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Mississippi Wheat Variety Trials, 1986

Joe E. Askew Jr.

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1986
Wheat
Variety Trials

MAFES

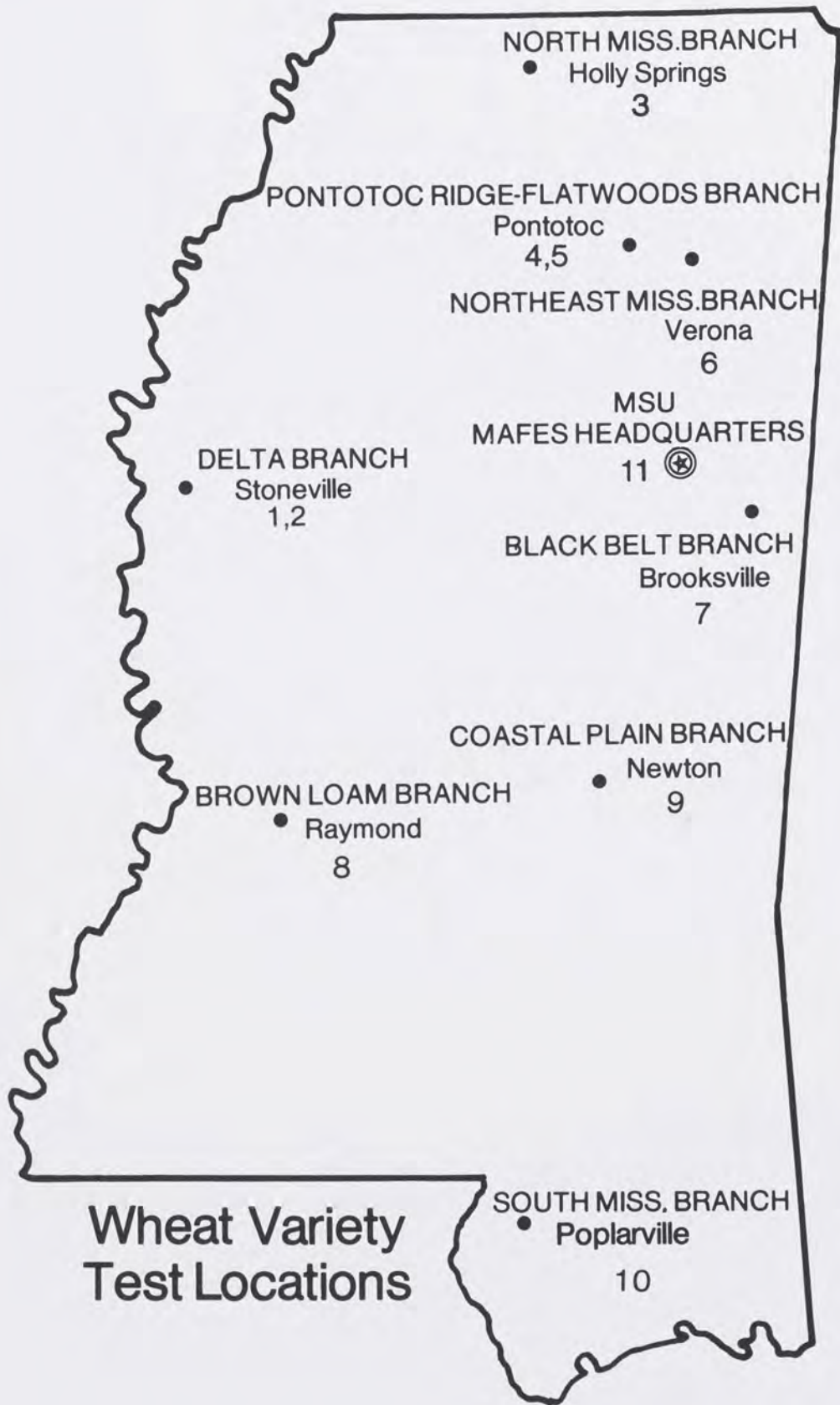


MISSISSIPPI AGRICULTURAL & FORESTRY EXPERIMENT STATION

R. Rodney Foil, Vice President and Director

Donald W. Zacharias, President

Mississippi State University, Mississippi State, MS 39762



Wheat Variety Test Locations

Technical Advisory Committee

Ned Edwards, Chairman
Agronomist, Brown Loam Branch

Hiram Palmertree
Superintendent, Pontotoc Ridge-Flatwoods Branch and
Northeast Mississippi Branch

Charles Baskin
Agronomist, MCEs, Mississippi State University

Joe Sanford
Research Agronomist, USDA-ARS, Mississippi State University

*Larry Trevathan
Associate Plant Pathologist
Department of Plant Pathology and Weed Science
Mississippi State University

* Performed disease ratings at all locations.

The following cooperated with the author in conducting these trials:

Charles Fisher
Assistant Superintendent, Delta Branch

Mike Storie
Farm Foreman, Delta Branch

Gene Stevens
Research Associate, North Mississippi Branch

Dennis Reginelli
Research Associate, Pontotoc Ridge-Flatwoods Branch

Alan Blaine
Research Associate, Northeast Mississippi Branch

Herby Bloodworth
Research Associate, Black Belt Branch

Tommy Sanders
Associate Agronomist, Coastal Plains Branch

Carl Hovermale
Associate Agronomist, South Mississippi Branch

Participating Companies and Varieties Entered:

Agri Pro
Route 2
Post Office Box 411
Brookston, IN 47923

Magnum
Hunter
Twain (formerly
NASW 78-111)

Pioneer Hi-Bred International
1000 West Jefferson Street
Tipton, IN 46072

Pioneer Variety 2550
Pioneer Variety 2551

Rohm and Haas Seeds, Incorporated
Independence Mall West
Philadelphia, PA 19105

HW 3015 R 9323
HW 3021 Coker 762
HW 3022 Coker 797
H X 7 Coker 916
R 9227 Coker 983

Terral Norris Seed Company, Incorporated
Post Office Box 826
Lake Providence, LA 71254

Terral 812
Terral 817

MISSISSIPPI WHEAT VARIETY TRIALS, 1986

Joe E. Askew, Jr., Manager
MAFES Variety Evaluations

Trials were conducted at 11 locations in 1985-86 (see map, inside front cover). Commercial seed companies were given the opportunity to enter one or more varieties for testing at four or more locations. A fee of \$50 was assessed for each entry at each location except Mississippi State University, Starkville, Mississippi, where all entries were tested without charge. Public varieties (inside back cover) were selected by the Technical Advisory Committee for evaluation at all locations.

Procedure

The trial at each location was a randomized block, with four replications of each entry. Plots consisted of seven rows 8 inches apart and 20 feet long. Recommended cultural and pest control practices were followed. Plots were limed and fertilized according to soil-test recommendations. Nitrogen was applied at 20 pounds/acre at planting and 80 pounds/acre in late February. No foliar fungicide was applied to ensure that varieties were evaluated under conditions of maximum disease pressure.

Source of seed ... Seed of all private entries was supplied by the participating companies. Seed of all public varieties was Breeder seed or Foundation Seed from the state of origin.

Planting rate ... All seeds were packaged for planting at the rate of 60 pounds/acre. Plots were planted with a cone, spinner-divider planter.

Yield ... A plot combine was used to harvest the total plot area, after ends were trimmed. Harvested seed were allowed to dry to uniform moisture content before weighing, and weights were converted to yield in bushels/acre (60-pound bushels).

Heading date ... The date when 50% of the heads were extended above the flag leaf was recorded.

Plant height ... Plants were measured from the ground to the top extremity, and average plant height was recorded.

Lodging ... Lodging was rated on the scale of 1 = almost all plants erect, 2 = all plants leaning slightly or only a few plants down, 3 = all plants leaning moderately or 25 to 50% of plants down, 4 = all plants leaning considerably or 50 to 80% of plants down and 5 = all plants down.

Seed test weight ... The test weight was taken on a composite sample from all replications.

Disease ratings ... All varieties were rated for development of powdery mildew, leaf rust, and septoria leaf and glume blotch according to James' Manual of Assessment Keys for Plant Diseases (see Appendix). At growth stages 10.5 (spikes emerged) and 11.1 (milky ripe), 10 plants were selected at random from each plot at each location. The percentage leaf area affected by each disease on the flag leaf from each plant was recorded. From these data, an assessment was made of the overall disease response of each variety.

Table 1. Results of the 1985-86 Mississippi Wheat Variety Trials at the MAFES DELTA BRANCH.

Entry	85-86	3-Yr	Test wt lb/bu	Date headed	Plant height inches	Lodging score	-----DISEASES-----		
	Yield Bu/acre	Avg. Yield					Rust	Septoria	Powdery mildew
Adder ^{A,C}	47.0	----	51	4/14	31	4	4	0	0
Florida 302 ^D	46.3	45.4	53	4/14	35	2	2	2	0
Pioneer 2551	44.4	----	49	5/2	33	4	11	0	0
Magnum ^C	42.1	----	52	4/14	34	3	8	0	0
Pioneer 2550	41.1	----	51	4/28	34	4	12	2	0
HW 3015	41.1	46.1	53	4/22	37	3	13	0	0
Twain	40.9	----	55	5/2	34	3	4	0	0
H X 7 ^C	39.0	----	52	4/14	34	3	15	2	0
Rosen ^C	39.0	44.7	52	4/17	34	3	15	0	0
HW 3022	38.7	----	52	4/22	32	3	14	2	0
AR 48-7-4	38.3	----	52	4/25	36	3	11	2	0
Saluda	38.1	37.5	52	4/28	33	3	10	0	0
Coker 916 ^C	36.9	----	52	4/17	34	3	9	0	4
HW 3021 ^C	36.1	----	47	5/2	38	3	23	0	0
Nelson	34.2	35.9	53	4/17	35	3	13	4	0
Coker 762 ^{A,D}	33.7	----	48	5/5	27	3	10	0	0
Coker 983	32.8	----	51	4/20	28	3	6	0	0
Massey ^C	30.9	----	48	4/22	37	4	12	0	0
Tyler ^C	29.9	----	48	4/22	36	3	16	0	0
R 9323	29.6	----	47	4/28	29	4	15	0	0
Terral 812 ^A	28.0	----	51	5/5	30	3	12	2	0
Hunter ^C	27.0	36.8	50	4/28	30	3	13	0	0
Florida 301	24.5	36.0	52	5/2	34	3	3	2	0
Terral 817 ^D	24.2	30.4	53	5/2	31	3	14	0	0
Bradford ^C	20.4	----	52	4/14	34	3	9	3	0
Coker 797	15.2	----	46	5/2	26	3	4	2	0
Overall Mean	34.2								
LSD @ 0.10	4.0								
Standard Error of Mean....	2.8								
Error Degrees of Freedom..	78								
CV %.....	16.5								

Other Disease Types Present
A. Barley Yellow Dwarf
B. Bacterial Stripe
C. Stem Rust
D. Smut

date planted 10-17-85
date harvested 6-7-85

Table 2. Results of the 1985-86 Mississippi Wheat Variety Trials, on clay soil at the MAFES DELTA BRANCH.

Valid results were not obtained at this location
because ALL plots were virtually destroyed by birds.

Table 3. Results of the 1985-86 Mississippi Wheat Variety Trials at the MAFES
NORTH MISSISSIPPI BRANCH.

Entry	85-86	3-Yr	Test wt lb/bu	Date headed	Plant height Inches	Lodging score	-----DISEASES-----		
	Yield Bu/acre	Avg.					Rust	Septoria	Powdery mildew
Saluda ^C	63.7	53.6	56	4/17	33	2	4	5	0
HW 3021	62.8	-----	54	4/20	36	2	8	7	0
Pioneer 2551	59.0	-----	52	4/20	32	2	1	4	0
Tyler ^{C,D}	59.0	-----	55	4/21	35	2	11	5	0
Coker 983 ^C	57.9	52.6	54	4/20	30	2	3	1	0
Florida 302 ^D	57.2	64.0	53	4/21	36	3	0	2	0
Pioneer 2550 ^C	56.6	49.3	54	4/11	34	2	3	2	0
H X 7	52.0	-----	54	4/16	35	2	2	3	0
AR 48-7-4 ^C	49.4	-----	54	4/20	40	3	2	3	0
Coker 916 ^C	48.9	60.0	52	4/14	32	3	0	5	0
HW 3022	48.4	-----	54	4/20	34	2	4	5	0
HW 3015 ^C	47.5	58.5	53	4/20	34	3	1	7	0
Massey ^C	47.5	-----	52	4/20	36	3	25	0	0
Rosen ^C	47.4	56.4	53	4/17	31	2	3	7	0
R 9323 ^C	47.4	-----	51	4/17	32	3	6	6	0
Twain	47.2	-----	55	4/20	37	2	0	5	0
Adder	46.5	-----	49	4/17	34	2	0	5	0
Bradford	44.9	-----	54	4/17	39	2	5	6	0
Coker 762 ^C	44.2	-----	49	4/20	28	3	5	4	0
Nelson ^C	44.1	52.8	52	4/13	36	2	3	6	0
Terral 812 ^C	41.9	-----	56	4/21	31	3	1	1	0
Magnum ^C	41.7	-----	53	4/14	32	2	2	7	0
Hunter ^C	41.6	48.2	55	4/17	31	3	9	2	0
Coker 797 ^C	41.5	-----	52	4/19	31	3	0	7	0
Terral 817 ^D	36.6	35.7	53	4/16	34	3	3	5	0
Florida 301	32.5	40.6	52	4/19	35	3	0	4	0
Overall Mean	48.0								
LSD @ 0.10	3.9								
Standard Error of Mean....	2.8								
Error Degrees of Freedom..	78								
CV %.....	11.5								

Other Disease Types Present
A. Barley Yellow Dwarf
B. Bacterial Stripe
C. Stem Rust
D. Smut

date planted 11-6-85
date harvested 6-17-85

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Table 4. Results of the 1985-86 Mississippi Wheat Variety Trials on Interior Flatwoods soil at the MAFES PONTOTOC FLATWOODS BRANCH.

Entry	85-86 3-Yr		Test wt lb/bu	Date headed	Plant height inches	Lodging score	-----DISEASES-----		
	Yield Bu/acre	Avg. Yield					Rust	Septoria	Powdery mildew
Florida 302 ^{A,D}	53.2	59.7	57	4/15	34	2	0	0	0
Saluda ^A	47.7	46.9	57	4/20	28	2	0	0	0
Tyler ^A	47.3	----	56	4/24	34	2	0	0	0
Massey ^A	45.8	----	56	4/21	32	2	0	0	0
Pioneer Variety 2551 ^A	40.1	----	56	4/23	29	2	0	0	0
Hunter ^A	38.5	46.3	57	4/15	25	2	0	0	0
Magnum ^A	38.3	----	56	4/23	31	2	0	0	0
Terral 812 ^A	37.6	----	55	4/20	30	2	0	0	0
Terral 817 ^{A,D}	34.9	38.9	54	4/14	30	3	0	0	0
Nelson ^A	31.9	36.8	55	4/19	30	2	0	0	0
Adder ^A	31.0	----	54	4/24	28	2	0	0	0
Florida 301 ^A	29.9	42.4	55	4/17	35	2	0	0	0
Pioneer Variety 2550 ^D	29.1	31.7	55	4/26	30	2	0	0	0
AR 48-7-4 ^A	28.0	----	55	4/22	33	2	0	0	0
Rosen ^A	25.2	30.4	52	4/23	26	2	0	0	0
Bradford ^A	22.3	----	54	4/23	37	2	0	0	0
Twain ^A	21.3	----	55	4/21	34	2	0	0	0
Overall Mean	35.4						Other Disease Types Present		
LSD @ 0.10	2.5						A. Barley Yellow Dwarf		
Standard Error of Mean....	3.1						B. Bacterial Stripe		
Error Degrees of Freedom..	48						C. Stem Rust		
CV %.....	17.3						D. Smut		

date planted 11-6-85
date harvested 6-3-85

Table 5. Results of the 1985-86 Mississippi Wheat Variety Trials on Upper Coastal Plain soil at the MAFES PONTOTOC RIDGE BRANCH.

Entry	85=86	3=Yr	Test wt lb/bu	Date headed	Plant height Inches	Lodging score	-----DISEASES-----		
	Yield Bu/acre	Avg. Bu/acre					Rust	Septoria	Powdery mildew
Saluda	52.1	51.6	57	4/13	28	2	0	0	0
Florida 302A,D	48.8	60.9	56	4/15	30	2	0	0	0
Pioneer Variety 2551	46.8	-----	57	4/14	28	2	0	0	0
H X 7A	46.7	-----	57	4/15	29	2	0	0	0
AR 47-7-4	45.5	45.4	57	4/15	34	2	0	0	0
HW 3021A	45.1	-----	56	4/15	31	2	0	0	0
Pioneer Variety 2550D	45.0	-----	58	4/15	31	2	0	0	0
HW 3015	44.3	-----	56	4/16	32	2	0	0	0
TylerA,D	44.1	-----	57	4/21	30	2	0	0	0
R 9323A	43.7	-----	56	4/13	26	2	0	0	0
MasseyA	42.1	-----	55	4/14	29	3	0	0	0
Coker 916A	42.1	-----	57	4/11	26	2	0	0	0
RosenA	40.7	34.4	56	4/13	28	2	0	0	0
Coker 762A,D	40.3	-----	53	4/20	26	2	0	0	0
BradfordA	39.3	53.9	57	4/13	32	2	0	0	0
Terral 812A	39.3	-----	57	4/15	26	2	0	0	0
AdderA	37.1	-----	59	4/13	27	2	0	0	0
HW 3022D	37.1	-----	56	4/14	30	2	0	0	0
Coker 983	36.2	-----	56	4/18	25	2	0	0	0
NelsonA	34.3	37.8	56	4/12	28	2	0	0	0
Terral 817D	29.4	-----	55	4/19	29	2	0	0	0
Florida 301A	29.0	45.7	59	4/20	33	2	0	0	0
Hunter	26.9	-----	57	4/19	24	2	0	0	0
Coker 797	24.5	-----	55	4/18	28	2	0	0	0
Overall Mean	39.8						Other Disease Types Present		
LSD @ 0.10	3.1						A. Barley Yellow Dwarf		
Standard Error of Mean....	2.2						B. Bacterial Stripe		
Error Degrees of Freedom..	72						C. Stem Rust		
CV %.....	11.3						D. Smut		

date planted 11-6-85
date harvested 6-3-86

Table 6. Results of the 1985-86 Mississippi Wheat Variety Trials at the MAFES NORTHEAST MISSISSIPPI BRANCH.

Entry	85-86 Yield Bu/acre	3-Yr Avg. Test wt lb/bu	Date headed	Plant height inches	Lodging score	-----DISEASES-----			
						Rust	Septoria	Powdery mildew	
Pioneer Variety 2551 ^{A,B}	67.9	----	55	4/15	34	2	0	0	0
Saluda ^{A,D}	64.6	55.9	56	4/14	34	2	0	0	0
Florida 302 ^D	63.0	62.1	57	4/17	36	2	0	0	0
HW 3021 ^A	62.3	----	55	4/16	36	2	0	0	0
Tyler ^{A,D}	62.1	----	58	4/19	40	2	0	0	0
Pioneer Variety 2550 ^A	60.2	45.9	57	4/18	36	2	0	0	0
HW 3015 ^A	57.6	----	56	4/14	37	2	0	0	0
R 9323 ^A	57.3	----	54	4/13	32	2	0	0	0
Coker 983 ^A	56.7	----	56	4/13	30	2	0	0	0
HW 3022 ^{A,D}	55.6	----	57	4/14	36	2	0	0	0
Adder ^A	55.5	----	53	4/14	34	2	0	0	0
Coker 762 ^A	55.1	----	54	4/17	31	2	0	0	0
Massey ^A	53.5	----	55	4/14	38	3	0	0	0
Rosen ^A	52.3	48.7	56	4/13	33	2	0	0	0
AR 48-7-4 ^A	51.5	----	55	4/14	41	2	0	0	0
Coker 916 ^A	48.4	52.5	54	4/9	32	2	0	0	0
Hunter ^A	47.2	44.6	56	4/8	30	2	0	0	0
H X 7 ^{A,D}	46.3	----	54	4/11	33	2	0	0	0
Coker 797 ^A	45.5	----	53	4/11	32	2	0	0	0
Terral 812 ^A	44.2	----	55	4/15	34	2	0	0	0
Nelson ^A	44.0	40.9	56	4/10	37	2	0	0	0
Bradford ^A	41.3	----	55	4/12	39	2	0	0	0
Terral 817 ^D	39.7	43.7	55	4/11	34	2	0	0	0
Florida 301 ^A	35.6	44.7	53	4/11	37	3	0	0	0

Overall Mean 52.1
 LSD @ 0.10 3.2
 Standard Error of Mean.... 2.2
 Error Degrees of Freedom.. 72
 CV %..... 8.6

Other Disease Types Present
 A. Barley Yellow Dwarf
 B. Bacterial Stripe
 C. Stem Rust
 D. Smut

date planted 11-6-85
 date harvested 6-3-86

Table 7. Results of the 1985-86 Mississippi Wheat Variety Trials at the MAFES BLACK BELT BRANCH.

Entry	85-86 Yield Bu/acre	3-Yr Avg. Bu/acre	Test wt lb/bu	Date headed	Plant height Inches	Lodging score	-----DISEASES-----		
							Rust	Septoria	Powdery mildew
Saluda ^A	33.2	36.4	51	4/7	32	4	7	0	0
Coker 983 ^A	31.8	39.6	54	4/6	29	3	2	0	0
Adder ^A	31.7	-----	50	4/6	29	4	0	0	0
Pioneer Variety 2550 ^A	30.0	40.0	49	4/9	34	4	1	0	0
HW 3015 ^A	27.4	-----	51	4/7	32	4	3	0	0
H X 7 ^A	26.9	-----	52	4/4	34	3	0	0	0
R 9323 ^A	26.5	-----	46	4/4	30	3	5	0	0
Florida 302 ^{A,D}	25.3	32.6	48	4/7	30	4	2	0	0
Pioneer Variety 2551 ^A	24.6	-----	45	4/8	31	4	8	0	0
Massey ^A	24.2	-----	47	4/6	34	4	17	0	0
HW 3022 ^A	24.0	-----	53	4/7	34	4	2	0	0
Bradford ^A	22.9	-----	52	4/4	33	4	1	0	0
Nelson ^A	22.2	34.7	53	4/4	32	4	0	0	2
Rosen ^A	21.1	40.0	50	4/6	32	4	5	0	0
Hunter ^A	19.7	34.0	50	4/4	27	3	5	0	0
Coker 916 ^A	19.7	-----	48	4/6	27	5	3	0	0
AR 48-7-4 ^A	19.6	-----	48	4/7	34	4	0	0	0
Tyler ^A	17.5	-----	44	4/8	34	5	12	0	0
Coker 762 ^A	16.7	-----	40	4/6	27	4	3	0	0
Florida 301 ^A	16.5	28.0	49	4/6	31	3	0	0	0
Terral 817 ^{A,D}	13.4	27.0	47	4/4	27	5	4	0	0
Terral 812 ^A	12.7	-----	48	4/6	30	3	0	0	0
Coker 797 ^A	9.9	-----	45	4/4	25	4	0	0	0
Overall Mean	22.3						Other Disease Types Present		
LSD @ 0.10	3.1						A. Barley Yellow Dwarf		
Standard Error of Mean....	2.2						B. Bacterial Stripe		
Error Degrees of Freedom..	69						C. Stem Rust		
CV %	19.6						D. Smut		

date planted 10-16-85
date harvested 6-17-85

Table 8. Results of the 1985-86 Mississippi Wheat Variety Trials at the MAFES BROWN LOAM BRANCH.

Entry	85-86 Yield Bu/acre	3-Yr Avg. Test wt lb/bu	Date headed	Plant height inches	Lodging score	-----DISEASES-----			
						Rust	Septoria	Powdery mildew	
Florida 302	50.6	61.8	56	4/6	34	2	0	0	0
Pioneer Variety 2551	41.1	----	54	4/13	32	2	0	0	0
HW 3015A,C	40.2	----	56	4/8	36	3	0	0	0
Terral 812A,C	40.1	----	56	4/5	31	2	0	0	0
Coker 983A	39.4	55.7	57	4/7	28	2	2	0	0
AdderA,C	37.6	----	56	4/7	28	2	0	0	0
NelsonC	36.2	48.3	57	4/5	32	2	0	0	0
BradfordA,C	35.9	----	59	4/5	36	2	0	0	0
RosenA,C	35.3	47.5	54	4/5	29	2	1	0	0
R 9323C	35.2	----	55	4/6	30	2	1	0	0
Coker 762A,C	34.4	41.9	53	4/11	28	2	0	0	0
AR 48-7-4C	33.8	----	56	4/7	36	2	0	0	0
SaludaC	33.2	35.0	56	4/11	30	3	3	0	0
HW 3022C	32.6	----	58	4/11	34	2	1	0	0
H X 7A,C	32.1	----	54	4/5	32	2	0	0	0
Florida 301A	31.5	50.6	56	4/12	34	3	0	0	0
Coker 797A	31.0	----	57	4/10	27	2	0	0	0
Coker 916A,C	31.0	51.3	57	4/5	29	2	0	0	0
TylerC	30.6	----	51	4/12	37	2	1	0	0
HunterA,C	29.4	----	59	4/6	26	2	3	0	0
Terral 817C	27.7	38.4	58	4/7	30	2	0	0	0
MasseyA,C	27.2	----	53	4/6	32	3	6	0	0
Pioneer Variety 2550C	22.6	----	53	4/14	34	2	0	0	0
Overall Mean	34.8								
LSD @ 0.10	2.8								
Standard Error of Mean....	2.0								
Error Degrees of Freedom..	75								
CV %.....	11.3								

Other Disease Types Present
A. Barley Yellow Dwarf
B. Bacterial Stripe
C. Stem Rust
D. Smut

date planted 11-14-85
date harvested 5-30-85

Table 9. Results of the 1985-86 Mississippi Wheat Variety Trials at the MAFES COASTAL PLAIN BRANCH.

Entry	85-86	3-Yr	Test wt lb/bu	Date headed	Plant height Inches	Lodging score	-----DISEASES-----		
	Yield Bu/acre	Avg. Yield					Rust	Septoria	Powdery mildew
Pioneer Variety 2550	43.9	----	52	4/19	36	2	0	0	0
Saluda	43.9	56.9	53	4/25	33	2	0	0	0
HW 3022 ^{A,D}	41.6	----	55	4/20	34	2	0	0	0
Florida 302 ^D	38.6	53.0	53	4/16	33	3	0	0	0
Coker 983 ^A	38.1	----	53	4/21	28	2	1	0	0
Pioneer Variety 2551	35.8	----	50	4/21	30	2	2	0	0
Coker 762	35.2	43.6	44	4/19	28	3	1	0	0
Nelson ^A	34.6	48.7	54	4/16	29	2	0	0	0
Coker 916 ^A	33.3	----	55	4/17	28	2	0	0	0
HW 3015	32.0	----	52	4/16	36	3	16	0	0
Coker 797	31.8	----	53	4/20	28	3	0	0	0
Adder ^A	31.3	----	51	4/16	28	2	0	0	0
Bradford ^A	30.7	----	52	4/18	34	2	0	0	0
Massey	30.2	----	54	4/17	31	3	24	0	0
H X 7 ^A	30.1	----	55	4/17	30	2	0	0	0
Hunter ^A	29.3	47.9	54	4/16	26	2	3	0	0
Florida 301	29.3	48.4	55	4/15	32	3	0	0	0
Tyler	28.0	----	52	4/19	34	3	11	0	0
AR 48-7-4	27.8	----	52	4/17	36	3	0	0	0
Rosen ^A	26.5	45.8	51	4/18	28	2	6	0	0
Terral 812 ^A	26.5	----	54	4/15	32	3	0	0	0
R 9323	25.9	----	54	4/21	28	3	12	0	0
Terral 817 ^A	24.4	40.9	50	4/18	32	4	8	0	0
Overall Mean \bar{x}	32.0								
LSD @ 0.10.....	4.1								
Standard Error of Mean....	2.9								
Error Degrees of Freedom..	69								
CV %.....	18.0								

Other Disease Types Present
A. Barley Yellow Dwarf
B. Bacterial Stripe
C. Stem Rust
D. Smut

date planted 11-12-85
date harvested 5-20-85

Table 10. Results of the 1985-86 Mississippi Wheat Variety Trials at the MAFES SOUTH MISSISSIPPI BRANCH.

Entry	85-86	3-Yr	Test wt lb/bu	Date headed	Plant height Inches	Lodging score	-----DISEASES-----		
	Yield Bu/acre	Avg. Yield					Rust	Septoria	Powdery mildew*
Florida 302	56.0	49.2	59	4/4	36	2	2	1	0
Coker 983	51.4	----	62	4/4	30	2	2	1	1
H X 7	46.3	----	59	4/4	34	2	4	2	4
Coker 762	45.4	42.4	57	4/7	30	2	2	2	5
Coker 916	45.0	----	58	4/4	32	2	2	1	3
Adder	42.3	----	57	4/5	32	2	4	1	6
Nelson	39.9	38.5	60	4/5	36	2	3	5	3
Saluda	39.2	31.8	60	4/11	31	2	3	2	6
R 9323	39.1	----	59	4/3	31	2	5	3	6
HW 3015	37.0	----	55	4/4	36	2	4	2	6
Terral 817	35.5	34.3	59	3/30	36	3	7	2	5
Terral 812	35.5	----	59	4/4	32	2	4	6	6
Bradford	34.1	----	60	4/3	41	2	2	5	8
AR-48-7-4	34.0	----	59	4/4	38	2	3	5	7
HW 3022	32.3	----	58	4/12	36	2	5	2	5
Massey	32.0	----	58	4/4	34	2	5	6	9
Coker 797	29.0	----	60	3/31	30	3	2	3	5
Hunter	28.7	29.8	57	3/31	29	2	5	3	2
Florida 301	27.7	35.3	57	3/30	36	3	1	3	7
Rosen	26.7	30.2	54	4/1	31	2	8	8	7
Tyler	19.8	----	50	4/14	37	3	8	3	3
Overall Mean	36.4								
LSD @ 0.10	3.4								
Standard Error of Mean....	2.4								
Error Degrees of Freedom..	66								
CV %.....	13.1								

date planted 11-13-85
date harvested 5-21-86

* Heavy infection on lower leaves.

Table 11. Results of the 1985-86 Mississippi Wheat Variety Trials at MAFES MISSISSIPPI STATE UNIVERSITY.

Entry	85-86	3-Yr	Test wt lb/bu	Date headed	Plant height Inches	Lodging score	-----DISEASES-----		
	Yield Bu/acre	Avg. Yield					Rust	Septoria	Powdery mildew
HW 3015 ^{A,D}	54.3	62.2	52	4/8	36	2	0	0	0
Saluda ^A	51.8	49.8	50	4/9	30	2	0	0	0
HW 3021 ^A	49.4	----	51	4/10	34	2	0	0	0
Pioneer Variety 2551 ^A	48.1	----	50	4/12	31	2	0	0	0
H X 7 ^A	46.1	----	53	4/8	34	3	0	0	0
Adder ^A	45.4	----	49	4/10	30	2	0	0	0
Nelson ^A	44.3	49.4	52	4/6	32	3	0	0	0
Magnum ^A	44.1	----	52	4/8	31	2	0	0	0
Pioneer Variety 2550	43.6	50.9	53	4/16	33	2	0	0	0
Bradford ^A	39.0	----	52	4/6	34	3	0	0	0
Massey ^A	37.9	----	50	4/8	33	2	4	0	0
AR 48-7-4 ^A	35.0	----	50	4/9	34	3	0	0	0
Coker 916 ^A	34.5	50.7	52	4/8	29	4	0	0	0
Twain ^A	33.8	----	53	4/14	34	2	0	0	0
Tyler ^A	32.7	----	51	4/16	30	3	1	0	0
Coker 983 ^A	30.8	43.9	52	4/6	27	3	1	0	0
R 9323 ^A	30.2	----	50	4/8	29	3	0	0	0
Florida 302 ^{A,D}	30.0	44.9	49	4/10	29	3	0	0	0
HW 3022 ^{A,D}	28.6	----	50	4/9	32	3	0	0	0
Rosen ^A	27.8	47.7	49	4/10	31	3	0	0	0
Hunter ^A	26.9	41.1	51	4/6	25	3	0	0	0
Florida 301 ^A	23.0	38.6	50	4/3	29	3	0	0	0
Coker 762 ^A	20.3	38.4	46	4/8	26	3	0	0	0
Terral 817 ^{A,D}	19.1	33.2	50	4/7	29	3	0	0	0
Terral 812 ^A	17.0	----	50	4/8	28	3	0	0	0
Coker 797 ^A	11.6	----	49	4/8	24	4	0	0	0
Overall Mean	34.8						Other Disease Types Present		
LSD @ 0.10	3.3						A. Barley Yellow Dwarf		
Standard Error of Mean....	2.3						B. Bacterial Stripe		
Error Degrees of Freedom..	75						C. Stem Rust		
CV %	13.4						D. Smut		

date planted 10-18-85
date harvested 6-13-86

Table 12. Yields of the 1985-86 Mississippi Wheat Variety Trials, averages of seven North Mississippi and three South Mississippi locations.

Entry	North	Three-Yr. Average	South	Three-Yr. Average
Adder	42.0	----	37.1	----
AR 48-7-4	38.2	----	31.9	----
Bradford	32.9	----	33.6	----
Coker 762	35.1 ⁴	39.9	38.3	42.6
Coker 797	24.7 ⁴	----	30.6	----
Coker 916	38.4 ⁴	48.9	36.4	52.3
Coker 983	41.0 ⁴	46.3	43.0	57.4
Florida 301	27.3	37.4	29.5	44.8
Florida 302	46.3	45.6	48.4	54.6
Hunter	32.5	40.6	29.1	42.8
HW 3015	45.4 ⁴	51.6	36.4	49.0
HW 3021	51.1 ³	----	----	----
HW 3022	38.7 ⁴	----	35.5	----
H X 7	42.8 ⁴	----	36.2	----
Magnum	41.6 ²	----	----	----
Massey	40.3	----	29.8	----
Nelson	36.4	41.1	36.9	45.1
Pioneer Variety 2550	43.7	43.1	33.3 ¹	----
Pioneer Variety 2551	47.3	----	38.5 ¹	----
Rosen	36.2	45.9	29.5	41.2
R 9323	39.1 ⁴	----	33.4	----
Saluda	50.2	45.9	38.8	41.3
Terral 812	31.5	----	34.0	----
Terral 817	28.2	34.0	29.2	40.7
Twain	35.8 ²	----	----	----
Tyler-----	41.8	----	26.1	----

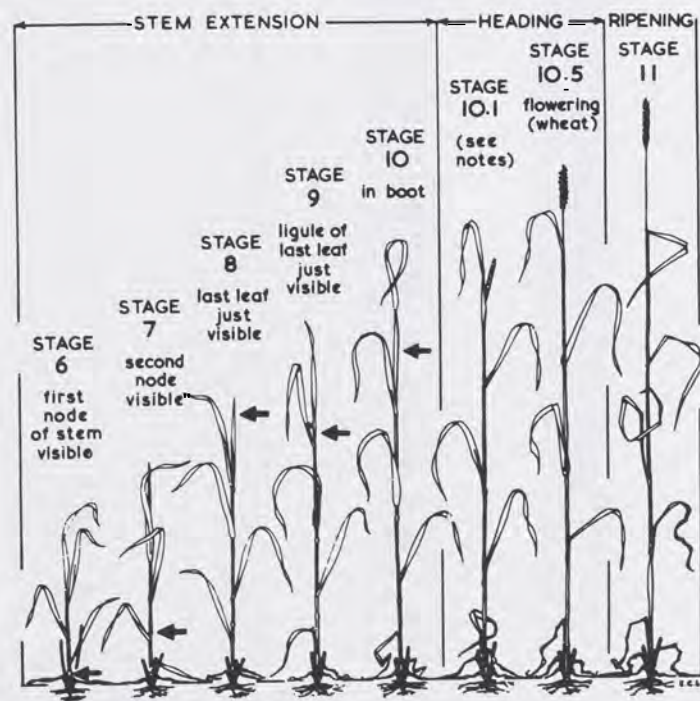
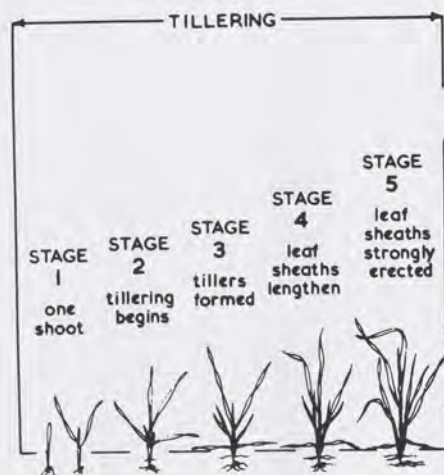
- ¹Only at two locations
- ²Only at four locations
- ³Only at five locations
- ⁴Only at six locations

Table 13. Number of seeds per pound of the varieties in the
1985-86 Mississippi Wheat Variety Trials.-----

Entry	No. seeds per pound	Two-Yr. average
AR 48-7-4	13938	13851
Adder	13869	-----
Bradford	14307	15635
Coker 762	16148	16419
Coker 797	13469	14134
Coker 916	15775	14564
Coker 983	14079	13411
Florida 301	10800	12883
Florida 302	12783	12594
H X 7	19698	-----
HW 3015	15771	15028
HW 3021	18504	16280
HW 3022	17865	-----
Hunter	13648	14636
Magnum	14049	14468
Massey	13104	-----
Nelson	13773	13519
Pioneer Variety 2550	12278	13070
Pioneer Variety 2551	13660	-----
R 9323	17012	-----
Rosen	17397	16246
Saluda	13911	12894
Terral 812	15315	16915
Terral 817	12233	12429
Twain	11115	-----
Tyler	12916	-----

APPENDIX

GROWTH STAGES IN CEREALS



- Stage
- 1 One shoot (number of leaves can be added) = "braiding"
 - 2 Beginning of tillering
 - 3 Tillers formed, leaves often twisted spirally. In some varieties of winter wheats, plants may be "creeping" or prostrate
 - 4 Beginning of the erection of the pseudo-stem, leaf sheaths beginning to lengthen
 - 5 Pseudo-stem (formed by sheaths of leaves) strongly erected
 - 6 First node of stem visible at base of shoot
 - 7 Second node of stem formed, next-to-last leaf just visible
 - 8 Last leaf visible, but still rolled up, spike beginning to swell
 - 9 Ligule of last leaf just visible
 - 10 Sheath of last leaf completely grown out, spike swollen but not yet visible
 - 10.1 First spikes just visible (awns just showing in barley, spike escaping through split of sheath in wheat or oats)
 - 10.2 Quarter of heading process completed
 - 10.3 Half of heading process completed
 - 10.4 Three-quarters of heading process completed
 - 10.5 All spikes out of sheath
 - 10.5.1 Beginning of flowering (wheat)
 - 10.5.2 Flowering complete to top of spike
 - 10.5.3 Flowering over at base of spike
 - 10.5.4 Flowering over, kernel watery ripe
 - 11.1 Milky ripe
 - 11.2 Mealy ripe, contents of kernel soft but dry
 - 11.3 Kernel hard (difficult to divide by thumb-nail)
 - 11.4 Ripe for cutting. Straw dead

(After E. C. Large. 1954. Plant Pathol. 3:128-129)

LEAF RUST OF CEREALS



Use for:

Crown rust of oats (*Puccinia coronata*
Corda Erikss. & Henn.)

Leaf rust of wheat (*Puccinia triticina*
Erikss.)

Leaf rust of barley (*Puccinia recondita*
Rob. ex Desm.)

Procedure:

Select a random sample of fertile tillers.

Growth stages:

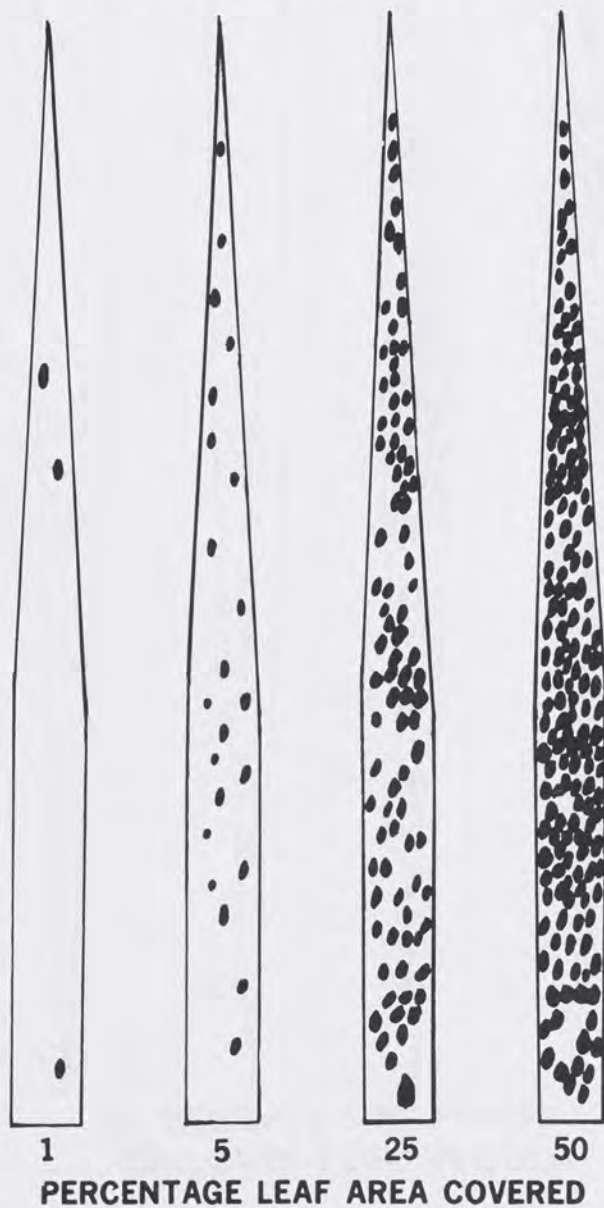
Assess at growth stages 10.5 and either 11.1 or 11.2 or both. The key can also be used for recording the disease at earlier growth stages, but the growth stage and leaf position (top leaf = leaf 1) should be carefully noted, so that valid comparisons can be made between crops.

Assessing severity:

Assess percentage leaf (lamina) area affected by disease on individual top leaves.

POWDERY MILDEW OF CEREALS

25



Use for:

Powdery mildew of wheat (*Erysiphe graminis* DC. ex Merat f. sp. *tritici* Marchal)

Powdery mildew of barley (*Erysiphe graminis* f. sp. *hordei* Marchal)

Powdery mildew of oats (*Erysiphe graminis* DC. ex Merat)

Procedure:

Select a random sample of fertile tillers.

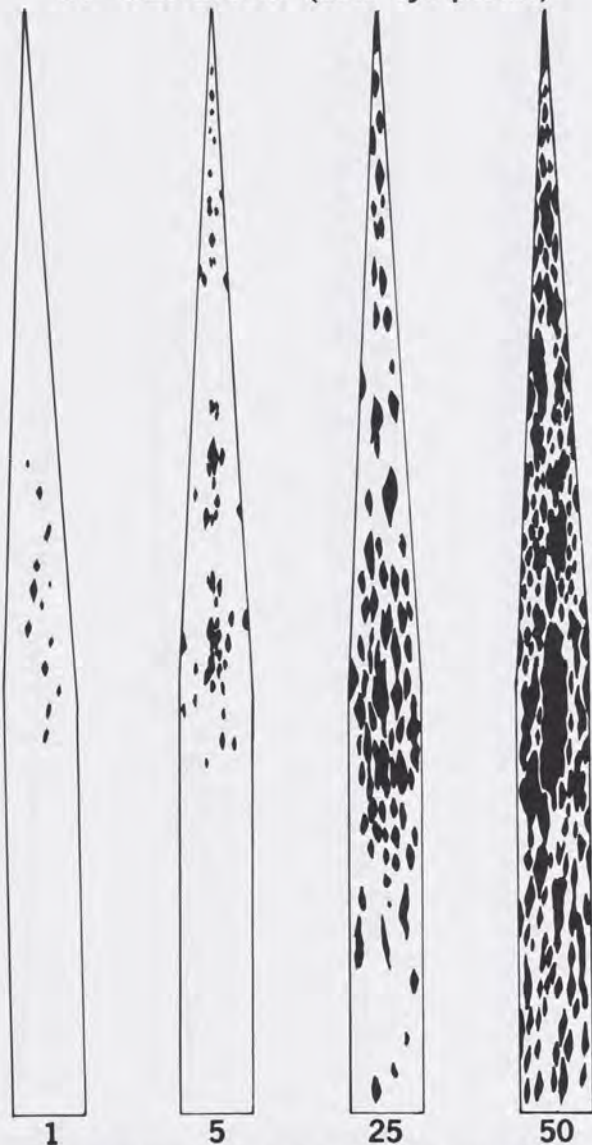
Growth Stages:

Assess at growth stage 10.5. The key can also be used for recording the disease at earlier growth stages, but the growth stage and leaf position (top leaf = leaf 1) should be carefully noted, so that valid comparisons can be made between crops.

Assessing severity:

Assess percentage leaf (lamina) area affected by disease on individual top leaves.

**SEPTORIA LEAF BLOTCH
OF CEREALS** (Leaf symptoms)



PERCENTAGE LEAF AREA COVERED

Use for:

- Glume blotch of wheat (*Septoria nodorum* Berk.)
- Speckled leaf blotch of wheat (*Septoria tritici* Rob. ex Desm.)
- Leaf blotch of wheat (*Septoria avenae* Frank f. sp. *triticea* T. Johnson)
- Leaf blotch and black stem of oats (*Septoria avenae* Frank f. sp. *avenae*)
- Speckled leaf blotch of barley (*Septoria passerinii* Sacc.)

Procedure:

Select a random sample of fertile tillers.

Growth stages:

Assess at growth stages 10.5 and either 11.1 or 11.2 or both. The key can also be used for recording disease at earlier growth stages, but the growth stage and leaf position (top leaf = leaf 1) should be carefully noted, so that valid comparisons can be made between crops.

Assessing severity:

Assess percentage leaf (lamina) area affected by disease on individual top leaves.

Public Service Varieties Entered

University of Arkansas
115 Plant Science Building
Fayetteville, AR 72701

Nelson
Rosen
AR-48-7-4 (Exp.)

Agricultural Research and Educational Center
University of Florida
Route 3, Box 4320
Quincy, FL 32351

Florida 301
Florida 302

Agronomy Department
Virginia Tech
VCIA Foundation Seed
Box 78
Blacksburg, VA 24061

Massey
Saluda
Tyler

Texas Agricultural Experiment Station
The Texas A&M University System
College Station, TX 77843

Bradford

Purdue University
Agronomy Department
West Lafayette, IN 47907

Adder

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