

Good Work on Lacombe Experimental Farm

Supt. G. H. Hutton sends the following synopsis of experimental work carried on at Lacombe during the year:

While the season of 1910 has been dry the yields secured at Lacombe do not indicate that the crops felt the lack of rain to any great degree. The soil of Central Alberta demonstrated its moisture-holding power this year, and when given a fair chance has produced a fair return even under adverse conditions. From April 1st to August 15th this year we had 8.34 inches, which, while considerably more than some sections enjoyed, is away below the average rainfall for this period.

All through the district good yields are recorded, particularly on breaking of 1909 or summer-fallow of that year, which were handled with a view of conserving soil moisture. The soil packer on fall plowing proved its value in many instances, in that moisture was available for prompt germination and subsequent growth, while that on similar soil not so handled was lost through evaporation.

EXPERIMENTS WITH SPRING WHEAT

All yields of spring wheat are high, though some varieties (notably Marquis and Chelsea) do not occupy as high a position in the list as usual. We consider Marquis, however, to be one of the best varieties for this soil, having regard to quality of flour produced coupled with early maturity. Following is the standing of the different varieties tested:

	Days maturing	Yield in 1910 bus. lbs. oz.
1. Huron	156	69 35 10
2. Pringle's Champlain	156	65 54 6
3. Preston	156	65 50 10
4. Riga	151	65 18 12
5. Red Fife	160	64
6. White Fife	165	63 56 4
7. Stanley	156	63 13 2
8. Bishop	157	60 50 10
9. Marquis	156	59 28 2
10. Chelsea	156	53 5 10
x11. Century	141	47 45 ..
x12. "Regenerated" Red Fife	139	47 30 ..

"x"—Sown on April 21st.

QUANTITIES OF SEED PER ACRE

The test of different quantities of seed has resulted in favor of what might be considered heavy seeding with wheat, oats and barley. This is in opposition to the theories of certain writers who have been dealing with dry land conditions in the western states, but these figures are supported in the main by the results of previous years, and in consequence we advise to test out the results of thin and heavy seeding before going to the extreme in reducing the quantity of seed per acre. I would draw attention to the effect of increasing the quantity of seed per acre upon the length of time required to mature the crop as well as to the increased yield from the heavier sowing.

	Days maturing	Weight of straw	Yield in 1910 bus. lbs. oz.
Marquis, $\frac{1}{4}$ bus. ..	156	5670	45 30 ..
Marquis, $\frac{1}{2}$ bus. ..	148	5645	49 54 6
Marquis, $\frac{3}{4}$ bus. ..	149	5769	58 50 10
Marquis, 1 bus. ..	145	5872	62 7 8
Marquis, $2\frac{1}{4}$ bus. ..	144	6018	63 41 4

Spring wheat was sown at different dates from March 31st to April 28th. The season was favorable for maturing late-sown grain, for the delayed rains helped the late-sown plots to fill out. The grain sown April 14th was ready for harvesting six days earlier than that sown April 28th, and while the last sown gave a yield of 63 bushels, 41 pounds per acre being ten bushels more than that sown two weeks before, yet I consider the early maturity quite as desirable as a heavy yield. It is not likely that this order would hold on average seasons, for as a rule the first sowings of wheat not only mature first but give the largest yield.

COMMERCIAL FERTILIZERS FOR SPRING WHEAT

With a view to determining the value of commercial fertilizers when applied to grain crops on old land which has been growing grain for about fifteen years, experiments have been conducted covering this point for the last two years. The results given below, while indicating that different combinations of fertilizers will increase the yield, the increase is not sufficient to pay for the cost of fertilizer the first year except in one instance. Following is the result:

Name of fertilizer	Amt. applied per acre	Cost of fertilizer	Yield per acre bus. lbs.	Value of crop minus cost of fertilizer when valued at 85c per bus.
Check plot	—	—	49 5	\$41.72
Acid phosphate ..	300	\$6.18	61 41	37.29
Muriate of Potash ..	120	4.33	.. ..	.. ..
Nitrate of Soda ..	120	4.63	.. ..	.. ..
Nitrate of Soda ..	120	4.63	61 46	41.69
Acid phosphate ..	300	6.18	.. ..	.. ..
Acid phosphate ..	300	6.18	61 16	41.36
Muriate of Potash ..	120	4.33	.. ..	.. ..
Muriate of Potash ..	120	4.33	60 22	42.35
Nitrate of Soda ..	120	4.63	.. ..	.. ..

EXPERIMENTS WITH WINTER WHEAT

The last two springs the snow has gone quite early and the nights following have been cold and the days warm. We have had, therefore, quite a period of alternate thawing and freezing. Under these conditions winter wheat has always come through much better on breaking or on land plowed out of timothy than on summerfallow. Our varieties for this year were all sown on summerfallow and were not considered worth while leaving this spring. Experiments in quantities of seed and dates of sowing were sown on land plowed out of timothy sod after the hay was cut in 1909. The results in the quantities of seed test bear out the work of previous years, except that formerly there has been a slight falling off in yield past the one bushel and a half seed per acre. This year the Alberta Red gave the largest yield when sown at the rate of two bushels per acre, while Dawson's Golden Chaff reached its maximum at one and one-quarter bushels of seed per acre. The increase from one-quarter of a bushel to two bushels of seed reduced the length of time required to mature by ten days. The following tables show the results with the two varieties, Alberta Red and Dawson's Golden Chaff:

Quantities of seed	Dawson's Golden Chaff yield per acre bus. lbs. oz.	Alberta Red yield per acre bus. lbs. oz.
$\frac{1}{4}$ Bushel	0	15 5 10
$\frac{1}{2}$ Bushel	8 5 10	27 33 12
$\frac{3}{4}$ Bushel	24	29 26 4
1 Bushel	31 30 ..	45 41 4
$1\frac{1}{4}$ Bushel	49 35 10	49 18 12
$1\frac{1}{2}$ Bushel	43 43 2	50 48 12
$1\frac{3}{4}$ Bushel	28 43 2	52 30 ..
2 Bushel	25 15 ..	53 11 4

As in previous years winter wheat sown about the middle of August has given larger yields than when sown either earlier or later. The first sowing was made on August 2nd, 1909, and sowings were made of both Dawson's Golden Chaff and Alberta Red one week apart up to September 12th. The highest yield of Alberta Red was 45 bushels, 41 pounds per acre sown on August 16th. The sowings of Dawson's Golden Chaff made August 9th and 16th tied with a yield of 31 bushels, 30 pounds.

EXPERIMENTS WITH OATS

Among the varieties of oats tested Banner, though not heading the list, is one of our best varieties. Abundance also stands well up. The past season did not appear to be as favorable for oats as for wheat. Twenty-six varieties were tested. The following table shows the standing of the best ten:

	Days maturing	Yield per acre bus. lbs.
1. White Giant	140	88 8
2. Tartar King	133	82 2
3. Swedish Select	133	80 10
4. Abundance	140	79 14
5. Banner	140	78 18
6. Danish Island	140	77 22
7. Lincoln	140	77 22
8. Thousand Dollar ..	133	75 30
9. "Regenerated" Ban- ner	140	75 30
10. Improved American ..	133	73 8

QUANTITIES OF SEED

With different quantities of seed per acre a range from one bushel to four and one-half decreased the number of days required to mature by ten and increased the yield by twenty-nine bushels per acre. From two and one-half to three and one-half bushels of seed per acre usually gives the largest yields here.

	Days maturing	Weight of straw	Yield in 1910 bus. lbs.
Banner, 1 bus.	141	4680	91 26
Banner, $1\frac{1}{2}$ bus.	140	5595	100 5
Banner, 2 bus.	139	5550	99 24
Banner, $2\frac{1}{2}$ bus.	138	6135	137 7
Banner, 3 bus.	133	4410	110 10
Banner, $3\frac{1}{2}$ bus.	131	5010	129 24
Banner, 4 bus.	131	4860	134 4
Banner, $4\frac{1}{2}$ bus.	131	4980	128 28

DATES OF SOWING

Banner oats were sown one week apart from March 31st to May 12th. The earliest sown oats required one hundred and fifty-one days to mature, while the last sown matured in one hundred and eighteen days. The heaviest yield was secured from the plot sown April 28th, which made 157 bushels 2 lbs. per acre. The question may arise as to the reason the oats on these plots yielded at a higher rate than the oats sown in the test of varieties. The explanation is that the land on which these tests were conducted was plowed earlier in the season of 1909, and being well-worked down had a chance to store more moisture than the later plowed land on which the variety tests of oats were carried on.

DATES OF SEEDING OATS

	Days maturing	Yield bus. lbs.
Banner, March 31st	151	125 10
Banner, April 7th	144	116 16
Banner, April 14th	132	122 22
Banner, April 21st	123	135 ..
Banner, April 28th	123	157 2
Banner, May 5th	118	145 5
Banner, May 12th	118	141 6

EXPERIMENTS WITH BARLEY

Thirteen varieties of six-rowed barley and ten varieties of two-rowed were tested at Lacombe in 1910. The barley, Guy Mayle received from Montana, stands well, as does also the O. A. C. No. 21. Mensury is this year eleventh in the list of six-rowed varieties. The largest yield of six-rowed varieties is 80 bushels per acre, being reached by Stella and Guy Mayle, while Nugent stood last with 53 bushels 36 lbs. per acre. Following is the standing of the six-rowed varieties:

	Days maturing	Yield in 1910 bus. lbs.
1. Stella	123	80 ..
2. Guy Mayle	114	80 ..
3. Claude	128	79 3
4. O. A. C. No. 21	119	77 39
5. Odessa	119	77 24
6. Yale	124	77 24
7. Albert	128	73 6
8. Trooper	123	71 12
9. Hulless	128	67 24
10. Mensury	119	63 36
11. Mansfield	119	63 16
12. Oderbrucher	119	58 6
13. Nugent	119	53 36

(Continued on page 1866)