

## **SPRING WHEAT FIELD PLOTS**

Experiments with spring wheat in 1952 included varietal field plot trials of 26 varieties and selections and nursery trials of approximately 500 strains.

### **VARIETAL EXPERIMENTS**

Twenty-three varieties of hard red spring wheat and two varieties of amber durum wheat were seeded in the 1952 Dickinson Experiment Station varietal field plot trials. The search for high yielding rust resistant wheats possessing satisfactory milling and baking quality has led to numerous changes in this trial. New this year were five wheats, Ns. 3880, a Lee x Mida sib., Ns. 3654, from the cross Lee x Ns. 3175, Ns. 3780, from the cross Am<sup>10</sup> x Newthatch, Ns. 4035, from the cross Mida x Vesta and Chinook, a new wheat from Canada.

Included in the top ten highest yielding hard red spring wheats in the Dickinson trials this year are: Ns. 4035, Red Thatcher, Pilot, Ns. 4036 (which is a Thatcher selection), Rival, Mida, Thatcher, N. No. 2313 (a selection from the cross N. No. 1750 x Timstein), Ns. 3780 and Chinook. All of the above listed wheats averaged 12.5 bushels or more per acre in the 1952 trial. Highest yield was 15.3 bushels per acre from Ns. 4035 and the lowest yield in the entire trial was 6.9 bushels per acre produced by N. No. 2211, from the cross 1764 x Henry.

Comparison of long term average yields shows that the varieties Mida, Pilot, Cadet and Rival have practically the same average for the past ten year period, 1943-1952. Thatcher, the only other variety in the Dickinson trials that is widely grown in this area has averaged 93 percent of the yield of Mida for the ten year period, 1943-1952. Mida has outyielded all other varieties included in the Dickinson trials for two years or more by a wide margin, with the exception of the two Thatcher selections which have averaged about the same as Mida in 1951 and 1952.

Three obsolete varieties, Haynes Bluestem, Red Fife and Marquis, still being carried in these trials for purposes of comparison, have been completely outclassed by the newer strains. Over the past ten years these old varieties have produced only a little more than three fourths as much as the top yielders in this trial.

Data from the 1952 variety trials with wheat are presented in [table 30](#).

Comparative yields for wheat varieties in the trials at the Dickinson Experiment Station since 1930 are summarized in [table 31](#)

Milling, baking, and analytical data from Dickinson samples are summarized in [table 32](#).

Table 30 - Agronomic Data From Wheat Variety Trials - 1952														
Date seeded - 4-21														
Date emerged - 4-30														
Rate - 1 bpa														
Plot size - 1/66 acre														
1952 No.	Variety or Cross	C.I. Or N. No.	Yield - Bu. per acre					Test Weight	Dates		Height Inches	% Leaf Rust	% Stem Rust	Rank
			1	2	3	4	Ave.		1st Head	Ripe				
1	1764 x Henry	2211	7.7	8.3	4.4	7.2	6.9	60.0	6-14	8-1	22	5	M	25
2	Am <sup>2</sup> x Newthatch	3662	12.1	15.4	5.0	9.4	10.5	58.0	6-15	8-1	23	0	T	20
3	Lee	2776	13.2	13.2	6.9	11.0	11.1	60.0	6-14	8-1	22	T	T	17
4	Rushmore	2280	11.6	11.6	6.6	12.1	10.5	61.0	6-15	8-3	22	35	T	21
5	Thatcher	10003	14.3	15.4	7.7	12.7	12.5	61.0	6-17	8-3	23	50	M	7
6	Thatcher Sel.	Ns. 4036	15.4	16.2	8.3	13.2	13.3	62.0	6-19	8-2	23	50	M	4
7	Red Thatcher	Sel.	12.9	17.6	9.9	15.4	13.9	60.5	6-22	8-3	22	50	M	2
8	Mida	12008	13.8	15.4	8.5	13.8	12.9	61.5	6-19	8-4	22	25	T	6

9	Pilot	11945	13.2	17.6	10.2	14.0	13.7	60.0	6-20	8-4	23	25	T	3
10	Rival	11708	12.1	16.8	9.1	13.8	13.0	60.0	6-20	8-4	23	25	M	5
11	Thatcher x Supresa	M 2824	10.5	12.1	8.3	13.5	11.1	62.0	6-19	8-2	18	T	T	18
12	1750 x Timstein	2313	11.8	15.4	9.9	12.4	12.4	59.5	6-17	8-3	19	5	T	8
13	Rescue	12436	11.0	14.0	11.3	11.8	12.0	60.0	6-22	8-3	23	15	T	13
14	Ceres	6900	8.0	12.1	10.2	13.8	11.0	60.5	6-19	8-2	19	25	T	19
15	Nugget	Ld 303	10.5	11.0	7.4	9.4	9.6	60.0	6-15	8-1	20	T	H	23
16	Cadet	12053	13.2	12.7	10.2	10.2	11.6	56.5	6-20	8-6	21	5	T	15
17	Marquis	3641	9.9	12.7	10.5	11.8	11.2	59.0	6-21	8-7	21	50	M	16
18	Red Fife	3329	11.6	14.3	11.0	9.9	11.7	59.5	6-21	8-6	24	35	M	14
19	Bluestem	2674	11.0	15.4	9.9	12.7	12.3	59.0	6-23	8-7	28	5	M	11
20	Mindum	5296	9.9	16.5	9.9	12.1	12.1	62.0	6-23	8-5	31	T	H	12
21	Lee x Mida sib.	3880	7.2	12.9	5.5	10.5	9.0	60.5	6-14	8-1	16	T	T	24
22	Lee x Ns. 3175	3654	7.7	12.7	9.4	12.1	10.5	59.5	6-14	8-1	17	T	M	22
23	Am <sup>10</sup> x Newthatch	3780	8.8	13.8	11.6	15.4	12.4	58.5	6-15	8-1	19	0	T	9
24	Chinook	S.C. 4258	6.6	12.7	11.0	19.3	12.4	61.0	6-16	8-2	19	T	M	10
25	Mida x Vesta	Ns. 4035	9.9	16.5	11.6	23.1	15.3	60.0	6-18	8-3	22	T	M	1

Table 31 - Comparative Yields - Wheat Varietal Trials - 1944-1952 with averages since 1930

Variety	Yields in bushels per acre									Averages <sup>a</sup>							
	1944	1945	1946	1947	1948	1949	1950	1951	1952	1951 to 1952	1950 to 1952	1948 to 1952	1946 to 1952	1942 to 1952	1940 to 1952	1935 to 1952	1930 to 1952
Common Wheat:																	
Thatcher	20.2	20.0	16.3	26.2	33.0	10.8	18.2	23.8	12.5	18.2	18.2	19.7	20.1	20.7	19.6	18.1	16.3
Ceres	16.8	21.0	14.0	18.6	36.3	12.5	19.2	24.1	11.0	17.6	18.1	20.6	19.4	19.9	18.8	17.0	16.0
Marquis	16.5	18.1	15.0	16.7	34.5	10.9	17.8	24.4	11.2	17.8	17.8	19.8	18.6	18.1	17.1	15.2	14.0
Red Fife	16.0	17.0	16.5	16.0	34.5	11.0	18.5	25.9	11.7	18.8	18.7	20.3	19.2	17.7	16.3	13.8	12.9
Haynes	15.0	13.9	14.9	14.5	34.9	8.6	16.7	23.8	12.3	18.1	17.6	19.3	18.0	16.7	15.3	13.1	12.3
Pilot	20.0	19.1	15.7	25.6	39.8	13.6	18.5	25.4	13.7	19.6	19.2	22.2	21.8	22.0	20.6	19.2	
Rival	22.6	24.3	19.9	27.6	35.8	11.3	19.5	25.3	13.0	19.2	19.3	21.0	21.8	22.0	20.6	19.3	
Mida	23.4	25.0	18.1	24.3	35.9	11.9	20.5	26.1	12.9	19.5	19.8	21.5	21.4	22.3	20.9		
Cadet	21.4	20.2	17.7	25.3	37.8	13.0	21.2	23.7	11.6	17.7	18.8	21.5	21.5	22.0			
Rescue			19.9	25.4	32.7	9.6	19.0	20.9	12.0	16.5	17.3	18.8	19.9				
Lee					32.2	9.4	19.1	22.0	11.1	16.6	17.4	18.8					
Rushmore					28.0	9.8	18.9	22.8	10.5	16.7	17.4	18.0					

N.N. 2211							19.7	20.9	6.9	13.9	15.8						
Red Thatcher								25.1	13.9	19.5							
Ns. 4036 (Grimm)								26.7	13.3	20.0							
Ns. 3662								21.1	10.5	15.8							
Minn. 2824								24.4	11.1	17.8							
Ns. 2313								22.4	12.4	17.4							
Ns. 3880									9.0								
Ns. 3654									10.5								
Ns. 3780									12.4								
Chinook 4258									12.4								
Ns. 4035									15.3								

Durum Wheat:

Mindum	21.0 <sup>b</sup>	22.1	19.8	32.8	43.0	12.0	19.1	21.3	12.1	16.7	17.5	21.5	22.9	23.2	21.4	19.2	16.9
Nugget					29.4	9.2	20.2	21.2	9.6	15.4	17.0	22.4					
Sig. dif. bu.		2.8	3.1	2.3		2.2	3.7	2.6									
Std. error %		8.4	12.6	9.1		14.4	13.7	7.9									

<sup>a</sup>Varieties badly stunted in 1936 by unusually severe drought and heat. No accurate yield comparisons possible, therefore omitted from averages. 1928 crop badly damaged by hoppers, yield comparisons of limited value. All yields in 1941 reduced greatly by hail July 9, not included in averages.

<sup>b</sup>Two repl. only.

Table 32 - Milling, Baking and Analytical Data from Dickinson Variety Samples - 1952

Variety	Wheat Protein	Flour Yield			Ash	Absorption	Malt - Phosphate -Bromate Formula									Farinogram Type
		Long Patent	Low Grade	Total			3 Hour Fermentation			2 Hour Fermentation						
							Loaf	Grain & Crumb		Symme-try <sup>3</sup>	Loaf	Grain & Crumb		Symme-try <sup>3</sup>		
								Vol ume	Text <sup>1</sup>			Color <sup>2</sup>	Vol ume		Text <sup>1</sup>	
%	%	%	%	%	%	cc				cc						
Thatcher	15.8	65.2	2.4	67.6	0.38	61.8	785	7.5	7.0	4.0 O	875	8.0	7.5	4.5 O	Medium Strong	
Rival	15.8	68.5	2.9	71.4	0.44	66.2	755	7.5	7.0	4.0 O	865	8.0	7.0	4.5 O	Medium Strong	
Mida	16.0	68.5	2.9	71.4	.036	63.1	765	7.0	8.0	4.0 O	930	7.0	8.5	4.5 O	Medium Weak	
Lee	17.0	66.1	2.8	68.9	0.37	65.1	715	7.5	7.5	4.5 O	885	7.5	8.0	4.5 O	Medium Strong	
Rushmore	16.4	70.1	2.0	72.1	0.38	60.5	835	8.0	7.5	4.5 O	880	8.0	8.0	4.5 O	Strong	
Marquis	15.7	67.1	3.3	70.4	0.40	61.7	780	7.5	7.5	4.5 O	820	7.5	8.0	4.5 O	Medium Strong	

Rescue	15.3	69.9	2.6	72.5	0.38	59.1	805	7.5	7.0	4.5 O	850	8.0	7.0	4.5 O	Medium Strong
Sask. 4258	16.1	69.8	2.2	72.0	0.36	62.8	775	7.5	8.0	4.5 O	905	7.5	7.5	4.5 O	Medium
Red Thatcher	15.4	68.4	3.1	71.5	0.38	64.3	745	8.0	7.0	4.5 O	860	7.5	7.5	4.5 O	Medium Strong
N. N. 2211	17.6	63.9	2.3	67.2	0.38	67.1	860	7.5	7.0	4.5 O	905	7.0	8.0	4.5 O	Medium Strong
N. N. 2313	15.6	67.6	2.2	69.8	0.39	59.0	690	7.5	7.0	4.5 O	900	7.5	8.0	4.5 O	Weak
N.S. 3654	16.9	67.7	2.9	70.6	0.42	63.6	780	7.0	7.5	4.5 O	900	7.0	8.0	4.5 O	Medium
N.S. 3662	16.8	66.9	2.6	69.5	0.39	63.1	890	7.5	7.5	4.5 O	775	7.0 c	7.0	3.5 g	Very Weak
N.S.3780	16.7	67.9	2.0	69.9	0.37	62.6	900	7.5	8.0	4.5 O	885	7.5	8.0	4.5 O	Medium
N.S. 3880	17.0	67.0	2.7	69.7	0.43	63.3	840	7.5	8.0	4.5 O	775	8.0	7.5	4.0 g	Very Weak
N.S. 4035	15.9	70.2	2.3	72.5	0.42	60.8	800	7.5	7.5	4.5 O	875	7.5	8.5	4.5 O	Medium Strong
N.S. 4036	14.6	69.6	1.9	71.5	0.38	60.9	835	8.0	6.5 y	4.5 O	930	7.5	7.0	4.5 O	Medium Strong
Minn. 2824	16.2	68.9	2.0	70.9	0.40	60.0	850	7.0	7.5	4.5 O	850	8.0	7.0	4.5 O	Weak

Note: All quantitative data on a 13.5% moisture basis.

<sup>1</sup>Grain and texture: O = open; c = close ----- Perfect Score 10.0

<sup>2</sup>Crumb color: y = yellow ----- Perfect Score 10.0

<sup>3</sup>Symmetry: O = overoxidized; g = green (underfermented)-----5.0

Appearance of crust satisfactory throughout.

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