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## Performance of Wheat, Barley, Oats and Rye Varieties in 1986

University of Tennessee Agricultural Experiment Station

Charles R. Graves

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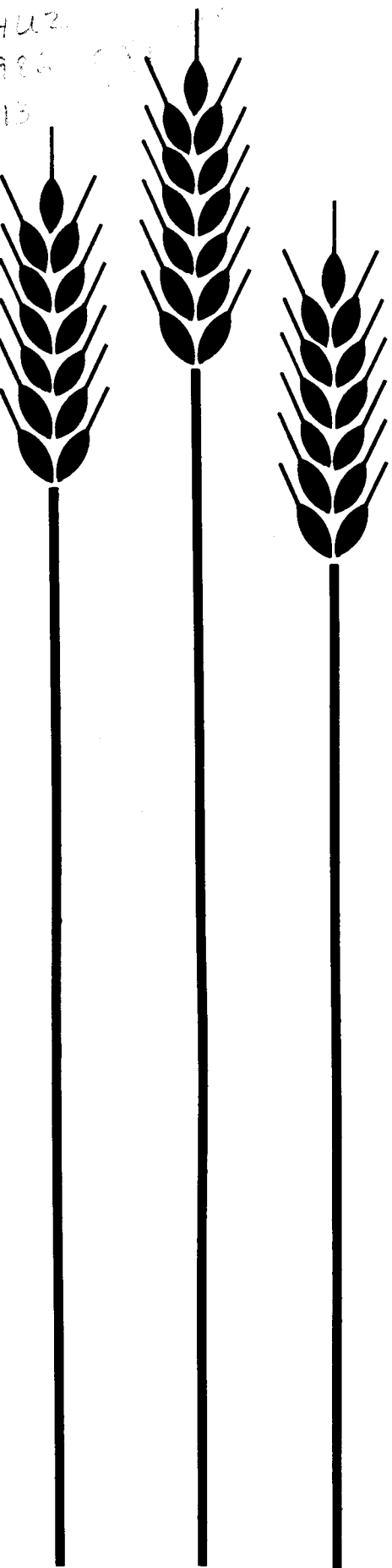
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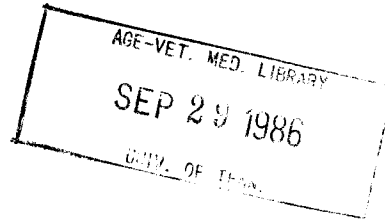


University of Tennessee  
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Research Report 86-13

August 1986



***Performance of Wheat,  
Barley, Oats and Rye  
Varieties in 1986***

Charles R. Graves

Department of Plant  
and Soil Science

# PERFORMANCE OF WHEAT, BARLEY, OATS AND RYE VARIETIES IN 1986<sup>1/</sup>

Charles R. Graves<sup>2/</sup>

## Wheat

Thirty-two soft red winter wheat varieties were evaluated at eight locations in 1986. No data were reported for Springfield, Crossville and Greeneville in 1984 or for Crossville in 1985 due to conditions that made the data too variable to be reliable.

The winter of 1985-86 had warm days and cold nights with little or no snow cover resulting in winter killing of wheat, oats and barley at many locations. Winter kill was severe at Crossville with no small grain variety performing well.

Small grain yields were further reduced, especially at Knoxville and Greeneville, by the dry spring of 1986.

With the dry spring of 1986 very little disease was noted at any location. Little or no response to foliar fungicide treatment on wheat varieties was obtained at Knoxville, Spring Hill and Jackson in 1986. These results will be reported in another publication.

Coker 762, Terral 817, Terral 812 and Coker 9227 did not perform well at most locations. Terral 812 seed were weak, resulting in thin stands at most locations. Florida 302 had performed well in 1984 and 1985, with little or no winter kill; however, in 1986 it showed winter killing at several locations with reduced yields. Coker 747 performed better relative to other varieties in 1986 than it had in previous years.

In 1986 the leading cultivars in yield of wheat were HW 3021, HW 3015, Coker 747, Saluda, Pioneer brand 2550 and Becker. Coker 916, Coker 983, and Magnum did

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<sup>1/</sup>These results will be included in the 1986 Bulletin, Performance of Field Crop Varieties, which will be available in 1987.

<sup>2/</sup>Professor of Plant and Soil Science.

not perform as well in 1986 as they had in 1984 and 1985. Using the three-year average, the leading varieties were Coker 916, Caldwell, Scotty, Compton, and Pioneer brand 2250.

The recommended wheat varieties for 1986-87 are Auburn, Caldwell, Coker 747, Coker 916, Fillmore, Massey, Pioneer brand 2550, Scotty and Tyler.

### Barley

Nine barley cultivars were evaluated at six locations in 1986. No yield data are reported for Greeneville because of winter killing and poor stands for all varieties.

Wysor and Henry were the two leading varieties in average yield. Yields at Knoxville, Crossville and Springfield were erratic for most varieties due to winter killing. The injury was not uniform across all replications, resulting in high C.V.'s for these locations. Spring Hill and Jackson data were averaged because of their low C.V.'s; however, the varieties ranked the same for this average yield as when the locations with high C.V.'s were included in the state average. These types of data can be expected in years where a lot of winter killing occurs.

The recommended barley varieties for 1986-87 are Volbar and Henry.

### Fall Seeded Oats

All fall seeded winter oats winter-killed in 1984. In 1985 some winter killing occurred but snow cover during severe cold reduced injury. In 1986 Jackson was the only location where little winter killing occurred. No yields were reported for Greeneville due to severe winter killing for all varieties.

Madison variety winter-killed at all locations with yields being recorded at Jackson only. The two leading varieties, Cumberland and Coker 716, suffered

winter injury at most locations.

The recommended fall seeded oats for 1986-87 are Southern States 76-30, Coker 716 and Cumberland.

### Spring Oats

Thirteen spring oat varieties were evaluated for grain and forage at Knoxville in 1986. Don, Ogle, Larry and Noble were the leading varieties in grain yield. Forage and grain yield for most varieties were reduced by the extremely dry spring and early summer at this location.

### Rye

Several varieties or strains were evaluated in 1986 at Knoxville for Gurley's Seed Company and Samuel Roberts Noble Foundation, Inc. The leading varieties in grain yield were AFC 20-20, GI 85, N.F. 142, and GI 87x. Considering the growing season of 1985-86, the rye varieties performed well. Most varieties lodged severely with GI 87 lodging the least. Test weight (weight per bu) was very similar for most varieties.

Table 1. Wheat: Yield of soft red winter wheat varieties evaluated at eight locations in 1986.

Variety	Avg.	Greene-1/	Knox-2/	Spring-3/	Spring-4/	Jackson <sup>5/</sup>	Milan <sup>6/</sup>	Cross-7/	Martin <sup>8/</sup>
		ville	ville	field	Hill		ville	ville	
Bushels per acre									
HW 3021	37	53	28	37	32	39	52	11	45
HW 3015	36	52	28	32	36	36	51	10	42
Coker 747	35	50	30	34	28	39	43	16	36
Saluda	34	53	25	31	32	43	45	7	39
Pioneer brand 2550	34	48	28	27	32	40	48	12	39
Becker	34	39	21	27	33	41	53	10	49
Fillmore	33	44	34	26	33	35	36	18	40
Tyler	32	47	22	31	29	39	44	6	37
Pioneer brand 2551	32	37	25	21	35	39	44	15	44
T79-307	31	45	22	32	30	25	42	17	37
Scotty	31	50	24	28	23	35	37	16	34
Auburn	31	36	26	21	24	42	35	25	42
Garst Exp 4055	31	42	22	24	28	39	36	15	40
Caldwell	31	44	28	27	29	32	34	12	44
Coker 9323	30	43	23	32	25	40	31	14	30
Massey	30	45	16	29	26	34	43	9	36
Compton	30	44	32	17	28	33	34	10	41
Coker 916	29	45	18	32	30	34	43	4	29
HW 3027	29	47	19	31	25	32	42	6	32
T80-312	29	41	20	31	26	26	37	19	33
Magnum	28	42	26	31	27	24	31	16	26
HW 3022	28	37	18	27	23	38	42	2	33
Twain <sup>10/</sup>	28	42	15	28	28	32	37	6	35
Newton	27	35	19	20	20	37	33	21	32
AKS (N-80)	26	45	10	27	26	22	32	6	37
Florida 302	25	37	5	25	20	41	40	5	--9/
Coker 983	24	37	16	28	19	36	34	3	21
Blazer	24	37	15	24	19	23	32	7	32
Coker 762	27	46	9	30	--9/	43	27	7	--9/
Terral 817	20	34	10	24	--9/	28	25	3	--9/
Terral 812	19	33	2	22	--9/	34	17	4	--9/
Coker 9227	13	12	3	12	--9/	16	33	4	--9/
Bailey 4287			14						
L.S.D. (.05)		9.7	6.1	6.3	5.4	5.2	7.5	4.1	
C.V. %		16.4	22.0	16.7	14.1	10.8	14.1	27.8	
Avg.		41.9	19.8	27.1	27.3	34.4	37.9	10.6	

1/Waynesboro silt loam (2% to 5% slopes).

2/Decatur silt loam (2% to 5% slopes).

3/Dickson silt loam (2% to 5% slopes).

4/Maury silt loam (2% to 5% slopes).

5/Calloway silt loam (2% to 5% slopes).

6/Memphis silt loam (2% to 5% slopes).

7/Hartsell's loam (2% to 5% slopes).

8/Falaya silt loam (2% to 5% slopes).

9/No yield reported because of disease, poor germination or weed problems.

10/Tested as Agri Pro 78-044-111.

Table 2. Wheat: Yield and other characteristics of soft red winter wheat varieties evaluated at eight locations in 1986.

Variety	Yield bu/A	Date Headed	Date Mature	Plant Height in.	Lodging %	Test <sup>1/</sup> Weight lb/bu	Leaf <sup>2/</sup> Rust Rating (0-5)	Mildew <sup>2/</sup> Rating (0-5)	Stand <sup>3/</sup> Rating (0-10)
HW 3021	37	4-29	6-2	32	0.7	57.0	1.8	1.0	3.2
HW 3015	36	4-28	6-2	33	1.8	55.4	0.1	0.3	3.8
Coker 747	35	4-28	6-1	28	0.7	58.4	0.9	1.2	5.2
Saluda	34	4-28	6-1	28	0.6	57.4	0.2	0.8	3.2
Pioneer brand 2550	34	4-30	6-3	31	1.4	56.4	0.1	1.2	3.0
Becker	34	5-1	6-2	28	0.7	56.2	0.7	3.6	3.2
Fillmore	33	5-4	6-7	34	1.0	51.8	0.0	0.3	5.5
Tyler	32	5-1	6-5	32	1.6	53.8	4.7	1.5	1.8
Pioneer brand 2551	32	4-30	6-1	29	0.8	55.9	0.5	0.4	7.2
T79-307	31	4-28	6-1	33	2.4	54.8	1.8	1.4	5.8
Scotty	31	4-28	6-2	31	1.1	54.9	0.1	1.2	7.2
Auburn	31	5-4	6-6	30	0.6	54.9	0.0	1.0	8.0
Garst Exp 4055	31	4-28	6-2	31	1.3	56.6	0.1	1.2	6.8
Caldwell	31	4-28	6-1	32	2.4	53.1	0.0	1.1	4.2
Coker 9323	30	4-28	6-2	27	0.7	54.6	0.4	0.2	6.5
Massey	30	4-28	6-2	31	1.7	55.3	4.3	0.1	3.0
Compton	30	4-29	6-1	30	1.1	54.7	0.0	0.9	6.0
Coker 916	29	4-27	5-31	28	2.2	56.1	0.1	0.6	1.0
HW 3027	29	4-27	5-31	29	1.0	55.2	0.3	0.9	2.0
T80-312	29	4-28	6-2	33	1.4	54.4	3.5	1.5	6.2
Magnum	28	4-27	5-31	28	0.7	54.1	0.7	1.5	5.0
HW 3022	28	4-29	6-3	31	0.7	55.2	1.0	1.6	1.8
Twain	28	4-29	6-2	32	1.4	56.8	0.0	0.1	2.8
Newton	27	5-2	6-2	29	0.6	54.3	0.5	2.0	8.8
AKS (N-80)	26	4-27	5-30	30	1.1	50.3	0.0	1.2	2.0
Florida 302	25	5-1	6-5	28	1.3	55.4	0.0	0.1	0.8
Coker 983	24	4-29	6-3	26	0.4	55.4	0.4	0.1	0.1
Blazer	24	4-28	5-31	30	1.6	54.8	1.5	1.6	2.5
Coker 762 <sup>4/</sup>	27	4-30	6-5	25	1.8	55.6	0.1	0.9	3.8
Terral 817 <sup>4/</sup>	20	4-27	6-2	28	3.0	54.7	0.0	0.9	1.2
Terral 812 <sup>4/</sup>	19	4-28	6-6	26	2.2	55.6	0.2	0.8	0.4
Coker 9227 <sup>4/</sup>	13	4-28	6-4	26	0.8	49.1	0.1	-	0.1

<sup>1/</sup>Test weight for Jackson only.

<sup>2/</sup>Rating based on a scale of 0 to 5 with 0 being no disease and 5 being severe.

<sup>3/</sup>A stand rating of 0 to 10 at Crossville with 0 being no stand or survival and 10 being 100 percent stand or survival.

<sup>4/</sup>Average of six locations instead of eight.

Table 3. Wheat: Yield of soft red winter wheat varieties evaluated at six locations for two years (1984-85).

Variety	Avg.	Greene-ville	Knox-ville	Spring Hill	Spring-field	Jackson	Milan
Bushels per acre							
HW 3015	46	58	35	42	45	50	48
Saluda	45	63	38	38	37	51	43
Coker 916	43	61	28	38	39	44	49
HW 3021	43	54	34	38	45	43	41
Pioneer brand 2550	41	56	33	38	39	43	36
Scotty	41	61	32	33	37	46	37
Coker 747	40	54	33	33	37	41	43
Florida 302	40	51	24	37	38	49	38
Massey	38	52	26	34	39	41	37
Magnum	38	56	29	34	36	40	35
Caldwell	38	51	34	36	37	40	32
Tyler	38	55	29	35	43	35	32
Coker 983	38	51	28	33	38	45	34
Compton	38	52	33	34	30	45	35
Fillmore	37	48	36	36	36	40	27
Auburn	36	50	30	29	33	44	33
Blazer	32	50	22	28	31	30	28

Table 4. Wheat: Yield and other characteristics of soft red winter wheat varieties evaluated at six locations for two years (1984-85).

Variety	Yield bu/A	Date Headed	Date Mature	Plant Height in.	Lodging %	Test Weight lb/bu	Rust Rating (0-5)	Leaf Mildew Rating (0-5)
HW 3015	46	4-28	6-1	35	17	55.8	0.7	1.9
Saluda	45	4-28	6-1	30	28	57.3	0.6	0.0
Coker 916	43	4-26	5-30	30	12	56.1	0.2	1.0
HW 3021	43	4-28	6-1	35	16	55.2	2.2	1.3
Pioneer brand 2550	41	4-30	6-3	32	25	56.1	0.9	1.1
Scotty	41	4-28	6-1	32	12	55.8	0.2	0.7
Coker 747	40	4-28	5-31	30	26	57.4	1.8	2.2
Florida 302	40	4-30	6-4	32	21	54.9	0.0	0.0
Massey	38	4-27	6-1	33	18	55.4	2.2	0.4
Magnum	38	4-27	5-30	30	11	56.2	0.8	1.4
Caldwell	38	4-28	6-1	33	23	54.8	0.5	0.7
Tyler	38	5-1	6-3	35	21	53.7	4.0	0.8
Coker 983	38	4-28	6-2	29	8	57.2	0.3	0.2
Compton	38	5-1	6-1	32	25	56.8	0.0	1.4
Fillmore	37	5-5	6-5	37	21	53.2	0.5	0.4
Auburn	36	5-4	6-4	33	10	55.7	0.0	1.2
Blazer	32	4-29	5-30	33	20	55.6	1.0	1.3



Table 5. Wheat: Yield of soft red winter wheat varieties evaluated at five locations for three years (1984-86).

Variety	Avg.	Knoxville	Spring			
			Hill	Jackson	Milan	Martin
Bushels per acre						
Coker 916	47	44	54	44	53	41
Caldwell	46	45	51	45	42	46
Scotty	45	45	43	48	43	47
Compton	45	43	45	49	42	46
Pioneer brand 2550	45	44	50	46	42	42
Auburn	44	42	46	47	41	45
Massey	44	42	48	43	46	43
Magnum	43	43	46	43	42	43
Fillmore	43	45	47	44	38	41
Coker 983	43	44	47	45	43	37
Coker 747	43	42	43	45	48	37
Tyler	--	44	52	43	44	--1/
Florida 302	--	40	50	52	45	--1/

1/No data for 1984.

Table 6. Wheat: Yield and other characteristics of soft red winter wheat varieties evaluated at five locations for three years (1984-86).

Variety	Yield bu/A	Date Headed	Date Mature	Plant Height in.	Lodging %	Test Weight lb/bu	Leaf	Mildew
							Rust Rating (0-5)	Rating (0-5)
Coker 916	47	4-28	6-1	30	9.8	56.1	0.2	0.8
Caldwell	46	4-28	6-1	33	16.1	54.2	0.7	0.8
Scotty	45	4-28	6-1	32	8.7	55.5	0.2	0.9
Compton	45	4-30	6-1	32	17.3	56.1	0.3	1.2
Pioneer brand 2550	45	4-30	6-3	32	16.9	56.2	0.6	1.1
Auburn	44	5-4	6-5	33	7.1	55.4	0.0	1.1
Massey	44	4-27	6-2	32	12.4	55.4	2.9	0.3
Magnum	43	4-27	5-30	30	7.3	55.5	0.8	1.4
Fillmore	43	5-5	6-6	36	14.6	52.7	0.3	0.4
Coker 983	43	4-28	6-2	28	5.6	56.6	0.4	0.1
Coker 747	43	4-28	6-1	35	10.9	55.8	2.1	1.2
Tyler	--1/	5-1	6-3	34	14.4	53.7	4.2	1.0
Florida 302	--1/	4-30	6-5	30	14.2	55.1	0.0	0.1

1/No data for Martin in 1984.

Table 7. Barley: Yield of varieties evaluated at five locations in 1986.

Variety	Avg. Across Five Locations	Knox-1/ ville	Cross-2/ ville	Spring-3/ field	Spring <sup>4</sup> / Hill	Jackson <sup>5</sup> / Jackson	Avg. <sup>6</sup> / Spring Hill & Jackson
							Bushels per acre
Wysor	46	32	33	26	67	75	71
Henry	41	36	34	29	55	51	53
Kline	31	2	14	31	45	61	53
Volbar	29	3	14	20	50	61	55
Anson	29	8	13	25	51	50	51
Genesis	28	8	16	19	48	48	48
Dawn	27	7	12	19	45	49	47
R74-203	26	3	12	19	39	58	48
Surveyor	25	0.8	27	20	31	48	25
L.S.D. (.05)		9.4	14.1	10.9	7.4	8.5	
C.V. %		58.2	49.5	32.3	10.6	10.4	
Avg.		11.1	19.6	23.0	47.9	55.6	

1/Decatur silt loam (2% to 5% slopes).

2/Hartsells loam (2% to 5% slopes).

3/Dickson silt loam (2% to 5% slopes).

4/Maury silt loam (2% to 5% slopes).

5/Memphis silt loam (2% to 5% slopes).

6/Jackson and Spring Hill yields were averaged due to low C.V.'s. However, even with the high C.V.'s at the other locations, ranking of average yield varied very little. These erratic yields were due to winter killing.

Table 8. Barley: Yield and other characteristics of varieties evaluated at five locations in 1986.

Variety	Yield bu/A	Date Headed	Date Mature	Plant Height in.	Weight <sup>1</sup> / per Bushel
					lbs
Wysor	46	4-30	5-29	29	43.8
Henry	41	4-26	5-29	28	44.4
Kline	31	5-1	6-4	28	----2/
Volbar	29	5-1	6-3	28	41.3
Anson	29	4-30	5-30	29	38.5
Genesis	28	4-21	5-25	25	47.6
Dawn	27	4-20	5-24	26	47.8
R74-203	26	5-3	6-4	27	40.1
Surveyor	25	4-30	5-29	25	----2/

1/Knoxville data only

2/Missing data due to winter killing on most plots.

Table 9. Fall Seeded Oats: Yield of varieties evaluated at four locations in 1986.

Variety	Avg.	Knoxville <sup>1/</sup>	Springfield <sup>2/</sup>	Spring <sup>3/</sup>	
				Hill	Jackson <sup>4/</sup>
Bushels per acre					
Cumberland	32	16	39	22	52
Coker 716	31	15	41	11	59
Brook's (Hall)	30	5	37	17	60
Brook's (N.C.)	30	6	40	21	52
AKS County Seed 883	29	9	41	17	49
Coker 277	22	4	31	13	42
Madison	--5/	--	--	--	29

<sup>1/</sup>Decatur silt loam (2% to 5% slopes).

<sup>2/</sup>Dickson silt loam (2% to 5% slopes).

<sup>3/</sup>Maury silt loam (2% to 5% slopes).

<sup>4/</sup>Memphis silt loam (2% to 5% slopes).

<sup>5/</sup>No yield due to winter kill.

Table 10. Fall Seeded Oats: Yield and other characteristics of varieties evaluated at four locations in 1986.

Variety	Yield bu/A	Date	Date	Plant
		Headed	Mature	Height in.
Cumberland	32	5-9	6-12	26
Coker 716	31	5-9	6-11	25
Brook's (Hall)	30	5-8	6-11	26
Brook's (N.C.)	30	5-8	6-11	27
AKS County Seed 883	29	5-9	6-14	23
Coker 277	22	5-7	6-12	24
Madison	--1/	---	----	--

<sup>1/</sup>No yield due to winter kill at most locations.

Table 11. Spring Oats: Yield and other characteristics of varieties evaluated at Knoxville in 1986.<sup>1/</sup>

Variety	Yield		Date	Date	Plant	Weight
	T/A	bu/A	Headed	Mature	Height	per Bushel
					in.	lbs
Don	1.44	51	5-21	6-30	28	30.1
Ogle	1.49	45	5-24	6-30	30	27.6
Larry	1.18	43	5-21	6-29	26	29.1
Noble	1.29	42	5-22	6-29	28	27.2
Otee	1.23	38	5-22	6-27	26	28.7
Bates	1.10	38	5-18	6-29	26	28.7
Porter	1.54	38	5-28	6-29	29	28.2
Lang	1.12	37	5-18	6-28	28	26.7
Hazle	1.25	35	5-26	6-29	27	26.3
Moore	1.62	31	5-28	6-30	36	25.6
Dal	1.27	30	5-30	6-30	30	25.6
Grundy	1.25	29	5-20	6-27	26	26.4
Lodi	1.53	25	6-2	7-2	38	23.4
L.S.D. (.05)	N.S.	11.4				
C.V. %	19.7	21.3				
Avg.	1.35	37.2				

<sup>1/</sup>Decatur silt loam (2% to 5% slopes).

Table 12. Rye: Yield and other characteristics of varieties evaluated at Knoxville in 1986.<sup>1/</sup>

Variety	Yield		Date	Plant	Lodging	Weight
	bu/A	T/A	Headed	Height		per Bushel
				in.	%	lbs
AFC 20-20 <sup>2/</sup>	31	1.99	6-17	56	60	54.0
GI 85 <sup>2/</sup>	31	2.33	6-17	55	60	54.4
N.F. 142 <sup>3/</sup>	30	2.26	6-17	57	48	53.6
GI 87x <sup>2/</sup>	29	2.24	6-16	56	55	54.8
Gurley Grazer 2000 <sup>2/</sup>	28	2.47	6-16	57	45	54.1
GI 87 <sup>2/</sup>	28	2.08	6-17	56	35	54.2
N.F. 214 <sup>3/</sup>	28	2.44	6-17	56	58	53.2
Elbon <sup>3/</sup>	28	2.25	6-17	55	61	54.9
Bonel <sup>3/</sup>	25	2.39	6-17	55	69	54.0
Maton <sup>3/</sup>	21	2.56	6-17	54	86	53.7
L.S.D. (.05)	N.S.	0.28				
C.V. %	26.7	8.9				
Avg.	26.0	2.30				

<sup>1/</sup>Decatur silt loam (2% to 5% slopes).

<sup>2/</sup>Gurley's Seed Co., Selma, NC.

<sup>3/</sup>Samuel Roberts Noble Foundation, Inc., Ardmore, OK.