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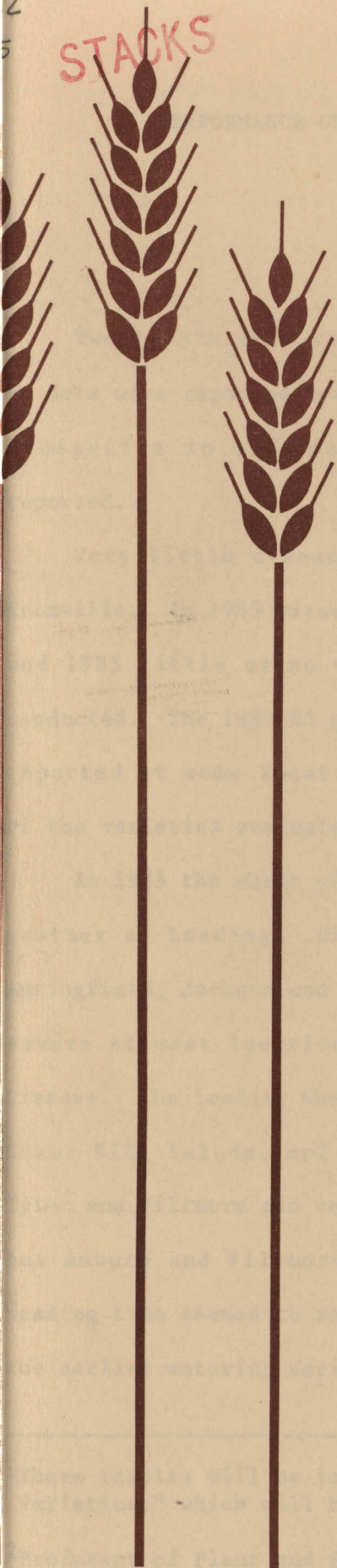
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Performance of Wheat, Barley, Oats and Rye Varieties in 1985

Charles R. Graves

Department of Plant
and Soil Science

PERFORMANCE OF WHEAT, BARLEY, OATS AND RYE VARIETIES IN 1985¹

Charles R. Graves²

Wheat

Twenty-six soft red winter wheat varieties were evaluated in 1984 and 1985. No data were reported for Springfield, Crossville and Greeneville in 1984, and for Crossville in 1985 due to conditions which made the data too variable to be reported.

Very little disease was noted in 1984 and disease ratings were made only at Knoxville. In 1983 virus disease was a problem at several locations but in 1984 and 1985 little or no virus was observed at the locations where the tests were conducted. The 1984-85 growing season was cold with record low temperatures being reported at some locations. Snow cover helped reduce injury from the cold. None of the varieties evaluated showed much winter injury.

In 1985 the wheat yields were reduced by leaf rust, powdery mildew and dry weather at heading. Disease ratings for rust were made at Knoxville, Greeneville, Springfield, Jackson and Martin. Mildew ratings were made but this disease was not severe at most locations. At Milan the wheat yields were variable due to Takeall Disease. The leading wheat varieties in yield for 1985 were HW 3015 (a hybrid), Coker 916, Saluda, and Florida 302. The late maturing varieties such as Auburn, Tyler and Fillmore did not perform well in 1985. Tyler is susceptible to leaf rust but Auburn and Fillmore have good resistance to this disease. The dry weather at heading time seemed to reduce the yields of the late maturing varieties more than the earlier maturing varieties.

¹These results will be included in the 1985 Bulletin, "Performance of Field Crop Varieties," which will be available in 1986.

²Professor of Plant and Soil Science.

The Martin data were not included in the average because Tyler and Hart varieties were not harvested due to poor stands at seeding.

In 1984 the wheat varieties at Knoxville, Jackson and Spring Hill were evaluated with and without a fungicide. The results reported are from the untreated plots. The results from the treated plots will be reported in a later publication. Little or no yield response to the fungicide treatment was obtained at Knoxville and Spring Hill. At Jackson most varieties responded to the fungicide treatments. Leaf rust was severe at Jackson with light leaf rust pressure at Knoxville. The dry weather at heading probably limited yield response to fungicides at this location. Susceptible varieties responded more to fungicide treatment than resistant varieties. However, Coker 916 gave a response to fungicide treatment in 1985 but did not respond in 1984. This variety has good leaf rust resistance. No explanation is offered as to why Coker 916 gave an inconsistent response.

Tyler appears to have a high yield potential but under leaf rust disease, a fungicide program may be necessary if the potential of this variety is to be realized.

Of the 26 varieties evaluated, the majority failed to give a response to fungicide treatment.

The recommended wheat varieties for 1985-86 are Auburn, Caldwell, Coker 747³, Coker 916, Fillmore, Massey, Pioneer brand 2550, Scotty, and Tyler.

³Present plans indicate that this variety will not be recommended after 1986.

Barley

The barley varieties were evaluated at five locations in 1985. Poor stands were noted at several locations. Some varieties at Springfield showed susceptibility to scald. At the other locations, little or no disease was observed. The performance of these varieties in 1985 varied from location to location. When analyzed across locations, there was no significant difference among the average yields. Kline, Milton, and Anson performed well at most locations in 1985. The recommended barley varieties for 1985-86 are Volbar and Henry.

Fall Seeded Oats

All fall seeded oats winter killed at all locations except Spring Hill in 1984. In 1985 some winter killing occurred but snow cover during severe cold reduced winter killing.

The leading varieties in yield in 1985 were Brooks and Southern States 76-30. Jackson was the only location that produced good yields. The recommended fall seeded oats for 1985-1986 are Southern States 76-30, Coker 716 and Cumberland.

Spring Oats

The spring oat varieties were evaluated for grain and forage at Knoxville in 1985. Ogle, Grundy, Larry and Noble were the leading varieties in grain yield. Grundy and Centennial produced the highest forage yields. The yield of grain and forage was low due to the dry spring.

Rye and Triticale

Seven rye and three triticale varieties were evaluated at Knoxville for grain and forage in 1985. The three triticale varieties were Winter Gro, Morrison and Great Northern.

The leading varieties in grain yield were Elbon, NF 142, Wintergrazer 70, and Matson. Winter Gro (a triticale), Matson and Wintergrazer led the test in forage yield. All varieties evaluated lodged severely. Winter Gro was late heading (5-18) and in maturity (6-24).

Table 1. Wheat: Grain yield of soft red winter wheat varieties evaluated in 1985 at six locations.

Variety	Avg.	Greene- ¹	Knox- ¹	Spring- ²	Spring ³	Jackson ⁴	Milan ⁵	Martin ^{6,7}
		ville	ville	field	Hill			
Bushels per acre								
HW 3015 ⁸	54	65	43	58	48	65	46	40
Coker 916	53	78	37	47	47	55	54	38
Saluda	52	72	52	44	43	59	40	38
Florida 302	51	66	43	50	53	58	36	34
Nelson	48	72	36	43	40	56	40	43
Scotty	48	72	39	45	43	56	36	45
Coker 983	48	66	40	48	47	54	33	29
Magnum	47	71	32	42	42	56	38	44
Wheeler	46	66	34	38	39	53	48	43
McNair 1003	46	68	39	44	41	42	41	37
HW 3021 ⁸	45	56	41	52	44	48	30	32
Southern Belle	45	67	39	42	40	44	37	30
Pioneer brand 2550	44	64	38	50	43	46	24	25
Caldwell	44	58	39	47	44	47	31	25
Compton	44	59	33	42	40	56	35	43
Massey	44	60	35	50	42	48	31	36
Coker 747	43	58	36	40	38	42	44	33
Hunter	42	62	31	39	36	52	34	31
Auburn	42	64	34	45	34	45	31	37
Tyler	41	63	38	56	42	30	21	--
Hart	41	72	35	40	37	40	23	--
Adena	41	64	32	44	31	40	35	24
Garst EW 3010	40	61	34	39	33	45	32	22
Fillmore	40	51	38	46	40	45	18	24
Blazer	38	62	30	38	37	36	24	25
NA-SW74-144	35	54	27	33	28	38	32	26
L.S.D. (.05)	4.3	9.2	7.9	6.5	8.7	7.1	12.2	8.3
C.V. %	16.9	10.2	15.3	10.4	15.2	10.4	25.2	17.0
Avg.	44.8	64.1	36.5	44.8	40.5	48.3	34.3	33.7

¹Decatur silt loam (2% to 5% slopes).

²Dickson silt loam (2% to 5% slopes).

³Maury silt loam (2% to 5% slopes).

⁴Calloway silt loam (0% to 2% slopes).

⁵Memphis silt loam (2% to 5% slopes).

⁶Collins silt loam (2% to 5% slopes).

⁷Martin data not included in average because of missing data for Tyler and Hart. No data was obtained for Tyler and Hart due to poor stand at seeding.

⁸HW=Hybrid wheat from Rohm and Haas.

Table 2. Yield and other characteristics of soft red winter wheat varieties evaluated at six locations in 1985.

Variety	Yield	Date headed	Date mature	Plant ht.	Lodging	Test weight	Leaf rust rating ¹	Mildew rating ¹
	Bu/A			in.	%	lb/bu	(0-5)	(0-5)
HW 3015	54	4-27	6-1	36	23	56.0	1.0	2.4
Coker 916	53	4-26	5-29	32	16	56.1	0.2	1.1
Saluda	52	4-29	6-1	33	39	57.3	0.8	0.8
Florida 302	51	4-29	6-3	36	28	54.7	0.1	0.0
Nelson	48	4-27	5-30	34	16	56.7	0.4	1.9
Scotty	48	4-29	6-2	34	17	56.2	0.3	0.5
Coker 983	48	4-26	6-1	31	10	58.0	0.3	0.2
Magnum	47	4-28	5-29	32	15	57.2	0.9	1.4
Wheeler	46	4-30	5-31	37	18	57.7	2.0	2.5
McNair 1003	46	4-27	5-30	33	12	53.2	2.3	1.0
HW 3021	45	4-27	6-1	37	22	54.5	2.3	1.4
Southern Belle	45	4-26	5-29	31	10	58.6	2.6	3.1
Pioneer brand 2550	44	4-30	6-3	34	34	56.0	1.2	1.1
Caldwell	44	4-28	6-1	34	32	55.5	0.7	0.5
Compton	44	5-1	6-1	34	35	57.8	0.0	1.6
Massey	44	4-25	5-31	34	24	55.4	1.4	0.4
Coker 747	43	4-28	6-1	32	36	56.9	2.1	2.4
Hunter	42	4-26	5-29	28	5	59.0	1.2	0.8
Auburn	42	5-4	6-3	36	14	56.2	0.0	1.3
Tyler	41	5-1	6-3	37	29	53.6	3.8	0.6
Hart	41	4-29	6-1	35	14	56.9	2.5	3.1
Adena	41	4-30	6-1	30	19	56.0	2.1	2.6
Garst EW 3010	40	5-2	6-4	34	11	53.9	1.4	1.6
Fillmore	40	5-6	6-5	40	30	53.8	0.6	0.4
Blazer	38	4-29	5-30	34	28	56.0	0.8	1.2
NA-SW74-144	35	4-28	5-30	34	18	54.0	2.5	4.6

¹0 is no disease and 5 is severe.

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

Variety	Avg.	Knox- ville	Spring Hill	Milan	Martin	Jackson
Coker 916	56	57	66	58	48	50
Florida 302	55	58	65	47	46	58
McNair 1003	54	57	62	53	54	42
Scotty	52	56	54	46	53	54
Coker 983	52	58	61	47	45	50
Caldwell	52	54	62	47	46	51
Magnum	52	51	55	48	51	52
Wheeler	51	46	54	56	47	54
Massey	51	54	59	48	46	47
Compton	51	48	54	46	48	57
Auburn	50	51	57	44	47	50
Nelson	49	47	54	46	49	49
Pioneer brand 2550	49	52	60	39	43	50
Hunter	48	49	55	50	40	46
Southern Belle	47	53	55	43	42	42
Fillmore	47	50	54	40	42	48
Coker 747	47	48	50	50	37	48
Tyler	51 ¹	54	64	43	--	46
Hart	46 ¹	43	52	40	--	47

¹Average of four locations.

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

Variety	Yield Bu/A	Date headed	Date mature	Plant ht. in.	Lodging %
Coker 916	56	4-29	6-4	34	10
Florida 302	55	5-3	6-8	37	21
McNair 1003	54	5-1	6-7	35	8
Scotty	52	5-2	6-7	36	13
Coker 983	52	4-30	6-6	33	5
Caldwell	52	5-1	6-6	36	28
Magnum	52	5-1	6-4	34	15
Wheeler	51	5-2	6-6	39	5
Massey	51	4-30	6-6	37	22
Compton	51	5-3	6-6	36	35
Auburn	50	5-6	6-8	38	7
Nelson	49	4-30	6-5	37	16
Pioneer brand 2550	49	5-4	6-8	36	24
Hunter	48	4-29	6-5	32	5
Southern Belle	47	4-29	6-4	33	7
Fillmore	47 ¹	5-8	6-10	41	15
Coker 747	47 ¹	5-2	6-6	33	30

¹Average of four locations.

Table 5. Wheat: Yield of soft red winter wheat varieties evaluated at five locations for three years (1983-85).

Variety	Avg.	Knox-ville	Spring Hill	Milan	Martin	Jackson
Bushels per acre						
Coker 916	52	49	61	57	43	47
Caldwell	51	52	58	49	45	51
Wheeler	51	40	56	58	46	53
Scotty	50	51	52	48	48	52
McNair 1003	49	47	55	52	49	43
Auburn	49	50	56	46	45	50
Fillmore	48	49	53	44	42	49
Massey	47	47	56	48	40	45
Pioneer brand 2550	47	51	57	41	39	48
Nelson	47	44	52	46	44	47
Coker 747	46	46	48	52	35	46
Hunter	42	41	47	46	37	40
Southern Belle	42	40	46	43	40	40
Tyler ¹	52	50	62	47	--	49
Hart ¹	46	41	51	43	--	47

¹Average of four locations.

Table 6. Wheat: Yield and other characteristics of soft red winter wheat varieties evaluated at five locations for three years (1983-85).

Variety	Yield	Date headed	Date mature	Plant ht.	Lodging
	Bu/A			in.	%
Coker 916	52	5-2	6-4	35	10
Caldwell	51	5-4	6-10	37	34
Wheeler	51	5-5	6-13	40	-- ²
Scotty	50	5-5	6-11	37	15
McNair 1003	49	5-3	6-10	36	7
Auburn	49	5-9	6-13	39	6
Fillmore	48	5-11	6-14	42	17
Massey	47	5-2	6-10	37	22
Pioneer brand 2550	47	5-6	6-12	36	23
Nelson	47	5-2	6-9	37	13
Coker 747	46	5-5	6-10	34	31
Hunter	42	5-1	6-9	31	6
Southern Belle	42	5-2	6-5	33	5
Tyler	52 ¹	5-6	6-12	41	-- ²
Hart	46 ¹	5-5	6-10	38	22

¹Average of four locations.

²Data missing for 1983.

Table 7. Wheat: Yield of varieties evaluated at Ames Plantation in 1985.

Variety	Avg.	Date Planted	
		Oct. 20	Nov. 24
		Bushels per acre	
Caldwell	43	41	45
Fillmore	43	39	47
Coker 916	43	37	48
Coker 747	38	37	40
Arthur	38	36	41
Pioneer brand 2550	38	37	40
McNair 1003	38	26	50
Southern Belle	36	40	32
Hunter	34	27	40
Tyler	30	33	27
5-76	21	26	18
L.S.D. (.05)	7.4	4.4	7.5
C.V. %	20.0	8.8	13.3
Avg.	36.7	34.5	39.0

Table 8. Barley: Yields of varieties evaluated at five locations in 1985.

Variety	Avg.	Greene ⁻¹	Knox ⁻¹	Spring ⁻²	Jackson ³	Spring ⁴
		ville	ville	field		Hill
		Bushels per acre				
Kline	63	62	54	78	50	74
Milton	63	71	57	59	59	70
Henry	63	71	60	65	51	67
Anson	63	64	57	59	49	84
Volbar	61	50	52	74	59	72
Boone	60	66	53	65	46	70
Redhill	59	70	42	47	76	58
Dawn	58	58	45	71	70	46
Winter Malt	57	65	40	51	59	71
L.S.D. (.05)	NS	11.8	6.8	22.8	17.9	12.7
C.V. %	22.2	12.7	9.0	24.7	21.4	12.8
Avg.	60.7	64.0	51.3	63.3	57.2	68.0

¹Decatur silt loam (2% to 5% slopes).

²Dickson silt loam (2% to 5% slopes).

³Grenada silt loam.

⁴Huntington silt loam (2% to 5% slopes).

Table 9. Barley: Yield and other characteristics of varieties evaluated at five locations in 1985.

Variety	Yield Bu/A	Date headed	Date mature	Plant ht. in.	Test weight lb/A	Lodging %
Kline	63	4-26	5-30	39	44.4	67
Milton	63	4-28	5-26	33	44.9	73
Henry	63	4-26	5-28	35	44.4	62
Anson	63	4-27	5-29	38	43.0	66
Volbar	61	4-25	5-28	38	43.6	67
Boone	60	4-26	5-27	34	45.0	70
Redhill	59	4-29	5-27	34	45.1	49
Dawn	58	4-21	5-22	35	46.3	55
Winter Malt	57	4-26	5-27	34	44.6	59

Table 10. Barley: Yields of varieties evaluated at four locations for three years (1983-85).

Variety	Avg.	Knox- ville	Spring Hill	Spring- field	Jackson
Bushels per acre					
Volbar	71	52	84	84	64
Henry	60	59	68	68	45
Milton	60	44	75	69	50
Dawn	55	34	67	58	61
Redhill	52	36	67	54	49

Table 11. Barley: Yield and other characteristics of varieties evaluated for three years (1983-85).

Variety	Yield Bu/A	Date headed	Date mature	Plant ht. in.	Lodging %
Volbar	71	5-1	6-9	40	54
Henry	60	5-1	6-4	37	58
Milton	60	5-1	6-4	34	63
Dawn	55	4-25	6-1	36	38
Redhill	52	4-30	6-4	36	33

Table 12. Fall Seeded Oats: Yields of varieties evaluated at five locations in 1985.

Variety	Avg.	Greene- ¹	Knox- ²	Spring ³	Spring- ⁴	Jackson ⁵
		ville	ville	Hill	field	
Bushels per acre						
Brooks	78	60	58	76	63	131
Southern States 76-30	74	58	33	88	60	130
Coker 716	70	59	25	84	58	126
Cumberland	70	41	39	86	80	102
Coker 81-21	69	64	44	79	47	113
Madison	67	66	44	76	28	119
L.S.D. (.05)	9.0	13.9	10.4	5.2	15.9	19.0
C.V. %	20.2	15.9	17.0	6.4	18.7	10.5
Avg.	71.2	58.0	40.6	80.9	56.2	120.1

¹Decatur silt loam (2% to 5% slopes).

²Decatur silt loam (2% to 5% slopes).

³Maury silt loam (2% to 5% slopes).

⁴Dickson silt loam (2% to 5% slopes).

⁵Grenada silt loam (2% to 5% slopes).

Table 13. Fall seeded oats: Yield and other characteristics of varieties evaluated at five locations in 1985.

Variety	Yield Bu/A	Date	Date	Plant	Test	Lodging
		headed	mature	ht. in.	weight lb/bu	
Brooks	78	5-5	6-4	40	32.7	42
Southern States 76-30	74	5-1	6-5	42	35.0	50
Coker 716	70	5-5	6-5	39	33.7	53
Cumberland	70	5-7	6-7	39	32.6	68
Coker 81-21	69	5-6	6-6	35	35.3	56
Madison	67	5-6	6-4	32	32.8	45
L.S.D. (.05)		9				
C.V. %		20.2				
Avg.		71.2				

Table 14. Spring Oats: Yield and other characteristics of varieties evaluated at Knoxville in 1985¹.

Variety	Yield		Date headed	Date mature	Plant ht. in.	Test weight lb/bu
	Bu/A	T/A				
Ogle	35	1.64	5-27	6-26	28	25.6
Grundy	33	1.95	5-25	6-24	32	28.7
Larry	33	1.42	5-24	6-23	28	28.5
Noble	32	1.56	5-26	6-26	30	27.7
Otee	28	1.45	5-25	6-24	28	28.3
Lang	27	1.38	5-24	6-24	27	28.1
Centennial	27	1.97	5-25	6-27	30	29.0
Porter	26	1.79	5-28	6-29	27	27.8
Bates	26	1.54	5-25	6-24	30	27.6
L.S.D. (.05)	6.2	0.45				
C.V. %	15.9	19.2				
Avg.	26.9	1.63				

¹Decatur silt loam (2% to 5% slopes).

Table 15. Rye and Triticale: Yield and other characteristics of varieties evaluated at Knoxville in 1985.

Variety	Grain yield	Forage yield	Date headed	Date mature	Plant height in.	Lodging %	Test weight lb/bu
	Bu/A	T/A					
Elbon	39	2.68	4-20	6-14	62	89	53.9
NF 142	37	2.62	4-20	6-15	64	85	53.1
Wintergrazer 70	36	2.81	4-22	6-13	63	89	53.6
Matson	36	2.88	4-20	6-10	63	90	53.4
Bonel	35	2.91	4-23	6-14	64	86	53.4
NF 74	34	2.73	4-22	6-10	63	89	52.4
Forager	32	2.10	4-22	6-16	59	88	53.0
Morrison ¹	31	2.52	4-30	6-16	51	86	45.3
Winter Gro ¹	24	4.09	5-18	6-24	56	96	44.6
Great Northern ¹	20	2.29	5-3	6-18	54	70	40.7
L.S.D. (.05)	2.0	0.34					
C.V. %	10.5	8.4					
Avg.	32.5	2.76					

¹Triticale varieties.