5	7.6	32	4.3	24
13	ARGE97-1043-6a-5	6	6	51	35	16	7	43	32	12	4	26	17	1.0	5	1.8	6	1.4	3
14	ARGE97-1033-10-2	7	11	52	37	18	8	57	41	8	1	28	19	1.3	10	1.1	1	1.2	1
15	ARGE97-1064-13-5	5	4	26	17	30	15	39	25	26	14	25	15	1.0	5	4.3	19	2.7	15
16	ARGE97-1008-3-3	8	13	39	27	25	12	36	20	8	1	23	11	1.5	14	1.3	3	1.4	3
17	VA00W-526	14	22	17	12	18	8	39	25	8	1	19	3	2.4	22	1.2	2	1.8	6
18	VA03W-647	3	1	16	11	22	11	35	16	12	4	17	2	0.8	3	1.7	5	1.3	2
19	VA03W-646	3	1	22	15	14	5	16	1	27	17	16	1	0.5	1	3.5	15	2.0	7
20	VA03W-671	10	18	11	5	15	6	44	34	37	23	23	11	1.9	21	5.3	24	3.6	19
21	VA03W-672	20	29	25	16	55	36	29	9	63	37	38	29	2.8	24	7.5	31	5.2	28
22	VA03W-652	53	40	42	30	43	30	42	30	52	32	46	37	10.0	41	6.1	27	8.1	40
23	GA 951079-2E31	36	35	26	17	36	23	40	27	46	26	37	28	7.0	36	5.8	25	6.4	34
24	GA 95652-2E56	19	27	27	20	35	21	34	14	74	39	38	29	4.1	30	9.7	39	6.9	36
25	GA951216-2E14	40	37	32	23	27	14	35	16	49	29	36	26	4.0	28	6.8	30	5.4	30
26	GA951216-2E26	8	13	26	17	45	31	35	16	25	13	28	19	1.8	18	3.1	12	2.5	14
27	GA951079-2A25	42	38	31	22	25	12	41	28	26	14	33	23	7.9	38	3.1	12	5.5	32
28	MD27-37	6	6	9	4	21	10	38	23	27	17	20	5	1.1	9	3.7	16	2.4	12
29	BERETTA	18	25	13	7	42	26	26	8	13	6	22	9	3.7	26	2.1	8	2.9	16
30	D00-6383	7	11	40	29	38	24	23	3	59	36	33	23	1.4	13	8.4	35	4.9	27
31	D00*6847	33	34	76	41	52	35	23	3	36	21	44	33	5.6	33	4.8	20	5.2	28
32	D00*6874	19	27	39	27	84	41	37	21	51	31	46	37	4.3	31	6.5	29	5.4	30
33	D99-5528	36	35	48	32	56	37	30	10	52	32	44	33	7.3	37	8.0	33	7.7	38
34	F96035G11-2	6	6	6	1	12	4	48	40	41	25	23	11	1.0	5	6.3	28	3.7	20
35	F96502G4-104	8	13	6	1	30	15	33	12	16	8	19	3	1.3	10	2.8	11	2.1	9
36	F98198G2-1	9	16	33	24	30	15	34	14	20	11	25	15	1.6	16	3.2	14	2.4	12
37	NC01-26765	6	6	6	1	39	25	44	34	35	20	26	17	1.3	10	5.1	22	3.2	18
38	NC01-27308	10	18	71	39	80	40	38	23	46	26	49	39	1.6	16	6.0	26	3.8	21
39	NC01-27809	6	6	13	7	35	21	24	5	19	9	20	5	0.9	4	2.0	7	1.5	5
40	LSU04FHB1	16	24	35	25	48	34	25	6	29	19	31	22	3.8	27	4.9	21	4.4	25
41	LSU04FHB2	32	33	49	33	64	38	47	39	66	38	52	41	6.3	35	8.4	35	7.4	37
	Mean:	18		32		36		36		35		31		3.3		5.0		4.1	
	L.S.D. (0.05)	.		.		.		.		.		18		.		.		4.3	
	CV%	.		.		.		.		.		45		.		.		52.6	

[1] Severity data based on the percentage of infected spikelets / total spikelets 21 to 28 days post inoculation
Spread = total number of diseased spikelets in a head.

Greenhouse (Rachis Involvement)[1]

	Cultivar/ Designation	COL'BIA MO	RALEIGH NC	MEAN ALL LOC.
1	ERNIE	0.9	0.5	0.69
2	COKER 9835	1.0	0.5	0.75
3	B011117	0.8	0.5	0.63
4	B990081	1.0	0.3	0.63
5	B006624	0.5	1.0	0.75
6	B006693	1.0	1.0	1.00
7	B010098	0.9	0.6	0.74
8	PAT	0.9	0.8	0.81
9	AR 857-1-1	0.8	1.0	0.88
10	AR 857-1-2	0.9	0.8	0.81
11	AR 93019-2-1	.	0.6	0.60
12	ARGE97-1022-5-1	0.8	0.6	0.70
13	ARGE97-1043-6a-5	0.6	0.3	0.44
14	ARGE97-1033-10-2	0.6	0.0	0.31
15	ARGE97-1064-13-5	1.0	1.0	1.00
16	ARGE97-1008-3-3	1.0	0.5	0.75
17	VA00W-526	0.6	0.8	0.69
18	VA03W-647	0.9	0.3	0.56
19	VA03W-646	0.6	1.0	0.81
20	VA03W-671	0.9	0.8	0.81
21	VA03W-672	1.0	0.6	0.80
22	VA03W-652	1.0	1.0	1.00
23	GA 951079-2E31	1.0	1.0	1.00
24	GA 95652-2E56	1.0	1.0	1.00
25	GA951216-2E14	1.0	1.0	1.00
26	GA951216-2E26	1.0	0.3	0.63
27	GA951079-2A25	1.0	1.0	1.00
28	MD27-37	0.9	0.3	0.55
29	BERETTA	0.9	0.6	0.74
30	D00-6383	1.0	0.5	0.75
31	D00*6847	0.8	0.8	0.75
32	D00*6874	0.9	1.0	0.94
33	D99-5528	0.9	1.0	0.94
34	F96035G11-2	0.9	0.5	0.68
35	F96502G4-104	0.9	0.5	0.69
36	F98198G2-1	1.0	0.8	0.88
37	NC01-26765	1.0	0.8	0.88
38	NC01-27308	0.9	0.8	0.81
39	NC01-27809	1.0	0.5	0.75
40	LSU04FHB1	0.9	1.0	0.94
41	LSU04FHB2	1.0	1.0	1.00
	Mean:	0.88	0.70	0.79
	L.S.D. (0.05)	.	.	ns
	CV%	.	.	26.2

[1]Records whether the rachis on an individual head had symptoms where 0=no rachis involvement and 1= rachis showed symptoms.

Heading Date (Julian Days*)

	CULTIVAR/ DESIGNATION	BAY AR	COL'BIA MO	CLAY'N NC	B'BURG VA	URBANA IL	W'TER OH	LEX'TON KY	S'BURY MD	MEAN ALL LOC.	RANK
1	ERNIE	109	131	110	129	130	144	128	124	126	*5*
2	COKER 9835	111	136	112	131	134	146	134	123	128	*28*
3	B011117	116	138	114	134	-	148	137	124	131	*40*
4	B990081	110	131	112	128	132	143	131	124	126	*5*
5	B006624	109	131	110	129	131	145	129	123	126	*5*
6	B006693	110	136	111	129	135	145	133	123	128	*28*
7	B010098	114	135	114	130	132	144	130	126	128	*28*
8	PAT	117	138	120	135	135	149	134	124	131	*40*
9	AR 857-1-1	108	135	109	130	.	150	131	123	127	*22*
10	AR 857-1-2	110	131	110	129	133	143	130	123	126	*5*
11	AR 93019-2-1	109	.	111	129	132	145	129	124	126	*5*
12	ARGE97-1022-5-1	114	136	113	132	.	145	131	123	129	*36*
13	ARGE97-1043-6a-5	117	135	115	133	134	145	132	125	129	*36*
14	ARGE97-1033-10-2	117	135	114	130	134	144	131	125	129	*36*
15	ARGE97-1064-13-5	112	135	113	130	133	144	132	123	128	*28*
16	ARGE97-1008-3-3	110	136	112	131	135	146	132	123	128	*28*
17	VA00W-526	111	133	111	131	134	146	131	123	127	*22*
18	VA03W-647	109	131	108	129	134	146	129	123	126	*5*
19	VA03W-646	109	131	110	129	131	145	129	123	126	*5*
20	VA03W-671	111	133	112	131	132	144	129	125	127	*22*
21	VA03W-672	107	131	111	127	131	145	129	124	126	*5*
22	VA03W-652	105	133	109	129	132	145	130	123	126	*5*
23	GA 951079-2E31	109	131	109	128	129	140	128	124	125	*1*
24	GA 95652-2E56	108	131	110	129	131	141	129	123	125	*1*
25	GA951216-2E14	110	131	112	129	131	143	129	123	126	*5*
26	GA951216-2E26	110	131	111	129	133	144	130	123	126	*5*
27	GA951079-2A25	109	131	110	128	129	141	127	124	125	*1*
28	MD27-37	109	131	111	128	131	142	129	123	125	*1*
29	BERETTA	114	133	113	130	133	147	130	123	128	*28*
30	D00-6383	113	131	112	130	131	141	129	124	126	*5*
31	D00*6847	111	135	112	131	132	145	132	124	128	*28*
32	D00*6874	109	133	111	129	130	143	129	123	126	*5*
33	D99-5528	111	131	111	128	132	142	130	123	126	*5*
34	F96035G11-2	110	133	111	130	130	141	130	123	126	*5*
35	F96502G4-104	112	138	113	131	132	143	130	125	128	*28*
36	F98198G2-1	110	131	111	128	131	144	130	123	126	*5*
37	NC01-26765	113	136	114	133	134	145	130	123	129	*36*
38	NC01-27308	111	131	111	130	134	145	130	125	127	*22*
39	NC01-27809	108	131	111	131	134	147	131	123	127	*22*
40	LSU04FHB1	111	136	110	129	133	143	129	125	127	*22*
41	LSU04FHB2	109	133	111	129	131	143	129	123	126	*5*
	Mean:	110	133	112	130	132	144	130	124	127	
	L.S.D. (0.05)	2	3	.	1	.	.	3	2	1	
	CV%	1	1.8	.	9	.	.	0.9	1.2	1.1	

*Days after December 31, 2003

Plant Height (in)

	CULTIVAR/ DESIGNATION	BAY AR	RANK	COL'BIA MO	RANK	B'BURG VA	RANK	LEX'TON KY	RANK	MEAN ALL LOC.	RANK
1	ERNIE	31	3	30	1	29	10	33	9	31	4
2	COKER 9835	32	8	30	1	28	3	30	1	30	2
3	B011117	33	13	33	11	28	3	31	4	31	4
4	B990081	37	33	35	26	30	21	33	9	34	24
5	B006624	37	33	35	26	29	10	34	16	34	24
6	B006693	37	33	38	37	36	40	36	36	37	38
7	B010098	37	33	35	26	31	26	35	31	35	32
8	PAT	37	33	37	31	32	31	37	37	36	35
9	AR 857-1-1	40	41	35	26	36	40	38	40	37	38
10	AR 857-1-2	37	33	37	31	34	36	35	31	36	35
11	AR 93019-2-1	35	26	.	.	31	26	34	16	34	24
12	ARGE97-1022-5-1	34	18	37	31	32	31	34	16	34	24
13	ARGE97-1043-6a-5	34	18	37	31	31	26	34	16	34	24
14	ARGE97-1033-10-2	36	29	38	37	35	39	35	31	36	35
15	ARGE97-1064-13-5	38	39	39	40	34	36	37	37	37	38
16	ARGE97-1008-3-3	36	29	37	31	33	35	34	16	35	32
17	VA00W-526	31	3	32	9	28	3	31	4	31	4
18	VA03W-647	34	18	30	1	29	10	34	16	32	12
19	VA03W-646	30	1	30	1	26	1	31	4	29	1
20	VA03W-671	30	1	33	11	27	2	32	8	31	4
21	VA03W-672	32	8	30	1	28	3	30	1	30	2
22	VA03W-652	31	3	34	19	28	3	34	16	32	12
23	GA 951079-2E31	34	18	33	11	30	21	33	9	33	21
24	GA 95652-2E56	33	13	33	11	28	3	33	9	32	12
25	GA951216-2E14	33	13	34	19	31	26	35	31	33	21
26	GA951216-2E26	32	8	34	19	32	31	34	16	33	21
27	GA951079-2A25	33	13	34	19	29	10	34	16	32	12
28	MD27-37	32	8	30	1	29	10	34	16	31	4
29	BERETTA	32	8	33	11	30	21	33	9	32	12
30	D00-6383	34	18	33	11	28	3	34	16	32	12
31	D00*6847	31	3	32	9	29	10	34	16	31	4
32	D00*6874	36	29	34	19	30	21	35	31	34	24
33	D99-5528	36	29	35	26	32	31	37	37	35	32
34	F96035G11-2	34	18	31	7	29	10	33	9	32	12
35	F96502G4-104	34	18	33	11	29	10	33	9	32	12
36	F98198G2-1	31	3	34	19	29	10	30	1	31	4
37	NC01-26765	35	26	37	31	30	21	34	16	34	24
38	NC01-27308	34	18	33	11	29	10	34	16	32	12
39	NC01-27809	33	13	31	7	29	10	31	4	31	4
40	LSU04FHB1	39	40	38	37	34	36	39	41	37	38
41	LSU04FHB2	35	26	34	19	31	26	34	16	34	24
	Mean:	34		34		30		34		33	
	L.S.D. (0.05)	3		3		2		3		2	
	CV%	4.4		5.3		4		4		3.7	

LEAF DISEASES AND BYDV

	CULTIVAR/ DESIGNATION	% STRIPE RUST F'VILLE[1] AR	% GREEN LEAVES KIBLER[2] AR	LEAF RUST SZEGED HUN.	LEAF RUST B'BURG VA	*Stagonospora nodorum* B'BURG VA	BYDV B'BURG VA	BYDV Kinston NC
1	ERNIE	66	83	S 70	6	2	5	3
2	COKER 9835	82	89	.	2	2	3	3
3	B011117	18	55	MS 1	2	3	5	5
4	B990081	12	40	0	1	3	4	3
5	B006624	7	30	0	1	1	3	3
6	B006693	7	30	0	2	6	2	4
7	B010098	9	45	0	5	5	4	3
8	PAT	2	50	0	6	7	2	3
9	AR 857-1-1	36	66	S 60	3	5	4	7
10	AR 857-1-2	46	78	0-S 100	2	3	7	6
11	AR 93019-2-1	52	78	0	5	7	4	3
12	ARGE97-1022-5-1	3	55	MRT	2	7	6	3
13	ARGE97-1043-6a-5	2	40	0	2	7	6	4
14	ARGE97-1033-10-2	29	45	S 100	3	6	6	4
15	ARGE97-1064-13-5	3	45	0	2	6	7	4
16	ARGE97-1008-3-3	33	50	0	4	5	4	1
17	VA00W-526	17	35	S 30	2	4	5	2
18	VA03W-647	82	87	MR 5	4	7	6	5
19	VA03W-646	55	93	MR 5	4	3	5	5
20	VA03W-671	44	85	S 100	1	8	4	4
21	VA03W-672	56	50	0	5	1	2	3
22	VA03W-652	81	96	MR 5	4	2	4	3
23	GA 951079-2E31	5	89	0	1	2	5	4
24	GA 95652-2E56	11	78	0	4	3	6	4
25	GA951216-2E14	8	89	MRT	2	4	7	4
26	GA951216-2E26	5	74	MS 5	2	2	5	3
27	GA951079-2A25	3	76	0	2	3	5	4
28	MD27-37	33	90	S 100	7	4	7	3
29	BERETTA	13	65	MS	4	3	6	4
30	D00-6383	85	73	MR 5	5	7	6	3
31	D00*6847	9	74	MRT	5	5	5	3
32	D00*6874	6	64	MRT	3	6	4	4
33	D99-5528	10	60	MS 10	2	3	6	6
34	F96035G11-2	13	66	MS 5	2	2	5	5
35	F96502G4-104	6	64	0	4	4	5	4
36	F98198G2-1	17	45	0	1	3	4	4
37	NC01-26765	98	96	MST	7	3	6	3
38	NC01-27308	34	85	MS 5	2	4	6	3
39	NC01-27809	2	55	0	1	4	5	5
40	LSU04FHB1	62	89	.	4	3	6	4
41	LSU04FHB2	40	87	.	2	4	4	4
	Mean:	29	67	0	3	4	5	4

[1]Percentage of flag leaf diseased. Rated 5-28. [2]Septoria tritici blotch was principle disease together with some stripe rust.

[3]0=Resistant, 9=Fully Susceptible.

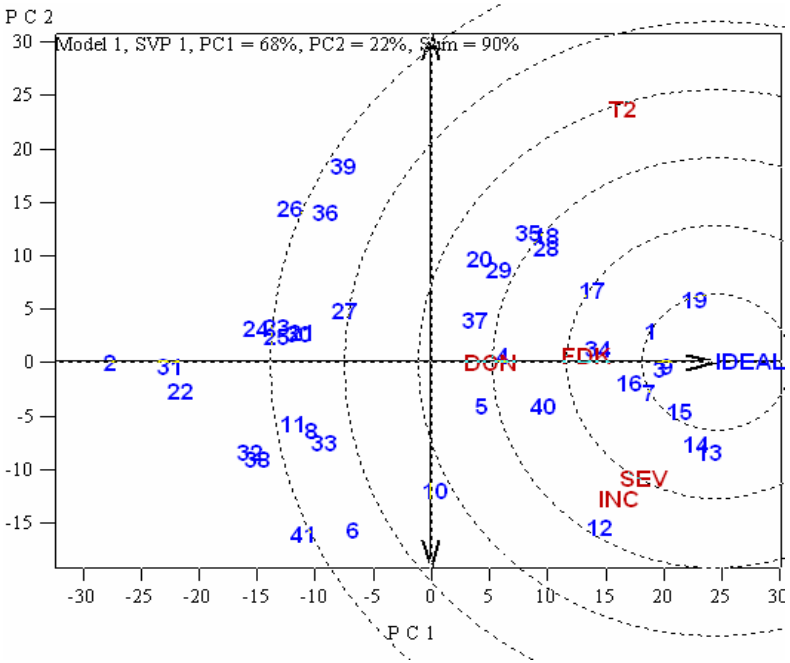
[4]For example 'ms30.5' indicated genotype was moderately susceptible with 30% of flag-1 covered with pustules.

1=lower leaves, 3=flag-2, 5=flag-1, 7=flag leaf, 9=head.

Means Across Locations

	Cultivar/ Designation	FHB Incidence	RANK	FHB Severity	RANK	FHB Index	RANK	FDK	RANK	ISK	RANK	DON	RANK	G'hse Type II	RANK	Heading Date	RANK	Plant Height	RANK
1	ERNIE	43	5	33	14	20	10	26	1	42	4	6.5	8	20	5	126	5	31	4
2	COKER 9835	67	40	52	39	47	41	55	41	65	39	11.7	37	45	36	128	28	30	2
3	B011117	44	9	27	7	19	6	32	11	46	8	7.4	12	22	9	131	40	31	4
4	B990081	52	14	36	19	24	15	32	11	48	14	4.6	3	29	21	126	5	34	24
5	B006624	53	16	33	14	23	14	30	7	47	11	4.2	1	34	25	126	5	34	24
6	B006693	52	14	36	19	22	13	39	27	50	16	8.2	17	49	39	128	28	37	38
7	B010098	41	3	27	7	19	6	30	7	40	1	6.6	10	23	11	128	28	35	32
8	PAT	56	20	39	23	27	22	47	38	54	21	13.9	40	41	31	131	40	36	35
9	AR 857-1-1	43	5	26	5	20	10	35	18	45	7	4.5	2	20	5	127	22	37	38
10	AR 857-1-2	50	11	31	12	21	12	37	23	50	16	7.5	14	41	31	126	5	36	35
11	AR 93019-2-1	61	30	41	26	33	29	37	23	57	28	8.2	17	44	33	126	5	34	24
12	ARGE97-1022-5-1	39	2	24	3	17	2	34	15	44	6	9.2	24	36	26	129	36	34	24
13	ARGE97-1043-6a-5	38	1	22	1	14	1	29	6	41	2	6.9	11	26	17	129	36	34	24
14	ARGE97-1033-10-2	43	5	22	1	18	5	26	1	42	4	6.5	8	28	19	129	36	36	35
15	ARGE97-1064-13-5	42	4	25	4	17	2	28	4	41	2	5.6	5	25	15	128	28	37	38
16	ARGE97-1008-3-3	43	5	27	7	17	2	41	30	46	8	7.4	12	23	11	128	28	35	32
17	VA00W-526	56	20	26	5	25	18	39	27	55	25	8.8	22	19	3	127	22	31	4
18	VA03W-647	58	24	33	14	25	18	38	25	54	21	6.3	7	17	2	126	5	32	12
19	VA03W-646	44	9	31	12	24	15	27	3	46	8	4.8	4	16	1	126	5	29	1
20	VA03W-671	58	24	40	24	31	25	34	15	57	28	8.2	17	23	11	127	22	31	4
21	VA03W-672	65	35	46	33	34	30	31	9	56	27	7.6	15	38	29	126	5	30	2
22	VA03W-652	65	35	49	37	39	38	45	34	67	40	9.5	26	46	37	126	5	32	12
23	GA 951079-2E31	67	40	44	30	34	30	40	29	61	31	9.7	28	37	28	125	1	33	21
24	GA 95652-2E56	66	38	46	33	37	35	41	30	62	34	10.4	31	38	29	125	1	32	12
25	GA951216-2E14	60	28	47	35	34	30	45	34	61	31	8.4	20	36	26	126	5	33	21
26	GA951216-2E26	66	38	55	41	44	40	35	18	61	31	10.7	32	28	19	126	5	33	21
27	GA951079-2A25	63	32	43	29	32	27	36	21	55	25	10.9	33	33	23	125	1	32	12
28	MD27-37	58	24	36	19	27	22	28	4	49	15	6.2	6	20	5	125	1	31	4
29	BERETTA	54	17	40	24	26	21	34	15	53	20	9.5	26	22	9	128	28	32	12
30	D00-6383	57	22	45	32	38	36	48	40	63	36	11.4	34	33	23	126	5	32	12
31	D00*6847	63	32	53	40	38	36	47	38	63	36	13.0	39	44	33	128	28	31	4
32	D00*6874	58	24	42	28	31	25	45	34	62	34	14.1	41	46	37	126	5	34	24
33	D99-5528	57	22	41	26	32	27	33	14	54	21	8.5	21	44	33	126	5	35	32
34	F96035G11-2	50	11	27	7	19	6	35	18	47	11	11.9	38	23	11	126	5	32	12
35	F96502G4-104	62	31	33	14	24	15	31	9	51	18	11.5	36	19	3	128	28	32	12
36	F98198G2-1	65	35	48	36	35	33	41	30	64	38	9.3	25	25	15	126	5	31	4
37	NC01-26765	55	18	35	18	25	18	41	30	52	19	10.2	30	26	17	129	36	34	24
38	NC01-27308	60	28	44	30	35	33	36	21	60	30	7.9	16	49	39	127	22	32	12
39	NC01-27809	64	34	50	38	42	39	45	34	68	41	9.8	29	20	5	127	22	31	4
40	LSU04FHB1	51	13	29	11	19	6	32	11	47	11	8.8	22	31	22	127	22	37	38
41	LSU04FHB2	55	18	38	22	27	22	38	25	54	21	11.4	34	52	41	126	5	34	24
	Mean:	37.6		37		27.7		37		53		8.7		31		127		33	
	L.S.D. (0.05)	13		12		9.7		12		9		4.3		18		1		2	
	CV%	22.3		32.9		38		30.2		13.6		42.8		45		1.1		3.7	

GENOTYPTE-BY-TRAIT BIPLOT



The FHB Index and ISK Index were omitted from this analysis.

The 'Ideal' entry, represented by the small circle with the arrow pointing to it, had the best combined resistance when measured by the variables in the nursery. Entries 9, 3, 1, 7, 15 and 19 appeared to be closest to ideal in this data set.

Entries 2, 31 and 22 were consistently inferior for the traits evaluated.

Entries 12, 13 and 14 performed very well for incidence and severity but not quite as well as Entries 4 and 5 for DON.

Correlations Between Traits Over Locations.

	SEVERITY	INDEX	SCABBY SEED	ISK	DON	G'HOUSE TYPE 2	HEADING DATE	PLANT HEIGHT
INCIDENCE	0.86	0.86	0.6	0.86	0.43	0.32	-0.42	-0.43
SEVERITY		0.94	0.75	0.9	0.43	0.53	-0.39	-0.38
INDEX			0.72	0.93	0.44	0.35	-0.32	-0.49
SCABBY SEED				0.79	0.60	0.47	ns	ns
ISK					0.54	0.34	ns	-0.43
VOMITOXIN (DON)						0.34	ns	ns
G'HOUSE TYPE 2							ns	ns
HEADING DATE								ns