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## Variety Tests at Brandon

Results of 1918 Experiments with Cereals—By W. C. McKillican, Supt. Brandon Experimental Farm

THE season of 1918 has been very unfavorable for grain crops in the western portion of Manitoba. It was the second season of extreme drought, and in addition there was a great amount of high wind, some of it in combination with extreme drought. The yields of grain are, therefore, lower than usually obtained, but are interesting in that they throw light on the relative yielding power of the different varieties under such conditions as prevailed this year.

### Spring Wheats

Variety	No. of days to maturity	Yield per acre, 1918	Average yield, 5 years
Manitoba	125	36.30	31.45
Kitchener	125	30.40	31.23
Red Fife	125	27.50	26.50
Marquis	129	25.12	...
Red Bob	129	23.20	...

These plots were grown on summer-fallow land. The highest yield in 1918 was from Kitchener, with Red Fife second and Marquis third. However, in a five-year average, Marquis has almost 11 bushels per acre lead over Red Fife. Kitchener has not been grown for five years and hence it is impossible to compare it with the others on that basis. A three-year average has been computed to give a fuller comparison and in this average Kitchener and Marquis are practically equal with a slight margin in favor of Marquis.

The peculiarities of the season—drought at a time that injured early crops most and rains at a time to help late crops—helped Red Fife, and for the first time since the introduction of Marquis, Red Fife yielded more than Marquis on this farm.

Red Bobs, which has received very much advertisement during the past few months, was grown in these tests this year for the first time. It is not advisable to draw conclusions from a single year's results. As compared with Marquis this year it ripened one day earlier and yielded three bushels, ten pounds per acre less.

### Oats

Previous to 1917, variety tests of oats were made on summerfallow as was done with wheat. These tests are continued, but in addition a set of oat plots on stubble land is now grown each year, as it is believed that the ability of a variety of oats to produce on stubble land is more indicative of its value for general farm use than the results obtained on summerfallow.

### Oats on Summerfallow

Variety	No. of days to maturity	Yield per acre, 1918	Average yield per acre, 5 yrs.
Manitoba	114	75.30	91.25
Gold Rain	112	65.30	89.22
Newmarket	114	66.16	86.11
Victory	117	78.28	85.27
Elgiva	113	61.6	85.17
Great French Lino.	112	60.20	84.25
Danbenny	106	35.30	83.18
O.A.C. No. 72	118	67.2	81.28
Gold	106	41.6	70.14
Elgiva Days	109	34.4	79.2
Alsasman	113	63.18	...
Industrial	111	49.14	...
Liberty	107	44.24	...
O.A.C. No. 3	105	40	...

### Oats on Stubble

Variety	No. of days to maturity	Yield per acre, 1918	Average yield per acre, 5 yrs.
Victory	112	45.30	57.1
Alsasman	110	40	57.1
Banner	111	42.32	57.1
Newmarket	111	37.2	57.1
O.A.C. No. 72	112	37.2	57.1
Elgiva	110	35.15	57.1
Gold	101	36.18	54.24
Gold Rain	110	34.24	54.4
Danbenny	101	32.32	48.28
O.A.C. No. 3	100	28.14	47.12
Great French Lino.	110	28.14	47.12
Industrial	109	28.4	47.12
Elgiva Days	101	31.20	47.12
Liberty	101	25.30	44.1

Banner continues to hold its leading position in the results on fallow and is also well toward the lead in the stubble results. It is interesting to note the results obtained this year with Victory. This variety has not heretofore given particularly good results at the farm, especially on the fallow tests. However, it has given good results for many years at other stations situated in drier parts of the country. This year, when drought conditions prevailed here, it has given the largest yield both on fallow and on stubble land. It would seem fair to assume that this variety is especially suited to districts where limited rainfall is the rule. Alsasman, Gold Rain and Newmarket have also given good results at this farm.

Among early maturing varieties, Danbenny (white) and Oroff (yellow) have given best results.

### Barley

The test plots of barley were grown this year on corn land and also on stubble land. The fallow results were obtained on corn land and the five-year averages are from yields either on corn land or summerfallow.

### Barley on Corn Land

Variety	No. of days to maturity	Yield per acre, 1918	Average yield per acre, 5 yrs.
Manchurian	99	53.16	54.3
O.A.C. No. 21	99	55.16	53.17
Gold	106	40.40	51.47
Imperial (Canadian)	105	55.40	49.42
Thorpe	97	50	48.23
Succow	97	50	48.23
Charlottetown No. 80	106	62.24	...
Stella	99	43.16	...
Minnesota No. 105	99	41.32	...
Albert	96	32.24	...

Manchurian and O.A.C. No. 21 are two reliable six-rowed varieties which give good returns every year, have good straw, are reasonably early and are, therefore, recommended for general use. The largest yields in 1918 were from two-rowed barleys, due probably to their lateness which gave them an advantage in this season with its peculiar favoritism toward anything late. Charlottetown No. 80, a two-rowed variety, originated at the Charlottetown, P.E.I. Station was first, with a yield of 62 bushels, 24 pounds per acre. It has not been grown long enough to report a five-year average.

In addition to the named varieties reported upon, several new sorts originated by Dr. Saunders, Dominion Cerealists, were tested under number, but no public report is being given until they are thoroughly proved out. Some of



A Splendid Crop of Corn on an Edmonton District Dairy Farm. Leon Abbott, a dairy farmer in the Clover Bar Settlement, just east of Edmonton, has been growing corn for three years with good success. This shows his 1918 crop.

these are very p the highest yield bushels and 4 Another, a bear bushels per acre.

### What Soil

Soil bacteria feed of the farm useful, but are and the more th soil and the working, the returns. We problem of how velopment and a problem we mu favorable to th First, the ben oxygen, as many they bring abo cesses. There of oxygen in t is well drained present in bet to a depth of t the bacteria. I eaked or water oxygen is not teria, therefore activity is cher tion of plant f supply the soil necessary oxyg keep the soil w face loosened up tivation.

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A third requ teria is a neut reaction in the there should b soil, in other w be "sour." T teria will not present. The w bacteria include and if this aci late it interfer al activities. duced must b ient lime or p soil, the acid i it is produced. is nitric acid an ash we get as a which is one t trate fertilizera by the growin present in the tities to neutr should be add

A fourth rec teria is organic are supplied b nures, straw, e and these sho quantities to f this process of these crude pla breaks them do ing them suita to use them. Th in digesting th added to the se tion of humus, should be prese Prof. D. H. Jon

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