DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

REPORT OF THE CHIEF SUPERVISOR

J. C. MOYNAN, B.S.A.

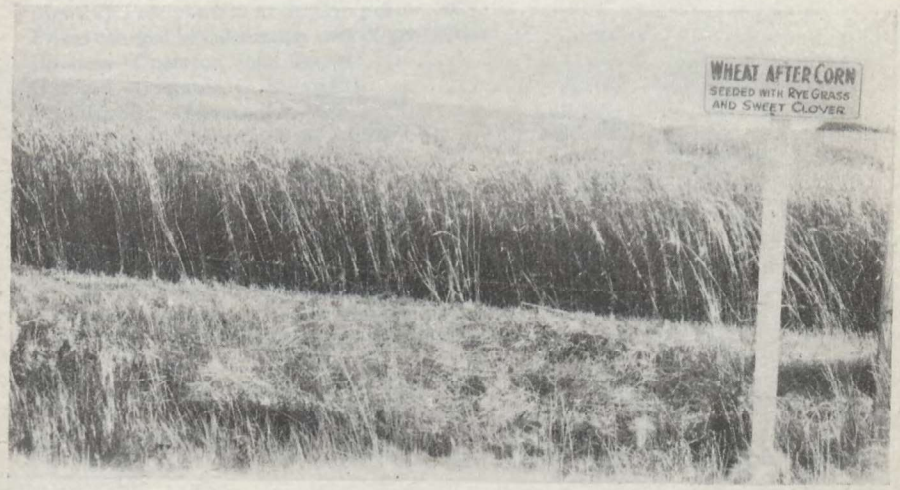
ON

THE ILLUSTRATION STATIONS

IN

BRITISH COLUMBIA, ALBERTA, SASKATCHEWAN and MANITOBA

FOR THE YEAR 1928



Marquis wheat on the Illustration Station at Riverhurst, Saskatchewan, yielded 30 bushels and gave a profit of $16.20 per acre.

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ILLUSTRATION STATIONS

IN

BRITISH COLUMBIA, ALBERTA, SASKATCHEWAN AND MANITOBA

During the past year one hundred and eighty-six Illustration Stations have been in operation in the Dominion. Twelve of these are located in Prince Edward Island, sixteen in Nova Scotia, eighteen in New Brunswick, fifty-five in Quebec, fifteen in Ontario, thirteen in Manitoba, twenty-four in Saskatchewan, seventeen in Alberta, and sixteen in British Columbia. Over one hundred field days and meetings have been held on these stations to explain the work and to bring the results of the different projects to the attention of the farmers in the surrounding districts.

The yields and cost of growing the different crops on each station, as well as their average over a period of years, are summarized for publication and appear in two reports; one deals with the work in the East, where mixed farming is generally carried on, and the other with that in the western provinces.

For the collection of data and the recording of the results enumerated in this report the superintendents of the Experimental Farms and the supervisors of the Illustration Stations as named below are responsible:—

Superintendents	*Supervisors*
W. H. Hicks, Agassiz, B.C.	A. E. Richards, Agassiz, B.C.
W. H. Fairfield, Lethbridge, Alta.	R. E. Everest, Lethbridge, Alta.
J. G. Taggart, Swift Current, Sask.	E. C. Sackville, Swift Current, Sask.
D. Matthews, Scott, Sask.	N. F. Bell, Scott, Sask.
M. J. Tinline, Brandon, Man.	D. A. Brown, Brandon, Man.
W. D. Albright, Beaverlodge, Alta.	

THE PRODUCTION AND SALE OF SEED GRAIN, GRASSES AND CLOVERS

The use of suitable varieties of grain and hardy strains of clovers is always of prime importance and frequently is a determining factor in profitable production. This fact has been demonstrated on several of the Illustration Stations during the past season, particularly in northerly districts, where early varieties are essential. On a number of these stations in Saskatchewan where frost damage was severe, Garnet wheat, because of early maturity, was demonstrated to be superior to Marquis in both yield and grade. On the stations where Garnet and Reward were grown in comparison with Marquis, Reward proved equal to Garnet in commercial grade. The success of these early varieties, in at least partly escaping frost damage and producing a good grade of wheat has created a demand from the operators for seed grain. On the Alberta stations, uniform fields of Marquis wheat and Banner oats grown from registered seed attracted considerable notice and favourable comment, because of their purity.

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During the past year the sales of seed grain on the Illustration Stations has increased by 32 per cent. Favourable moisture conditions during 1927 and 1928, particularly in the western provinces, resulted in the wheat and oat yields being well above the average. The resulting improved financial position of the farmers has stimulated the demand and made possible the purchase of fresh supplies of pure seed grain. A review of the sales made by the operators indicates that Marquis still maintains its position as the leading variety of wheat, as over 75 per cent of the sales made from the stations in Manitoba, Saskatchewan, and Alberta were of that variety. Garnet was most in demand in the northerly districts of these provinces. Of the oat varieties Banner and Victory in all provinces found preference, excepting in northern Ontario, northern Quebec, and sections of the Maritime Provinces subject to early frost, where Alaska has proven a very desirable oat. Of the barley varieties, O.A.C. No. 21, Trebi, and Charlottetown No. 80 have done well on the stations, the choice of which depends largely on the soil and climatic conditions of the district, Trebi having done particularly well on the Manitoba stations.

The seed sold by the operators during the past year amounted to 40,072 bushels of seed grain, 7,999 bushels of seed potatoes, and 18,061 pounds of grass and clover seed.

LIVE STOCK IMPROVEMENT

In the eastern provinces, Manitoba, parts of Alberta and British Columbia, considerable attention is being directed in a practical and demonstrational way to building up the dairy herds on the Illustration Stations and to the development of typey flocks of sheep and hogs. To effect the desired results it is sometimes necessary to start with the demonstration and production of suitable hay crops high in protein, to increase the supply of succulent feeds and to arouse greater attention in the feeding, housing and systematic grading up of the individual herds. The majority of the operators are now using pure-bred sires, they are keeping individual milk records and making butter fat determinations in order to determine the production of each animal. A study of the year's production of milk and butter fat on the different stations indicates that the average production of butter fat varies from 408 pounds to 121 pounds; the lowest producing individual giving 74 pounds of butter fat. These results show the need and possibilities of systematic breeding and selection. The improvement of the dairy herds, sheep and hogs on the stations makes available in the districts concerned a supply of pure-bred males and females for other farmers who may be interested in similar work. During the past year the operators sold 260 head of cattle, 301 hogs and 202 sheep for breeding purposes.

POULTRY IMPROVEMENT WORK

Progress continues to be made on the Illustration Stations with regard to the housing, feeding and general quality of poultry kept. This can be seen by comparing conditions three years ago on the Eastern Quebec stations with those existing at the present time. In 1925 there were 374 pure-bred birds kept on twenty Illustration Stations then in operation. At the present time on twenty-two stations there are 1,904 birds kept, of which 1,650 are pure-breds, principally Barred Plymouth Rocks. A number of the operators and adjoining farmers have sought information on poultry-house construction, some having built houses to accommodate up to 250 birds, others having remodelled their old buildings, making improvements in the lighting and ventilation. Attention is given each fall to securing well-bred cockerels from stock which has produced 200 eggs or more. Over a period of years, following the practice of mating these cockerels with some of the best producing females, the flocks on some of the stations have

improved to the point where they are now able to enter and successfully compete in the Provincial Egg Laying Contests. The benefit of efforts expended in this direction are far reaching as the operators make an effort to dispose of their surplus breeding stock and hatching eggs to farmers in the surrounding district. This year 516 cockerels, 489 pullets, and 1,631 settings of hatching eggs were sold by the different Illustration Station operators.

REPORT OF THE ILLUSTRATION STATIONS IN BRITISH COLUMBIA

A. E. Richards, B.S.A., Supervisor

During the year 1928 fifteen Illustration Stations were supervised from the Experimental Farm at Agassiz. Seven stations are located in central British Columbia along the line of the Canadian National Railway serving the Upper Fraser, Nechako, Francois Lake and Bulkley valleys. Four are located on Vancouver island and four in the southern interior of the province.

THE SEASON

Variable weather conditions were experienced throughout the province. The Bulkley and Nechako valleys suffered from lack of rain in the spring while McBride at the eastern boundary of the Central plateau received an abundant supply through the season. Kamloops in the dry belt received over four inches of rain in June. In general total precipitation was considerably below the usual annual total. Rain in midsummer, however, provided moisture at the right time to turn what appeared to be an extremely light crop into a fair average.

Seasonal weather conditions set the limit for field work in the various sections of the province. In central British Columbia fall work usually ends October 20 and work on the land commences in the spring about April 20. On Vancouver island work on the land continues throughout the winter months. Seeding dates in central British Columbia range from April 20 to May 10, hay cutting July 1 to 15 and grain harvesting August 20 to September 1. The maximum growing period for vegetation in central British Columbia is estimated at 175 to 180 days. In the north Okanagan the average number of growing days is 200 while on Vancouver island the growing period extends from 250 to 275 days.

PRECIPITATION FOR 1928 AT THE ILLUSTRATION STATIONS IN BRITISH COLUMBIA

Month	Alberni	Armstrong	Courtenay	Duncan	Fernie	Francois Lake	Kamloops	McBride	Prince George	Salmon Arm	Salmon Valley	Telkwa	Vanderhoof
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	11·61	1·35	7·29	6·36	2·98	.....	1·40	1·77	0·92	1·20	0·28	2·42	0·80
February	4·08	.....	3·05	0·82	0·98	.....	0·15	0·15	0·67	0·45	0·50	0·47	0·52
March	8·47	1·15	5·28	5·69	5·72	1·15	0·27	2·43	1·75	1·76	1·08	1·43	1·60
April	4·68	1·39	2·70	2·94	1·89	0·15	0·83	0·71	0·23	1·29	0·16	0·15	0·51
May	2·78	1·36	1·58	1·20	1·96	0·56	0·30	1·68	1·14	0·89	0·48	1·52	0·80
June	1·39	2·15	1·05	0·64	3·75	0·09	4·58	3·49	3·01	1·29	1·46	0·19	0·80
July	0·67	0·73	0·20	1·01	3·43	1·60	1·58	1·61	1·00	1·45	1·08	5·60	1·04
August	0·36	0·37	0·41	0·33	1·88	0·72	0·50	1·38	1·96	0·00	1·59	0·49	1·13
September	2·38	0·32	1·18	0·81	1·10	0·55	0·58	1·62	1·28	0·24	0·46	1·03	0·99
October	8·06	1·09	5·57	4·79	8·61	0·98	0·44	2·52	1·58	0·74	0·62	0·74	1·18
November	5·90	0·60	7·69	4·21	2·72	0·95	0·67	1·06	0·67	0·35	0·50	0·92	1·00
December	8·91	0·48	11·17	3·80	3·68	0·95	0·50	0·60	0·42	0·97	0·60	1·17	1·15
	59·29	10·93	47·17	32·60	38·70	.....	11·80	19·02	14·63	10·63	8·81	16·13	11·52

MAXIMUM AND MINIMUM TEMPERATURES AT ILLUSTRATION STATIONS IN BRITISH COLUMBIA, 1928

(In Degrees Fahrenheit)

Month	Alberni		Armstrong		Duncan		Fernie		Francois Lake		Kamloops		McBride		Prince George		Salmon Arm		Telkwa	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
January	50	24	41	−4	55	20	49	−34	.....	.....	44	−12	50	−42	46	−54	48	−8	41	−37
February	55	24	42	−2	58	21	45	10	52	18	42	−10	46	17	50	−27	47	0	43	−10
March	71	23	58	8	75	20	61	3	48	8	57	4	58	0	76	−14	64	12	62	4
April	75	27	80	21	71	27	70	18	62	14	64	18	69	20	70	10	72	23	64	13
May	89	36	85	28	88	35	88	45	84	26	92	24	86	25	92	22	89	29	73	24
June	89	39	93	41	89	40	82	34	96	34	87	34	85	25	86	26	93	40	87	27
July	100	46	103	47	94	43	91	38	86	36	96	40	85	33	95	40	101	49	85	36
August	98	40	96	35	88	41	86	30	76	30	89	29	73	25	84	24	92	40	83	31
September	91	34	95	30	89	33	82	24	80	24	86	26	72	20	85	16	92	34	83	26
October	64	29	70	20	63	28	60	18	64	18	62	16	43	12	57	11	77	27	57	22
November	61	31	64	18	60	30	50	10	52	12	46	10	44	5	60	6	66	22	48	13
December	55	19	46	4	51	19	40·5	−13	44	−11	36	−8	34	−10	43	−23	43	9	38	−13
Range	100	19	103	−4	94	19	91	−34	96	−11	96	−12	86	−42	95	−54	101	−8	87	−37

OBJECTIVES AND PROGRESS

Demonstration and encouragement in the growing of clover and alfalfa has been the main objective of the Illustration Stations in central British Columbia since work was undertaken in 1922. On Vancouver island commercial fertilizer work forms the main project on the stations. Other parts of the province where Illustration Stations are located have problems peculiar to the district and to these problems the Station is giving its attention.

When Illustration Station work was undertaken in the province a crop survey showed less than two acres of alfalfa along the line of the Canadian National Railway. Test plots were set out on the Stations and these were extended to demonstration blocks under field conditions. The success of these demonstrations gave encouragement to farmers to grow alfalfa with the result that the acreage under this crop has increased to 150 or 160 acres.

Each year sees the clover acreage increasing throughout central British Columbia. Last year over 3,500 pounds of clover seed were threshed in the Prince George and Vanderhoof districts.

CO-OPERATION AND EXTENSION

In co-operation with the university of British Columbia fall wheat tests are being continued in the central interior and this season a co-operative oat experiment was undertaken. The Experimental Stations and the University are co-operating in a test of northern versus locally grown potatoes. This test has now been in progress five years.

The co-operative extension work with farmers in districts served by the Illustration Stations was continued this year. Thirty-six, one-acre plots of sweet clover were set out under the direction of the supervisor in central British Columbia and co-operating with the district agriculturist fifteen one-acre demonstration plots of sweet clover were established in the Cariboo district.

SEED AND LIVE-STOCK SALES

One of the most important services that the Illustration Stations render to the community is the distribution of better seed and better live-stock. During the past year British Columbia operators sold 1,516 bushels of seed grain, 215 pounds clover seed, and 9 tons of seed potatoes. Eggs for hatching totalled 175 settings. Live stock sales for breeding purposes included 9 head of cattle, 44 hogs, and 40 sheep.

NEW STATIONS

Work was undertaken on three new Stations this year. These are located at Fernie in the East Kootenay district, Salmon Arm in the southern interior and Duncan on Vancouver Island. In response to requests several new districts were visited and the possibilities for work investigated.

PRICES CHARGED IN CALCULATING COSTS

Rent and taxes	Based on value of land at prevailing rate of interest plus taxes.
Horse and manual labour	Based on prices in the district.
Cost of twine and threshing	Based on prices in the district.
Use of machinery	$2.85 per acre.
Manure	$2 per ton.

COST OF SEED

(British Columbia)

		$ cts.
Oats, Banner	per bushel	1 02
Wheat, Marquis	"	2 40
Wheat, Garnet	"	2 40
Wheat, Blue Stem	"	1 50
Fall Wheat, Jones' Fife	"	1 50
Peas, Golden Vine	"	3 60
Peas, Prussian Blue	"	3 60
Spring vetch	"	4 80
Fall vetch	"	10 20
Corn, Longfellow	per pound	0 06
Corn, North West Dent	"	0 06
Corn, Compton's Early	"	0 06
Sunflowers, Mammoth Russian	"	0 13
Sunflowers, Manchurian	"	0 20
Potatoes, certified seed	per ton	60 00
Timothy	per pound	0 10
Orchard grass	"	0 28
Western rye grass	"	0 17
Tall oat grass	"	0 40
Meadow fescue	"	0 30
Italian rye	"	0 16
Clover, common red	"	0 35
Clover alsike	"	0 30
Clover, white sweet	"	0 15
Alfalfa, Ontario variegated	"	0 32
Alfalfa, Grimm	"	0 41

RETURN VALUES

(British Columbia)

—		Vancouver Island	Southern Interior	Central British Columbia
		$ cts.	$ cts.	$ cts.
Clover and timothy hay	per ton	16 00	.....	12 00
Alfalfa hay	"	.....	14 00	18 00
White sweet clover hay	"	.....	12 00	.....
Peas and oats hay	"	.....	.....	13 00
Oat hay	"	15 00	11 00	11 00
Oat straw	"	4 80	4 80	4 80
Wheat straw	"	2 40	2 40	2 40
Sunflowers, ensilage	"	.....	.....	5 00
Corn silage	"	6 00	6 00	6 00
Oats and peas ensilage	"	.....	.....	7 00
Turnips	"	4 00	.....	.....
Artichokes	"	6 00	.....	.....
Potatoes, commercial	"	20 00	.....	30 00
Oats	per bushel	0 80	0 80	0 80
Wheat	"	1 20	1 20	1 50
Field peas	"	.....	3 00	3 50
Alfalfa seed	per pound	.....	0 30	.....
Clover seed, common red	"	.....	.....	0 35
Clover seed, alsike	"	.....	.....	0 30

NOTE.—Vancouver island stations include: Alberni, Comox and Courtenay. Southern Interior Stations: Armstrong and Kamloops. Central British Columbia Stations: Francois Lake, McBride, Prince George, Salmon Valley, Smithers, Telkwa and Vanderhoof.

The cost of farm manure is distributed over the crops in the rotation in the following proportions:—

Four-year rotation: first-year crop, 40 per cent; second-year crop, 30 per cent; third-year crop, 20 per cent; fourth-year crop, 10 per cent.

Five-year rotation: first-year crop, 40 per cent; second-year crop, 25 per cent; third-year crop, 20 per cent; fourth-year crop, 10 per cent; fifth-year crop, 5 per cent.

The residual influence of chemical fertilizers and lime is distributed as follows:—

Mixed fertilizers: first-year crop, 55 per cent of cost; second-year crop, 30 per cent of cost; third-year crop, 10 per cent of cost; fourth-year crop, 5 per cent of cost.

Nitrate of soda supplied alone: first-year crop, 80 per cent of cost; second-year crop, 20 per cent of cost.

Lime: cost is divided equally among each crop in the rotation.

ALBERNI, VANCOUVER ISLAND

Operator, C. Chase

Alberni received fifty-nine inches of rain during 1928. The ten-year average for this district is sixty-nine inches. The average annual temperature for the same period is forty-nine degrees. The past season on the whole was favourable for crop growth.

This station is illustrating that land drainage, the introduction of clovers and other humus-building plants and shallow surface cultivation to keep down weeds is a practical way to cope with the problem of soil leaching in the winter months and moisture conservation during the dry summer.

In addition to work with fertilizers on potatoes, the value of nitrate of soda and sulphate of ammonia as a top dressing for the meadows and the importance of lime for the acid condition of much of the Island soils is being demonstrated under field conditions.

A summary of yields and costs is given in the following table:—

OPERATIONS AT ALBERNI, FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (—) loss per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Potatoes	3	6·45 tons	9·15 tons	17 30 per ton	17 11 per ton.	68 32
Turnips	1	28·00 tons	.....	3 42 per ton	.....	16 25
Hay, second year	1	3·03 tons	.....	8 78 per ton	.....	21 85
Wheat, Marquis	2	39·0 bush.	30·5 bush.	1 03 per bush.	1 71 per bush.	—4 79

With the exception of nitrate of soda which was applied at planting time to potatoes all fertilizers were broadcast March 10. Meadows were top dressed with nitrate of soda and sulphate of ammonia March 14. Wheat was sown April 26. Potatoes were planted May 19. Hay was cut July 9, wheat August 10, and potatoes dug September 25.

A top dressing of nitrate of soda at 100 pounds to the acre increased the yield of hay by 0·30 tons over the check and sulphate of ammonia at 150 pounds per acre increased the yield by 0·70 tons over the check plot.

With potato fertilizer tests, 4-10-10 mixture at 1,000 pounds per acre gave the highest yield, but the sulphate of potash returned the largest profit. Potatoes are grown from certified Burbank seed. The percentage of unmarketable tubers was very small. In calculating the profit and loss per acre potatoes are valued at $20 per ton.

COMMERCIAL FERTILIZER DEMONSTRATION ON THE POTATO CROP AT ALBERNI

Plot	How fertilized per acre	Yield per acre	Increase over check plot	Cost of fertilizer per acre	Profit per acre above plot not fertilized
		tons	tons	$ cts.	$ cts.
1	Nitrate of soda—50 pounds Sulphate of ammonia—150 pounds	7·18	4·80	9 22	90 93
2	Superphosphate—600 pounds	7·45	5·07	5 08	96 32
3	Sulphate of potash—200 pounds	7·74	5·36	3 69	103 50
4	4–10–10 —500 pounds	7·66	5·28	6 92	98 68
5	4–10–10 —1,000 pounds	7·96	5·58	13 84	97 76
6	Check, not fertilized	2·38	.....	.....	.....

ARMSTRONG, NORTH OKANAGAN

OPERATOR, W. B. MCKECHNIE

Due to the favourable season crop returns were above the average on the station and in the district generally. Over two inches of rain in June stimulated all growth and assured a good catch of alfalfa on the newly seeded fields.

A ten-year rotation with alfalfa is conducted on this station, including seven years alfalfa followed by a mixed crop, fall wheat and the hoed crop of corn. This is the reverse order to the usual rotation where the hoed crop is used as a cleaning crop for grain. Experience shows, however, in this dry-farming area that the decomposition of the alfalfa roots is slow. Difficulty is experienced in cultivating the corn crop immediately after alfalfa and labour costs are increased. For that reason the rotation has been altered and the alfalfa stand is followed by a mixed crop, fall wheat and corn in the order named. The corn thus receives the greatest benefit from the decomposed residues of alfalfa and fits the land for the new seeding of alfalfa.

A summary of yields and costs is given in the following table:—

OPERATIONS AT ARMSTRONG, TEN-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Fall wheat, Jones' Fife	4	42·0 bush.	34·6 bush.	0 66 per bush.	0 81 per bush.	19 59
Mixed O.P., grain	1	50·0 bush.	.....	0 53 per bush.	.....	21 03
Alfalfa hay, old stand	4	3·25 tons	2·12 tons	6 06 per ton	7 43 per ton	15 58
Alfalfa hay, first year stand	2	3·25 tons	2·25 tons	6 06 per ton	10 94 per ton	12 39
Alfalfa hay, second year stand	1	3·00 tons	.....	6 35 per ton	.....	22 95
Corn, N.W.D.	1	9·00 tons	.....	5 86 per ton	.....	1 24
Field peas	3	8·0 bush.	12·3 bush.	4 18 per bush.	2 34 per bush.	14 07
Alfalfa seed	2	77 pounds	88·5 pounds	0 22 per pound	0 18 per pound	13 29

All ploughing was completed in the fall. Winter wheat was sown October 3, alfalfa and grain April 19, and corn May 10. Alfalfa was cut June 12 and July 23. Corn was harvested August 28.

COMOX, VANCOUVER ISLAND

OPERATOR, J. A. CARTHEW

This station is illustrating in a very practical way that a systematic rotation of crops, good seed and good methods of cultivation increase the returns from the land. The four-year rotation in progress here seems well suited to this dairying section.

A summary of yields and costs is given in the following table:—

OPERATIONS AT COMOX—FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (−)loss per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Corn, Longfellow	5	12·00 tons	14·00 tons	6 33 per ton	5 05 per ton	24 26
Potatoes, Green Mountain	4	7·60 tons	6·37 tons	21 80 per ton	23 65 per ton	36 70
Hay, second year	3	3·05 tons	3·12 tons	11 78 per ton	10 70 per ton	20 50
Hay, first year	4	3·62 tons	2·85 tons	10 90 per ton	10 85 per ton	23 68
Oat hay	2	1·75 tons	2·12 tons	29 55 per ton	23 31 per ton	−15 25

A splendid crop of hay was taken off the station fields. The hay meadows were a picture from early spring until the crop was hauled to the barn. The mixture on this field is fairly wide consisting of four grasses, two clovers and alfalfa sown at the following rates per acre: Timothy, 3 pounds; meadow fescue, 2 pounds; Italian rye, 2 pounds; tall oat, 1 pound; common red clover, 8 pounds; alsike, 2 pounds and alfalfa 2 pounds, making a total of 20 pounds of seed to the acre. This mixture gave early growth, a heavy bottom and considerable second growth.

Ploughing commenced February 14. Grain was sown April 14. Potatoes planted May 12. Hay was cut June 22, corn harvested September 8 and potatoes dug October 9.

COURTENAY, VANCOUVER ISLAND

OPERATORS, HALLIDAY BROS.

Fairly comprehensive fertilizer tests are conducted on this station on six one-half acre plots in duplicate. Plots of this size approximate field conditions fairly closely. Simple ingredients and mixtures at various rates are applied. Certified seed of the Burbank variety is used and hill selection is practised. This station is demonstrating the value of manure, judicious use of commercial fertilizer and better seed.

A summary of yields and costs is given in the following table:—

OPERATIONS AT COURTENAY, FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (−) loss per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Potatoes, Burbank	5	10·17 tons	11·23 tons	15 68 per ton	13 64 per ton	175 04
Artichokes	1	20·08 tons	.....	6 47 per ton	.....	−13 89
Hay, second year	3	2·75 tons	2·58 tons	12 80 per ton	11 53 per ton	12 31
Hay, first year	4	2·25 tons	2·29 tons	14 89 per ton	13 18 per ton	12 55
Oats, Victory	4	51·5 bush.	60·7 bush.	0 83 per bush.	0 75 per bush.	5 74

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Ploughing was completed in February. Fertilizers and lime were spread March 9. Oats were sown April 19 and potatoes planted May 30. Hay was cut June 11. A top dressing of sulphate of ammonia applied on the hay meadow early in March increased the yield of hay considerably. When applied at one hundred and fifty pounds per acre yield was increased 3·20 tons over the check and the one hundred pound application gave 1·20 tons over the check.

The potatoes grown on this station passed inspection for certification. The operators have consistently followed the practice of hill selecting thereby increasing the yield and quality of their product much above the average in the district.

Improved Jerusalem artichokes show promise as a forage and ensilage crop. They made seven feet of growth during the season. The tops provided a splendid soiling crop in the month of October and the tubers made a succulent winter feed for the pigs and cows.

In the commercial fertilizer tests with potatoes the heavy application of mixed materials gave the highest yield and most profitable returns. In estimating profit and loss the potatoes are valued at $20 per ton.

COMMERCIAL FERTILIZER DEMONSTRATION ON THE POTATO CROP AT COURTENAY

Plot	How fertilized per acre	Yield per acre	Increase over check plot	Cost of fertilizer per acre	Profit or loss per acre above plot not fertilized
		tons	tons	$ cts.	$ cts.
1	Nitrate of soda, 50 pounds; Sulphate of ammonia, 150 pounds	9·35	0·38	3 86	3 74
2	Superphosphate, 600 pounds	9·72	0·75	4 06	10 94
3	Suphate of potash, 200 pounds	11·30	2·33	3 35	43 25
4	4–10–10—1,000 pounds	10·34	1·37	11 28	16 12
5	4–10–10—2,000 pounds	12·73	3·76	22 55	52 65
6	Check—not fertilized	8·97	.....	.....	.....
	Duplicate Plot				
1	Nitrate of soda, 50 pounds; Sulphate of ammonia, 150 pounds	8·95	0·11	3 86	−1 66
2	Superphosphate, 600 pounds	8·82	−0·02	4 06	−4 46
3	Sulphate of potash, 200 pounds	8·97	0·13	3 35	−0 75
4	4–10–10—1,000 pounds	10·56	1·72	11 28	23 12
5	4–10–10—2,000 pounds	13·59	4·75	22 55	72 45
6	Check, not fertilized	8·84	.....	.....	.....

DUNCAN, VANCOUVER ISLAND

Operator, B. Young

Work was commenced on this station this year. A four-year rotation is being established and demonstration work with alfalfa will be undertaken. Soil on the station fields is light underlain with gravel. This is a soil building problem. The station will demonstrate the value of manure and humus forming plants to increase the productivity of this soil.

A summary of yields and costs is given in the following table:—

OPERATIONS AT DUNCAN—FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre, 1928	Cost, 1928	Average profit per acre
			$ cts.	$ cts.
Hay, first year	1	3·70 tons	7 99 per ton	29 56
Potatoes, Early St. George	1	5·38 tons	22 97 per ton	37 83

The operator had a splendid crop of alfalfa on a two-acre test plot. The first crop cut on June 20 yielded 9 tons 120 pounds to the acre green weight which reduced in curing to 3 tons 640 pounds of rich alfalfa hay. A second crop of one and a half tons of cured hay to the acre was harvested. The same results can be obtained on other parts of the island. Clean land, good seed and good methods are responsible for the fine returns.

Early St. George potatoes for the early market proved a profitable crop. The potatoes were planted on well prepared land March 27. In estimating profit and loss the potatoes are valued at $30 per ton.

COMMERCIAL FERTILIZER DEMONSTRATION ON THE POTATO CROP AT DUNCAN

Plot	How fertilized per acre	Yield per acre	Increase over check plot	Cost of fertilizer per acre	Profit or loss per acre above plot not fertilized
		tons	tons	$ cts.	$ cts.
1	Check—not fertilized	5·40			
2	Superphosphate—600 lbs.	5·80	0·40	5 22	6 78
3	4–10–10—500 lbs.	4·94	−0·46	7 59	−21 39
4	4–10–10—1,000 lbs.	5·40	0·00	15 18	−15 18

FERNIE, EAST KOOTENAY

Operator, W. M. Dicken

This is a new station on which a four-year rotation is being established. Demonstration work with forage crops and alfalfa and variety tests with potatoes were undertaken this season. This work will be extended next season to include commercial fertilizer demonstration work.

Work on the land commenced April 24. The season was favourable.

A summary of yields and costs is given in the following table:—

OPERATIONS AT FERNIE, FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre, 1928	Cost, 1928	Average profit or (−) loss per acre
			$ cts.	$ cts.
Potatoes, Netted Gem	1	7·55 tons	12 62 per ton	131 18
Mixed grain, O.P.V.	1	68·9 bush.	0 53 per bush.	49 68
Wheat, Marquis	1	13·0 bush.	2 16 per bush.	−8 55
Hay	1	2·50 tons	5 80 per ton	25 50

The crop of oats, peas and vetch on fall ploughed land yielded 12·40 tons per acre green weight in comparison with 7·30 tons from the spring ploughed plot. The fall ploughed land yielded 87·5 bushels of mixed grain to the acre while the spring ploughed area gave 37·9 bushels. This is an outstanding demonstration in favour of ploughing crop land in the fall of the year.

Grain and potatoes were planted early in May. Hay was cut August 4, grain September 12 and potatoes were dug September 22.

FRANCOIS LAKE, CENTRAL BRITISH COLUMBIA

OPERATOR, J. R. STANYER

Ploughing was completed in the fall. Grain was sown May 4, hay cut July 31 and grain harvested August 23. The spring was very dry, which reduced yields below the average.

A summary of yields and costs is given in the following table:—

OPERATIONS AT FRANCOIS LAKE, FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (−) loss per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Alfalfa hay	3	1·00 ton	1·42 ton	8 48 per ton	7 35 per ton	15 42
Hay, second year	1	0·75 ton	.....	13 37 per ton	.....	−1 03
Hay, first year	4	0·75 ton	1·00 ton	13 27 per ton	11 18 per ton	5 02
Wheat, Garnet	3	20·0 bush.	23·3 bush.	1 18 per bush.	1 29 per bush.	8 93

Grimm alfalfa was sown in 1924 on this station. It is withstanding the winters and has produced an average of 1·42 tons to the acre over a three-year period. On all illustration stations in the province two or three pounds of alfalfa to the acre are included in the grass and clover seed mixtures. This improves the bulk and quality of the forage, accustoms the soil to the crop, making it more receptive to later seedings of alfalfa.

KAMLOOPS, THOMPSON VALLEY

OPERATOR, C. R. GREEN

This station is located in the Rose Hill dry-farming area. Wheat is an important cash crop in the district. The Bluestem variety is the most generally grown spring wheat. This soft white wheat is not as acceptable on the market as the hard red varieties. Growers are looking for a wheat which will be adaptable to the district and meet the standard grading requirements. The Illustration Station is assisting the farmers in this problem by conducting tests under field conditions with a number of spring wheats.

At the same time farmers must bear in mind that there is a soil problem in the district which is fundamental to crop production. With continuous grain cropping and much working the soil is inclined to become loose and powdery. The problem is to maintain and build up the body of the soil under a condition of limited soil moisture. A systematic crop rotation which includes grasses, the legumes and barnyard manure will help to do this.

The season has been favourable with a total precipitation of 11·80 inches compared with the ten-year average of 10·37 inches. Wheat was sown April 20 and harvested August 24. Sweet clover was cut July 2. Corn was planted May 17 and harvested September 19.

A summary of yields and costs is given in the following table:—

OPERATIONS AT KAMLOOPS, FIVE-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (—) loss per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Corn, N.W.D.	5	5·20 tons	4·10 tons	8 20 per ton	9 53 per ton	−7 73
Wheat, in rows	2	28·5 bush.	26·3 bush.	0 60 per bush.	0 71 per bush.	13 14
Hay, sweet clover	5	1·53 tons	1·15 tons	9 45 per ton	13 89 per ton	−0 69

A five-year rotation is in progress on this station. Sequence of crops are wheat in rows seeded down to white sweet clover followed by sweet clover hay, summer-fallow, wheat and corn. Satisfactory catches of sweet clover have been obtained by mixing the clover seed with the wheat in the grain box and drilling in the mixed seed in double drills six inches apart with thirty-six inches between the rows. Three cultivations during the season kept weeds in check effectively.

A good stand of alfalfa has been established on a five-acre field on the station this season. The Turkestan and Grimm varieties are in test.

McBRIDE, CENTRAL BRITISH COLUMBIA

OPERATOR, J. T. OAKLEY

The season was unusually wet in McBride district. The station recorded 3·49 inches of rain in June and 1·61 inches in July. The splendid moisture produced a heavy growth of crops. A sharp frost August 11 did considerable damage to garden crops but did not injure the grain.

Systematic soil-building methods with a crop rotation forming the basis of work and field demonstrations with clover and alfalfa are making an impression on neighbouring farmers, judging by the changes that are taking place in their farming practices. Under treatment of this kind crops are showing gradual improvement from year to year.

A summary of yields and costs is given in the following table:—

OPERATIONS AT McBRIDE, FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Hay, O.P.V.	5	2·25 tons	2·05 tons	15 91 per ton	15 50 per ton	1 42
Hay, second year	4	2·75 tons	2·19 tons	5 65 per ton	7 01 per ton	16 22
Hay, first year	5	2·50 tons	1·50 tons	8 01 per ton	10 58 per ton	6 94
Oats, Banner	6	50·0 bush.	57·3 bush.	0 27 per bush.	0 38 per bush.	24 85

Alfalfa plots on the station area and on neighbouring farms gave two good cuts of hay yielding three tons to the acre.

In 1927 a three-quarter block of Chewing fescue was seeded. This year seventy-five pounds of seed were harvested from this plot. This seed graded number one with germination of 93 per cent. This grass looks very promising in central British Columbia. In test plots it has come through four successive winters without injury.

FORAGE CROP TESTS IN CENTRAL BRITISH COLUMBIA

This project was started in 1924. Twenty-five to thirty varieties of clovers, grasses and alfalfas were sown in rows on each of the stations in central British Columbia. In 1925 the work was extended. A number of farmers in each district are now carrying on the test and to more nearly approximate field conditions, plots the width of a drill and one chain in length were established on three of the Illustration Stations.

Clover for seed on a co-operative demonstration field at McBride, B.C., on the farm of C. Harder. This is the first clover seed grown in the McBride district.

Notes are made periodically on germination, comparative growth, strength of stand, winter hardiness and second growth. Useful information has been obtained on the behaviour of the different forage crops under local natural conditions.

Last year a number of varieties of grasses were permitted to mature seed in order to test the quality of the seed. No record was kept of the yield. The following results were received from the seed testing laboratories at Ottawa: Meadow fescue, germination 97 per cent, grade No. 1; Western Rye, 98 per cent, No. 1; Red Top, 93 per cent, No. 1; Orchard grass, 80 per cent, No. 2; Chewing fescue, 93 per cent germination and No. 1 grade.

PRINCE GEORGE, CENTRAL BRITISH COLUMBIA

OPERATORS, A. & J. BLACKBURN

Spring was backward but on the whole the season was favourable with a total of seven inches of rain during the growing period. Eight degrees of frost on August 26 damaged garden crops and reduced the yield of sunflowers, but grain was sufficiently matured to escape injury.

The operators have a dairy herd of forty cows. Crops are selected and a cropping system planned on the Illustration Station with the aim of growing as much of the concentrates, that is the protein, on the farm as possible and growing such a variety of crops as will supply a balanced ration. The basis of

any cropping system where milk production and maintenance of fertility are concerned are the leguminous forage crops. Clover and alfalfa for that reason have an important place.

Clover is giving splendid crops of hay on this station, and this year home-grown seed was used for new seedings. Clover meadows were established in 1922 and in each succeeding year. The six-year record shows an average yield of one and one-half tons with no failures to obtain a stand and no serious loss from winter killing.

An eighty-two bushel crop of Banner oats grown from registered seed on the Illustration Station at Prince George, B.C. A splendid stand of clover and grasses was obtained.

A summary of yields and costs is given in the following table:—

OPERATIONS AT PRINCE GEORGE, CENTRAL BRITISH COLUMBIA—FIVE-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (−) loss per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Hay, first year	6	1·87 tons	1·40 tons	10 12 per ton	10 75 per ton	8 14
Hay, second year	5	1·16 tons	1·50 tons	8 75 per ton	7 67 per ton	12 76
Hay, third year	2	1·13 tons	1·44 tons	10 05 per ton	8 47 per ton	5 57
Field peas	4	12·0 bush.	10·6 bush.	3 41 per bush.	3 23 per bush.	6 85
Oats and peas (matured for ensilage)	6	3·00 tons	4·47 tons	10 08 per ton	8 24 per ton	3 36
Sunflowers (ensilage)	6	3·69 tons	6·62 tons	11 07 per ton	6 26 per ton	−0 15
Oats, Banner	6	82·0 bush.	60·5 bush.	0 27 per bush.	0 27 per bush.	31 35
Demonstration Block—Hay, sweet clover	1	0·62 tons	.....	16 92 per ton	.....	−3 05
Fall wheat, Crail Fife	2	10·0 bush.	12·8 bush.	1 49 per bush.	1 20 per bush.	5 84

Sunflowers and a mixture of peas and oats are grown for ensilage in the proportion of two acres of sunflowers to one acre of peas and oats. The sunflowers are cut when one-fourth to one-half in blossom. The peas and oats mixture are harvested at the same time in a well-advanced stage of maturity. The crops are fed into the silo together, the sunflowers supplying the succulence and the peas and oats the grain.

SALMON ARM, THOMPSON VALLEY

OPERATOR, GEO. PATERSON

This is the first year that illustration work has been conducted at this station. A four-year rotation is in the course of establishment.

A late spring and surface moisture delayed work on the land. On the whole the season was favourable.

The station is located on an old farm recently purchased by the operator. The land is badly infested with weeds. Control and eradication of weeds is one of the main problems at the present time. A systematic rotation featuring hoed and soiling crops with after-harvest cultivation and summer ploughing will be included in the program of work.

A summary of yields and costs is given in the following table:—

OPERATIONS AT SALMON ARM, FOUR-YEAR ROTATION

Crop	Number of years grown	Yield, per acre, 1928	Cost, 1928	Average profit or (—) loss per acre
			$ cts..	$ cts.
Corn N.W.D.	1	8·0 tons	8 17 per ton	—17 40
O.P.V. (ensilage)	1	11·23 tons	3 43 per ton	40 07
O.P.V., hay	1	3·23 tons	10 62 per ton	1 22
Barley, O.A.C. 21	1	29·2 bush.	1 01 per bush.	3 40
Oats, Banner	1	75·0 bush.	0 42 per bush.	35 96

Grain was sown May 9 and corn planted May 22. Forage crops were cut July 27, grain was harvested August 21, and the corn crop put in the silo September 15.

A grass mixture consisting of timothy at 8 pounds to the acre, alfalfa at 5 pounds, common red clover at 5 pounds, and alsike at 2 pounds made a good stand, with the alfalfa showing up strongly.

SALMON VALLEY, CENTRAL BRITISH COLUMBIA

OPERATOR, J. S. JOHNSON

A late spring delayed seeding until May 14. Although moisture was not abundant during the season there was sufficient for a good average crop. Reward, Garnet, and Marquis wheat were tested on this station A threshing outfit was not available in the fall, so the wheat is still in the stack and yields cannot be reported. All varieties made good growth and filled well. Marquis was considerably later than Garnet and Reward, and Reward was slightly earlier than Garnet.

Wheat was sown at the rate of one bushel to the acre and seeded down with clover and grasses. The mixture consists of timothy at 4 pounds per acre; perennial rye, 1 pound; meadow fescue, 2 pounds; common red clover, 4 pounds; alsike, 2 pounds; alfalfa, 4 pounds. The catch of clover and grasses is one of the best in the history of the station. Clover was eight to ten inches high under the grain and uniform over the whole field.

A summary of the yields and costs is given in the following table:—

OPERATIONS AT SALMON VALLEY, FIVE-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (—) loss per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Hay, second year	2	1·50 tons	1·62 tons	6 00 per ton	5 77 per ton	13 66
Hay, first year	3	1·25 tons	1 42 tons	9 21 per ton	7 47 per ton	8 75
Hay, fourth year	1	1·0 ton	.....	8 49 per ton	.....	3 51
O.P.V. hay	1	1·00 ton	.....	26 70 per ton	.....	—13 70

Hay was cut July 18. Garnet and Reward wheats were harvested August 19, giving a growing period of 98 days. Marquis was harvested 108 days after sowing.

Baling clover and timothy hay at Salmon Valley, B.C. When illustration work was started here in 1924 no clover was grown on the farm. In 1928 the operator cut over one hundred acres of clover.

SMITHERS, BULKLEY VALLEY

Operator, GEO. OULTON

Work on the land commenced April 15 with excellent soil moisture conditions. An extremely dry spring seriously reduced the hay crop on the station and in the district. Rain in July stimulated second growth in the grain resulting in uneven ripening and shrunken kernels.

Sweet clover as a pasture plant occupies an important place on this dairy farm. The crop was seeded with oats on a two acre field near the dairy barn. The oat nurse crop provided an evening pasture for the herd of twenty cows and this season the sweet clover supported a larger number of animals.

OPERATIONS AT SMITHERS, FIVE-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit per ac re
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Oats and vetch, grain...	1	70·3 bush.	.....	0 24 per bush.	.....	56 94
Potatoes.....	5	6·70 tons	5·68 tons	5 57 per ton	12 31 per ton	177 07
Hay, third year.....	1	0·79 tons	.....	8 91 per ton	.....	0 57
Hay, second year.....	3	1·20 tons	1·22 tons	8 05 per ton	15 73 per ton	4 28
Oat hay.....	4	5·00 tons	3·17 tons	3 33 per ton	6 29 per ton	23 27

Alfalfa on this Station and in the district has shown up to advantage in this dry season in comparison with clover and timothy. It gave a very good first crop and a stronger second crop following the rains in July. Farmers who grew alfalfa this year are enthusiastic about its behaviour and plan to increase their acreage.

TELKWA, BULKLEY VALLEY

Operator, F. M. Dockrill

Spring work was delayed due to unsettled weather. The timothy and clover hay crop failed due to extremely dry hot weather during May and June. In July 5·66 inches of rain speeded up crop growth with the result that grain and ensilage crops were almost up to average yield.

OPERATIONS AT TELKWA, SIX-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Oats, Victory.....	3	48·0 bush.	74·0 bush.	0 55 per bush.	0 36 per bush.	30 91
Hay, first year.....	2	0·33 tons	1·41 tons	33 99 per ton	20 04 per ton	7 48
Sunflowers.....	4	12·0 tons	9·50 tons	4 35 per ton	5 08 per ton	7 78
Wheat, Marquis.....	5	21·0 bush.	28·5 bush.	1 34 per bush.	0 93 per bush.	20 37

Co-operating with the provincial Department of Agriculture Marquis wheat and Victory oats from registered seed were grown on the Station this year. This seed will be distributed throughout the district in connection with the "better seed" campaign. Over a period of five years Marquis has yielded an average of 28·5 bushels to the acre. Maturing and general quality of the grain has always been good.

Alfalfa produced a good crop on this farm yielding one and one-half tons to the acre in two cuttings compared with one-half ton to the acre from timothy and clover.

VANDERHOOF, NECHAKO VALLEY

Operator, D. Turcotte

Weather in early spring was unsettled and cool. Field work on the Station started May 2. The growing season was dry and crops light.

The regular four-year rotation with clover has been changed to a nine-year alfalfa rotation, giving six years alfalfa, two years grain and one year hoed crop.

Demonstration work with alfalfa and sweet clover is featured on this Station. Turkestan, Cossack, Ontario Variegated and Grimm varieties are in test under

field conditions. Each variety suffered slight injury during the winter but no one variety appears to show outstanding superiority over the others. The Ontario Variegated and Grimm from Canadian grown seed have proved reliable.

OPERATIONS AT VANDERHOOF, NINE-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit per acre
		1928	Average	1928	Average	
				$ cts.	$ cts.	$ cts.
Oats, Victory	5	44·0 bush.	60·7 bush.	0 16 per bush.	0 20 per bush.	38 59
Wheat, Reward	1	19·0 bush.	.....	0 58 per bush.	.....	17 41
Wheat, Garnet	3	16·3 bush.	26·9 bush.	0 83 per bush.	0 65 per bush.	26 90
Alfalfa, first year	3	1·0 ton	1·29 tons	9 18 per ton	17 38 per ton	8 87

The grain crop was one of the poorest in the history of the Station while the clover and alfalfa catch was one of the best in spite of an unfavourable season. This catch has been obtained on land which grew clover and alfalfa before. This is a fine demonstration of the value of soil inoculation and the improvement which may be expected by staying with alfalfa. Where seeded on land which grew alfalfa before it comes strongly with good colour.

FIELD DAYS AND EXHIBITIONS IN BRITISH COLUMBIA

Field days were held on the Illustration Stations in Central British Columbia at which the University of British Columbia, the Dominion Experimental Farm, Summerland and the provincial Department of Agriculture were represented. At all points the Farmer's Institutes co-operated in making the meetings a success. Picnics and social evenings were arranged by local committees in connection with the Field Day program. The first meeting was held at Smithers on July 3 with thirty-seven present. At Telkwa twenty-six attended, at Wistaria thirty-two, Francois Lake, twenty-seven, Vanderhoof ninety-one, Quesnel sixty-eight, Prince George forty-five, Salmon Valley thirty-seven and at McBride twenty-one, making a total of 384 persons. During the year the supervisor addressed the annual Convention of British Columbia Dairymen at Nanaimo, the annual Convention of the C. S. T. A. at Vernon, the Conference of British Columbia Agronomists at Vancouver, two Farmer's Institute meetings and judged at the Provincial Winter Fair at Vancouver.

FORT ST. JOHN, PEACE RIVER DISTRICT

Operator, J. W. Abbott

The season opened later than usual in this district. Work on the land commenced during the first week of May, seeding of the wheat plots on the illustration fields was completed May 12. The growing season until the end of July was unusually dry. The effect of this droughty period was intensified by high southwest winds. Unfortunately, there was a recurrence of the grasshopper menace after a lapse of one year.

The precipitation recorded on the station during May, June, and July was 4·82 inches, 1·55 of which fell on July 30. No frost was registered from May 9

until September 6. The following table indicates the yields obtained from the different varieties and classes of grain:—

Crop	Yield per acre
	bush.
Spring wheat—	
Reward	36
Garnet	36
Fall wheat—Turkey Red	26½
Fall rye	38
Oats (on stubble)—	
Banner	20½
Legacy	22
Peas—Chancellor	20½
Potatoes—Irish Cobbler	207

The cultural treatment given the Reward and Garnet wheat was identical. As in previous tests, Garnet matured one day ahead of Reward, each giving excellent samples of grain. Fall rye has always produced a paying crop at this station, in this locality both fall wheat and fall rye appear to give the best results when seeded not later than the second week in August.

An experiment was conducted in order to test out the comparative value of different grasses and clovers when sown singly and in a mixture. The undermentioned table indicates the grasses and mixtures sown in 1925 and 1926 on summer-fallow land, also the yields, cutting taking place on July 23.

	Yield per acre pounds
Western rye grass	2,640
Brome grass	2,620
Brome and western rye grass	2,710
Brome and sweet clover	2,680
Western rye and alfalfa	2,320
Alfalfa	2,090
Sweet clover	2,360

The grasses gave the best results. Alfalfa in this test suffered from some unknown reason and did not give the expected return. Both western rye and brome seem well adapted to local conditions and have given comparatively good yields in dry seasons. A five acre field of alfalfa seeded in rows has given satisfactory results from a seed producing standpoint. This season, however, a very high percentage of the seed crop was destroyed by grasshoppers and lay on the ground at harvest time. At the time of reporting, this crop has not been threshed, but as an estimate the yield is expected to be about 60 pounds per acre.

REPORT OF THE ILLUSTRATION STATIONS IN ALBERTA

R. E. Everest, B.S.A., Supervisor

THE SEASON

The weather of 1928 was variable in its effect upon crop production in Alberta. Rains were not quite as heavy nor as well distributed as those of the previous year. In 1928 ample moisture was not available until June, while in 1927 May was the rainy month of the year. At the end of May, 1928, the crop situation was very critical because of the drought during the month and the threat of its continuance. The crops drilled on the stubble and even on land ploughed in the spring were suffering for moisture and only the grain on well fallowed land was maintaining normal growth. The rains which began on the 2nd of June were extremely fortunate for the province as they fell just in time to preclude a serious impairment of the crop situation. June continued rainy, some points recording precipitation on nineteen different dates and the majority of Illustration Stations reported rain for more than ten days of the thirty-day period. July followed with a fair amount of moisture and at the beginning of August a wonderful wheat crop was promised for the whole of Alberta.

Hail storms at this time were taking more than their usual toll, and were appearing in wheat districts (such as along the Macleod, Aldersyde line) which have usually escaped the hail storm ravage. The early frosts which occurred on the thirteenth and twenty-third of August were of still more serious consequence and especially in the west and north central portion of the province greatly reduced the yield and quality of the crop. The southeast corner of the province comprising an area bounded on the west and north roughly by a line drawn from Coutts to Drumheller and thence east through Youngstown to the Saskatchewan border was only slightly affected by the low temperatures. Throughout this area of the province, yields and grades of wheat were quite satisfactory. Some of the wheat graded number 1, and the bulk of the crop was within the grades 2 to 4, with yields on the Illustration Station fields up to forty-eight bushels per acre. The weather conditions and results place 1928 among the good crop years.

The harvest and threshing seasons were favourable to uninterrupted work. Many combines were added to the existing harvesting and threshing machinery and the crop was handled in an unprecedentedly short time. The influx of motor trucks for grain transport coupled with the open weather and the new machinery accomplished the most rapid delivery of the crop at the elevator that has yet been known in the west.

In order to depict more clearly the moisture conditions for the crop-year 1928, the autumn precipitation of 1927 appears in tabular form followed by the precipitation records of 1928.

PRECIPITATION, AUTUMN MONTHS, 1927

—	Bindloss	Cessford	Chedderville	Glenwoodville	Grassy Lake	High River	Jenner	Kipp	Orion	Pincher Creek	Wainwright	Whitla	Youngstown	Lethbridge
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
September	1·40	2·04	3·02	5·17	2·95	4·14	1·45	2·85	0·84	6·44	2·18	0·88	2·30	3·29
October	0·47	1·43	0·53	0·95	0·66	1·36	0·66	0·65	1·14	1·40	1·36	1·65	1·16	0·58
November	0·60	2·55	2·00	2·00	1·80	1·80	2·30	3·30	0·85	2·37	0·75	2·00	1·20	2·88
December	0·90	2·70	2·05	1·40	1·00	0·60	1·85	0·95	1·60	1·50	0·30	1·80	1·10	0·96
Totals	3·37	8·72	7·60	9·52	6·41	7·90	6·26	7·75	4·43	11·71	4·59	6·33	5·76	7·71

MONTHLY PRECIPITATION AT STATION POINTS IN ALBERTA—1928

Month	Bindloss	Cessford	Chedderville	Glenwoodville	High River	Jenner	Kipp	Milk River	Orion	Pincher Creek	St. Paul de Metis	Sunnynook	Wainwright	Whitla	Youngstown	Lethbridge
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	0·20	0·55	0·85	1·10	0·60	0·25	0·90	0·80	0·35	1·05	0·05	0·35	0·05	0·20	0·25	0·94
February	0·10	0·95	0·90	0·50	0·50	0·25	0·85	1·00	0·88	0·55	1·20	0·17	0·25	0·80	0·15	0·79
March	Nil	0·10	1·05	0·88	1·40	0·15	1·10	1·00	0·61	1·62	0·91	0·10	0·82	1·70	0·40	0·93
April	1·13	1·45	2·05	0·79	0·70	1·00	0·65	0·80	1·30	1·35	1·17	1·40	0·65	1·10	1·00	1·32
May	0·29	Nil	0·44	0·15	0·05	1·14	0·06	0·45	0·50	0·27	2·65	0·10	0·12	0·95	0·42	0·09
June	4·09	4·04	10·31	7·54	6·14	4·87	7·62	5·07	5·62	7·81	1·27	4·92	1·60	3·81	4·24	6·79
July	1·89	3·38	1·75	4·01	2·11	1·87	4·44	3·70	1·17	2·01	5·04	2·81	2·25	2·67	2·41	3·98
August	0·47	Nil	2·26	3·29	1·76	0·23	1·19	1·72	0·62	4·31	2·10	Nil	0·67	1·28	0·84	1·54
September	Nil	0·10	0·21	0·17	0·08	0·07	0·23	.....	Nil	0·66	1·07	Nil	0·22	0·60	0·59	0·24
October	0·82	1·27	1·23	0·47	0·18	0·54	0·74	0·45	0·20	0·83	0·60	1·30	Nil	0·55	0·55	0·85
November	Nil	Nil	Nil	0·25	0·30	0·25	0·50	0·40	Nil	0·15	0·03	Nil	0·02	Nil	0·15	0·28
December	0·20	3·00	1·25	0·70	0·40	0·25	0·30	.....	0·60	0·33	0·30	Nil	0·10	0·40	Nil	0·33
Totals	9·19	14·84	22·30	19·85	14·22	10·87	18·58	*	11·85	20·94	16·39	11·15	6·75	14·06	11·00	18·07

* Incomplete.

GARNET WHEAT

On the north and west Illustration Stations, Garnet wheat again demonstrated its adaptability to these regions. The early maturing habit of this variety carried the grain to a comparatively safe stage of development while later wheats were injured by the early frosts.

At Pincher Creek, High River, Wainwright and St. Paul de Metis, Garnet was two grades higher than the Marquis.

In the Wainwright and St. Paul de Metis districts the acreage sown to Garnet will be considerably increased for the 1929 crop year. In fact by 1928, Garnet wheat was finding its most suitable districts in the province.

SEED AND POULTRY SALES

Marked progress in the spread of improved seed grain is being made at certain stations. One operator sold seed to thiry-five individual farmers. In 1928, the Alberta Illustration Station operators disposed of 10,961 bushels for seeding purposes.

Sales of eggs from the Illustration Stations for use in hatching receive special attention. At one station the operator who is very well known for his strain of winter egg laying birds, sold 1,260 eggs for setting. From all Illustration Stations in the province 3,797 eggs were sold for hatching in the spring of 1928.

The foregoing figures afford a glimpse of the potent influence that the stations exert for improved grain output and increased production in poultry.

PUBLICITY AND FIELD MEETINGS

Short articles and reports on the stations are furnished the local papers from time to time. The willingness of the town editors to give space to this material is appreciated.

Field meetings were held with satisfactory attendance at Orion, Bindloss, Jenner and High River. The aim was to have a program of merit for these field days in order that the gathering would be attractive and justify the farmers in taking time off to attend.

NUMBER OF STATIONS

Eighteen Illustration Stations were operated in Alberta during 1928. In this period one new station was added, that of St. Paul de Metis, and two transfers of station locations were made, one at Foremost and the other at Milk River. The work of supervision was carried out from the Experimental Station, Lethbridge.

CROP SEASON 1928

In compiling this report the cost of production and profit or loss are based on the rates that are given below:—

COST VALUES

Rent, dry land Stations	8 per cent of land value.
Rent, irrigated Stations	$8.00 per acre.
Use of machinery	$1.35 per acre.
Horse labour (per horse)	8 cents per hour.
Manual labour per hour	Rates prevailing in the district.
Threshing, per bushel	" " "
Binder twine, per pound	" " "

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COST OF SEED

Wheat, per bushel	$1 50
Oats, per bushel	0 95
Barley, per bushel	1 20
Corn, per pound	0 08
Sunflowers, per pound	0 09
Sweet clover, per pound	0 09
Brome grass, per pound	0 09
Western rye grass, per pound	0 07
Alfalfa, per pound	0 40

RETURN VALUES

Wheat, per bushel	$1 00
Oats, per bushel	0 45
Barley, per bushel	0 60
Hay, per ton	10 00
Oat sheaf feed, per ton	10 00
Corn fodder green, per ton	3 50

ALLOCATION COST OF SUMMER-FALLOWING

Two-thirds is charged to the first crop and one-third to the second crop. The yields given for hay and fodder crops are estimated weights.

GENERAL OUTLINE OF ROTATIONS IN USE

Three-year rotation—3 fields.
Summer-fallow.
Wheat on fallow.
Wheat on spring ploughing.

Three-year rotation—3 fields.
Summer-fallow.
Wheat seeded with sweet clover.
Sweet clover hay.

Four-year rotation—4 fields.
Summer-fallow.
Wheat seeded with western rye grass.
Western rye grass hay.
Western rye grass hay.

Two-year rotation—2 fields.
Wheat on corn stubble.
Corn on wheat ground.

An additional field is devoted to alfalfa in rows as a continuous hay crop.

In the three-year rotation including hay, sweet clover has been sown with the wheat crop at the rate of ten pounds per acre. If in the succeeding year the stand of clover was light, oats was sown in as a substitute crop; if the clover was a failure the field would then be ploughed and seeded outright to oats.

Sweet clover has not always been a sure crop in our Alberta work and consequently has called for a close watching in the spring time in order that a field should not be lost to production in its second year from summer-fallow.

Ten-year Rotation—10 fields.
Alfalfa hay.
Alfalfa hay.
Alfalfa hay.
Alfalfa hay.
Alfalfa hay.
Alfalfa hay.
Wheat.
Rowed crop or wheat.
Oats.
Barley seeded with alfalfa.

On the irrigated stations there is in addition to the above rotation a 10 acre well-fenced permanent pasture which is laid out with a border system of irrigation.

BINDLOSS, ALBERTA

OPERATOR, JOHN BARNES

The winter of 1928 left a good depth of snow over this district which remained well into March. Work on the land commenced at the station on April 24. Grain and hay crops made favourable growth throughout the season and gave good returns at harvest. Corn alone was the disappointing crop on the Station. The near frosts of late summer checked this tender plant so that in yield and maturity 1928 was an off year for corn.

June was the high month for moisture, 4·09 inches being received. For the five months, April to August inclusive, 7·87 inches of rain were recorded, slightly less than one half the amount measured during the similar period of 1927.

Wheat was sown at the rate of one and one-quarter bushels on fallow and one bushel per acre on second crop land. Wheat cutting commenced August 13.

TABLE GIVING RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS AT BINDLOSS

Rotation and crops		Yield per acre		Cost		Profit per acre 1925–1928 Average
		1928	Average 1925–28	1928	Average 1925–28	
				$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Summer-fallow	acre			5 53	5 29	
Wheat, Marquis, after fallow	bush.	41·00	28·05	0 39	0 66	17 28
Wheat, Marquis, after wheat	bush.	25·00	20·90	0 50	0 62	12 44
Three-year Rotation—						
Summer-fallow	acre			5 53	5 19	
Wheat, Marquis, after fallow	bush.	40·00	29·80	0 38	0 55	19 40
Sweet clover hay	ton	2·20		3 60		
Two-year Rotation—						
Wheat after corn	bush.	35·60	22·92	0 32	0 66	15 35
Corn, N.W. Dent	ton	5·00	5·25	1 45	3 13	9 45
Demonstration Test Field—						
Alfalfa	ton	3·50		1 68		

On August 24, a field meeting was held on the Bindloss Station. Some eighty farmers from the district were in attendance. In the local Field Crops Competition, Mr. Barnes won first award on his entry of ten acres of Marquis wheat.

The seed grain sales made by this operator amounted to 1,100 bushels.

CESSFORD, ALBERTA

Operator, G. E. Griffith

Work on the land commenced on the station April 27. The early part of the season was very dry. The month of May was without rain. The precipitation for June and July amounted to 4·04 and 3·38 respectively, and for the five month period, April to August inclusive, 8·87 inches of rainfall were received. Wheat was sown at the rate of one bushel per acre. Wheat cutting commenced August 20.

TABLE GIVING RESULTS OF THE SEASON'S WORK AT CESSFORD

Rotation and crops	Yield	Cost	Profit or loss(−) per acre
Three-year Rotation—		$ cts.	$ cts.
Summer-fallow		4 76 per acre	
Wheat, Marquis, after fallow	44·00 bush.	0 33 per bush.	29 48
Wheat, Marquis, after wheat	21·00 bush.	0 56 per bush.	9 24
Three-year Rotation—			
Summer-fallow		4 44 per acre	
Wheat, Marquis, after fallow	39·40 bush.	0 34 per bush.	26 00
Oats, replacing sweet clover	1·00 ton	10 04 per ton	−0 04
Two-year Rotation—			
Wheat after corn	30·00 bush.	0 31 per bush.	20 70
Corn, N.W. Dent	1·00 ton	10 14 per ton	−6 64

CHEDDERVILLE

Operator, A. May

In this outlying westerly district the work started in 1927, was continued in 1928 and further investigations were entered upon. Precipitation over this area is ample but the soil does not appear to be so fertile as the district that lies east towards Innisfail.

A sentence from the 1927 report for Chedderville is, "The production of feed crops for stock is of primary importance to the settlers." The most successful crops in 1928 were sweet clover, western rye grass, oats, brome grass and barley. If stands of sweet clover can be secured this crop may prove useful as a soil improver as well as for feeding purposes. Out of five fields sown to sweet clover in 1927, one was considered worth leaving in 1928. This one field, however, was the most valuable to the operator in feed production of any of the fifteen fields used.

Garnet wheat suffered too much from summer frosts to be of value. Sunflowers were a failure. Alfalfa gave a light cutting of hay. It is aimed to exercise greater care when preparing land for this crop in order to obtain thorough inoculation of the soil for this leguminous plant. This accomplished, the hope of successful crop growth on this soil will be brightened.

The operator, Mr. May, is keenly interested in all the projects and performs the work in a most careful and commendable manner.

GRASSY LAKE

OPERATOR, J. E. JAMES

Spring work commenced on the land at this station on April 27. May was very dry, no rainfall being recorded for the month. On June 2, the drought broke and rain was received on twelve different days throughout the month. These June rains were in time to retrieve the crop situation with the result that wheat yields were excellent. The highest return upon the station was 45 bushels and the average for the farm was 34 bushels per acre.

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS AT GRASSY LAKE

Rotation and crops	Yield per acre		Cost		Profit per acre, 1925-28 average
	1928	Average 1925-28	1928	Average 1925-28	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow ... acre	.....	.....	4 36	5 26	
Wheat, Marquis, after fallow ... bush.	45·0	32·50	0 36	0 53	21 55
Wheat, Marquis, after wheat ... bush.	26	21·55	0 41	0 68	12 59
Three-year Rotation—					
Summer-fallow ... acre	.....	.....	4 04	5 40	
Wheat, Marquis, after fallow ... bush.	36	26·62	0 41	0 68	16 30
Sweet clover hay ... tons	2	1·51	4 42	8 25	5 84
Two-year Rotation—					
Wheat after corn ... bush.	30	23·85	0 33	0 51	16 78
Corn, N.W. Dent ... tons	6	3·87	1 15	.....	4 03

The James brothers, who operate this station, sold seed grain for 1928 to the amount of 800 bushels, ten different neighbours entering into the purchases. A considerable acreage of winter rye was grown in this locality this season, but owing to the drought of May, a very light crop was harvested. The district enjoyed another good wheat crop year in 1928, yields of Marquis wheat up to 45 bushels per acre being obtained on the station fields. This was three bushels short of the 1927 yield of 48 bushels. The average yield of wheat on fallow for nine years, 1920 to 1928 upon this station was 22·25 bushels per acre.

HIGH RIVER

OPERATOR, B. F. KISER

In 1927 as a result of winter setting in by early November, a considerable acreage of that year's crop around High River carried over to the spring of 1928 for threshing. The threshing was completed upon the station fields by April 16. The yields of spring threshed grain were not greatly reduced but the germination power of the wheat kernels was seriously impaired. So weak was the germination of spring threshed samples that this grain was largely discarded for seeding purposes. Marquis wheat from the 1927 crop threshed April 16, 1928, gave a yield of 35·67 bushels, and Garnet wheat 36·50 bushels per acre.

Spring work on the land this season commenced on the station May 1. Growth throughout the season was good and at the beginning of August the promise was for a bountiful harvest. On the 13th of the month a frost occurred that seriously reduced the wheat in grade and to some extent in yield. This date was the earliest frost in Mr. Kiser's experience around High River.

Precipitation for the five months, April to August inclusive, totalled 10·76 inches. Wheat was sown at one and one-quarter bushels per acre on fallow and one bushel per acre on second crop land. Wheat cutting commenced September 4.

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS AT HIGH RIVER

Rotation and crops	Yield per acre		Cost		Profit per acre, 1925-1928 average
	1928	Average 1925-1928	1928	Average 1925-1928	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow			9 07 per acre	8 78 per acre.	
Wheat, Marquis, after fallow	28·0 bush.	36·25 bush.	0 71 per bush.	0 59 per bush.	20 23
Wheat, Marquis, after wheat	22·0 bush.	30·42 bush.	0 81 per bush.	0 62 per bush.	16 18
Three-year Rotation—					
Summer-fallow			9 07 per acre	8 90 per acre	
Wheat, Garnet, after fallow	33·0 bush.		0 60 per bush.		
Sweet clover hay	3·50 tons		4 13 per ton		
Two-year Rotation—					
Wheat, Marquis, after corn and sunflowers	44 bush.	29·50 bush.	0 37 per bush.	0 50 per bush.	18 53
Corn, Northwestern Dent	0·75 ton		16 73 per ton		
Sunflowers	5·0 tons		2 51 per ton		

Sweet clover again proved its value as a fodder crop on this station by giving two cuttings of hay for a total of three and one-half tons per acre.

The average yield of wheat on fallow for nine years, 1920 to 1928, is 30 bushels and of wheat second crop 23 bushels per acre.

A field meeting was held on this station on the afternoon of August 1.

JENNER

Operator, Nels Klein

Work on the land commenced at this station on April 23. The Jenner district was favoured above other points in this part of the province in the amount of rainfall received for May. During this period, 0·42 inches of moisture was recorded. These rains 0·29 and 0·13 coming on the 12th and 13th of the month aided considerably in obtaining a uniform germination. The yields upon the station fields were reduced by about 25 per cent from damage by a hail storm of July 29. This storm did not extend in severity to all the operators' land. On such fields, wheat yielded 40 bushels per acre.

Rainfall for the five month period April to August inclusive, totalled 9·11 inches. Wheat was sown at the rate of one bushel per acre. Cutting commenced on August 14.

TABLE GIVING RESULTS OF THE SEASON'S WORK AT JENNER

Rotation and crops	Yield per acre	Cost	Profit or (−) loss per acre
		$ cts.	$ cts.
Three-year Rotation—			
Summer-fallow		6 37 per acre	
Wheat, Marquis, after fallow	31·0 bush.	0 44 per bush.	17 36
Wheat, Marquis, after wheat	16·0 bush.	0 64 per bush.	5 76
Three-year Rotation—			
Summer-fallow		6 37 per acre	
Wheat, Marquis, after fallow	31·0 bush.	0 44 per bush.	17 36
Sweet clover hay	1·50 tons	3 07 per ton	10 39
Two-year Rotation—			
Wheat after corn	25·0 bush.	0 38 per bush.	15 50
Corn, N.W. Dent	2·0 tons	7 05 per ton	−7 10
Demonstration Test Fields—			
Alfalfa hay	1·50 tons	5 45 per ton	6 82
Western rye grass hay	2·0 tons	3 84 per ton	12 32

From the tabulated results above it can be noted that alfalfa, sweet clover and western rye grass all gave satisfactory returns in cured hay.

The fields of the station are kept particularly neat and clean, and are sown with good strains of registered Marquis wheat, supplied to the operator. Thus Mr. Klein is in a favourable position for supplying high class seed to his neighbours, and was able to sell 700 bushels of seed wheat from his 1927 crop.

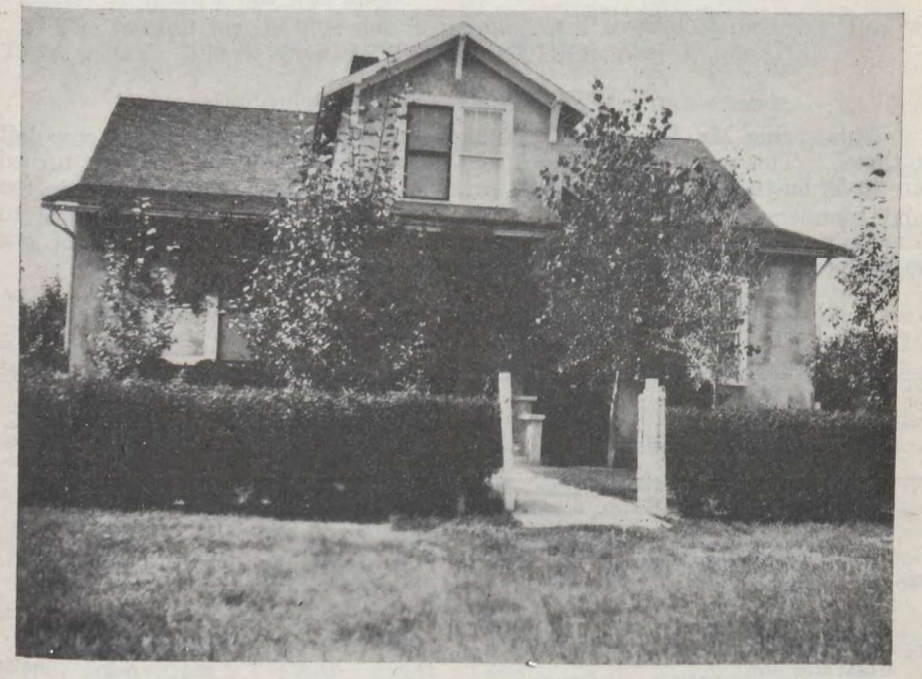
The field meeting held at this Illustration Station on the evening of July 26 was well attended.

The Jenner district, which suffered severly from drought previous to 1927. has in the past two favourable years returned to a position of comfort and cheerfulness.

MILK RIVER

OPERATOR, WM. ALBRECHT

At this point a change of location was made in 1928, from the Cornwall farm, lying five miles east of the town, Illustration Station work being transferred to the farm of Mr. Wm. Albrecht which is one mile south of Milk River. When the rotations are fully established, an attractive station will undoubtedly be the result.



Trees, flowers and a shelter belt add to the appearance and comfort of the farm home on the Illustration Station at Milk River, Alberta.

Bountiful crops prevailed throughout this locality this season. Wheat on the station fields gave a yield up to 48·5 bushels per acre. The rainfall for the five month period, April to August inclusive, totalled 11·74 inches.

A clean crop of Minnesota No. 23 corn on the Illustration Station at Milk River, Alberta.

ORION, ALBERTA

Operator, George Wagar

This spring Mr. Wagar had 100 acres of the 1927 general wheat crop left to thresh. This was done in May after the rush of seeding was over. It turned out 30·50 bushels of wheat per acre, grading number four. Spring work on the land commenced April 21. The rainfall for the five month period April to August inclusive, totalled 9·21 inches. Wheat was sown at the rate of one bushel per acre. Wheat cutting commenced August 6.

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS AT ORION

Rotation and crops	Yield per acre		Cost		Profit per acre 1925-1928 average
	1928	Average 1925-28	1928	Average 1925-28	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow....acre	.....	.....	5 19	4 67	.....
Wheat, Marquis after fallow....bush.	47·50	25·52	0 31	0 73	16 05
Wheat, Marquis, after wheat....bush.	24·60	16·10	0 47	1 36	7 33
Three-year Rotation—					
Summer-fallow....	.....	.....	5 19	4 77	.....
Wheat, Marquis, after fallow....bush.	43·0	24·12	0 33	0 71	14 75
Sweet clover hay....tons	2·0	.....	3 70	.....	.....
Two-year Rotation—					
Wheat after corn....bush.	28·0	16·57	0 33	0 91	10 84
Corn, N.W. Dent....tons	2·50	4·0	4 14	.....	3 65
Demonstration Test Field—					
Western rye grass hay....tons	1·33	.....	4 31	.....	.....

The operator from his autumn 1927 threshed grain made creditable sales for the spring's seeding. Thirty-one farmers bought seed from him to the amount of 1,885 bushels of Marquis wheat, and 260 bushels of Victory oats. Though a side line, the sales of poultry stocks from Mr. Wagar's well kept and carefully selected flock of Barred Rocks stands out in an equally favourable light. For hatching purposes in 1928, eggs were sold to the number of 1,260 as well as five cockerels for breeding purposes.

Mr. Wagar, the operator at Orion, is extremely careful to make available to the community results or stocks that may accrue to him in the conduct of Illustration work upon his farm. This attitude on the part of the operator, together with his sound judgment and good work, places the Orion station as one that is functioning to near the maximum of its possible benefits to the locality served.

PINCHER CREEK, ALBERTA

Operators, Sandgren and Carlson

Snowfalls were frequent in this district until April 20, consequently work on the land was delayed. Upon the station fields, tillage operations commenced May 9. The station fields at Pincher were subject to quite local conditions of hail and therefore the results given are not of value as being representative of the Pincher Creek district. Hail was recorded on June 21 and 24. These storms were of twelve and two minutes duration. Considering the appearance of the fields following these disasters a remarkable, though far from complete, recovery in grain crops was made.

The rainfall for the five month period, April to August inclusive, totalled 15·75 inches. Wheat cutting commenced on September 1.

RESULTS OF THE SEASON'S WORK AT PINCHER CREEK

Crops	Yield per acre	Cost	Profit or (−) loss per acre
		$ cts.	$ cts.
Wheat, Marquis after fallow	20·20 bush.	0 92 per bush.	1 62
Wheat, Marquis, after wheat	15·0 bush.	1 20 per bush.	−3 00
Wheat, Garnet, after wheat	12·0 bush.	1 41 per bush.	−4 92
Winter wheat, Kharkov	18·0 bush.	0 97 per bush.	0 54
Oats, Banner on clover sod	69·0 bush.	0 25 per bush.	13 80
Alfalfa hay	1·60 tons	5 07 per ton	7 89
Sweet clover hay	1·20 tons	9 44 per ton	0 67
Timothy hay	0·80 tons	11 24 per ton	−0 99

Seed sales by the operator, Mr. Carlson, from the 1927 crop for use in the spring of 1928 were large, a total of 2,452 bushels of wheat was sold to twenty-five farmers of the district. Seed cleaning machinery has been an important consideration with the operators at this point, who farm on a large scale, hence they are so equipped that only well-cleaned and well-graded wheat is put out for seeding purposes.

Mr. Carlson states that the hail and early snow storms were quite restricted in the area visited.

Outside of the hailed sections, wheat yields in excess of fifty bushels per acre were harvested. Consequently those tabulated above are not a true index to Pincher Creek conditions for this season.

ST. PAUL DE METIS, ALBERTA

OPERATOR, HECTOR THERRIEN

St. Paul itself is a good sized town and is the centre of quite a well-settled and progressive district that lies thirty miles north and ninety miles east of Edmonton. A good percentage of the St. Paul community settlement came from Quebec. Six miles west of the town a portion of an Indian Reserve has been taken up under the British Family location scheme that was active in 1927.

Following an inspection of the St. Paul de Metis district, it was decided to establish an Illustration Station upon the farm of Hector Therrien, two miles west of the town. Fields were laid out and work started in the spring of 1928. It was not possible to fully establish the work proposed for this station this season, consequently the results are omitted from the report for this the initial year. Summer frost is a danger that is recognized in this locality, therefore, an early maturing crop is desirable. Garnet wheat at this early stage of development has made for itself a favourable reputation in the St. Paul district.

SUNNYNOOK, ALBERTA

OPERATOR, ROBERT MONTGOMERY

Work on the prairie breaking of 1927 consisted of sowing three five-acre fields with registered Marquis wheat, five acres to registered Banner oats, with a fifth field divided, two and one-quarter acres being used for corn and two and three-quarter acres summer-fallowed. In the early summer four more fields were broken out which completes the area required for future station work.

Wheat when combined, gave a yield of 23 bushels and Banner oats 45 bushels per acre. The purpose in part of the 1928 cropping was to secure pure seed of wheat and oats from this virgin soil.

WAINWRIGHT, ALBERTA

OPERATOR, GEORGE C. BOYD

Work on the land commenced at this station, May 4. Growing conditions were favourable for the months of June and July. Pronounced frosts in August reduced the yield and grade of grain crops considerably. In spite of this setback a large percentage of the farmers in the district harvested a paying crop.

Wheat on the station was sown at one and one-quarter bushels and oats at the rate of two bushels per acre. The rainfall for the five month period, April to August inclusive, totalled 5·29 inches. Grain cutting was started on August 23.

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS AT WAINWRIGHT

Rotation and crops	Yield per acre		Cost		Profit per acre 1925-1928 average
	1928	Average 1925-1928	1928	Average 1925-1928	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow	.....	.....	7 22 per acre	6 49 per acre	.....
Wheat, Marquis, after fallow	22·50 bush.	30·67 bush.	0 72 per bush.	0 61 per bush.	17 93
Wheat, Marquis, after wheat	22·0 bush.	26·65 bush.	0 69 per bush.	0 61 per bush.	15 41
Four-year Rotation—					
Summer-fallow	.....	.....	6 79 per acre	6 70 per acre	.....
Wheat, Marquis, after fallow	15·60 bush.	27·80 bush.	0 98 per bush.	0 69 per bush.	15 51
Western rye grass hay (1st year)	2·40 tons	2·45 tons	4 08 per ton	4 05 per ton	14 60
Western rye grass hay (2nd year)	2·20 tons	1·65 tons	3 44 per ton	4 45 per ton	9 39
Three-year Rotation—					
Summer-fallow	.....	.....	6 04 per acre	6 33 per acre	.....
Wheat, Reward, after fallow	22·60 bush.	.....	0 68 per bush.	.....	.....
Sweet clover hay	1·60 tons	1·60 tons	5 76 per ton	6 10 per ton	7 01
Two-year Rotation—					
Wheat after sunflowers	20·0 bush.	25·20 bush.	0 62 per bush.	0 50 per bush.	16 17
Sunflowers	4·0 tons	4·87 tons	2 51 per ton	3 11 per ton	6 79
Demonstration Test Fields—					
Alfalfa hay	1·50 tons	.....	5 27 per ton	.....	.....
Banner oats	46·41 bush.	.....	0 28 per bush.	.....	.....

Garnet wheat gave a good yield at this station. This is the third year in succession for a favourable record of this wheat in the district.

Mr. Boyd had planned to seed one-quarter section of spring ploughing to Garnet wheat in 1928. At seeding time the fact that this land had grown Marquis in 1927 led him to change from Garnet and sow again with Marquis. After threshing by comparing the performance of the two wheats upon other fields, Mr. Boyd estimated that he had lost one thousand dollars by using Marquis in place of Garnet on this one hundred and sixty acres.

The operator at Wainwright has a well-established reputation for good grain. For this spring's seeding, thirty-five farmers of the district purchased seed from Mr. Boyd. The sales were as follows: Marquis, 475 bushels; Garnet, 275 bushels; O.A.C. No. 21 Barley, 174 bushels and Banner oats, 1,610 bushels. Twenty-five hundred and thirty-four bushels of grain for seeding purposes, from one farm in a season, is a very creditable accomplishment in the spread of good seed stocks for the improvement of output in the district.

The nine year average yield of wheat on fallow for 1920 to 1928, upon this station was 29·02 bushels, and of wheat, second crop over the same period, 24·10 bushels per acre.

WHITLA, ALBERTA

Operator, R. H. Babe

Work on the land commenced at this station April 26. Moisture throughout the summer was sufficient to keep grain crops going along favourably. It is pleasing to record that in this sometimes droughty district a good crop was threshed. The station yields for 1927, while good, were exceeded this year.

Wheat was sown at the rate of one bushel per acre. The rainfall for the five month period, April to August inclusive, totalled 9·81 inches. Wheat cutting started on August 16.

83298—6½

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS AT WHITLA

Rotation and crops	Yield per acre		Cost		Profit per acre 1925-1928 average
	1928	Average 1925-1928	1928	Average 1925-1928	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow			6 04 per acre	5 94 per acre	
Wheat, Marquis, after fallow	37·60 bush.	23·70 bush.	0 38 per bush.	0 69 per bush.	12 56
Wheat, Marquis, after wheat	19·50 bush.	14·52 bush.	0 62 per bush.	1 04 per bush.	3 59
Three-year Rotation—					
Summer-fallow			5 55 per acre	5 94 per acre	
Wheat, Marquis, after fallow	40 00 bush.	23·10 bush.	0 37 per bush.	0 74 per bush.	11 73
Sweet clover and oat hay	1·67 tons		0 95 per ton		

The average yield of wheat on fallow for the nine year period from 1920 to 1928, on this station was 15·12 bushels per acre.

YOUNGSTOWN, ALBERTA

OPERATOR, ROBERT L. COAD

Work on the land commenced at this station April 25. The forepart of the season was too dry for a vigorous growth of crops, no considerable rain was received until June 7. A combination of soil and climatic conditions held grain back from making its best development and at threshing only a moderate yield was obtained.

Wheat was sown at one bushel and oats at one and one-half bushels per acre. The rainfall for the five month period, April to August inclusive, totalled 8·91 inches. Wheat cutting started on August 15.

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS AT YOUNGSTOWN

Rotation and crops	Yield per acre		Cost		Profit per acre 1925-1928 average
	1928	Average 1925-1928	1928	Average 1925-1928	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow			4 63 per acre	5 19 per acre	
Wheat, Marquis, after fallow	17·75 bush.	20·37 bush.	0 73 per bush.	0 64 per bush.	10 12
Wheat, Marquis, after wheat	13·0 bush.	15·82 bush.	0 76 per bush.	0 78 per bush.	5 92
Four-year Rotation—					
Summer-fallow			5 40 per acre	5 30 per acre	
Wheat, Marquis, after fallow	24·0 bush.	17·10 bush.	0 58 per bush.	0 70 per bush.	7 28
Western rye grass hay (1st year	2·0 tons	1·62 ton	3 74 per ton	6 06 per ton	7 75
Three-year Rotation—					
Summer-fallow			4 62 per acre	5 99 per acre	
Wheat, Marquis, after fallow	19·0 bush.	20·87 bush.	0 68 per bush.	0 64 per bush.	10 12
Sweet clover and oat hay	0·75 ton	1·50 tons	15 46 per ton	8 52 per ton	4 85
Demonstration Test Field—					
Victory oats	42·0 bush.		0 30 per bush.		

The Youngstown district is coming back in point of production but not in the abundant crops of the past two years enjoyed by surrounding localities.

The average yield of wheat on fallow for nine years, 1920 to 1928, on the Station is 17·02 bushels and of wheat second crop over the same period, 12·63 bushels per acre.

Seed and poultry sales were made by the Operator in the spring of 1928 to an amount that would exert an influence for good on the quality of local production.

The Youngstown community is putting forth commendable efforts towards improvement. The District Builders Branch of the town Board of Trade, a summer fair, the standing Field Grain Competitions and a winter Seed Fair: all are steps forward to a quickened interest and increased knowledge for the work on the individual farms.

IRRIGATED STATIONS

GLENWOODVILLE, ALBERTA

OPERATOR, GLEN WOOD

For the second year in succession a wet season was experienced over the United Irrigation district in 1928. The April to August precipitation amounted to 15·78 inches. This heavy summer rainfall was exceeded by only one of our Illustration Station points. This was at Chedderville in the Rocky Mountain House territory.

As a result of the copious rains over the Glenwood fields Irrigation water was only employed once and this was upon alfalfa in the month of May when 0·15 of precipitation was recorded for the thirty-one days. The station at Glenwoodville had been so saturated with water throughout the previous autumn and winter that spring work was difficult and delayed. Upon the station the first cutting of alfalfa was made on July 23, and the second cutting on September 4.

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS FOR ALFALFA AT GLENWOODVILLE

Crop	Yield per acre		Cost		Profit per acre 1925-1928 average
	1928	Average 1925-1928	1928	Average 1925-1928	
			$ cts.	$ cts.	$ cts.
Alfalfa hay	3·39 tons	3·06 tons	5 23 per ton	5 76 per ton	12 83

Wheat, oats and barley upon the station were an unprofitable crop. In four years' results at Glenwoodville, wheat has shown a profit in two seasons. Oats and barley have not to the present reached the profit column. The ten-acre field of permanent pasture in 1928 was not required for grazing owing to the abundance of native grasses on wild land. This pasture area was cut for hay and returned a yield of 2·21 tons at a profit of $10.17 per acre. An observation on the ten-year rotation is that as the alfalfa fields are ploughed up, the weeds with which the land was infested are gradually being subdued.

KIPP, ALBERTA

OPERATOR, C. M. NICOL

One irrigation was given the alfalfa and barley fields and three applications of water were made on the permanent pasture during the season. May, with a rainfall of 0·06 inches, was a disturbing month and prompted activity in the use of irrigation water. June and July each had a good rainfall and very little

more irrigation water was required on other than the permanent pasture field. The first cutting of alfalfa was made on the 27th of June and the second cutting on August 7.

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF FOUR YEARS AT KIPP

Crops	Yield per acre		Cost		Profit or loss (−) per acre 1925-1928 average
	1928	Average 1925-1928	1928	Average 1925-1928	
			$ cts.	$ cts.	$ cts.
Alfalfa	2·25 tons	2·95 tons	9 39 per ton	7 14 per ton	9 55
Wheat, Marquis	18·50 bush.	.....	1 36 per bush.	.....	.....
Oats, Banner	39·50 bush.	51·24 bush.	0 48 per bush.	0 44 per bush.	4 63
Barley, O.A.C. No. 21	20·0 bush.	23·50 bush.	1 12 per bush.	1 13 per bush.	−11 15
Corn, Minnesota No. 23	3 0 tons	.....	7 01 per ton	.....	.....

Throughout the summer the ten acre field of permanent pasture gave real service from a stock grazing view point. Twelve Holstein heifers lived in this field for 127 days. These dairy animals feeding on the green meadow made a pretty picture easily seen by all who travelled the Red Trail.

PROGRESS

The year 1928 has marked another advance in the work of the Illustration Stations of Alberta.

Lines of particular progress may be summarized as follows:—Improvement of poultry in the station neighbourhood. A marked increase in the spread of good seed through sales by the operators in their respective districts. Larger attendance at Field Meetings, and a greater influence of the operators in their individual localities, evidenced by the number of neighbours who confer with them in regard to Illustration Station methods and work.

REPORT OF THE ILLUSTRATION STATIONS IN SASKATCHEWAN

E. C. Sackville, B.S.A., Supervisor

During the year 1928 there were twenty-eight Illustration Stations in operation in different districts in the province of Saskatchewan. Twenty-two of these were under the supervision of the Swift Current Experimental Station. Four in the eastern part of the province were supervised by the Experimental Farm at Brandon, and the Empress Station, close to the border of Alberta, by the Lethbridge Station. The following report deals with those Stations supervised by the Swift Current Experimental Station. During the year three new stations were located and work started at the following places: Meadow Lake, Eston, and Melville.

THE SEASON

Spring was fairly late in opening and during the early part was cool and dry with some heavy winds. Some damage resulted from soil drifting on two of the Stations, but this was not general. During June and July there was a heavy rainfall in most of the districts where Illustration work is carried on. This caused a quick growth of all crops, but particularly the grain. An early frost occurred on the night of August 22 which caught the wheat in most parts of the Province before it was fully mature. This caused considerable loss in

both grade and yield, but especially in the grade. This damage was most general and severe in the north part of the province. On the Illustration Stations and other farms in these districts where early varieties of wheat were used and early seeding practised much of this loss was avoided. It was a year in which these early varieties effected a real saving. Oats and barley gave a good yield of fair quality grain where they were sown in fairly good time. Hay crops gave about an average yield, though in a few cases there was a poor growth, owing to the prolonged drouth during the early part of the season. Conditions were unfavourable for the corn crop. The weather was fine during the fall and harvesting and threshing were completed in good time.

The record of the rainfall for the season from the opening of spring until the end of the year is given in the following table:—

RAINFALL APRIL-NOVEMBER FOR 1928, IN INCHES—SASKATCHEWAN

Station	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
Avonlea	.....	0·65	4·10	0·70	.....	.....	.....	.....	.....
Davidson	0·07	0·46	6·16	2·64	0·04	.....	0·41	.....	9·78
Fox Valley	.....	0·30	4·42	0·93	0·70	.....	0·34	.....	6·69
Guernsey	0·20	0·82	5·22	2·93	0·23	.....	0·30	.....	9·70
Herbert	0·29	0·44	3·01	1·96	0·81	0·05	0·27	.....	6·83
Kindersley	0·15	1·03	2·24	3·93	1·28	0·15	0·10	.....	8·88
Lloydminster	.....	2·15	2·45	0·89	0·78	0·10	.....	.....	6·37
Loverna	.....	1·41	2·73	2·79	1·12	0·35	.....	.....	8·40
Marcelin	.....	.....	2·10	1·15	1·35	0·10	0·15	.....	.....
Meadow Lake	.....	0·45	2·47	2·31	1·58	1·53	.....	.....	8·34
Melville	.....	.....	3·90	1·22	0·46	0·39	.....	.....	.....
Meota	.....	0·21	4·56	2·57	0·57	.....	0·13	.....	8·04
Parkbeg	.....	0·66	5·33	2·39	0·25	0·34	0·56	.....	9·53
Piapot	.....	0·32	5·91	1·75	1·08	.....	0·35	.....	9·41
Radville	.....	0·29	4·52	2·99	2·03	0·27	0·28	.....	10·38
Riverhurst	.....	0·46	4·00	2·04	0·29	0·15	.....	.....	6·94
Shaunavon	.....	1·36	4·28	2·69	1·08	0·25	.....	.....	9·66
Spruce Lake	.....	0·58	3·15	1·10	0·18	0·35	0·11	.....	5·47
Trossachs	.....	0·21	4·45	3·57	0·69	0·09	.....	.....	9·01
Tugaske	.....	0·50	6·46	2·28	0·15	.....	0·74	.....	10·13
Weyburn	.....	0·30	4·15	3·34	1·36	.....	0·50	0·10	9·75

In order to arrive at the cost of producing crops, the following charges are used, and in calculating profits, the following return values:—

COST VALUES

Rent of land per acre	8 per cent interest on land value.
Taxes	At rates charged.
Use of machinery, per acre	$1 35.
Horse labour	8 cents per hour.
Manual labour	Rates prevailing in the district.
Threshing	" " "
Binder twine	" " "

COST OF SEED

Wheat, per bushel	$1 50
Oats, per bushel	0 60
Barley, per bushel	0 75
Fall rye, per bushel	0 80
Peas, per bushel	3 00
Corn, per pound	0 08
Sunflowers, per pound	0 08
Sweet clover, per pound	0 12
Western rye grass, per pound	0 07
Brome grass, per pound	0 07
Alfalfa, per pound	0 30

RETURN VALUES

Wheat, per bushel—	
No. 1 Northern	1 00
No. 2 Northern	0 95
No. 3 Northern	0 90
No. 4	0 84
No. 5	0 73
No. 6	0 58
Feed	0 52
Oats, per bushel	0 40
Barley, per bushel	0 55
Fall rye, per bushel	0 80
Peas, per bushel	3 00
Hay, per ton	10 00
Oat sheaf feed, per ton	10 00
Corn and sunflower silage, per ton	3 00
Corn, fodder, per ton	6 00

Two-thirds of the cost of summer-fallowing is charged to the first crop and one-third to the second crop. The yields given for hay and fodder crops are estimated weights.

MEETINGS

Field meetings were held this year during the last week of July and the first week of August on eight of the Illustration Stations as follows: Fox Valley, Loverna, Lloydminster, Spruce Lake, Meota, Kindersley, Guernsey and Tugaske. The superintendent of the Swift Current Experimental Station assisted the supervisor at those meetings.

AVONLEA

OPERATOR, J. W. MILLER

Spring opened later than usual and the first seeding on the Station was done May 8. The spring was dry until June and during this month there was a little over four inches of rain well distributed. July gave 0·70 inches. Though the rainfall for the growing season was not heavy, yet it came when most needed with the result that a good crop of both grain and forage crops was produced. The wheat was well advanced and mostly cut when the frost came and did not suffer much damage, grading No. 2. Corn was damaged to some extent. The first cutting of wheat was started August 10.

SUMMARY OF YIELDS, COST AND PROFIT PER ACRE

	Yield per acre, bushel or ton		Cost per bushel or ton		Profit per acre	
	1928	Average 5 years	1928	Average 5 years	1928	Average 5 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	7 22*	7 61*	.....	.....
Marquis wheat	28·0	18·4	0 62	0 63	9 24	8 26
Marquis wheat	16·0	.....	0 74	.....	3 36	.....
N.W. Dent corn	5·0	4·0	2 83	3 48	0 85	0 05
Wheat (seeded)	22·0	13·8	0 50	1 06	9 90	6 26
Hay—sweet clover	2·0	1·8	3 72	4 63	12 56	10 94
western rye	1·0	1·0	5 92	7 80	4 08	3 47
Average for rotation	.....	.....	.....	.....	5 71	.....
Three-year Rotation—						
Fallow	.....	.....	7 22*	.....	.....	.....
Marquis wheat	30·0	.....	0 56	.....	11 70	.....
Marquis wheat	20·0	.....	0 68	.....	5 40	.....
Average for rotation	.....	.....	.....	.....	5 70	.....
Demonstration Test Field—						
Sweet clover and brome	2·0	.....	3 69	.....	12 62	.....
Western rye and alfalfa	2·0	.....	3 88	.....	12 23	.....

*Cost per acre. All wheat graded No. 2 Northern.

Wheat following corn gave a yield approximating the fallow this year and a good quality. Corn usually gives a fairly good yield on this Station and though germination was delayed it was a promising looking crop until the frost of August 22 which caused a good deal of damage.

The operator sold 600 bushels of his best quality Marquis wheat to neighbouring farmers for seed this spring.

DAVIDSON, SASKATCHEWAN

Operator, Reuben Lloyd

Spring was backward in this district and the first seeding of wheat was done May 3. Though the early part of the season was dry with a light rainfall during April and May, June was quite a wet month with 6·16 inches which was very favourable for growth. July gave 2·46 inches. The result was that all crops came through well and gave good yields, particularly the grain. Hay crops were about average where the stand was satisfactory. There was a frost on the night of August 22 before the wheat was ripened and this caused considerable damage reducing the grade on the station fields to No. 3 Northern. Harvesting of barley was started August 25 and wheat August 28.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT DAVIDSON

Rotations and crops	Yield per acre bushel or ton		Cost per bushel or ton		Profit per acre	
	1928	Average 3 years	1928	Average 3 years	1928	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	7 07*	7 49*	.....	.....
Wheat	37·5	.....	0 51	.....	14 62	.....
Oats, fallow this year	.....	.....	7 07*	.....	.....	.....
half fallowed	.....	.....	7 07*	.....	.....	.....
half oats, triple rows	1·0	.....	9 62	.....	0 38	.....
Wheat, seeded down	34·0	26·5	0 37	0 54	18 02	16 33
Hay, stand too thin, land fallowed	.....	.....	7 07*	.....	.....	.....
Three-year Rotation—						
Fallow	.....	.....	7 07*	6 89*	.....	.....
Wheat	.....	.....	.....	.....	.....	.....
Barley, O.A.C. No. 21	45·0	42·5	0 31	0 33	10 80	12 20 (2 yr.)
Demonstration Test Field—						
Alfalfa	1·2	1·3	5 07	5 74	5 92	5 11 (2 yr.)

* Cost per acre.

The results obtained from the work on this station this year were quite encouraging. It would seem that the large amount of summer-fallowing which has been done, also the turning under of the grass and clover stubble is beginning to show a beneficial effect on the soil and in weed control. The wheat showed a healthy crop with apparently no damage from root rot. The favourable moisture supply this year was no doubt the most important factor. It is a rather interesting fact that the field of wheat which gave the heaviest yield was one that was given a coat of manure four years ago.

The operator of this station sold 80 bushels of Banner oats and 60 bushels of O.A.C. 21 barley for seed last spring. This was distributed among five

farmers in the district. The wheat from the previous year's crop was too much shrunken by the rust to make good seed. There will be, however, a fair quantity of good seed for sale from this year's crop.

Mr. Lloyd has quite a large flock of pure-bred Barred Rock poultry and this year distributed through sales in the district, 30 cockerels for breeding purposes as well as a number of setting eggs.

ESTON

Operator, T. J. Johnson

Illustration work was started here this spring on the farm operated by Mr. T. J. Johnson. The land selected is 1½ miles east of Eston on the northeast of section 22, township 25, range 20, west of the 3rd meridian. The soil is a heavy greyish brown clay tpyical of a large area in this part of the province. This land had been fallowed the previous year and in order to make a start three varieties of wheat: Marquis, Garnet and Reward were sown. The following hay crops were seeded with this wheat: western rye grass, brome, alfalfa and a mixture of alfalfa and western rye. There was not much rainfall during the early part of the season, but during June and July there were some good rains which came at the right time and were sufficient to produce a good crop. The frost of August 22 did some damage to Marquis and also a slight damage to the Reward, but Garnet was so far advanced, it was not affected. The grade of Garnet was No. 2-3, Reward 3-4 and Marquis 4-5. The yields of these wheats could not be fairly compared, as they were all left for the Combine and cut the same day. This was unfavourable to the earlier varieties and Garnet particularly lost a good deal by shelling.

The new seedings of hay all made a fairly uniform catch and seem to have established themselves.

It is planned to extend this work next year and introduce some crop rotations. The seed raised this year will be used for seeding on the station next spring.

FOX VALLEY

Operator, Chris. Mutschler

The first work on the land at the station commenced April 24 and first seeding April 26. The early part of the season was dry and cool with considerable wind though there was not much damage from soil drifting. During June there was a good rainfall of 4·42 inches and from the opening of spring until August 1 a total rainfall of 5·65 inches. While this is not a heavy rainfall, yet it came at the time most needed. The result was that all grain crops except fall rye made favourable growth and gave good yields, particularly the wheat and oats on fallow. Hay crops on the whole gave a good average yield though the growth was slow in the spring. Corn was only a fair crop and was damaged by the frost of August 22. The wheat and oats were well advanced and cut when the frost came and made a good quality grain. Harvesting was started on August 6 when fall rye was cut. First wheat was cut August 15.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS

Rotation and crops	Yield per acre bushel or ton 1928	Cost, per bushel or ton 1928	Profit or loss per acre 1928
		$ cts.	$ cts.
Wheat continuously	17·5	0 62	5 77
Two-year Rotation—			
Fallow		7 02*	
Wheat	37·5	0 51	16 50
Fallow		7 02*	
Oats	81·3	0 23	13 82
Fallow		7 02*	
Fall rye	16·0	0 96	−2 56
Seven-year Rotation—			
Wheat (seeded down)	36·0	0 47	17 28
Hay	1·5	6 55	5 18
Corn	2·0	5 59	0 81
Wheat	32·5	0 37	18 85
Fallow		7 02*	
Fall rye killed, oats seeded for green feed	1·5	8 65	2 02
Fallow		7 02*	
Average for rotation			6 31
Six-year Rotation—			
Barley (seeded down)	32·5	0 30	3 25
Sweet clover	1·5	6 33	5 51
Fallow		7 02*	
Wheat	42·0	0 43	21 84
Spring rye	37·0	0 44	13 32
Corn	1·5	6 39	0 59
Average for rotation			7 22
Three-year Rotation—			
Fallow		7 02*	
Wheat	31·25	0 52	13 44
Wheat (sown on fallow this year)			
Wheat	31·25	0 52	13 44
Demonstration Test Fields—			
Alfalfa, Grimm Half (In rows 3 feet sown solid)	1	6 99	3 01

*Cost per acre. All wheat graded No. 2 Northern.

A beginning was made with Illustration work here last year, but it was only in preparation for the crops and rotations which were started this year in a systematic way.

By reference to the summary table above it will be noted that there are five cropping systems under test:—

(1) Continuous cropping to wheat.

(2) Wheat, oats and fall rye grown in a two-year system whereby these crops are sown each year only on summer-fallow.

(3) A three-year system whereby two crops of wheat are grown after the summer-fallow, one directly after fallow and one on the stubble land.

(4) A seven-year system with the crops and fallows in the folowing order: Wheat, hay, corn, wheat, fallow, fall rye, fallow. The hay is a mixture of western rye grass and sweet clover and is seeded with the wheat. The fall rye is seeded on fallow the latter part of August.

(5) A six-year system as follows: Corn, barley, hay, fallow, wheat, spring rye. Sweet clover hay is used here seeded with the barley as a nurse crop.

In addition to these different rotations there is a field seeded to alfalfa, two acres of which is in rows three feet apart and two acres sown the regular way. This was sown last year alone on stubble land, spring ploughed and a satisfactory catch obtained. It will be left down for a number of years if the stand is maintained.

A field meeting was held on this farm for the first time on the afternoon of July 25 and though the attendance was not large, a very keen interest was shown by those present in the work under way.

An extension was made to the work of this station this year for the purpose of growing wheat on the two-year system of wheat, summer-fallow, wheat always being sown only on summer-fallow. Half of this quarter was summer-fallowed this year by four different methods, as follows:—

(1) Ploughed and surface worked as necessary to control weeds.
(2) Surface worked only (not ploughed).
(3) Surface worked until July 20, then ploughed.
(4) Fall ploughed and surface worked the following season as necessary.

GUERNSEY

Operator, C. H. Snider

Spring opened in fair time and the first work on the station started the last days of April and seeding of wheat May 1. There was a good rainfall during the growing season but the early part of the spring was dry and windy and there was no heavy rain until the first week of June. There was some damage from soil drifting particularly to the fall rye which never recovered. The rainfall for the four months April to August was 9·37 inches, 5·22 inches of which came in June and for the whole season there was 9·90 inches. All crops except corn made favourable growth until the frost of August 22 which did considerable damage to the grain. The corn was also frozen down. Harvest was started about August 16 when Garnet wheat was cut. The weather was very favourable during harvesting and threshing.

A well cultivated summer-fallow on the Illustration Station at Guernsey, Saskatchewan, where sow thistle control is important.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT GUERNSEY

Rotations and crops	Yield per acre, bushel or ton		Cost per bushel or ton		Profit or loss per acre	
	1928	Average 3 years	1928	Average 3 years	1928	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Four-year Rotation—						
Wheat (seeded)	24·25	17·0	0 72	0 95	11 64	4 81
Hay (rye grass and sweet clover)	2·75	1·9	4 44	4 93	15 29	10 91
Banner Oats	41·75	46·75	0 32	0 29	3 34	7 81 (2 yr)
Fallow	.....	.....	7 16*	8 12*	.....	.....
Average for rotation	.....	.....	.....	.....	7 57	.....
Three-year Rotation—						
Wheat—Garnet	25·0	18·8	0 58	0 69	8 00	7 03
Reward	20·0	.....	0 69	.....	5 20	.....
O.A.C. 21 barley, seeded	37·0	33·5	0 38	0 35	6 29	8 84
Hay (sweet clover)	2·5	.....	3 68	.....	15 80	.....
Average for rotation	.....	.....	.....	.....	8 82	.....
Two-year Rotation—						
Wheat (Marquis)	20·0	15·3	0 61	0 81	4 60	3 82
Corn (half)	0·25	0·87	36 36	20 85	−8 34	−5 55 (2-yr.)
Sweet clover (half)	1·5	1·5	5 60	8 17	6 60	3 25
Average for rotation	.....	.....	.....	.....	6 51	.....
Demonstration Field—						
Alfalfa	1·75	2·3	4 49	3 49	9 64	16 07
Fall rye	Killed by soil drifting this spring.					

*Cost per acre.

This year three varieties of wheat were grown again on the Station, Marquis, Garnet and Reward. Garnet exceeded Reward in yield by five bushels but the Reward was the best quality of all being fully one grade higher than Garnet which was about a No. 4. The Marquis was not so far advanced as the other two varieties when the frost came, so suffered more damage, the grade being reduced to No. 5, though the yield was equal to the Reward. There were quite a number of green immature kernels present in all the wheat, particularly the Marquis. These two earlier wheats showed quite an advantage this year and were much more profitable than Marquis. Garnet ripened first August 16, Reward August 23, and Marquis August 28. The O.A.C. 21 barley gave a good yield of good quality grain, but oats were not so good as last year.

A two-acre field of winter wheat of the Kharkov variety was sown the latter part of August on fallow land and made a fair start.

The Annual Field Day was held on this Farm on the afternoon of August 3 with a good attendance of interested farmers present.

The operator of this station grew six varieties of wheat in rod rows for a test of yield and other qualities. This was carried on in co-operation with the Cereal Branch of the Experimental Farms. He also co-operated with the provincial university in growing four varieties of wheat in one-tenth acre plots for a protein test.

HERBERT

Operator, Milton Holmes

The first work on the land was started on this Station the last days of April and first seeding was done May 2. The early part of spring was dry and cool but during June there was a favourable rainfall of over three inches and total rainfall from spring until August was 5·70 inches. All crops made good growth after the heavy rains came in June and conditions were favourable

for growth until the frost came on August 22. Though the wheat was in the dough stage and some cut, yet considerable damage was done reducing the grade to No. 4, as well as lowering the yield. Hay crops were above the average, but corn was practically a failure. Harvesting was started August 17.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT HERBERT

Rotations and crops	Yield per acre, bushel or ton		Cost per bushel or ton		Profit or (−) loss per acre	
	1928	Average 6 years	1928	Average 6 years	1928	Average 6 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow	.....	.....	6 91*	8 05*	.....	.....
Marquis wheat	27·4	19·6	0 60	0 87	6 58	4 12
Marquis wheat	19·0	10·6	0·76	1 35	1 52	−1 15 (4 yr.)
Average for rotation	.....	.....	.....	.....	2 70	
Six-year Rotation—						
Fallow	.....	.....	6 91*	8 23*	.....	.....
Marquis wheat	27·0	19·9	0 60	0 89	6 48	4 56
Wheat—Marquis	17·0	.....	0 84	.....	0 00	.....
Renfrew	26·0	.....	0 62	.....	5 72	.....
North-Western Dent corn	0·5	1·5	20 66	5 79	−7 33	−7 62
Wheat seeded	18·6	16·8	0 55	0 65	5 39	5 44
Hay—sweet clover	1·6	.....	5 16	.....	7 75	.....
Western rye	1·2	0·75	6 00	11 07	4 80	1 26
Average for rotation	.....	.....	.....	.....	2 85	.....
Two-year Rotation—						
Fallow (sweet clover ploughed in)	.....	.....	7 39*	7 69*	.....	.....
Marquis wheat (half seeded to sweet clover	31·4	.....	0 62	.....	6 91	.....
Average for rotation	.....	.....	.....	.....	3 45	.....
Demonstration Test Fields—						
Grimm alfalfa in 30-inch rows	1·2	1·7	5 75	5 24	5 10	5 10

Two varieties of wheat were grown this year, the standard variety Marquis, and Renfrew, a selection made out of Marquis by the University of Alberta. Renfrew on stubble land, alongside of Marquis, outyielded it by nine bushels this year, though it takes a little longer to mature than Marquis. It will be further tested as one year's results cannot be relied on.

The alfalfa field which had to be partly reseeded last spring came on fairly well this year though the weather the first part of the season was unfavourable. It gave one cutting of a little over one ton per acre.

KINDERSLEY

OPERATOR, ROBERT SIMPSON

The opening of spring was delayed and seeding on the Station fields did not commence until May 4. The early part of the season was fairly dry and cool. The rainfall for the four principal growing months, April to August, was 7·35 inches and over half of this (3·98 inches) came in July. June gave only 2·24 inches which is below the average. Though the moisture supply was much less than last year, yet it came in time and was sufficient to produce an excellent crop of grain on fallow land. The wheat on fallow was well advanced and was matured before the frost of August 22. The stubble crop, however, was later and was damaged by frost. Oats gave a good yield but were not ripe

until after the frost. Hay crops made favourable growth except the alfalfa and brome permanent fields. Harvest was started August 15 when Reward wheat was cut.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT KINDERSLEY

Rotations and crops	Yield per acre, bushel or ton		Cost per bushel or ton		Profit or (−) loss per acre	
	1928	Average 5 years	1928	Average 5 years	1928	Average 5 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow			7 69*	7 95*		
Wheat—half Marquis	43·0	24·0	0 44	0 79	21 93	12 74
half Reward	31·5		0 54		12 92	
Banner oats	62·0		0 24		9 92	
Half sweet clover	1·25		6 77		4 04	
Half oats in triple rows	1·0	1·0	7 04	6 84	2 96	3 16 (2-yr.)
Wheat seeded	33·5		0 35		20 10	
Hay-rye grass and alfalfa	1·25	1·0	5 74		5 33	
sweet clover	2·0	2·0	4 37	5 21	11 26	12 10
Average for rotation					9 83	
Three-year Rotation—						
Fallow ploughed and surface worked			7 22*	7 79*		
Surface worked only			6 29*	5 84*		
Wheat after fallow	38·0	32·0	0 49	0 57	17 48	19 00 (3-yr.)
Wheat after wheat stubble disked	17·5		0 67		−2 62	
Spring ploughed	9·0		1 41		−8 01	
Average for rotation					4 95	
Two-year Rotation—						
Fallow			6 91			
Garnet wheat (on stubble this year)	0·23		0 58		7 36	
Demonstration Test Field—						
Brome grass hay	0·75	0·5	8 48	10 51	1 14	0 60
Grimm alfalfa hay	0·38	0·9	16 82	14 38	−2 59	3 48
Renfrew wheat on fallow	0·35					

*Cost per acre.

Reward wheat, a cross between Marquis and Prelude, was grown on this station on fallow land alongside of Marquis. Results are shown in the table above. Marquis gave 43 bushels per acre and Reward 31½. The grade was No. 2 the same as Marquis. It was cut three days ahead of the Marquis. In order to give it a more thorough test it will be grown again next year.

All the wheat on the fallow land was well advanced and was cut ahead of the frost of August 22; it graded No. 2. The Marquis on stubble land sown two weeks later was caught by the frost and badly damaged making "feed". Garnet wheat on stubble sown the same date was cut two days ahead of the frost and made a No. 3 grade yielding 6 bushels more than Marquis.

It will be noted that wheat on spring ploughed stubble gave a much lower yield than when the stubble was double disked. This has been the result every year. Spring ploughing or fall ploughing is not practised in this district to any extent as it has not as a rule proven satisfactory.

Renfrew wheat was grown on this station for the first time on fallow land adjoining the station fields. It gave a yield of 35 bushels per acre and grade was about the same as Marquis. This year Mr. Simpson again grew four varieties of wheat in small plots for a protein test in co-operation with the Chemistry Department of the University of Saskatoon.

From a small beginning of two settings of eggs obtained from the Swift Current Experimental Farm a few years ago, the operator has built up a pure-bred flock of producing Barred Rock poultry. Each year now the best of the surplus breeding stock and also hatching eggs are sold to people in the district for building up their flocks. A well-attended field meeting was held on this station on the afternoon of August 1.

LLOYDMINSTER

Operator, Hugh Hill

Spring opened the latter part of April and seeding operations on the Station began April 27 and all wheat was sown by May 3. The season was a fairly dry one with only 5½ inches of rainfall during the four months April to August. Over four inches of this came in May and June about the same amount for each month, hence was well distributed. The result was that a crop of grain a little below the average was produced. Hay crops were well above the average On the night of August 22 there was a fairly heavy frost but some of the earlier wheat was already cut and the other so far advanced that it did not receive much damage except in a few low spots of the field. Harvest was started August 2.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT LLOYDMINSTER

Rotations and crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit per acre	
	1928	Average 4 years	1928	Average 4 years	1928	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Wheat	26·8	33·0	0 47	0 45	11 52	22 04
Banner oats (seeded)	38·8	55·4	0 30	0 24	3 88	12 50
Sweet clover	1·6	1·3	5 14	3 47	7 78	8 15
Average for rotation					7 73	
Five-year Rotation—						
Fallow			7 07*			
Wheat—Garnet	23·6		0 49		10 86	
Marquis	23·6		0·49		10 86	
Oats	43·6		0 32		3 49	
Wheat—Reward	24·4		0 61		8 30	
Garnet	28·0		0 55		11 20	
Hay	1·8		4 67		9 60	
Average for rotation					7 76	
Demonstration Fields—						
Wheat after corn and sunflowers	22·8		0 48		10 71	
Chancellor peas	17·0		6 88		36 04	
O.A.C. 21 barley	46·0		0 24		14 26	

*Cost per acre, all wheats graded No. 2 Northern, except one field of Marquis which was No. 3.

Marquis, Garnet and Reward wheats were all grown on this Station this year. The results are shown in the summary table above. Garnet exceeded the Reward in yield, but not in quality as the Reward was a plumper sample. Both would grade 2-3, of good general appearance. Garnet and Marquis gave practically the same yield and the grade was nearly the same though the Garnet was a better looking sample.

Although on the station fields there was not much difference between the Marquis and the earlier wheats due probably to the early seeding, yet on most

other farms in the district, there was a much greater difference. Very little Reward is grown yet, but those who had Garnet secured a good yield of good quality grain usually grading about No. 2-3, while Marquis under the same circumstances gave a low yield of poor quality.

A field meeting was held on this station July 27.

LOVERNA

Operator, Robert Brumwell

Spring was late in this district and the first seeding on the station fields was done May 14. There was only a fair supply of moisture during the growing season and at times crops were suffering. Fortunately 1·41 inches fell in May which helped to germinate the crops. June gave 2·73 and July, 2·79, which is 6·93 inches from the opening of spring to August. Grain crops came through with a fairly good yield except oats which were quite light. Hay crops benefitted by the rains during May and gave a good yield. Corn gave a fair yield also. Harvesting began August 20 and all the wheat was cut before the frost of August 22, hence there was no damage from this cause.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT LOVERNA

Rotation and crop	Yield per acre bushel or ton 1928	Cost per bushel or ton 1928	Profit or (—) loss per acre 1928
		$ cts.	$ cts.
Seven-year Rotation—			
Wheat seeded down	30·0	0 39	16 80
Hay	1·25	7 79	2 76
Corn	2·25	5 77	—6 23
Wheat	18·8	0 57	7 14
Fallow	.....	6 82*	.....
Fall rye (S. rye subst)	18·5	0 70	1 85
Fallow	.....	6 82*	.....
Three-year Rotation			
Fallow	.....	6 82*	.....
Wheat	17·5	0 77	3 15
Wheat	17·5	0 77	3 15
Two-year Rotation—			
Oats (2nd crop this year)	21·0	0 58	—3 78
Fallow	.....	6 82*	.....
Demonstration Fields—			
Brome and S. clover	2·5	3 00	17 50
Western rye and alfalfa	2·5	3 14	17 15
Western rye	2·5	2 93	17 67
Alfalfa	2·5	3 22	16 95

*Cost per acre. All wheat graded No. 2 Northern.

There were no crops on fallow on the station this year and the best crop of wheat was after corn which yielded 30 bushels per acre. It might be pointed out here that this corn field was kept very clean last year.

Renfrew and Marquis were both grown again this year as second crop. By reference to the summary table above it will be observed that the Renfrew gave 1¼ bushels per acre more than Marquis, but this is not a significant difference.

A beginning has been made on this station with three systems of cropping —a two-year, a three-year and a seven-year one. It is planned to extend the two-year system to include wheat and fall rye as well as oats.

Dakold fall rye and also winter wheat of the "Kharkof" variety were both sown the first of September on fallow and stubble land. They both made a good start this fall.

A field meeting on the Illustration Station at Loverna, Saskatchewan.

Mr. Brumwell the operator of this station sold over 500 bushels of seed wheat in his district last spring. Part of this was Marquis and part Renfrew. This was a good beginning.

The first field meeting was held on this farm on the afternoon of July 26. Quite a number of farmers from the surrounding district and some of the townspeople came to look over the station fields.

MARCELIN

OPERATOR, J. B. GODBOUT

Spring opened later than usual and first seeding on the station was done May 4. The season on the whole was one of light rainfall particularly during the early part. June gave the most with 2·10 inches. Grain crops made good growth, but the frost of August 22 caught the later wheat before it was ripe and damaged it considerably, but the two earlier varieties were well ripened and escaped the frost damage. Oats were also affected by the frost as they were quite green at the time. They were cut for sheaf feed. Barley gave a good yield of good quality grain. The spring was too dry for a heavy growth of hay crops, however, yields were fairly good. The wheat and barley were cut with the combine which was started September 1.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT MARCELIN

Rotations and crops	Yield per acre bushels or tons	Cost per bushel or ton	Profit or (−) loss per acre
	1928	1928	1928
		$ cts.	$ cts.
Five-year Rotation—			
Fallow	.....	*7 07	
Garnet wheat	23·0	0 58	7 36
Banner, oat-hay	2·5	4 56	13 60
O.A.C. 21 barley	46·0	0 29	11 96
Hay (western rye and sweet clover) oats substituted this year	.....	(green feed)	
Demonstration Test Fields—			
Marquis wheat (after fallow)	20·0	0 59	−0 20
Garnet wheat (after corn)	36·0	0 38	18 72
Reward wheat (after corn)	36·0	0 38	20 52
Alfalfa	1·0	5 94	4 06
Alfalfa-rye grass mixture	1·5	4 29	8 56
Western rye grass	1·0	5 94	4 06

*Cost per acre.

The two early wheats, Garnet and Reward, gave good results on the station this year. They ripened early enough to escape practically all frost damage, while the later ripening Marquis was affected in both grade and yield. The Reward was the highest grade No. 2. Garnet was also a good sample No. 3, while Marquis was No. 6.

This is the first year Reward has been grown on this station but Garnet has been grown for three years. It has given good results except in 1927 when there was a very early frost on August 7, and it was damaged considerably like all other varieties. However, a frost at such an early date is exceptional. During the first two years Garnet yielded practically the same as Marquis and this year outyielded it. It has ripened on the average nine days ahead of Marquis.

MEADOW LAKE

Operator, Martin Gran

This Illustration Station is located in township 59, range 17, west of the third meridian and is the furthest north station in Saskatchewan. It was selected in 1927, the fields laid out this spring, and a start made with some of the work. A part of the land had to be cleared and broken this year so that some of the work was of a preparatory nature.

Three varieties of wheat Marquis, Garnet and Reward were sown on fallow land. A field of Banner oats and of O.A.C. 21 barley were sown on stubble land. Three fields of hay, western rye grass, alfalfa and timothy were sown with a light nurse crop of oats.

The spring was dry in this district, with less than a half inch of rain during April and May, but during June there was 2·47 inches and in July 2·31. The total for the whole season was 8·34 inches. This was a season of only a fair supply of moisture but it came when most needed and was quite effective in giving a favourable growth and a good yield of all crops. A hail-storm passed over the district on August 4 and struck the fields where the wheat varieties were, damaging about 50 per cent. The two earlier varieties suffered the most.

The frost at this point did not occur until August 26. The Garnet and Reward were both cut before this, namely, on August 18, but Marquis not

until August 30. The grade of Garnet and Reward was No. 3, but Marquis suffered some damage from the frost and would not grade better than No. 4-5. The stand of all these wheats was good, but owing to the hail damage which was not the same on all fields, the yields could not be compared with fairness. The oats were cut August 30 and yielded 56 bushels per acre. Barley was cut August 14 and yielded 46 bushels. Both of these grains were plump and of good quality.

The land in this district is level or undulating with a considerable growth of poplar and willow bluffs. The soil is a rich black loam.

MELVILLE

Operator, Philip J. Besler

This station was located this spring on the farm of Mr. Besler on the southwest of section 26, township 22, range 6, west of the second meridian. The fields are adjacent to the main highway running east and are two miles from town. The soil is a dark loam and the land is slightly rolling and typical of the district. The work this year was chiefly of a preparatory nature. Five fields were seeded down to different hay crops with Marquis wheat sown at the rate of 1½ bushels per acre as a nurse crop. Following are the hay crops:—

(1) Western rye seeded at the rate of 14 pounds per acre.
(2) Brome seeded at 14 pounds.
(3) Timothy seeded at 10 pounds.
(4) Alfalfa seeded at 10 pounds.
(5) A mixture of 8 pounds of western rye, 4 pounds sweet clover and 4 pounds alfalfa per acre.

There was a fair rainfall during the season and crops made a fairly good growth but the frost of August 22 caused considerable damage to the wheat which was cut August 27. The average yield was 17 bushels per acre.

MEOTA

Operator, Walter Tait

The opening of spring was delayed by cold weather during April and it was May 2 before any seeding was done on the station. During the early part of the season and until the first week of June the weather was dry, as there was less than a quarter of an inch of rain. June was fairly moist with 4·56 inches and July gave 2·57 inches which improved conditions wonderfully and all crops came on well. The total rainfall for the season was 8·04 inches which is not heavy, but the greater part came when most needed. There was a good crop of wheat on the station and it was cut before the frost of August 22, so the quality was good enough to grade No. 2. There were a few green kernels, due to the uneven germination of the crop in the spring. Oats were sown later and were slow in germination and did not do so well as the wheat. Hay crops gave about an average yield but corn was light and was much damaged by the frost.

Harvest was started August 13 when the Garnet wheat was cut.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT MEOTA

Rotations and crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit per acre	
	1928	Average 6 years	1928	Average 6 years	1928	Average 6 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow			*7 23	*7 05		
Marquis wheat	40·5	37·4	0 45	0 52	20 25	24 06
Marquis wheat	27·5	23·6	0 54	0 88	11 27	11 80
Average for rotation					10 50	11 95
Six-year Rotation—						
Fallow			*7 23	*7 66		
Wheat—Marquis	40·0	41·5	0 33	0 37	24 80	29 38 (2 yrs.)
Garnet	38·5		0 34		23 48	(2 yrs.)
Banner oats	44·5		0 33		3 11	
N.W. Dent corn	Crop frozen used for pasture					
Oats (triple rows)	0·1		8 77		1 23	
Wheat seeded	29·5		0 54		12 10	
Hay—W. rye, alfalfa	1·6	1·8	4 72	5 11	8 45	9 71
Three-year Rotation—						
Marquis wheat	36·3	44·3	0 39	0 37	20 33	32 21 (2 yrs.)
Oats seeded	30·0	52·0	0 30	0 26	3 00	11 86 (2 yrs.)
Hay—W. rye sweet clover	3·0	2·0	3 25	4 27	20 25	15 39 (2 yrs.)
Average for rotation					14 53	
Demonstration Test Field—						
Grimm alfalfa	Reseeded this year					

* Cost per care.

Two varieties of wheat were grown on the station this year—Marquis and Garnet—while Reward was grown on a field adjoining the station. The Marquis and Garnet yielded practically the same on a fallow field, but the Garnet was a better looking sample and would grade fully one grade higher. The Garnet was cut August 13, nine days ahead of the Marquis, which was cut just the day before the frost, and it showed a few frosted kernels. One field of Marquis which was cut four days ahead of the frost made a sample which compared favourably with the Garnet. Reward did not yield quite so well as the other varieties but the quality compared very favourably with them. This is the third year Garnet has been grown on the station fields here, and it has given very good results both from the standpoint of yield and grade. It has, on an average for three years, ripened eight days ahead of Marquis, and the yield has been practically the same—actually one-half bushel more per acre.

Garnet was grown on a number of farms in this district this year, as considerable of the seed has been distributed by the operator of the station. In practically every case Garnet ripened safely ahead of the frost, and as a rule made a grade not lower than No. 3, while Marquis in most every case was caught by the frost and badly damaged, grading about No. 5-feed.

The average results of ten years' growing of wheat by different methods on this station show that wheat on fallow in a three-year rotation of two crops of wheat and fallow has given an average yield of 33·5 bushels per acre, wheat on fallow in a rotation containing hay crops and corn or other row crops, 31·4 bushels, wheat, second crop on the spring-ploughed stubble of the three-year rotation above, 21·3 bushels.

The annual field meeting was held on this farm on the afternoon of August 1. There was a good attendance and an interesting afternoon spent in going over the fields and discussing different features of the work.

PARKBEG

OPERATOR, T. L. HUMPHREY

The first work on the station fields commenced April 30 and seeding of wheat May 2. The early part of the spring was dry and cool with considerable wind, but on June 6 a soaking rain came which gave a favourable moisture supply and all crops went ahead well. During the principal growing season over eight inches of rain fell, which was sufficient to produce an excellent growth. The grain was so well advanced that it was cut before the frost of August 22, and so escaped damage. The wheat graded No. 2 and the yield was well above the average. Hay crops also were above the average, except the rye grass—alfalfa mixture. The season was not favourable for corn. Harvest was started August 13.

SUMMARY OF YIELDS, COST AND PROFIT AT PARKBEG

Rotations and crops	Yield per acre, bushels or tons		Cost per acre, bushel or ton		Profit per acre	
	1928	Average 5 years	1928	Average 5 years	1928	Average 5 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow			*6 52			
Wheat	40·0		0 38		22 80	
Hay	1·25	1·25	6 56	4 66	4 29	4 75
Average for rotation					9 03	
Five-year Rotation—						
Fallow			*7 42	*7 08		
Marquis wheat	30·00	23·0	0 56	0 70	11 70	11 66 (4 yrs.
½ N.W. Dent corn	Failed to make a successful stand					
½ fallow			8 31	All land fallowed this year		
Wheat (seeded)	20·0	22·5	0 49	0 44	9 20	14 72 (2 yrs.
Hay—rye grass-alfalfa	0·8	1·3	8 70	4 38	1 04	5 40
sweet clover	1·6	1·2	4 00	5 20	9 60	6 57
Average for rotation					6 31	
Two-year Rotation—						
Fallow (sweet clover ploughed under)			7 90	7 37		(2 yrs.
Marquis wheat	31·0	28·5	0 63	0 60	9 92	13 15
Average for rotation					4 96	
Two-year Rotation—						
Marquis wheat seeded	27·0	22·5	0 45	0 53	13 50	12 06 (2 yrs.)
Sweet clover hay	2·4	2·2	3 40	5 29	15 83	14 32 (2 yrs.
Average for rotation					14 66	
Demonstration Test Field—						
Brome grass	Ploughed shallow and disked early in June. To renew stand.					

* Cost per acre. All wheat graded No. 2 Nor.

The different rotations carried on at this station are on reasonably uniform land but they have not been down long enough to give much reliable information as yet.

This year we had the highest yield of wheat recorded on this station—40 bushels per acre of No. 2 grade, which at the prevailing price of wheat this fall gave a net profit of $22.71 per acre over the cost of producing the crop. The average yield on all the wheat fields was 29·6 bushels per acre this season.

The pure-bred flock of Barred Rock poultry has now been built up so that surplus hatching eggs are available for the neighbours.

PIAPOT

OPERATOR, E. SCHERCK

Seeding of wheat on the station fields was started April 24. The first part of the season was dry and windy and no heavy rains came until June. There was a rainfall of 5·91 inches during this month which brought all crops along well. The total rainfall from spring until August was 7·98 inches which was sufficient to produce a good yield of all crops. The dry spring was not favourable for fall rye but hay crops came on well later, when rains came and made a heavy crop. Some soil drifting occurred just after seeding, but it did not continue long enough to do very much damage. The grain was cut before the frost, but corn was still standing so was damaged a good deal. Harvest was started August 4 when the fall rye was cut. Wheat was harvested August 10.

SUMMARY OF YIELDS, COST AND PROFIT AT PIAPOT

Rotations and crops	Yield per acre bushels or tons	Cost per bushel or ton	Profit per acre
	1928	1928	1928
		$ cts.	$ cts.
Three-year Rotation—			
Fallow	.....	*6 42	
Marquis wheat	33·5	0 44	15 07
Fall rye	14·0	0 64	2 24
Six-year Rotation—			
Corn	Damaged by frost used for pasture.		
Marquis wheat	21·8	0 42	11 55
Hay—western rye and sweet clover	2·0	3 71	12 59
Marquis wheat	26·0	0 42	13 78
Fallow	.....	5 33	
Fall rye	27·5	0 45	9 62
Two-year Rotation—			
Fallow	.....	*5 80	
Banner oats	55·0	0 21	10 45
Demonstration Test Fields—			
Brome grass	2·0	3 09	13 81
Western rye—sweet clover	3·0	2 65	22 04
Grimm alfalfa	3·5	1 50	29 75

* Cost per acre. All wheat graded No. 2 Nor.

A start has been made on this Station with three systems of cropping. The six-year system is designed to prevent soil drifting as much as possible. The only bare fallow in this rotation is sown to fall rye the latter part of August.

In the three-year and two-year systems the method of working the summer-fallow is as follows: Surface work in the stubble with the disk or cultivator only as necessary to kill weed growth until about July 20, then plough and leave without any further work. By this method the soil is left in a lumpy or rough condition and is not quite so liable to drift that fall or the next spring. This was the method followed last year and the wheat on the land worked this way did not suffer much damage from soil drifting this spring. It did not prevent the soil from blowing altogether when the wind was strong, but seemed to check it to some extent.

RADVILLE

OPERATOR, J. H. STOCKTON

Spring opened in fair time and seeding on the station commenced April 28. Though the weather was dry and cool during the months of April and May yet for the remainder of the growing season there was plenty of rain and all crops made rapid growth. Yields of wheat were well above the average and oats about average. Hay crops were also good but corn did not do well and was damaged by frost. The frost in this district was light and did not damage the wheat to any extent. However, the grain, both wheat and oats, ripened very unevenly and there were many green kernels present which reduced the grade of wheat to No. 3. Harvest was done with the Combine and was started September 1.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT RADVILLE

Rotations and crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1928	Average 5 years	1928	Average 5 years	1928	Average 5 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	*6 76	*7 36		
Wheat	32·0	28·0	0 52	0 58	12 16	15 46
Banner oats	32·5	31·1	0 44	0 47	−1 30	0 49
N. W. Dent corn	Frozen		*9 21	.....	−9 21	
Wheat seeded down	27·5	13·7	0 43	1 20	12 92	6 63
Hay—W. rye and alfalfa	1·5	0·8	7 00	10 05	4 50	4 06
sweet clover	1·0	1·6	7 53	5 58	2 47	10 20
Average for rotation	.....	.....	.....	.....	3 08	
Three-year Rotation—						
Fallow	.....	.....	*6 76	*6 74		
Wheat	31·0	26·8	0 54	0 60	11 16	15 26
Wheat	16·0	12·8	0 84	1 19	0 95	2 76
Average for rotation	.....	.....	.....	.....	4 04	
Two-year Rotation—						
Wheat	22·0	.....	0 57	.....	7 26	
Sweet clover	1·5	.....	5 39	.....	6 91	
Average for rotation	.....	.....	.....	.....	7 08	

* Cost per acre. All wheat graded No. 3 Northern.

Crops on the burn-outs made a poor start this dry spring which resulted in an uneven crop. Some farmers in the district packed after seeding with apparently good results. Early seeding was also a very important factor.

Wheat after a crop of sweet clover which was ploughed in last year, the latter part of June, and the land summer-fallowed the rest of the season gave a yield of 22 bushels of wheat per acre this year. This was nine bushels per acre less than after a bare summer-fallow which was worked earlier, but was six bushels more than wheat after wheat on spring ploughed stubble. This year a crop of clover hay was taken off previous to ploughing the fallow.

A new poultry house was built this year by the operator and a good producing flock of White Wyandottes has been established.

A Combine (Reaper Thresher) was used on this farm to harvest the wheat crop. It gave satisfactory results so long as the grain was ripe and dry. On some fields the uneven ripening made it difficult to avoid getting tough grain.

RIVERHURST

OPERATOR, R. F. RUDD

Spring work on the Station fields commenced the last days of April and the seeding of wheat was done between April 27 and May 1.

During the months of April and May there was less than a half inch of rain, hence growth was slow, but June gave four inches and July 2·04 inches. This caused a rapid growth of all crops which resulted in a yield of grain crops above the average while hay and corn gave about an average yield. The wheat was ripe by the time the frost came (August 22) and there was practically no damage from this source. The wheat was cut with the Combine which was started August 30 and was completed September 4.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT RIVERHURST

Rotations and crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1928	Average 6 years	1928	Average 6 years	1928	Average 6 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow			*7 85	*6 69		
Marquis wheat	35·0	0·23	0 50	0 73	15 75	10 90 (4-yr.)
Marquis wheat	25·3	24·6	0 58	0 58	9 36	12 12 (2-yr.)
N. W. Dent corn	3·0	4·5	4 42	3 24	−4 26	2 19 (2-yr.)
Wheat (seeded)	30·0	22·0	0 41	0 51	16 20	14 82 (4-yr.)
Hay—W. rye and sweet clover	1·8	.....	4 09	.....	10 64	.....
Average for rotation	.....	.....	.....	.....	6 81	
Three year Rotation—						
Fallow	.....	.....	*7 38	*6 56		
Wheat—Marquis	32·0	23·5	0 53	0 76	13 44	10 86
Renfrew	45·0	.....	0 42	.....	21 60	
Marquis wheat	27·0	19·1	0 55	1 14	10 80	7 54
Average for rotation	.....	.....	.....	.....	8 08	
Two-year Rotation—						
Marquis wheat seeded	29·0	26·9	0 46	.....	14 21	
Sweet clover hay	3·0	2·7	3 13	3 12	20 62	18 57 (2-yr.)
Average for rotation	.....	.....	.....	.....	17 41	
Demonstration Test Fields—						
Alfalfa		Seeded with a light nurse crop of oats.				
Brome grass	.....	.....				

* Cost per acre. Marquis wheat graded No. 2 Northern, Renfrew No. 3.

The fields on this Station have improved in appearance particularly from the standpoint of weeds during the last few years. This can be attributed principally to the timely and thorough cultivation given by the operator. It is reasonable to infer that the grass and clover crops which are grown in the rotations have also been a help in weed control and in improving the soil texture.

Every crop except corn shows a good profit over and above the cost of production this year. Renfrew wheat was given a test on the Station this year for the first time. It was sown alongside of Marquis both on fallow land. It exceeded Marquis in yield by quite a margin but was several days later in maturing and did not make quite so good a sample. Results are sufficiently promising to warrant further tests of this variety.

SHAUNAVON

Operator, Stanley Murch

Spring opened about the usual time and first work on the land commenced the last days of April. Seeding of wheat was started April 30 and all sown by May 4. The early part of the spring was dry and it was not until the last week in May that a good rain was received. During the remainder of the growing season there was a good supply of moisture well distributed. From April 1 to August 1, 8·33 inches fell. All crops made rapid growth when the rain came and the wheat came through with excellent yields particularly on fallow land and after corn. The quality on the whole was also good as it was ripe and some cut before the frost of August 22. Hay crops were well up to the average but corn was a short crop and was damaged by frost. Harvest was started August 21.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT SHAUNAVON

Rotations and crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or loss per acre	
	1928	Average 4 years	1928	Average 4 years	1928	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow			*7 22	*7 19		
Marquis wheat	49·0	27·8	0 41	0 78	26 46	12 41
Marquis wheat	24·0	16·2	0 61	1 32	8 16	5 47
Corn N.W. Dent	2·0		5 47		−4 94	
Wheat (seeded)	49·0	25·6	0 30	0 55	31 85	17 45
Hay—rye grass alfalfa	1·5	1·2	5 56	8 46	6 66	4 78
sweet clover	1·2	1·2	6 52	8 89	4 18	4 97
Average for rotation					10 34	
Three-year Rotation—						
Fallow			*7 69			
Garnet wheat	41·0		0 45		20 50	
Renfrew wheat	18·0		0 70		3 60	
Average for rotation					8 03	
Two-year Rotation—						
Fallow			*7 22			
Marquis wheat	50·0		0 54		20 50	
Average for rotation					10 25	
Demonstration Test Fields—						
Alfalfa-sweet clover mixture	Seeded this year with a light nurse crop of oats (6 pounds alfalfa 6 pounds sweet clover).					

*Cost per acre. Marquis and Garnet wheat graded No. 2 Northern. Renfrew, No. 3 Northern.

All the Marquis wheat sown on the station fields this year was registered (2nd generation), so there will be considerable pure seed wheat for sale to anyone in the district who wishes to make a start with seed from registered stock.

Garnet and Renfrew were also grown on this station this year Garnet on fallow did not yield quite so high as Marquis, but was cut six days ahead of Marquis on fallow and the sample was more uniform, all grading No. 2. Some of the Marquis on fallow graded No. 2 and some No. 3. Renfrew as 2nd crop did not equal the Marquis in yield and was one grade lower grading No. 3, while Marquis under the same conditions made a No. 2 grade.

An experiment in seeding down alfalfa was made this spring when six pounds of alfalfa was seeded with 6 pounds of sweet clover per acre all sown with a light nurse crop of oats. The stand secured was quite uniform. Next year it is expected the hay crop will be mostly sweet clover, then the following year the alfalfa will have become established. This plan has been worked out with success in another district.

Although no field meeting was held here this year, Mr. Murch had a visit from one of the higher grades of the school with their teacher one afternoon in the latter part of July when the grain was in head. He conducted them over the fields and explained the different varieties of crops and the rotations which are being carried on.

SPRUCE LAKE

Operator, Harry Eagle

The opening of spring was delayed owing to the cold stormy weather and it was May 8 when seeding operations started on the station. The season was a rather dry one, particularly the early part, and germination of the grain was not very uniform. Precipitation from the opening of spring until August 1 was 4·83 inches with the heaviest in June (3·15 inches). Coming at an opportune time this was sufficient to produce about an average crop of wheat and also hay. Oats, however, being later sown suffered more from the dry weather in July and were a light crop. There were two summer frosts in this district, a light one on August 2 and the heavy frost of August 22, so all the wheat was frosted to some extent. Harvest was started August 8 with the cutting of Garnet wheat.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT SPRUCE LAKE

Rotations and crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or (− loss per acre	
	1298	Average 4 years	1928	Average 4 years	1928	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Four-year Rotation—						
Fallow	.....	.....	*6 91	.....	.....	.....
Wheat	24·0	27·75	0 61	0 55	6 96	17 62
Oats (seeded down)	26·0	.....	0 49	.....	−2 39	.....
Hay	1·2	1·3	6 30	5 22	4 44	7 68
Three-year Rotation—						
Fallow	.....	.....	*7 07	.....	.....	.....
Wheat	26·0	.....	0 48	.....	9 36	.....
Wheat (garnet)	24·0	.....	0 51	.....	9 36	.....
Demonstration Fields—						
Alfalfa and W. rye	1·5	.....	4·63	.....	8 06	.....
Oats	37·0	.....	0 38	.....	0 74	

*Cost per acre. Garnet wheat graded No. 3. Northern, Marquis No. 4, Northern.

Three varieties of wheat—Garnet, Marquis and Reward were grown on this Farm in 1928. Garnet on stubble land yielded nearly the same, within two bushels, of Marquis under similar conditions, was ripe eight days earlier and made a much better grade. Reward was sown on a piece of breaking adjoining the station and gave a yield of 38 bushels per acre which would grade about No. 4. Although all the wheat was frosted to some extent the Garnet was only slightly damaged though there were a good many green kernels in it on account of the uneven germination and ripening of the crop. The Marquis was cut after the frost of August 22 and was damaged considerably so that it would grade No. 4-5. On many other farms in this district also Garnet gave a much better grade than Marquis.

An interesting and well attended Field Metting was held on this Farm on the afternoon of July 28.

TROSSACHS

OPERATOR, CHAS. CARLSON

The first seeding on the station fields commenced April 27. The spring was dry and mostly cool and there was no soaking rain until the middle of June. During that month 4·45 inches fell and July gave 3·57. From spring until the first of August there was a total rainfall of 8·23 inches. This was sufficient for a more than average crop had it been well distributed. Wheat and sweet clover made the most favourable growth. Oats were sown later and did not germinate so well and were more uneven and later in ripening, hence were more damaged by the frost of August 22. These were cut for green feed. The wheat was a very fair sample as it was well advanced before frost. It was reduced about two grades chiefly on account of the presence of immature kernels. Western rye grass did not recover after the dry spring and made only a short growth. Corn failed to make a successful stand and the field was fallowed. Harvest was started August 20.

SUMMARY OF YIELDS, COST AND PROFIT AND LOSS AT TROSSACKS

Rotations and crops	Yield per acre, bushel or ton		Cost per bushel or ton		Profit or (−) loss per acre	
	1928	Average 4 years	1928	Average 4 years	1928	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow			*6 81	*7 34		
Marquis wheat	31·0	23·5	0 53	0 67	13 02	11 5
Marquis wheat	13·0		0 98		0 39	
Average for rotation					4 21	
Six-year Rotation—						
Fallow			*7 84	*6 97		
Marquis wheat	17·2	26·0	0·83	0 61	2 06	15 98
Banner oat hay	1·0	1·0	11 56		−1 56	
North Western Dent corn	Failed to make a stand, land fallowed.					
Marquis wheat (seeded)	16·0	18·2	*8 58 0·47	0 48	7 68	12 96
Hay—western rye	Growth very short not cut for hay.					
sweet clover	2·0	1·8	4 20	3 91	11 60	11 38 (2 yrs)
Average for rotation					1 00	

*Cost per acre. All wheat graded No. 2 Northern.

This was not a favourable season for crops on the burn-out areas. The hard spots did not recover well even when good rains came about the middle of June hence an uneven growth resulted on most fields. Wheat on fallow in the three-year rotation gave a much heavier yield than the fallow in the six-year rotation this year which is the reverse of the usual results. There are fewer hard spots on the first mentioned field as the land has been under cultivation longer.

Sweet clover made a good growth in spite of the unfavourable conditions in the spring.

Most of the wheat from the 1927 crop was not suitable for seed on account of the rust, but a small surplus quantity of the best was sold in the district for this spring.

TUGASKE

OPERATOR, ROBERT WILSON

Spring opened later than usual in this district and the first seeding was done on May 11. The months of April and May were dry with only a half inch of rain the last two days of May. During June there was plenty of moisture with 6·45 inches well distributed. July gave 2·28 inches, a total of 9·23 inches for the principal growing months. Though the growth of all crops was retarded by the spring drouth, particularly on stubble land, yet they recovered and made good headway when the rains came later. However, the late seeding and delayed growth resulted in a late crop of grain which was caught in the green state by the frost of August 22. This caused considerable damage reducing the grade of wheat to No. 3 on stubble and corn land and 4 to 5 on fallow. Yields of grain were well above the average in spite of the loss caused by the frost.

Hay crops on the whole were good, particularly the sweet clover. These were cut from July 12-17.

Harvest was started August 27 and completed September 7.

SUMMARY OF YIELDS, COST AND PROFIT AT TUGASKE

Rotations and crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit per acre	
	1928	Average 6 years	1928	Average 6 years	1928	Average 6 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year rotation—						
Fallow			*7 70	*6 89		
Wheat	28·6	21·4	0 61	0 83	6 58	7 60
Wheat	27·6	16·4	0 56	0 68	7 73	4 96
Average for rotation					4 77	4 19
Six-year Rotation—						
Fallow			*8 17	*7 71		
Wheat	26·2	30·0	0 64	0 56	5 24	12 92 (2-yr.)
Wheat	24·4	22·0	0 61	0 66	7 08	7 37
N.W. Dent corn	3·0	6·5	2 98	2 17	0 06	10 73 "
Wheat (Seeded down)	26·0	25·8	0 46	0 53	11 44	12 12 "
Hay (W. rye and alfalfa)	1·4	1·2	4 16	6 72	8 18	4 44 "
Average for rotation					5 33	7 93 "
Three-year Rotation—						
Fallow			*8 01	*7 06		
Wheat (seeded)	25·8	18·8	0 56	0 86	7 22	6 16
Sweet clover	2·2	1·8	4 64	6 97	11 80	7 34
Average for rotation					6 34	4 50
Demonstration Fields—						
Alfalfa	0·8	2·1	8 66	6 92	1 07	6 32
W. rye, brome and s. clover	1·6		4 52		8 77	

* Cost per acre.

There was only one variety of wheat grown here this year—Marquis—Garnet being discontinued, as it was not considered of any particular advantage judging from results of two years experience. However with a season of early frost such as this year, Garnet would have most likely shown quite an advantage. Damaging early frosts, however, have not been frequent in this district over a period of years.

The yields of wheat on stubble land, spring ploughed and after corn are practically equal to wheat on summer-fallow this year and the quality is better. The heavy seasonal rainfall would largely account for this levelling of yields.

Corn was sown in rows six feet apart this year and this gave room for operating the ordinary field cultivator which saved considerable labour. The hoeing required, however, raised the cost of production and the early frost reduced the yield and quality so the crop was not profitable.

Sweet clover gave the heaviest yield of the hay crops, over two tons per acre, while a mixture of western rye grass, 10 pounds; alfalfa, 6 pounds gave about a half ton lower yield but a superior quality of hay.

Six years' results with the three-year rotation including sweet clover have not shown any advantage in increased yields of wheat when compared with the ordinary three-year rotation of two crops of wheat and fallow. The former rotation, however, on the whole does show a little more average profit which is due chiefly to the profit shown from the sweet clover hay which is usually a fairly heavy crop.

The grain on this station last year was damaged by the rust to quite an extent, but the operator sold some of the best wheat and oats for seed to a few farmers in the district.

Ten years' results are now available in the growing of wheat in the three-year system of two crops of wheat and summer-fallow. Wheat after the summer-fallow for that time has given an average yield of 21 bushels per acre, and wheat on the spring ploughed stubble, 16·5 bushels. This is the system usually followed in this district and on the whole seems to be suitable to the conditions prevailing.

The six-year rotation has been in operation for only two years, hence the results are not comparable with the other two rotations.

Winter wheat of the "Kharkof" variety was seeded on this station this fall on August 29. Two acres were sown on summer-fallow and two acres on stubble land. This is just an experiment and the results will be watched with considerable interest.

A field meeting was held at this station on the afternoon of August 4 and there was a very fair attendance of farmers of the district who showed a keen interest and appreciation of the excellent work carried on by the operator of this station.

WEYBURN

Operator, E. Meredith

The seeding of wheat commenced on this station May 1. The spring was dry with only a few light showers until June when there was a good rainfall of 4·15 inches with an additional 3·34 inches during July. Under these favourable conditions crops made quick growth and came through with good yields on the whole. The frost of August 22 was not so severe in this district as in some others. The wheat on the station was all cut ahead of the frost. The grade was from 2-3 due chiefly to the presence of green kernels caused by the uneven germination this dry spring. This was most noticable in wheat on stubble land which was later sown. Oats were late ripening but gave a good yield. The season was unfavourable for corn. It was a short crop and was damaged by the frost. Hay crops were well up to the average. Harvest was started August 16.

SUMMARY OF YIELDS—COST AND PROFIT AND LOSS

Rotations and crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or (— loss per acre	
	1928	Average 4 years	1928	Average 4 years	1928	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Half fallow	.....	.....	*6 91	.....	.....	8 07 (6-yr.)
Half sweet clover hay and fallow	2·0	.....	1 94	8 07	16 11	.....
Wheat	33·0	32·0	0 52	0 56	14 19	7 85 (5-yr.)
Wheat	13·0	26·0	1 05	0 64	—1 95	15 85
Average for rotation	.....	.....	.....	.....	7 09	.....
Six-year Rotation—						
Fallow	.....	.....	*7 84	.....	.....	.....
Wheat	33·0	.....	0 55	.....	13 20	.....
Victory oats	70·0	70·0	0 25	0 22	10 50	14 49 (5-yr.)
North Western Dent corn	Frozen.					
Garnet wheat (seeded)	26·0	.....	0 46	.....	12 74	.....
Hay—alfalfa and W. rye	1·5	1·5	5 87	6 36	6 20	6 51
Demonstration Test Fields—						
Alfalfa	1·0	1·4	5 94	6 12	4 06	7 68

*Cost per acre.

Marquis and Garnet wheats were both grown on the station this year and Reward on a fallow field adjoining. Garnet did not come up to the Marquis in yield this year being 6 bushels less, but it was bright in colour and a little more attractive sample. Reward did not yield quite so high as Marquis but the grain was a little plumper. All these wheats would grade practically the same this year Nos. 2-3.

Half of the summer-fallow in the three-year rotation was in yellow blossom sweet clover this year and gave a yield of two tons per acre. This was cut July 13 and the land was summer-fallowed as soon as the hay was taken off. The wheat crop on this next year will be compared with that on the bare fallow.

Garnet wheat on the Illustration Station at Weyburn, Saskatchewan. This crop yielded 26 bushels and gave a profit of $12.74 per acre.

The average yield of wheat on this station on summer-fallow for a period of ten years is 27·2 bushels per acre and wheat on the stubble land 21·8 bushels.

This was the station selected by the university last year to represent the heavy black clay loam soil for growing wheat in the protein test experiment which is being carried on co-operatively. Four varieties were grown in one-tenth acre plots.

REPORT OF THE ILLUSTRATION STATIONS FOR MANITOBA AND EASTERN SASKATCHEWAN

D. A. Brown, B.S.A., Supervisor

This is a report of the year's operations of thirteen stations in Manitoba and four in eastern Saskatchewan, being the number under supervision from the Brandon Experimental Farm.

THE SEASON

Crop conditions in 1928 were on the whole satisfactory. Work commenced in most districts during the last week of April and the dry, mild weather which followed permitted the seeding of crops in record time.

Severe frosts in late May thinned the stands of wheat and oats in several localities. A decidedly dry May and first half of June caused apprehension as to the crop prospects, should the drought continue, but about the middle of June rains became general. Precipitation was abundant throughout the summer until August was well spent, in fact, haying and early harvest operations were seriously interfered with in numerous localities by the excessive rains. Dry weather set in again in early September and its continuance until freeze up provided an ideal fall for the saving of the heavy crop.

Stem rust appeared about ten days later than in 1927, but multiplied slowly and little or no damage resulted to the fairly early maturing crop.

Damaging frosts were experienced in late August in many sections of this province. In the northern districts where crops were later, numerous oat fields, which showed early promise, gave low yields of badly frosted grain. Frozen grades of wheat were very common and in too many instances seriously curtailed the grower's income.

The weed menace was more apparent than is usual. Following the wet seasons, perennial sowthistle has spread extensively and is invading nearly every part of Manitoba. Wild oats were particularly bad and were responsible in many instances for reduced yields and rejected grades. Perennial sowthistles, couch grass and wild oats constitute 95 per cent of the weed problem on the Illustration Stations.

Progress in Agricultural Machinery.—Two combine harvesters were sold in Manitoba in 1926. This year 208 were in use. A questionnaire was sent to the majority of owners by this Division and replies indicate that the ideal weather conditions this fall facilitated the use of these machines to a great extent. In the majority of instances these implements gave the best satisfaction. The auto truck came into fairly general use this year as a means for hauling grain; with suitable roads, operators claim a decided saving by the use of this vehicle.

COST OF PRODUCING CROPS

From weekly reports submitted by operators, cost of production figures are calculated and presented in this report. Values given below form the basis for these calculations.

COST VALUES

Rent of land	8 per cent of land values
Use of machinery	$1 35 per acre
Horse labour	8 cents per hour
Man labour, Threshing, Binder twine	Prevailing district rates

COST OF SEED

Wheat	$1 75 per bushel
Oats	0 85 "
Barley	1 25 "
Fall rye	1 25 "
Flax	2 50 "
Corn	4 40 "
Sunflowers	0 09 per pound
Alfalfa, commercial No. 1	0 35 "
Sweet clover, white blossom	0 12 "
Alsike	0 34 "
Red clover	0 38 "
Brome grass	0 12 "
Western rye grass	0 08 "
Timothy	0 11 "
Meadow fescue	0 15 "

RETURN VALUES

Wheat, common	$1 07 per bushel
Wheat, durum	0 92 "
Oats	0 50 "
Barley	0 60 "
Fall rye	0 84 "
Corn, green for silage	3 00 per ton
Sunflowers, for silage	2 50 "
Alfalfa hay	11 00 "
Sweet clover and grass hay	8 00 "
Mixed alfalfa and grass hay	9 00 "

Straw values are not considered. Two-thirds of the cost of summer-fallowing is charged to the first crop and one-third to the second crop.

ARBORG

OPERATOR, M. SHEBESKI

Satisfactory weather conditions, combined with very thorough work by the operator, resulted in high yields of good quality crops being obtained on this station. On the rather heavy, black loam soil, natural to this district, sow-thistle control, to a large extent, spells success in crop production. Progress is being made in this work on the station under influence of the cleaning effects of the five-year rotation in operation. Early maturing varieties is another essential to this usually late locality.

A small trial orchard begun in 1927 was extended this year. From this timely information relative to the suitability of the hardier sorts of plums, crab apples, strawberries and raspberries is sought. Flowers and shrubbery are a pleasant feature of the work on this station.

A Field Day was held July 11, when about fifty interested visitors spent the afternoon in a tour of the fields and gardens, discussing numerous problems.

Seeding wheat commenced April 26, while oats and barley went in May 11, and corn May 12. Precipitation from January to September inclusive amounted to 14.49 inches.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT ARBORG

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit per acre	
	1928	Average 2 years	1928	Average 2 years	1928	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Five year Rotation—						
Fallow, replacing corn	.....	.....	8 31	8 03	.....	.....
Wheat, Marquis seeded	20 03	19·03	11 02	12 93	10 70	9 59
Hay, M. fescue, W. rye grass, red and alsike clover	5·8	.....	14 76	.....	46 14	.....
Barley, O.A.C. 21	42·24	29·87	12 94	11 70	12 40	6 84
Oats, Banner	51·00	34·50	12 97	11 91	12 53	4 89
Demonstration Test Field—						
Alfalfa and timothy	5·00	.....	11 69	.....	40 81	.....

Corn was a failure and was replaced by fallow. The cost incurred because of this failure was apportioned to all crops in the rotation.

The hay mixture consisted of five pounds each of meadow fescue and western rye grass and three pounds each of red and alsike clover; this is seeded with wheat on fallow or following corn. A better crop of hay would be difficult to get than that grown from this mixture in 1928. The test plot of alfalfa and timothy was little less successful. Marquis wheat made a fair sample, while the oats and barley were very good as to both yield and quality. During the year this station disposed of 179 bushels of seed grain and 25 bushels of seed potatoes to farmers in the neighbourhood.

CHURCHBRIDGE, SASK.

OPERATOR, HENRY GRUBE

An excellent season for grain crops was experienced throughout this district until the August frosts damaged much of the later ripening fields.

Seeding began on the station May 3, at which date the wheat plots were put in, oats were seeded a day later and corn on May 23.

The six-year rotation as originally outlined continues to give satisfactory results. Wild oats present the worst weed problem, while sowthistles are being held in check.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT CHURCHBRIDGE

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit or (−) loss per acre	
	1928	Average 3 years	1928	Average 3 years	1928	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Corn, cut for hay	1·5	2·75	11 91	13 21	−2 91	−0 21
Wheat, Garnet seeded	28·0	25·50	12 65	12 42	17 31	17 64
Hay, W. rye grass and alfalfa	2·5	2·5	8 07	8 73	16 93	17 61
Hay and break	2·25	2·25	8 07	8 66	14 43	13 17
Wheat, Marquis	20·0	16·83	12 52	12 69	8 88	7 15
Oats, Banner	50·0	49·50	12 49	13 03	12 51	11 48
Demonstration Test Fields—						
Timothy, 3rd crop	1·5	.....	6 14	.....	5 86	.....
Wheat, Reward, after sweet clover	24·0	.....	10 07	.....	15 61	.....
Alfalfa, 3rd crop	1·75	1·58	8 34	8 18	12 66	9 82

* Corn made rather a late start and the stand became infested with wild oats. The crop was cut and made into hay on Aug. 16. before the wild oats had advanced sufficiently to be harmful. The field was then well prepared for next year's crop.

Hay crops were, this year, up to the average and show a good profit, however, wheat following hay did not give the yield and profit that is obtained when this crop follows corn.

Two acres of Reward wheat seeded on a field following sweet clover yielded 24 bushels of plump, bright wheat. O.A.C. No. 21 barley on a test plot following three years of timothy yielded 30 bushels per acre of very good seed.

The sales of seed grain from this station have this year amounted to 1,020 bushels, the operator also disposed of 300 pounds of timothy seed.

DAUPHIN

OPERATOR, A. E. FRENCH

In 1928 this station maintained its previous reputation for the excellent work done. Plots yielded heavily and acre profits were substantial, demonstrating that fine results can be secured on a rich soil such as is found in this locality when it is kept in a thoroughly cultivated condition. Sowthistle is the weed problem in this district and careful control methods practised in the six-year rotation operated on the station are bringing convincing results.

Seeding commenced on May 2, when the Garnet and Reward wheat plots were put in. Oats were seeded May 8 and the sixty-day oats on May 12. A Field Day was held on July 26, when a fair-sized crowd of visitors were conducted around the plots. Rotations, weed control, and choice of cereal varieties were the chief subjects discussed.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT DAUPHIN

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit per acre	
	1928	Average 3 years	1928	Average 3 years	1928	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
60 day oats replacing corn	2·25	.....	12 30	.....	5 60	.....
Wheat, Reward seeded	33·50	29·28	16 43	16 85	19 42	17 96
Hay, first year	3·25	2·58	11 76	9 93	20 76	15 91
Hay and break	2·0	1·58	8 91	8 56	7 09	6 31
Wheat, Garnet	33·17	27·14	17 77	16 92	17 72	14 96
Oats, Banner	80·0	53·42	17 86	16 10	22 14	10 84
Demonstration Test Fields—						
Alfalfa for hay	3·33	4·78	10 48	11 30	29 48	40 69

Sixty-day oats replaced corn this year. In the two previous years corn averaged $5.11 per acre profit.

The hay plots are divided into two parts of equal area, one-half is seeded to western rye grass and alfalfa at the rate of 8 pounds each per acre, while the other half is seeded to meadow fescue at the same rates. For two years Garnet wheat following the alfalfa and rye grass has been a much heavier and cleaner stand than that on the side following fescue and alfalfa. The reason for this does not as yet seem clear.

Sixty-day oats replaced corn or summer-fallow. This crop permits of late seeding and being removed for hay in July enables the field to be ploughed in late July, which is a most effectual operation towards the control of sowthistle. Two acres of Minturki winter wheat were seeded September, 1927, on bare summer-fallow, but this crop entirely killed out in the early spring. Seed sales during the year included 1,150 bushels of wheat, oats and barley, and 50 bushels of potatoes.

DUGALD

OPERATOR, THOS. ROBERTS

Following the disappointing season of 1927 when flooding did havoc, the excellent returns on this station this year were doubly appreciated.

Reward wheat was seeded on April 26, Mindum on the 27th, oats on the 28th, barley on May 9 and corn on May 21. Sowthistle is prevalent in this locality, but fails to present a difficult problem on the station plots. Wild oats, however, are bad and measures for their control are under way. Already the three-year rotation shows evidences of effectually reducing this pest.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT DUGALD

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit or (−) loss per acre	
	1928	Average 3 years	1928	Average 3 years	1928	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Wheat, Reward	32·0	.....	18 68	.....	15 56	.....
Flax, seeded (cut for hay)	0·50	.....	12 87	.....	−9 87	.....
Hay, first year	1·0	1·50	9 27	8 79	0 73	7 54
Hay and break	1·90	1·72	8 75	8 99	10 25	9 18
Wheat, Mindum	27·0	.....	13 49	.....	11 35	.....
Oats, Banner	64·0	64·59	14 38	14 94	17 62	15 69
Three-year Rotation—						
Corn, North W. Dent	11·50	9·0	18 22	16 45	16 28	10 50
Barley, O.A.C. 21, seeded	30·0	29·33	16 89	14 56	1 11	3 05
Hay, sweet clover and break	2·85	1·70	10 32	9 03	12 68	7 64
Demonstration Test Field—						
Alfalfa for hay	2·25	.....	8 44	.....	18 56	.....

Flax was a failure this season, although the grass and alfalfa mixture seeded with this crop made a fine catch. Shortly after seeding the plot was partially inundated with heavy rains and drowning was responsible for a stand too weak to leave for grain, hence, the plot was cut in July and taken off for hay.

Reward and Mindum wheats were under trial here for the first time this year. Each was seeded on summer-fallow land and yielded well, the Reward stood up better on this heavy land, yielding slightly better, and giving a fine dark red sample.

Profits for most of the fields are lower than yields would indicate. Especially is this true in the case of the barley. This is due to to the summer-fallowing that had to be done in 1927 when fields drowned out, so that this year's crops are charged with two-thirds the cost of that summer-fallowing and with the expense in connection with seed used last year. There was no fallow in the six-year rotation this year due to the fact that two plots had to be handled as fallow in 1927. Next year this rotation will assume its proper sequence.

ERIKSDALE

OPERATOR, R. G. COWDERY

The third year of operation at this point brought very favourable results. This is a locality with a rather shallow soil, where sowthistle abounds and where outcroppings of stone make cultural operations difficult. Improvement crops are a necessity and the success of sweet clover on the station plots has been encouraging. Seeding of the plots began on May 2. This is largely a live stock region, where forage crops are featured. This has been kept in mind when planning rotations suitable for this station and district.

The Field Day held July 13, brought out a large number of farmers and their families. Besides discussions relative to field crops, much interest centred around the trial orchard, which was this year set out, and which is a very great credit in its trimness to the operator.

Trebi barley on the Illustration Station at Eriksdale yielded 43½ bushels per acre.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT ERIKSDALE

Rotations and crops	Yield per acre, bushels or tons	Cost per acre	Profit or (—) loss per acre
		$ cts.	$ cts.
Two-year Rotation—			
Barley, Trebi, seeded	48·0	16 01	12 79
Hay, sweet clover and break	1·5	8 55	6 45
Four-year Rotation—			
Summer-fallow	.....	9 54	.....
Oats, Banner seeded	43·50	10 65	11 10
Hay, clover and brome and break	1·25	9 76	2 74
Fallow, replacing barley	.....	8 11	.....
Test Plots—			
Trebi barley, following wheat	23·0	11 82	1 98
Oats, Victory, following wheat	14·50	12 49	—5 24
Mindum, following Mindum	8·50	13 47	—5 65

The figures presented above demonstrate that crops grown on clean summer-fallow such as that of barley in the two-year rotation, and oats in the four-year system have a distinct advantage. This was very largely due to the absence of sowthistle. In fact, this weed was the chief limiting factor on all of these plots this year, since moisture was abundant and rust negligible.

Sweet clover was a short but thick stand and gave a profitable yield of good quality hay. The sweet clover and brome mixed made a fair crop, but the advisibility of including brome on this stony soil is questioned, because of the difficulty of eradication. Trebi barley gave a very excellent sample for the second year in succession. Fifty bushels of this seed were disposed of for local use last spring.

GILBERT PLAINS

OPERATOR, GEO. W. BEST

Very good results were secured at this station this year. There is a noticeable cleanliness and neatness about the plot area which reflects credit to the able management of the operator. Couch grass is the chief weed problem, but it is being thoroughly attacked and is now under fair control. Other weeds are insignificant.

Wheat plots were seeded April 26, oats May 14 and barley on May 26.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT GILBERT PLAINS

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit per acre	
	1928	Average 2 years	1928	Average 2 years	1928	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Five-year Rotation—						
Wheat, Mindum (replacing fallow)	31·00	.....	15 49	.....	13 03	.....
Wheat, Marquis on fallow	30·00	22·50	18 57	12 95	13 53	7 93
Barley O.A.C. 21 seeded down	36·00	33·50	17 31	15 74	21 21	13 24
Hay and break	2·50	2·75	10 27	10 13	19 73	19 89
Oats, Banner	97·00	.....	18 47	.....	30 03	.....
Demonstration Test Field—						
Hay, alfalfa	1 75	.....	8 60	.....	12 40	.....

Corn was a failure in 1927 and the plot was fallowed. This made two summer-fallow plots available for crop in 1928. The original sequence of crops will be regained in 1929. Mindum, under trial for the first time here did very well, although Marquis on fallow gave a slightly better profit. Clover and grass hay yielded well. The removal of this crop in early July, permitted the field to be ploughed in midsummer, which was followed by intensive surface cultivation for couch grass.

GUNTON

OPERATOR, ELLWOOD FRASER

Work on the land commenced in late April; wheat was seeded on May 3, barley on May 4 and oats on May 14.

Perennial sowthistle is a most persistent weed on this station and in the neighbourhood. Control measures afforded by the six-year rotation are being studied.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT GUNTON

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit per acre	
	1928	Average 3 years	1928	Average 3 years	1928	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts
Six-year Rotation—						
Summer-fallow	.....	.....	7 46	6 78	.....	.....
Wheat, Garnet, seeded	41·0	28·69	17 52	17 44	36 35	19 49
Hay, first year	2·90	1·80	9 20	7 04	15 45	8 34
Hay and break	2·15	1·63	6 01	5 98	13 34	8 30
Wheat, Mindum (2 yr. average)	19·00	17·50	12 64	14 19	4 84	3 55
Oats, Banner	31·00	28·50	14 01	12 84	3 29	1 66
Demonstration Test Fields—						
Alfalfa, W. rye grass and Meadow fescue	1·50	1·58	6 76	7 24	9 74	9 76
Barley O.A.C. No. 21	35·00	33·00	12 13	14 01	8 87	5 02

Mindum wheat following two years of hay has not been as successful nor as profitable as Garnet wheat on bare fallow.

The mixed hay, seeded at the rate of eight pounds of sweet clover to eight pounds of rye grass and meadow fescue, has yielded well. In the second year with the clover gone, there is a tendency for the grass stand to be thin, and this year sowthistles were fairly well spread over the field.

The oat crop finished better than early prospects indicated. Sowthistles were rampant in this plot and fall cultivation took place as soon as the crop was removed; this treatment followed by a bare fallow in 1929 should have a beneficial cleaning effect in controlling weeds.

INWOOD

OPERATOR, WM. COSSETTE

The plots on this station are situated on a stony and rather shallow soil; this condition combined with the sowthistle menace makes profitable crop husbandry a difficult task. Fall rye was this year tried in place of wheat, because of the poor results of wheat in former years. The only other cereal grown this year was oats. Seeding took place on May 4.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT INWOOD

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit or (−) loss per acre	
	1928	Average 2 years	1928	Average 2 years	1928	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Four-year Rotation—						
Summer-fallow	.....	.....	6 26	7 11	.....	.....
Oats, Banner, seeded	44·50	31·25	17 02	13 64	5 23	2 99
Hay, sweet clover and break	1·00	1·38	9 14	8 25	−1 14	4 50
Oats, Banner	37·00	.....	14 22	.....	4 28	2 19
Fall rye (replacing wheat)	8·75	.....	7 20	.....	0 15	.....
Demonstration Test Fields—						
Hay, alfalfa	1·00	.....	5 75	.....	4 25	.....
Hay, western rye grass	0 95	.....	4 93	.....	2 67	.....
Hay, meadow fescue	0·75	.....	4 84	.....	1 16	.....

Thorough summer-fallowing is required here to control sowthistles. It will be noted that the oat crop on bare fallow was quite outstanding in yields and profit, while that following sweet clover hay was but slightly lower. Sweet clover hay, because of early removal, permitting subsequent early tillage, provides a fair measure of successfully handling the thistle. Fall rye could not this year be pronounced a success; seeded on oat stubble, the stand was not sufficiently thick to compete with the sowthistle. Alfalfa, western rye and meadow fescue hay on demonstration plots, although free from weeds, yielded but marginal profits. Ammonium sulphate applied at the rate of 75 pounds per acre on one-half of the alfalfa area showed a slight thickening of the stand. Fifty bushels of seed wheat and oats were disposed of last spring.

KAMSACK, SASK.

OPERATOR, F. CRAIG

After four years of operation the six-year rotation on this station appears reasonably free from weeds, and this year very satisfactory yields were harvested off all plots. Wheat was seeded on April 30, and May 4, respectively,

while oats went in a week later. A Field Day was held July 27, with a fairly large number of visitors present. Cereal crops and field cultural practices were the central themes of discussion.

The precipitation from May to September inclusive was 10·10 inches.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT KAMSACK

Rotation and crops	Yield per acre bushels or tons		Cost per acre		Profit per acre	
	1928	Average 3 years	1928	Average 3 years	1928	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Corn	7·50	6·80	16 86	16 20	5 64	4 06
Wheat, Garnet, seeded	30·0	24·42	13 65	15 98	18 45	16 28
Hay, first year	2·0	1·38	8 71	7 73	7 29	3 86
Hay and break	1·50	1·17	8 29	7 55	3 71	2 45
Wheat, Reward	22·0	21·0	13 17	14 31	9 83	10 33
Oats, Victory	46·50	51·42	13 18	16 22	9 82	10 19

Wheat following corn continues to hold a distinct advantage over wheat following the two hay crops. The hay mixture consists of western rye grass, meadow fescue and alfalfa, using five pounds of each per acre. This makes a very good quality hay and yields fairly well on this soil.

The oat crop had some sowthistle and wild oats. These are the prevailing weeds in this district. All other fields in this rotation were clean. It is noteworthy that oats being the last field, in the rotation and a second successive grain crop, should be the weediest. This indicates the need for carefully arranged and managed rotations. Eight hundred bushels of seed oats and wheat were sold from this station for spring seeding.

KATRIME

Operator, A. E. Walker

Work was commenced on this new station in the spring of 1928, when a five-acre field was seeded down to alfalfa as a trial hay plot. The land was previously summer-fallowed. Reward wheat on two acres and O.A.C. No. 21 barley on three acres provided the nurse crops.

On an area which will be occupied in 1929 by a six-year rotation two plots were laid out on land which was summer-fallowed in 1927. These were seeded with Marquis wheat, on one western rye grass and sweet clover was seeded at the rate of 8 pounds of each per acre, the other was seeded down for a two-year period using 8 pounds each of alfalfa and western rye grass, which is the mixture to be used in the rotation.

These grain plots yielded fairly well and the quality was good. The grasses and legume made very heavy stands in all plots.

PETERSFIELD

Operator, Wm. Michael

This station has most encouraging progress to report for 1928. Sowthistle, which is so persistent in the Red River valley soil is now, due to careful preparatory work, fairly well under control.

Spring opened early for this district. Wheat seeding took place on April 24, oats and barley seeding was delayed until May 10, corn was planted on May 23. Heavy rains during June and July were responsible for some flooding on the corn and fallow plots. Wet weather interfered with early haying and because of this sweet clover was rendered almost useless for feed. A Field Day held

July 9 was pronounced a success, despite the heavy deluge of rain which fell the previous day. Field crops and poultry were the chief subjects discussed.

The precipitation from January to September, inclusive, totalled 14·39 inches. The average summer temperatures, this year, were slightly below normal.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT PETERSFIELD

Rotation and crops	Yield per acre bushels or tons		Cost per acre		Profit or (—) loss per acre	
	1928	Average 2 years	1928	Average 2 years	1928	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Summer-fallow	.....	.....	12 91	11 40	.....	.....
Wheat, Reward, seeded	45·0	.....	22 22	.....	25 93	.....
Hay, first year	3·85	3·30	12 73	11 75	25 78	21 26
Hay and break	3·25	1·50	10 48	8 62	22 02	5 88
Wheat, Garnet	28·0	.....	14 89	.....	15 07	.....
Oats, Victory	22·50	17·50	11 51	11 61	−0 26	−2 55
Three-year Rotation—						
Corn, N.W. Dent	6·50	.....	22 27	.....	1 73	.....
Barley, Trebi, seeded	43·0	35·17	13 90	16 05	11 90	6 06
Hay, sweet clover and break	1·50	1·50	11 45	11 78	0 55	3 93

Reward wheat was used as a nurse crop, replacing flax on summer-fallow land this year; during the two previous years flax made a very satisfactory nurse crop. Hay yields were much in advance of the average and sowthistle and other weeds were few in this crop. The hay mixture was seeded at the rate of fifteen pounds per acre, being made up of five pounds each of western rye grass, meadow fescue and alfalfa. Corn gave a fair yield despite semi-flooding in July. Trebi barley after corn lodged badly, but yielded well, giving a good quality sample. Here as at several other stations oats come as the last crop in the course of the rotation, succeeding wheat and gave the lightest and weediest crop.

PIPESTONE

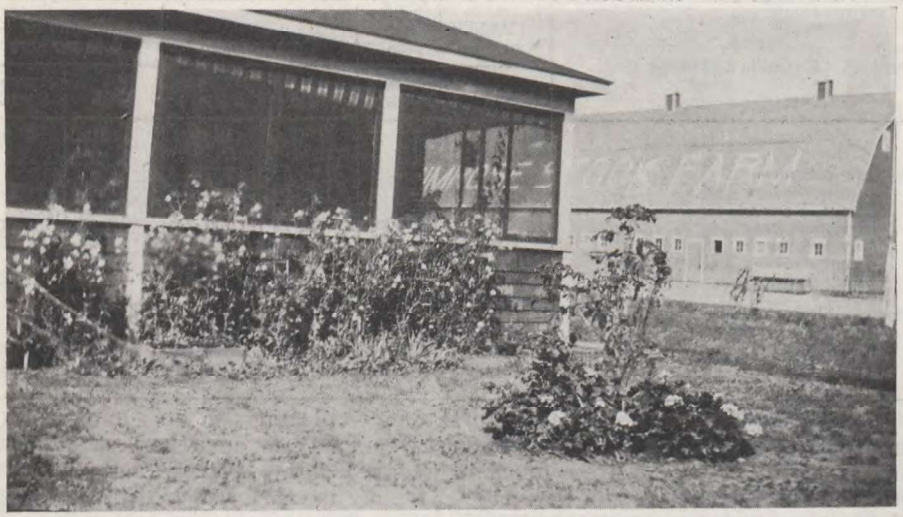
OPERATOR, WM. FORDER

This station started operations in 1927 and this year the three and six-year rotations came into their proper order. The soil here is light and fairly sandy, with a slight amount of couch grass as the main weed problem. Wheat was seeded on May 4 and oats on May 5. A Field Day held on July 16 was well attended. Field and garden crops were chiefly discussed.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT PIPESTONE

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit or (—) loss per acre	
	1928	Average 2 years	1928	Average 2 years	1928	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Corn, N.W. Dent	6·0	.....	12 04	.....	5 96	.....
Wheat, Mindum, seeded	19·0	16·0	13 92	15 23	3 56	2 75
Hay and break	1·5	1·25	6 83	6 23	5 17	4 77
Wheat, Mindum	11·0	9·86	10 18	12 78	−0 66	−2 22
Oats, Victory	18·0	24·12	10 48	12 52	−1·48	0 29
Three-year Rotation—						
Wheat, Mindum	12·50	12·75	11 04	13 10	−0 45	0 01
Oats, Victory, seeded	23·0	25·50	9 17	12 64	2 33	1 52
Hay, sweet clover, break	1·25	.....	7 04	.....	2 96	.....

Profits are slightly above the two-year average although yields on the whole were this year lighter. This is explained by reason of the 1927 crops having been grown on summer-fallowed plots, and were therefore charged with two-thirds of the fallow costs, while the same fields this year had but one-third of this charge to bear.



General view of the home on the farm where an Illustration Station is in operation at Pipestone.

Sweet clover and brome seeded at the rate of eight pounds each per acre, with wheat following corn produced a good quality and profitable hay crop. Sweet clover in the three-year rotation is seeded at the rate of 15 pounds per acre. Last year this crop was ploughed down as green manure. This year one-half of the plot was treated thus while the other half was cut for hay and then ploughed. This will afford an opportunity of comparing these cultural practices on succeeding crops. Wheat gave a fair yield on summer-fallow (fallow replaced corn in 1927). The field in the three-year rotation following sweet clover ploughed down did not yield up to expectations. Last spring 3,600 pounds of sweet clover seed were disposed of by the operator of this station.

PLUMAS

OPERATOR, FRED BUSCHAU

This station has been operating four years. In 1926 drought reduced yields severely. In 1927 rust and excessive rains combined to curtail yields. This, however, was a favourable season and with well-prepared fields profitable crops were harvested.

Sowthistle is the major weed problem of this district. The effect of such cultural practices as ploughing immediately in wake of the binder, late fall cultivation on fallow and on stubble intended for fallow, as well as the introduction of hay crops within a rotation is being studied.

The wheat plots were seeded on April 23, oats on May 11 and corn on May 12.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT PLUMAS

Rotations and crops	Yield per acre, bushels or tons		Cost per acre		Profit per acre	
	1928	Average 2 years	1928	Average 2 years	1928	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	8 25	7 62	.....	.....
Wheat, Mindum, seeded	23·50	18·0	17 46	14 95	3 16	2 88
Hay, first year	2·50	1·55	7 10	6 23	12 90	8 77
Hay, and break	1·20	1·10	6 01	5 52	3 50	4 24
Wheat, Mindum	38·0	25·25	17 07	12 10	17 89	5 03
Oats, Banner	38·50	.....	11 77	.....	7 48	.....
Three-year Rotation—						
Corn, North Western Dent	7·0	7·50	17 89	17 17	3 11	5 39
Wheat, Mindum	19·0	13·50	12 62	11 29	4 86	3 41
Hay, western rye grass and break	1·50	1·17	6 05	5 41	3 95	3 59

Because of severe winter-killing a demonstration plot of Grimm alfalfa was ploughed up and fallowed this year. The hay mixture in the six-year rotation is made up of eight pounds each of sweet clover and brome grass. This hay although not yielding high has made creditable profit, and has a beneficial cleaning influence on the land. The oat crop in 1927 was cut for feed, which precludes the possibility of presenting a two-year average. Corn crops have been thoroughly worked and have brought fine results both as a fodder crop and as a summer-fallow substitute.

Thirty bushels of wheat and forty-five bushels of potatoes were disposed of last spring for seed.

ROBLIN

OPERATORS, ARNOTT BROS.

This station was established in 1926 and in 1927 crops were seriously reduced by wet conditions and stem rust. More favourable weather and the absence of rust this year resulted in increased returns; frost in August, however, did some damage.

Owing to the undulating, wooded nature of the landscape in this district, snow remains on the land late in spring, which as a rule delays seeding. This condition is common to the station plots. Early maturity of the common varieties grown cannot then be expected. Wheat was seeded on May 15, oats and barley on June 2. Canada thistle, wild oats and stinkweed are fairly prevalent over the plots and control of these is sought by cultural plans now in the course of establishment.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT ROBLIN

Rotation and crops	Yield per acre, bushels or tons	Cost per acre	Profit per acre
		$ cts.	$ cts.
Five-year Rotation—			
Summer-fallow	.....	7 20	.....
Wheat, Marquis, seeded	16·25	14 62	0 33
Hay and break	1·66	10 05	3 23
Wheat, Marquis	19·0	14 97	2 51
Oats, Banner, cut for hay	2·25	13 16	4 84
Three-year Rotation—			
Barley, Trebi (replacing wheat)	40·0	16 01	7 99
Barley, Trebi, seeded	47·0	16 68	11 52
Hay, sweet clover	2·0	10 75	5 28
Demonstration Test Fields—			
Alfalfa for hay (½ plot)	4·25	10 63	11 87
Wheat, Marquis seeded to alfalfa (½ plot)	22·0	15 98	7 56

Barley replaced wheat in the three-year rotation in view of the fact that this plot could not be prepared in time for wheat, owing to residual water in the spring. Banner oats seeded on June 2 were frozen before maturity. They were not threshed but used as sheaf feed. Even though Marquis wheat was seeded quite late it matured before frost and graded a good No. 3 Northern.

STE. ROSE DU LAC

OPERATOR, JOS. FITZMAURICE

Wheat seeding started at this station on April 28; the oat plots were put in on May 5. Conditions throughout the summer were satisfactory and favourable yields of cereals were obtained. As a result of partial flooding in 1927, the sweet clover plot for hay came through in such a weakened condition that it was ploughed down and summer-fallowed. The cost for this failure is distributed equally among this year's grain crops.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT STE. ROSE

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit per acre	
	1928	Average 2 years	1928	Average 2 years	1928	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Five-year Rotation—						
Summer-fallow	.....	.....	4 88	5 33	.....	.....
Wheat, Mindum, seeded	24·0	.....	14 38	.....	7 00	.....
Hay, sweet clover and break, failure	.....	0·50	.....	3 20	.....	2 40
Wheat, Mindum	27·00	18·50	13 92	12 34	10 92	6 08
Oats, Banner	50·00	32·50	11 92	10 10	13 08	6 53

The station is situated on a light silty loam soil with sowthistle giving considerable trouble. The efforts which have been put forth to control this weed resulted in much cleaner fields this season.

Mindum wheat has had two successful years at this station and seems well adapted to local conditions. The plot following sweet clover hay was particularly clean and gave the highest yield. The oat plot was infested with thistle but gave a surprisingly good yield and quality of grain.

TISDALE, SASK.

OPERATOR, GEORGE MCMURDO

This station was established in 1927 and following the preparatory work of that year, fields are now in proper sequence for carrying on the five-year rotation which was to be established. Several plots were fallowed last year, hence summer-fallow charges against this season's crops are higher than will be the case in succeeding years. This fact explains why profits in the accompanying table are not as substantial as the yields would indicate. The wheat plots were seeded on May 2, and oats on May 23.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT TISDALE

Rotation and crops	Yield per acre bushels or tons	Cost per acre	Profit or (—) loss per acre
		$ cts.	$ cts.
Five-year Rotation—			
Summer-fallow		7 89	
Wheat, Marquis, seeded	38·78	19 12	22 29
Hay and break	3·0	12 67	11 33
Wheat, Garnet	42·33	19 59	25 70
Oats, Banner	20·0	14 05	—4 05
Demonstration Test Field—			
Hay, alfalfa	2·30	11 72	11 28

Both Marquis and Garnet wheat produced good yields of plump, high quality seed. The hay was seeded at the rate of eight pounds each of sweet clover and brome per acre. This was a fine heavy crop and was saved in good condition.

Oats gave a low yield, due largely to the presence of Canada thistle and other minor weeds. This plot was the only one having troublesome weeds.

WAWOTA, SASKATCHEWAN

OPERATOR, CHARLES PRYCE

The season of 1928 might be considered as a backward one in this district. Seeding was not unusually late, but the cool dry spring influenced by damaging frosts near the end of May, set back all grain crops which were then above ground. Wheat was seeded on the plots on May 5, oats and barley on May 17.

The Annual Field Day held July 17 was a marked success when about one hundred visitors were present. Lively discussions on rotation of crops,

Filling the cement walled trench silo at Wawota with sunflowers. The operator, Mr. Pryce, depends to quite an extent on this crop for winter feeding.

weeds, fertilizers, silage, cereal crops and gardening were engaged in. Landscape beautification surrounding the buildings on this station is a feature of progress and does remarkable credit to the exacting and energetic work of the operator.

The precipitation from April to September inclusive was 12·86 inches, of which amount 6·25 inches fell in June and 3·29 inches in July.

SUMMARY OF YIELDS AND COST OF GROWING CROPS AT WAWOTA

Rotation and crops	Yield per acre, bushels or tons		Cost per acre		Profit per acre	
	1928	Average 3 years	1928	Average 3 years	1928	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Summer-fallow	.....	.....	7 07	.....	.....	.....
Wheat, Reward, seeded	17·50	20·80	12 02	12 92	6 70	11 32
Hay, first year	1·50	1·50	8 51	6 95	1 49	3 85
Hay and break	Failure	0·83	.....	4 02	.....	3 31
Wheat, Garnet	15 0	18·33	12 65	14 04	3 40	8 65
Oats, Banner	60·0	48·0	12 99	12 06	17 01	11 03
Demonstration Test Field—						
Barley, O.A.C. 21	50·0	.....	14 73	.....	15 27	.....
Sunflowers for silage	7·50	.....	16 12	.....	2 63	.....

Yields and profit in 1928 were barely up to the three-year average for wheat and hay. Oats although not heavy of straw gave a fine yield and a good plump sample. The second year hay crop; after four years' trial it appears that the practice of growing hay two years in succession was desirable in this district, because this modification in the rotation with regard to hay crops seems essential. Fallow now replaces corn as the growing of this crop has not met with success. This probably was due to the use of seed from the northern states, which although hardier on our prairies than southern grown seed, does not appear acclimatized sufficiently to meet peculiar local conditions at Wawota. Brandon grown Northwestern Dent was tried out in a small plot this year with very fair success despite the long, cool dry spring. Sunflowers do well and are a safe crop for silage.

The operator disposed of 1,137 bushels of seed grain during the year. Many people visit this station and numerous inquiries are answered relative to results of the work.

REPORT OF THE CO-OPERATIVE TESTS WITH GRAIN ALONG THE LINE OF THE HUDSON BAY RAILWAY

This work has been conducted four years with the result that fairly valuable information is now available. Plots were this year seeded at Mile 137, Mile 82, Mile 42, The Pas and the Hudson Bay Junction.

Mile 137, R. Davidson.—At the time of inspection, August 28, all plots were in healthy vigorous condition. Stands of wheat, oats and barley were tall. No stem rust was discovered and only a very occasional pustule of leaf rust. Early wheats were changing in colour, but the later ones would not mature before September 14. The dry spring and early summer and then the rains of late summer brought along a tall late growth and slow maturity. Vegetable gardens had not been touched by frost on August 28 and an October report from this point stated that no killing frost was experienced there until September 22. This seems remarkable when compared to the killing frosts over most of

the prairies before the end of August. The plots here would have matured had it not been for birds and chipmunks which cleaned them off as they ripened. There are therefore no data as to yields to record.

MILE 81, J. RAINVILLE.—Second growth was responsible for belated ripening at this point. On August 28 barleys were nearly all ripe but birds and rodents had them cleaned off. The wheat and oats met a similar fate which rendered harvesting impossible. There was a trace of stem rust on all late wheats and barley at this point but none was noticed on oats.

MILE 42, J. TURNBULL.—By referring to the accompanying table it will be noticed, that in nearly every way the tests at this place this year were a decided success. It is remarkable to note that although seeded May 22 all wheats were ripe and cut before August 18. Mindum was included this year as a test for the suitability of a late variety and in every respect it did well.

Plots were cut at the date of inspection but a field of wheat about ten days from maturity was inspected. Stem rust infection from a trace to 30 per cent was common in this field. Slight frost injury was apparent in gardens on August 28.

MACKAY INDIAN SCHOOL, THE PAS.—At date of inspection, August 21, no frost damage had been recorded. Wheat and oats were all mature but the grain had been entirely stripped by birds and chipmunks except the barley. Reward, Red Bobs, Marquis and Ceres wheat all showed rust infection from a trace up to 30 per cent, while Huron showed but a trace and Mindum was entirely free. Oats attained a tall clean growth with no sign of stem rust.

HUDSON BAY JUNCTION, R. JARVIS.—The plots are out in the Etomami district, 10 miles southeast of The Junction. This is rather an exclusive farming district of little more than two townships, situated between the Porcupine Mountains on the south and east and the Pasquia Hills on the west and north. The soil is a rich dark peat loam not yet cultivated sufficiently long to work out the peat, hence, it is cold and develops a slow maturing crop.

Plots were all seeded May 22 and on August 23, the date of inspection, early wheats were ripe, as also were early oats and barley. A rather severe frost visited the district on the morning of the 24th and 25th of August and nearly all samples of wheat were frozen. The later ones although weighing quite well would not grade better than No. 5. All samples, however, germinated well with the exception of Mindum.

Much of the crops in this district was frozen, but at date of inspection several fine fields of garnet were safely in stook. In a farming locality situated such as this one early varieties of all cereals will for several years be a decided advantage.

SUMMARY OF CO-OPERATIVE TESTS ALONG THE LINE OF THE HUDSON BAY RAILWAY

Variety	Hudson Bay Junct'n R. Jarvis		Mile 42 J. Turnbull		The Pas Rev. E. Bird	
	Bushels per acre	Weight per bushel	Bushels per acre	Weight per bushel	Bushels per acre	Weight per bushel
Wheat—						
Huron	45·78	59·5	46·11	62·0	.....	.....
Reward	43·60	64·0	23·35	66·0	.....	.....
Red Bobs	43·50	59·5	30·22	63·5	.....	.....
Ceres	40·87	60·5	39·23	63·4	.....	.....
Marquis	40·33	61·5	37·78	64·0	.....	.....
Mindum	36·51	60·5	30·61	65·0	.....	.....
Barley—						
Trebi	45·88	47·0	58·86	48·6	27·91	49·5
Bearer	45·70	48·0	54·01	48·0	19·62	46·5
Himalayan	36·84	61·5	37·78	61·5	16·90	61·5
O.A.C. 21	33·90	49·0	59·70	48·0	24·96	49·0
Duckbill	32·06	49·5	44·45	53·0	28·13	53·5
Oats—						
Victory	67·24	40·0	83·90	41·5	.....	.....
Gold Rain	66·88	41·0	77·22	40·0	.....	.....
Banner	66·12	38·5	76·46	38·0	.....	.....
Gopher	61·40	37·5	75·09	39·0	.....	.....
Laurel	44·84	46·0	43·62	46·0	.....	.....
Alaska	41·04	41·0	61·71	40·0	.....	.....

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