

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

## **2004 NURSERY REPORT**

J. P. Murphy  
R. A. Navarro  
D. A. Van Sanford

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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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North Carolina State University  
Department of Crop Science  
Box 7629  
Raleigh, NC 27695-7629

February 1, 2005

## TABLE OF CONTENTS

Location Notes	3
Photographs	5
List of Entries and Pedigrees	6
FHB Incidence	7
FHB Severity	8
FHB Severity by Individual Isolates, Szeged, Hungary	9
FHB Severity, GGE Biplot Analysis	10
FHB Index	11
AUDPC	12
Field Visual Ratings and Disease Spread in Spiklets	13
Fusarium Damaged Kernels %	14
Fusarium Damaged Kernels % GGE Biplot Analysis	15
Incidence, Severity, Kernel Rating (ISK) Index	16
1000 Grain Weight	17
Grain Yield and Quality, Szeged, Hungary	18
Vomitoxin (DON)	19
DON CGE Biplot Analysis	20
Greenhouse Screening (Head Severity)	21
Greenhouse Screening (Rachis Involvement)	22
Heading Date	23
Plant Height	24
Leaf Diseases and BYDV	25
Means Across Locations	26
Genotype-by-Trait Biplot	27
Correlations Between Traits	28

## 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° average day, 50° average night.  
May: Low 80's average day, 65° 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°F. Percentage of hours when temperature was 9-30° 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<sup>2</sup>).
- Inoculation method: Conidial suspension (5 x 10<sup>4</sup> 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 ( $3 \times 10^4$  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  $\mu$ L 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  $\mu$ L 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 fusarium one month before anthesis.

**Szeged, Hungary.**

Cooperator: Akos Mesterhazy.  
Cereal Research Institute.

**Fundulea, Romania.**

Cooperator: Marianna Iltu.

**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#nuser](http://scabusa.org/research_var.html#nuser)

# 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	FOGLEMEN	2003-04
30	D00-6383	PION 2545/3/CHOTI LERMA/FUNK 5215//ARTHUR 71	FOGLEMEN	2003-04
31	D00*6847	JACKSON/PION 2545	FOGLEMEN	2003-04
32	D00*6874	IL77-2656/NK79W810//PION 2580	FOGLEMEN	2003-04
33	D99-5528	IL77-2656/NK79W810//MALLARD (MASON)	FOGLEMEN	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	COL'BIA	S'BURY	B'BURG	URBANA	W'STER	LEX'TON	MEAN
	AR	MO	MD	VA	IL	OH	KY	ALL LOC.
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	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	COL'BIA	S'BURY	B'BURG	URBANA	W'STER	LEX'TON	SZEGED <sup>1</sup>	FUN'LEA	MEAN
	AR	MO	MD	VA	IL	OH	KY	HUN	ROM	ALL LOC.
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	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

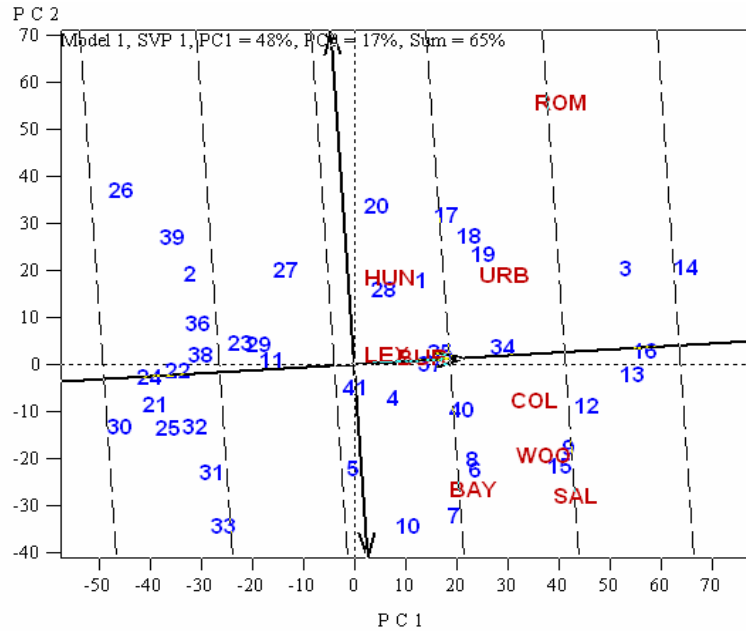
<sup>1</sup>DATA BY INDIVIDUAL ISOLATES ON FOLLOWING PAGE



**SEVERITY BY INDIVIDUAL ISOLATES,  
SZEGED, HUNGARY**

Cultivar/ Designation	<i>F. gramin.</i>	<i>F. gramin.</i>	<i>F. culmor.</i>	<i>F. culmor.</i>	Mean	RANK
	Isol. 12377	Isol. 40	Isol. 12375	Isol. 12551	All Isolates	
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 BIPLLOT ANALYSIS<sup>1</sup>



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 Salisbury to 36th in Romania). Entries 16 and 13 exhibited both low mean severity and relatively good stability over environments.

<sup>1</sup>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 <sup>1</sup>	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

### FHB Index (1-100)

CULTIVAR/ DESIGNATION	BAY		COL'BIA		S'BURY		B'BURG		URBANA		W'STER		LEX'TON		F'VILLE		KIBLER		MEAN	
	AR	MO	MD	VA	IL	OH	KY	AR	AR	ALL LOC.										
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	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

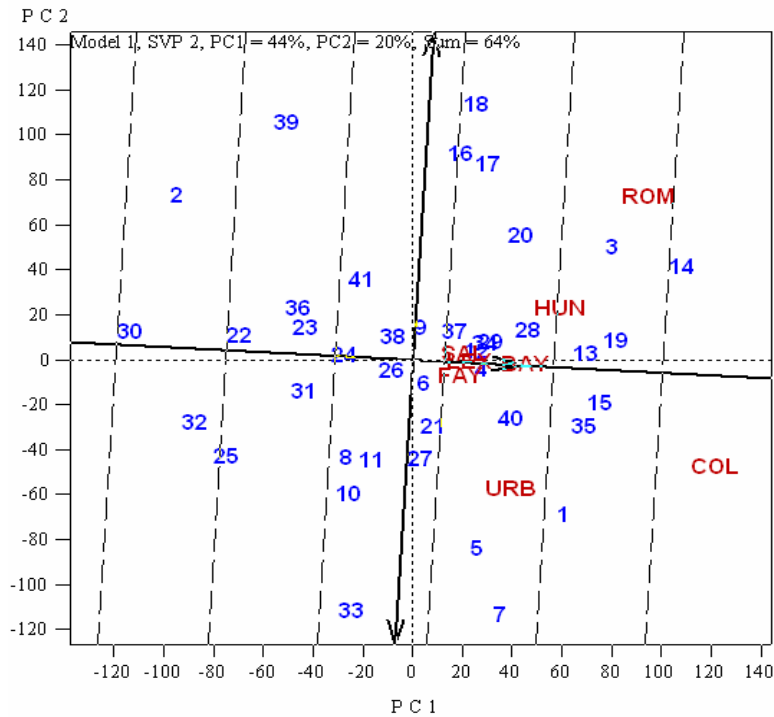
CULTIVAR/ DESIGNATION	VISUAL SCORE (1-9) BAY AR		SPIKLET SPREAD (NUMBER) COL'BIA MO	
		RANK		RANK
1 ERNIE	3	3	9.1	25
2 COKER 9835	8	41	5.3	9
3 B011117	3	3	3.1	1
4 B990081	3	3	9.9	31
5 B006624	5	19	9.6	29
6 B006693	5	19	5.9	11
7 B010098	3	3	4.4	6
8 PAT	3	3	4.2	4
9 AR 857-1-1	4	10	5.8	10
10 AR 857-1-2	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		COL'BIA MO		URBANA IL		F'VILLE AR		LEX'TON KY		S'BURY MD		SZEGED HUN		FUN'LEA ROM		MEAN ALL LOC.	
	RANK		RANK		RANK		RANK		RANK		RANK		RANK		RANK		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 BIPLLOT ANALYSIS<sup>1</sup>



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 instability 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

**INCIDENCE, SEVERITY, KERNEL RATING (ISK) INDEX <sup>1</sup>**  
**(0.3 \* Incidence + 0.3 \* Severity + 0.4 \* Fusarium Damaged Kernels)**

CULTIVAR/ DESIGNATION	BAY	COL'BIA	S'BURY	URBANA	LEX'TON	MEAN
	AR	MO	MD	IL	KY	ALL LOC.
	RANK	RANK	RANK	RANK	RANK	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

<sup>1</sup>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		1000 GR. WT. SZEGED HUN		MEAN ALL LOC.	
	RANK		RANK		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)		YIELD LOSS DUE TO FHB (%)		GRAIN EVAL. <sup>1</sup>	GRAIN COLOR <sup>2</sup>	NIR %WET GLUTEN		NIR HARD-NESS		NIR %GRAIN PROTEIN	
		RANK		RANK				RANK		RANK		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% . . . . .

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

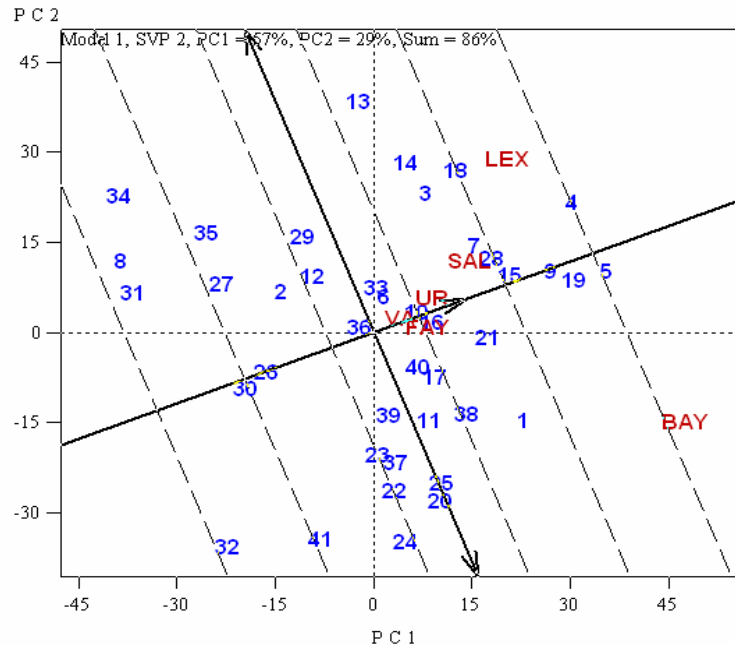
<sup>2</sup> Grain color: vb=light brown, b=brown, sb=dark brown, vb-b=light brown to brown, sb-vb=mixture, maybe segregation.

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

Cultivar/ Designation	BAY		B'BURG		URBANA		LEX'TON		F'VILLE		S'BURY		MEAN	
	AR	RANK	VA	RANK	IL	RANK	KY	RANK	AR	RANK	MD	RANK	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 BIPLLOT 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<sup>1</sup>

Cultivar/ Designation	NC	VA	AR	KY	MO	MEAN	NC	MO	MEAN
	SEVERITY	SEVERITY	SEVERITY	SEVERITY	SEVERITY	ALL LOC.	SPREAD	SPREAD	SPREAD
	RANK	RANK	RANK	RANK	RANK	RANK	RANK	RANK	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

<sup>1</sup> 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)<sup>1</sup>

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

<sup>1</sup>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	COL'BIA	CLAY'N	B'BURG	URBANA	W'TER	LEX'TON	S'BURY	MEAN	RANK
	AR	MO	NC	VA	IL	OH	KY	MD	ALL LOC.	
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

### Plant Height (in)

CULTIVAR/ DESIGNATION	BAY		COL'BIA		B'BURG		LEX'TON		MEAN	
	AR		MO		VA		KY		ALL LOC.	
	RANK		RANK		RANK		RANK		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	% GREEN LEAVES	LEAF RUST		<i>Stagonospora</i> <i>nodorum</i>	BYDV	
	F'VILLE <sup>1</sup> AR	KIBLER <sup>2</sup> AR	SZEGED HUN.	B'BURG VA	B'BURG VA	B'BURG VA	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

<sup>1</sup>Percentage of flag leaf diseased. Rated 5-28. <sup>2</sup>Septoria tritici blotch was principle disease together with some stripe rust.

<sup>3</sup>0=Resistant, 9=Fully Susceptible.

<sup>4</sup>For example 'ms30.5' indicated genotype was moderately susceptible with 30% of flag-1 covered with pustules.

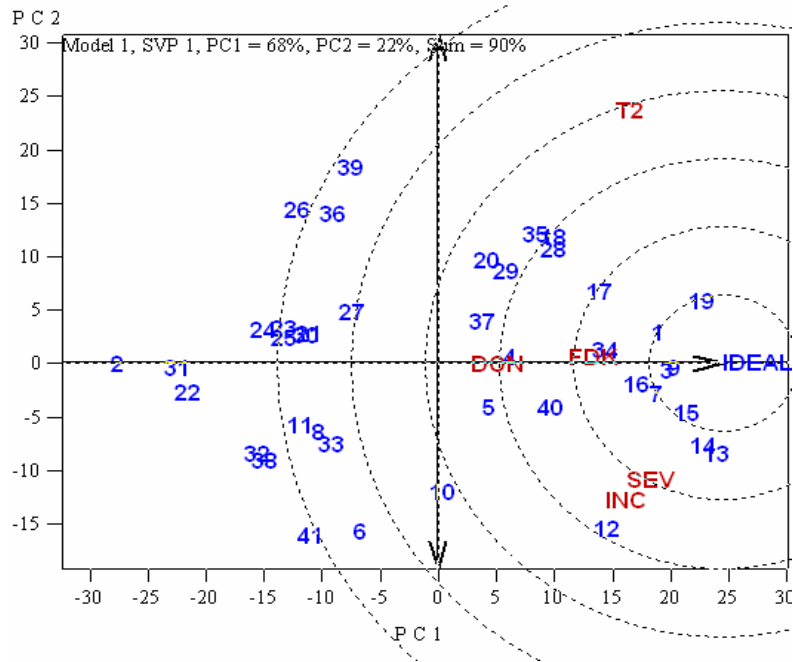
1=lower leaves, 3=flag-2, 5=flag-1, 7=flag leaf, 9=head.

### Means Across Locations

Cultivar/ Designation	FHB Incidence		FHB Severity		FHB Index		FDK		ISK		DON		G'hse Type II		Heading Date		Plant Height	
	RANK		RANK		RANK		RANK		RANK		RANK		RANK		RANK		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

# GENOTYPE-BY-TRAIT BIPLLOT



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