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Canada

DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

DOMINION EXPERIMENTAL FARMS

REPORT OF THE CHIEF SUPERVISOR

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

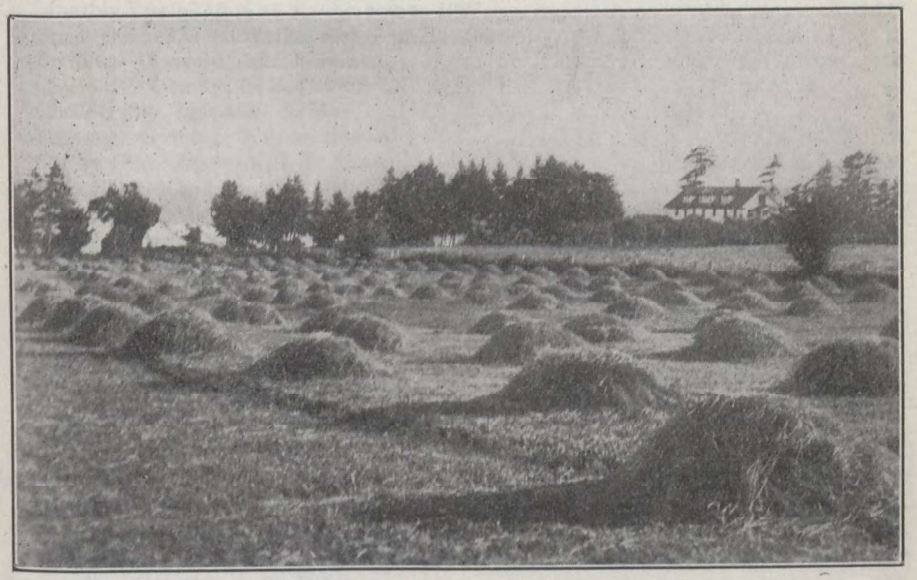
ON

THE ILLUSTRATION STATIONS

IN

BRITISH COLUMBIA, ALBERTA, SASKATCHEWAN and MANITOBA

FOR THE YEAR 1927



Clover hay on the Illustration Station at Comox, B.C., yielded three and one-third tons per acre.

Printed by the Authority of the Hon. W. R. Motherwell, Minister of Agriculture, Ottawa, 1928

CONTENTS

ILLUSTRATION STATIONS

IN

BRITISH COLUMBIA, ALBERTA, SASKATCHEWAN AND MANITOBA

During the past year one hundred and sixty Illustration Stations have been in operation in the Dominion. In addition fifteen new sites have been selected and work will be started on them in the spring of 1928. Eleven of these stations are located in Prince Edward Island, fifteen in Nova Scotia, sixteen in New Brunswick, forty in Quebec, thirteen in Ontario, twelve in Manitoba, twenty-four in Saskatchewan, sixteen in Alberta and thirteen in British Columbia. 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 dealing with the work in the east, where mixed farming is generally carried on and the other with the work 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 Stations 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.
M. J. Tinline, Brandon, Man.	J. D. Guild, Brandon, Man.
W. D. Albright, Beaverlodge, Alta.	

ILLUSTRATION STATIONS AS SEED CENTRES

The use of good seed is undoubtedly one of the first essentials to satisfactory crop production. Such seed must not only be pure, free from weed seeds and disease, but must also be of a variety suited to the soil and one which contains those inherent characters with regard to earliness, winter-hardiness, etc., which will make its production profitable under the climatic conditions of the district. In order to illustrate and to give effect to a policy of extending the use of such seed, the Illustration Stations have adopted the principle of growing the varieties of grain and class of crops found most successful on the nearest experimental Farm. In turn these crops are multiplied and the seed offered for sale in the district, so that they may come more rapidly into general production. Each season the Illustration Stations are increasing in their efficiency as seed growers and distributors, due to the care and efforts of the farmers with whom they are co-operating, in carrying on this work. The total sales this year amounted to 30,942 bushels of seed grain, 11,892 bushels of seed potatoes and 22,080 pounds of grass and clover seed.

POULTRY IMPROVEMENT, SALE OF BREEDING STOCK AND HATCHING EGGS

Considerable effort is being made on the Illustration Stations and in the districts surrounding them to arouse greater interest in the breeding, feeding and housing of poultry. Each year finds improvements being made by the various

operators. During the past year some built new and up-to-date houses, others have remodelled their old ones, making improvements with regard to the lighting, ventilation and general comfort of the houses. In addition, all are endeavouring to improve the egg laying qualities of their flocks by careful breeding and selection and by the introduction of males from high producing females. Such a procedure establishes in the respective districts a centre from which farmers can procure breeding stock and hatching eggs from ancestors that have produced over 200 eggs per year. This year 602 cockerels, 682 pullets and 1,528 settings of hatching eggs were sold from these stations.

DAIRY MILK RECORDS, LIVE STOCK IMPROVEMENT

In the provinces of British Columbia, Ontario, Quebec, New Brunswick, Nova Scotia, and Prince Edward Island, it may be said that the operators of the Illustration Stations derive their main source of livelihood from the sale of dairy products. It is, therefore, essential that the dairy herds be developed along production lines so that a profitable return may be obtained for the labour expended and food consumed. Economical crop production and the feeding of these crops to good stock must go hand in hand to make these stations and adjoining farms most profitable, because inefficiency along either of these branches of farming renders the other less effective. The use of milk scales and the weighing of each cow's milk, while long advocated, is still neglected on too many farms. On the Illustration Stations the milk production of the herds varies greatly. Many have well-bred and good-producing herds, selected over a long period of years, but others still have that period of development ahead. However, progress is being made and active interest is developing in live stock improvement. Some for the first time introduced pure-bred blood into their herds this year; others have been in a position to pass stock on to the farmers of their districts for a similar purpose. The operators of these stations sold 266 head of cattle, 106 hogs and 165 sheep, during the past year, for breeding purposes.

PUBLICITY AND MEETINGS

Although the work on the Illustration Stations is designed to illustrate successful methods of growing crops as well as the breeding and feeding of live stock and poultry, it is essential that the methods followed and results obtained be brought to the attention of the farmers surrounding them. To do this the supervisors in the different provinces hold field meetings on these Illustration Stations, during the growing seasons, and explain the work and results in detail. During the past season one hundred and twenty-four field and public meetings were held with this aim in view. In addition the supervisors assisted in the program at eight short-courses and acted as judges at twenty-two fairs and eight ploughing matches.

Timely matters of interest, as well as reports of progress and yields, were prepared and given for publication to the local newspapers.

REPORT ON THE ILLUSTRATION STATIONS IN BRITISH COLUMBIA

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

During the year 1927 twelve Illustration Stations were supervised from the Experimental Farm at Agassiz. Seven Stations are located in central British Columbia, serving the territory adjacent to the Canadian National Railway between McBride and Smithers, a distance of four hundred miles. Two Stations are in the southern interior and three are located on Vancouver island.

THE SEASON

A glance at the meteorological table will show the great variation in climate throughout the province of British Columbia. Rainfall ranges from 75 inches on Vancouver island down to 10 or 12 inches in the southern interior and minimum winter temperatures vary from 14 degrees above zero on the island to 56 degrees below zero in central British Columbia. On Vancouver island work on the land continued throughout the winter months. Ploughing at Comox was reported on February 9. In central British Columbia very little field work was undertaken during April and seeding was not general until the middle of May. In fact all over the province dates of seeding were one to two weeks later than usual. Many farmers in the interior grew uneasy during the delay as they feared that grain would not ripen. However, a favourable growing season was experienced in almost all sections of the province. Wet weather in June and early July retarded hay cutting but increased yields to considerably above the average. Grain matured in record time in the central interior, averaging one hundred and four days for wheat and one hundred and six days for oats from date of seeding.

PRECIPITATION FOR 1927 AT THE ILLUSTRATION STATIONS IN BRITISH COLUMBIA

Month	Armstrong	Alberni	Courtenay	Francois Lake	Kamloops	McBride	Prince George	Salmon Valley	Smithers	Telkwa	Vanderhoof
	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch	inch
January	1·87	11·46	7·83	0·80	1·45	0·56	1·90	1·50	0·50	0·82	0·65
February	0·96	7·58	5·48	0·10	0·70	0·36	0·57	.....	2·80	2·37	0·95
March	0·29	9·35	4·72	0·21	1·45	1·67	1·15	0·06	1·15	1·37	1·40
April	0·44	3·41	0·83	1·11	0·17	1·64	1·11	0·39	1·20	1·28	0·58
May	1·50	3·33	3·12	1·35	1·82	1·08	2·01	1·00	1·40	1·90	1·25
June	1·37	1·79	1·96	0·94	3·43	1·59	2·35	1·33	2·17	2·21	1·41
July	1·54	0·44	0·36	1·17	1·42	2·45	0·99	0·89	0·58	0·56	1·28
August	2·07	1·11	0·97	1·06	1·57	0·48	1·60	0·81	0·30	0·51	0·59
September	2·87	4·91	4·04	0·79	1·83	3·08	2·06	1·24	0·81	0·74	1·08
October	1·91	11·42	3·77	0·89	2·87	5·38	3·21	1·63	0·93	1·43	1·31
November	2·20	16·31	5·33	2·15	2·20	4·13	3·25	2·50	1·65	1·75	2·70
December	2·28	5·78	5·19	.....	3·30	2·03	3·62	2·50	3·05	3·15	2·50
	19·30	76·89	44·60	.....	22·21	24·45	23·32	.....	16·49	17·32	15·65

MAXIMUM AND MINIMUM TEMPERATURES AT ILLUSTRATION STATIONS IN BRITISH COLUMBIA, 1927

(In degrees Fahrenheit)

Month	Alberni		Armstrong		Courtenay		Francois Lake		Kamloops		McBride		Prince George		Smithers		Telkwa		Vanderhoof	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
January	48	29	46	−20	50	27	41	−36	40	−26	43	−38	46	−37	36	−12	43	−27	43	− 2
February	60	28	44	− 8	50	30	43	−41	48	−13	45	−18	50	−30	50	−34	41	−26	50	−15
March	88	25	54	17	66	28	46	− 2	49	8	56	1	48	6	52	0	47	5	57	17
April	89	29	72	16	75	32	58	6	67	12	60	− 4	62	6	66	8	59	14	87	14
May	92	33	76	29	78	34	70	25	76	28	76	17	76	26	70	22	68	25	60	24
June	99	38	84	38	87	37	85	30	90	32	82	28	86	32	80	32	78	30	76	28
July	107	43	93	40	88	44	86	35	96	38	88	35	92	36	94	34	87	37	90	32
August	89	43	90	40	85	42	88	30	90	38	82	35	90	30	94	30	89	29	80	32
September	85	25	72	38	76	29	66	20	72	28	70	19	72	22	70	26	81	22	75	4
October	71	29	64	26	60	31	53	18	66	18	54	18	60	12	54	20	62	13	50	11
November	64	24	48	15	58	24	36	−11	44	− 4	36	−10	44	−18	40	−16	46	−15	45	− 4
December	61	3	37	−23	49	14	.....	.....	44	−29	35	−45	42	−56	40	−36	39	−32	49	−25
Range	107	3	93	−23	88	14	.....	.....	96	−29	88	−45	92	−56	94	−36	89	−32	90	−25

CO-OPERATION, EXTENSION AND PROGRESS

In addition to the Illustration Station work in the province, irrigation and orchard cover crop demonstrations are conducted at Grand Forks in the Boundary district. Alfalfa tests with cutworm control measures were undertaken on ten two-acre blocks in the Armstrong district in co-operation with the Dominion Entomological Branch. A corn-growing competition was conducted at Salmon Arm with eighteen contestants. On Vancouver island, in co-operation with the provincial Department of Agriculture, ten one-acre plots of alfalfa were set out, on which lime and fertilizer tests were undertaken. In co-operation with the University of British Columbia, fall wheat tests are being conducted in the central interior, and the Experimental Stations and University are co-operating in a test of northern versus locally grown potatoes. This test has now been in progress for four years.

The co-operative extension work with farmers in districts served by the Illustration Stations was continued this year. Twenty one-acre plots of Common Red clover, twenty one-acre plots of alsike and fifteen one-acre plots of alfalfa for fodder and seed production tests were established. In the new farming district of Birch island on the North Thompson river, ten one-half-acre plots of alfalfa were set out under the direction of the division for the purpose of demonstrating the value of this crop. The forage crop variety testing project has been enlarged this year on the Illustration Stations and extended among farmers in the district. Fifteen grasses, eight clovers, six varieties of alfalfa and eight annual fodder crops are included in this test in which twenty-seven farmers are co-operating.

NEW STATIONS

Three new Illustration Stations were selected this year. One will be located at Fernie in the East Kootenay district, one at Salmon Arm in the southern interior, and the other near Duncan on Vancouver island. Requests for new Stations have been received from various parts of the province. These districts will be visited and possibilities for work investigated.

LIVE STOCK AND POULTRY ON THE ILLUSTRATION STATIONS

Important work is being accomplished by Illustration Station operators in the sale of pure-bred stock to neighbouring farmers. To adequately perform this service, good foundation stock must be maintained and proper housing provided. Pure-bred poultry flocks are kept on ten out of the twelve stations, pure-bred pigs on eight stations, and pure-bred dairy sires on six stations. Three new barns have been built in the last three years to accommodate increased dairy herds and five new poultry houses have been constructed by the operators within the same period.

PRICES CHARGED IN CALCULATING PRODUCTION 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	$2.00 per ton.

COST OF SEED
(British Columbia)

		$ cts.
Oats, Banner	per bushel	0 85
Wheat, Marquis	"	2 00
Wheat, Garnet	"	2 00
Wheat, Blue Stem	"	1 50
Fall Wheat, Jones' Fife	"	1 50
Peas, Golden Vine	"	3 00
Spring Vetch	"	4 80
Corn, Longfellow	per pound	0 07
Sunflowers, Mammoth Russian	"	0 12½
Potatoes, certified seed	per ton	60 00
Timothy	per pound	0 13
Orchard grass	"	0 30
Western Rye	"	0 17
Tall Oat Grass	"	0 40
Meadow Fescue	"	0 30
Italian Rye	"	0 20
Clover, Common Red	"	0 36
Clover, Alsike	"	0 35½
Clover, White Sweet	"	0 17
Alfalfa, Ontario Variegated	"	0 26
Alfalfa, Grimm	"	0 38

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	"	.....	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, ensilage	"	6 00	6 00	6 00
Oats and peas ensilage	"	.....	.....	7 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

Rainfall at Alberni during 1927 was heavier than at any other Illustration Station in the province with a total of seventy-seven inches. Over a ten-year period records show that Alberni district receives an average of sixty-eight inches per annum. As most of the rain is received during the winter months, it is important to guard against loss of fertility through soil leaching. For July the ten-year monthly average is less than one inch. Soil moisture must be conserved at this time of the year to carry the crops through the hot, dry period. Land drainage, the introduction of clovers and other humus-building plants and surface cultivation to keep down weeds seems to be the most practical way to cope with each of these problems.

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
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Potatoes	2	15½ tons	10½ tons	10 40 per ton	17 02 per ton	100 16
Hay, first year	2	2½ tons	2½ tons	13 98 per ton	12 13 per ton	10 13
Wheat	1	22 bush.	.....	2 40 per bush.	.....	—19 80
Oats	3	38 bush.	62 bush.	1 27 per bush.	0 72 per bush.	5 84

With the exception of nitrate of soda which was applied at planting time, fertilizers were broadcasted on the plots February 26. Lime was applied March 5 to grain and new seedlings. A top dressing of nitrate of soda was applied on hay meadows March 22. Marquis wheat and Banner oats were sown April 12. Potatoes of the Burbank variety were planted May 10. Hay was cut July 11, wheat August 12, and potatoes were dug October 24.

Golden millet proved an excellent emergency fodder crop on this Station. It was sown June 23 after the loss of the kale crop. Used as a soiling crop for a small dairy herd it proved a fine succulent feed throughout late summer and fall months.

On the potato fertilizer tests, 3-10-7 mixture at one thousand pounds per acre gave the highest yield but many potatoes were rough and misshapen. The plots with superphosphate and muriate of potash gave the largest percentage of marketable potatoes. In calculating the profit or loss per acre potatoes are valued at $20 a 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—200 lb	15½	1¾	6 69	28 31
2	Superphosphate—600 lb	16	2¼	6 01	38 99
3	Muriate of potash—150 lb	17	3¼	2 63	62 37
4	3-10-7—500 lb	17¾	4	7 73	72 27
5	3-10-7—1,000 lb	18¼	4¼	15 46	79 54
6	Check, not fertilized	13¾			

62680—2½

ARMSTRONG, NORTH OKANAGAN

OPERATOR, W. B. MCKECHNIE

The season was favourable and on the whole crop returns were satisfactory throughout the district. All ploughing was completed in the fall. Alfalfa stands wintered without injury. The fall wheat sustained slight winter killing. Prussian Blue field peas were sown April 14. Corn was planted May 28. Peas were harvested August 30, alfalfa was cut June 28 and fall wheat was harvested July 20.

As a test of early versus late seeding of alfalfa, two acres were sown April 28 and two acres of the same field were sown May 26. On both blocks germination was good and a satisfactory stand established. Experience on the Station has shown that as a general rule best results are obtained by sowing alfalfa early, about the time of grain seeding. A seeding rate of ten to twelve pounds to the acre without a nurse crop of grain is recommended. Alfalfa should be put on fall ploughed land and if possible on land which grew an intertilled crop the preceding year. The Turkestan variety is grown on the Station and in the district and seems well suited to natural conditions in the valley.

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

OPERATIONS AT ARMSTRONG, SEVEN-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (−) loss per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Field peas	2	16½ bush.	14½ bush.	1 51 per bush.	1 42 per bush.	25 85
Alfalfa hay, four year stand	3	1¾ tons	1¾ tons	6 44 per ton	7 89 per ton	14 18
Alfalfa hay, first year stand	1	1¼ tons	.....	15 82 per ton	.....	−2 27
Fall wheat	3	30 bush.	32 bush.	0 82 per bush.	0 86 per bush.	18 38
Alfalfa seed	1	100 lbs.	.....	0 14 per lb.	.....	16 00

A portion of a field of Hanson's Cossack alfalfa on the Station was left for seed. The crop was cut September 5. This is the first seed grown in the district. The test has been quite successful and next year the operator intends to increase his acreage for seed production.

COMOX, VANCOUVER ISLAND

OPERATOR, J. A. CARTHEW

This Station is located in the centre of a mixed farming and dairying district. The four-year rotation conducted here is well suited to local conditions. Under a systematic cropping system of this kind one-half of the area is in hay, one-fourth in grain and one-fourth in corn, roots and other hoed crops. Manure at sixteen tons per acre is applied to the hoed crop field. Under treatment of this kind the crops on the Station are showing gradual improvement from year to year. This bears out the results of experiments which show that by following a proper rotation the output of the land is increased and at the same time acre costs are reduced. Usually this can be accomplished through the rotation without extra monetary cost to the farmer.

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 per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Hay, second year	2	3¼ tons	3¼ tons	11 69 per ton	10 16 per ton	18 22
Hay, first year	3	2½ tons	2⅝ tons	15 89 per ton	10 83 per ton	20 60
Oat, hay	1	2½ tons	.....	17 08 per ton	.....	15 20
Corn	4	10½ tons	14½ tons	7 57 per ton	4 73 per ton	31 30
Potatoes	3	7¼ tons	5¼ tons	25 16 per ton	24 57 per ton	62 18

A magnificent crop of hay was harvested on field "A." A top dressing of nitrate of soda at 100 pounds to the acre, applied on a portion of the field when growth was beginning, increased the yield considerably.

Ploughing commenced February 9 on the Station. Lime was applied March 4 and nitrate of soda was spread on the meadows March 24. Grain was seeded April 13, Burbank potatoes planted May 4 and Longfellow corn on May 14. Hay was cut July 13, corn September 19 and potatoes dug October 28.

COURTENAY, VANCOUVER ISLAND

OPERATORS, HALLIDAY BROS.

Land was ploughed on this Station February 15. Manure was hauled to the hoed crop field during the winter, put in small piles and spread in the spring. Portions of the meadows were top dressed with nitrate of soda April 22. Nitrate of soda is most effective, applied when growth is starting. Mixed fertilizers were spread on the potato field March 7, and nitrate of soda was applied at time of planting. Lime was spread February 11 on the field to be in grain and seeded down.

Oats were seeded April 18, and potatoes planted May 14. Cutting of hay commenced July 25 which was considerably later than the usual date. On account of the prevalence of weeds in the grain plot this crop was cut and put in the silo. Potatoes were harvested October 29.

A summary of costs and yields 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
		1927	Average	1927	Average	
				$ cts.	$ cts.	
Hay, second year	2	2¾ tons	2½ tons	10 63 per ton	10 89 per ton	13 43
Hay, first year	3	2¾ tons	2½ tons	13 89 per ton	12 61 per ton	12 91
Oats (ensilage)	1	5 tons	.....	9 04 per ton	.....	−15 20
Potatoes	4	11¾ tons	11½ tons	14 56 per ton	13 13 per ton	270 88

The application of nitrate of soda at 100 and 150 pounds to the acre on the second year meadow increased the yield of hay considerably. Potatoes grown from certified seed of the Burbank variety are used on this Station. By means of "hill selection" the operators are gradually improving their product and next year the whole plot will consist of hill selected material.

A fairly comprehensive fertilizer test was conducted on this Station. All seed planted was certified Burbank. The yield of 15½ tons to the acre on plot 4 is the product of "hill selected" potatoes. On other plots ordinary certified seed was planted. This is a splendid demonstration of the value of manure, commercial fertilizer and better seed. In estimating profit and loss the potatoes are valued at $20.00 per ton.

COMMERCIAL FERTILIZER DEMONSTRATION ON THE POTATO CROP AT COURTENAY

Plot	How fertilized, per acre	Yield per acre	Increase over check plot (−) decrease	Cost of fertilizer per acre	Profit per acre above plot not fertilized (−) loss
				$ cts.	$ cts.
1	Nitrate of soda—200 lb.	8½ tons	4½ tons	6 08	78 92
2	Superphosphate—600 lb.	9¼ tons	5 tons	4 75	95 25
3	Muriate of potash—150 lb.	7¾ tons	3¼ tons	2 31	62 69
4	3-10-7—1,000 lb.	15½ tons	11½ tons	13 36	211 64
5	3-10-7—2,000 lb.	13½ tons	9 tons	26 73	153 27
6	Check—unfertilized	4½ tons			
	Duplicate Plot—				
1	Nitrate of soda—200 lb.	7¼ tons	−1¼ tons	6 08	−31 08
2	Superphosphate—600 lb.	8¾ tons	¼ ton	4 75	9 25
3	Muriate of potash—150 lb.	7¾ tons	−¼ ton	2 31	−17 31
4	3-10-7—1,000 lb.	9¼ tons	¼ ton	13 36	1 64
5	3-10-7—2,000 lb.	12 tons	3½ tons	26 73	43 27
6	Check—unfertilized	8½ tons			

FRANCOIS LAKE, CENTRAL BRITISH COLUMBIA

OPERATOR, J. R. STANYER

Work on the land commenced April 28 and grain was sown May 14. A long period of dry, hot weather during July and August reduced crop yields considerably. In spite of the drought, new seedings of grasses and clovers are very satisfactory. Grimm alfalfa was sown in 1924 on this Station, and it is withstanding the winters and producing good crops of hay each year.

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 per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Alfalfa	2	1½ tons	1⅞ tons	7 17 per ton	6 78 per ton	18 37
Hay, first year	4	1 ton	1⅛ tons	10 98 per ton	10 48 per ton	6 68
Wheat, Ruby	5	13½ bush.	21 bush.	1 90 per bush.	1 28 per bush.	9 47
Wheat, Garnet	2	12 bush.	25 bush.	1 80 per bush.	1 35 per bush.	10 47
Hay, O.P.V.	4	1 ton	2¼ tons	23 57 per ton	13 72 per ton	13 18

Alfalfa and timothy hay were cut July 26, mixed crop August 18 and wheat August 30. The mixed crop consists of oats, peas and vetch sown at an acre rate of two bushels, one bushel, and one-half bushel respectively.

FORAGE CROP TESTS IN CENTRAL BRITISH COLUMBIA

The primary function of the Illustration Station is to apply, under field conditions, the results of investigations and experiments conducted on the Dominion Experimental Farms. There are certain agricultural localities, however, which are remote from the Experimental Stations and which have natural conditions peculiar to themselves. Such is the situation in Central British Columbia. Here, with the co-operation of interested operators and farmers in the district, the Division of Illustration Stations is conducting experimental work on a small scale with various forage crops.

This project was started in 1924 by sowing twenty-five to thirty varieties of grasses, clovers and alfalfas in rows. In 1925 the work was extended. A number of farmers in each district are now carrying on the tests and in order to more nearly approximate field conditions, plots, the width of a drill and one chain in length were established on each Illustration Station. The plots contain straight varieties and mixtures of fifteen grasses, eight clovers, six alfalfas and eight annual fodder crops.

Notes are made periodically on germination, comparative growth, strength of stand, winter hardiness and second growth. Useful information has been obtained on the adaptability of the different forage crops to Central Interior conditions of soil and climate.

The work has an important educational value in acquainting the farmers in the district with the different types and varieties of grasses where they can compare their growth and behaviour under natural conditions. The tests serve also as a preliminary to making up suitable mixtures for the field.

KAMLOOPS, THOMPSON VALLEY

OPERATOR, C. R. GREEN

Work on this Station is a dry farming undertaking. Soil is excellent but inclined to become loose and powdery with much working. The problem here is to maintain and build up the body of the soil with a condition of limited moisture.

The average precipitation at Kamloops for ten years is ten inches per annum. The past season has been the most favourable for a number of years with a total of 22·21 inches. Three and one-half inches of rain in June gave a great impetus to crop growth. Fall wheat was winter-killed and replaced by the Bluestem variety in the spring. Grain was sown April 30 and cut August 19. Sweet clover hay was cut July 16. No ensilage crop was grown on the Station under field conditions last season.

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

OPERATIONS AT KAMLOOPS

Crop	Number of years grown	Yield per acre		Cost		Average profit or (−) loss per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Wheat, broadcast	3	34 bush.	21¼ bush.	0 66 per bush.	0 93 per bush.	10 94
Wheat, in rows	1	24½ bush.	.....	0 83 per bush.	.....	9 18
Sweet clover hay	4	1½ tons	1 ton	13 76 per ton	15 01 per ton	−1 84

On field C wheat was sown in rows and cultivated. The grain drill was fitted to sow double drills with three feet between the rows. Wheat was sown at the rate of 36 pounds per acre. Sweet clover seed was mixed in the grain box and sown with the wheat at the rate of 8 pounds per acre. Three cultivations during the season kept weeds in check effectively. The wheat grew quite rank and went down on part of the field. On account of more moisture than usual last season, wheat in rows did not show up to advantage. The stand of sweet clover is one of the best obtained on the Station.

In a forage crop test conducted at the Station with corn, sunflowers, sudan and kaffir corn the following yields were obtained. Corn, 8·84 tons per acre; sunflowers, 8·14 tons; sudan grass, 3·46 tons; and kaffir corn, 5·52 tons per acre. Corn and sunflowers appear to be the most suitable ensilage crops for this district.

Bluestem wheat in rows on the Illustration Station in the dry farming area at Kamloops, B.C., yielded 24 bushels per acre.

McBRIDE, CENTRAL BRITISH COLUMBIA

OPERATOR, J. T. OAKLEY

A four-year rotation is in progress on the McBride Illustration Station, consisting of a hoed crop followed by grain and two years clover hay. Work has been conducted on this location since 1922. The rotation is now on its second cycle and the benefits of systematic cropping, regular application of manure and the introduction of clovers are more evident each year.

Soil in this area is described as a fairly heavy clay loam. Much of the land has been burned over, leaving the soil deficient in humus and nitrogen. Restoration is brought about most economically and effectively by clovers and alfalfas in a crop rotation. Already there is a marked improvement in tilth of the soil on the experimental blocks.

Possibly the most outstanding crop on the station and in the district this year is the alfalfa. Alfalfa wintered without injury. Last year's stands showed great improvement this season. On the station, in mixtures and alone, it shows

up well. When timothy was ten to twelve inches high in June, alfalfa had twenty to twenty-five inches of growth. A second cutting of this valuable fodder crop was taken off the plots, averaging two and one-half tons from the two cuttings. Before freeze up it had formed a good covering for winter protection.

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
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Hay, second year	3	1¾ tons	2 tons	8 55 per ton	7 46 per ton	15 81
Hay, first year	4	1½ tons	1½ tons	9 64 per ton	11 44 per ton	5 93
Hay, O.P.V	4	1¾ tons	2⅛ tons	15 04 per ton	15 40 per ton	5 19
Field peas	1	32 bush.	.....	0 81 per bush.	.....	86 08
Oats	5	60 bush.	59 bush.	0 40 per bush.	0 40 per bush.	24 52

All ploughing was completed in the fall of 1925. Spring work commenced April 12. Grain was sown April 29. Hay was cut July 15 and grain on August 23.

Field peas of the Golden Vine variety gave a magnificent crop. The peas are plump and well-matured. Spring vetch was introduced as a seed crop and shows promise. Seed was a good size and well-matured, yielding 26 bushels to the acre. A three-quarter acre demonstration block of Chewing's Fescue for seed has been set out on this Station. Stand is good and from results obtained in tests with this grass on the McBride Station during the last four years, it shows promise of becoming an important cash crop for Central British Columbia.

CLOVER AND ALFALFA SEED PRODUCTION IN CENTRAL BRITISH COLUMBIA

In 1926 the Experimental Farms Branch distributed pure strains of clover and alfalfa seed to thirty-five farmers along the line of the Canadian National Railways in order to test out these crops for seed production under Central British Columbia conditions. One-acre blocks of Ontario Variegated alfalfa, Common red and alsike clover, all Canadian grown, were set out under the direction of the Division of Illustration Stations.

A portion of the plots were seeded in rows and the balance broadcast. A favourable season gave good germination and strong stands were established.

This season's seed was harvested from several plots averaging about one hundred pounds to the acre. Samples forwarded to the Dominion Seed Laboratories graded satisfactorily, with alfalfa samples showing 98 per cent, and clover 99 per cent germination. Clover and alfalfa seed from central British Columbia were interesting features at the interior and Vancouver winter fairs. A number of enterprising farmers in the central interior grew a considerable acreage from their own seed. In view of the amount of seed grown this year and the prospect of annual increase, the provincial department provided seed cleaning plants in the Nechako and Bulkley valleys. This is the first year that clover and alfalfa seed have been grown in central British Columbia and marks another stage in the agricultural development of this section of the province.

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PRINCE GEORGE, CENTRAL BRITISH COLUMBIA

OPERATORS, A. AND J. BLACKBURN

The weather record for the growing season of 1927 in the Prince George district shows nine inches of rain from May 1 to the end of September. The growing season was entirely free from summer frosts. A period of dry, hot weather, extending from July 17 to August 25 reduced the yield and quality of grain considerably but on the whole the season has been favourable and profitable for the farmers in the Prince George district.

Probably the outstanding feature of this season's work was the successful growing and harvesting on a commercial scale of a crop of clover seed. The seed is of good quality with a germination test of 99 per cent.

Herd of Holstein cows on the farm of A. and J. Blackburn, Prince George, B.C., where good milk production is maintained all winter with home grown grain, oats, peas and sunflower silage and clover hay.

In 1922 clover meadows were established on the Illustration Station. Every year since 1922 new meadows have been seeded in the course of the four-year rotation. During the five-year period there have been no failures in obtaining a stand and there have been no losses from winter killing on the Station. Some of the seasons have been very dry, especially those of 1922 and 1924, and last winter was a severe test on the clovers and alfalfa.

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

OPERATIONS AT PRINCE GEORGE, FIVE-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Oats	5	74 bush.	56½ bush.	0 32 per bush.	0 28 per bush.	28 97
Hay, first year stand	5	1¼ tons	1½ tons	6 70 per ton	10 88 per ton	9 07
Hay, second year stand	5	2 tons	1¼ tons	8 07 per ton	9 13 per ton	13 76
Hay, third year stand	1	1¼ tons	.....	6 89 per ton	.....	8 95
Field peas	3	9 bush.	10½ bush.	3 81 per bush.	3 17 per bush.	6 70
Sunflowers (ensilage)	5	10¾ tons	7½ tons	4 20 per ton	5 30 per ton	5 94
Oats and peas (ensilage)	5	3 tons	4⅜ tons	12 31 per ton	7 87 per ton	6 90
Demonstration Block—						
Alfalfa hay	3	1½ tons	1 1/10 tons	9 37 per ton	9 63 per ton	6 37
Wheat	3	18½ bush.	18¼ bush.	1 03 per bush.	0 93 per bush.	16 58
Common red clover seed	1	76 lb.	.....	0 15 per lb.	.....	15 20
Alsike clover seed	1	100 lb.	.....	0 11 per lb.	.....	19 00

All ploughing was completed in the fall on the Station. On account of the late spring, seeding was delayed until May 20. Hay was cut August 4 which is about two weeks later than usual. Banner oats and Garnet wheat were cut August 23. Clover for seed was harvested August 29 and ensilage crops cut September 7.

Sunflowers and a mixture of peas and oats are grown each year for ensilage on the Station. Sunflowers of the Mammoth Russian variety are sown at the rate of 10 pounds per acre. The mixed crop consists of Banner oats at 1½ bushels and Golden Vine field peas at 1½ bushels to the acre. The yield of oats and peas appears low but they have a comparatively high value in the ensilage mixture to which they add the grain content. The sunflowers are cut when one-fourth to one-half in blossom. Peas and oats are harvested at the same time in a well advanced stage of maturity. Alternate loads of each crop are put into the silo, the sunflowers supplying the succulence, and the peas and oats the grain. Comparative yield and cost per ton for five years is given in the table following:—

COMPARISON OF ENSILAGE CROPS AT PRINCE GEORGE

—	—	Yield per acre (green weight)	Cost per ton
			$ cts.
1923	Sunflowers, Mammoth Russian	7 tons 1,768 lb.	6 37
	Mixed, oats and peas	4 tons 500 lb.	6 45
1924	Sunflowers, Mammoth Russian	5 tons 500 lb.	5 93
	Mixed, oats and peas	9 tons 500 lb.	3 51
1925	Sunflowers, Mammoth Russian	4 tons 1,300 lb.	5 12
	Mixed, oats and peas	2 tons 1,568 lb.	7 48
1926	Sunflowers, Mammoth Russian	7 tons 1,000 lb.	4 87
	Mixed, oats and peas	3 tons 1,500 lb.	9 63
1927	Sunflowers, Mammoth Russian	10 tons 1,500 lb.	4 20
	Mixed, oats and peas	3 tons	12 31
	Five-year Average—		
	Sunflowers, Mammoth Russian	7 tons 414 lb.	5 30
	Mixed, oats and peas	4 tons 1,231 lb.	7 87

CORN-GROWING COMPETITION IN SALMON ARM DISTRICT

The purpose of this competition is to encourage the growing of corn by a large number of farmers as an ensilage and cleaning crop in the Salmon Arm district. The competition also served to test the comparative suitability of the two varieties, North West Dent and Compton's Early. The North West Dent seed was grown at Kelowna, B.C., and the Compton's Early seed at Ruthven, Ont.

In 1925 North West Dent and Longfellow varieties were grown and last year Minnesota Thirteen was grown in place of Longfellow. In both tests, North West Dent made the better showing.

The tests this year with North West Dent and Compton's Early were conducted on seventeeen farms. Sunflowers were included in the test on seven farms. Records of cost of production were kept by eight farmers. The farms included upland and lowland soils in various localities so that the information obtained through the tests is applicable to the corn-growing possibilities of the district as a whole.

May 20 was the average date of seeding. Germination of North West Dent was much stronger than Compton's Early. Co-operators reported tasseling on fifty per cent of the North West Dent variety on August 1, and on Compton's Early about two weeks later. Corn was cut on most farms about September 23. At time of cutting Compton's Early averaged nine feet high and North West Dent seven feet. In yield Compton's Early averaged 11½ tons to the acre and North West Dent 11 tons. In maturity North West Dent led on all plots. At time of cutting it was in the glazed stage while Compton's Early was still quite milky.

From field records kept by the co-operators, requirements for horse labour averaged 49 hours and manual labour 52 hours for producing an acre of corn. The cost of silo filling averaged $2 per ton, and the complete cost of growing the crop averaged $6.67 per ton.

SALMON VALLEY, CENTRAL BRITISH COLUMBIA

OPERATOR, J. S. JOHNSON

On account of the late spring, seeding was delayed until May 18. A favourable growing season with very warm mid-summer weather brought crops into early maturity. Garnet wheat ripened in 97 days from date of seeding and Marquis wheat in 101 days. As Marquis considerably outyielded Garnet it appears to be a better wheat for this district.

Clover and alfalfa came through a severe winter without injury and yielded fair crops of hay. When work started on this Station three years ago no clover was grown on the farm. This year the operator cut one hundred acres of fine quality clover and timothy hay. Each year shows an increase in the acreage in clovers and alfalfa throughout the district.

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

OPERATIONS AT SALMON VALLEY, FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (−) loss per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Hay, first year	2	1¼ tons	1½ tons	6 00 per ton	6 60 per ton	11 37
Wheat, Garnet	1	10 bush.	.....	2 40 per bush.	.....	−9 00
Wheat, Marquis	1	20 bush.	.....	1 23 per bush.	.....	5 40
Hay, third year	1	1½ tons	.....	6 66 per ton	.....	8 01

A start was made with clover seed growing this year on the Station. Demonstration blocks set out in 1926 yielded 100 pounds of alsike and 85 pounds of common red clover to the acre.

SMITHERS, BULKLEY VALLEY

Operator, Geo. Oulton

The season in the Bulkley Valley was much later than usual. Intermittent rain in June delayed hay cutting but increased the yield considerably above the average. Marquis wheat was sown on May 7. Alfalfa was cut July 26 and the hay crop on August 1.

The grass and clover mixture used on this Station consists of the following ingredients: Timothy at four pounds per acre, orchard grass one pound; meadow fescue two pounds; western rye one pound, common red clover four pounds, alsike clover three pounds and alfalfa two pounds. A nurse-crop of wheat at one and one-quarter bushels or oats at one and one-half bushels per acre is used. The oats are cut early for hay or ensilage, giving the clovers and grasses a much better chance to become established before the freeze-up.

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

OPERATIONS AT SMITHERS, FIVE-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Alfalfa	2	1¼ tons	1¼ tons	8 25 per ton	9 20 per ton	10 01
Hay, second year	1	2¼ tons	.....	6 33 per ton	.....	12 05
Hay, first year	3	2¼ tons	1¼ tons	6 63 per ton	15 99 per ton	6 41
Wheat	4	33⅓ bush.	26⅔ bush.	0 48 per bush.	0 73 per bush.	25 49

Tests on this and at other Stations in the central interior have demonstrated the value of sowing clover and grass seed with the grain drill in order to cover the seed and put it down to moisture. Clover should not be sown on new breaking or land out of sod. More satisfactory stands have been obtained on land which has produced one of two crops of grain or a cultivated crop. It is a good safeguard to treat all clover and alfalfa seed with nitro-culture and to give the seed a fair chance. It should be sown on fall ploughed land.

TELKWA, BULKLEY VALLEY

Operator, F. M. Dockrill

Spring work commenced May 2 which was eight or ten days later than usual. Wheat was sown May 10. Early St. George potatoes were planted May 28. Hay was cut July 25, ten days later than the usual date of harvesting. Potatoes were dug October 12.

A six-year rotation is in progress on this Station. Sequence of crops is as follows: first year, hoed crops; second year, grain and seeded; third year, clover and timothy hay; fourth year, hay; fifth year, hay or pasture; sixth year, mixed crop of oats and peas or oats for grain. When potatoes were put on land out of sod as practised in the four-year rotation it was found that the undecomposed sod had a drying influence on the land which retarded the full growth of the crop. Under the six-year rotation the sod is more completely decomposed and worked into better shape for the hoed crop. Manure is applied to the mixed

crop preceding the hoed crop at the rate of twenty tons to the acre. On account of the difficulty often experienced in obtaining strong catches of clovers and grasses and due to the persistency of the red and alsike clovers in this district, meadows are left down for three years.

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

OPERATIONS AT TELKWA, SIX-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (−) loss per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Wheat, Marquis	4	34½ bush.	31 bush.	0 89 per bush.	0 79 per bush.	26 06
Hay, fourth year stand	1	1¾ tons	.....	6 40 per ton	.....	10 50
Hay, second year stand	3	1¾ tons	1½ tons	5 35 per ton	7 68 per ton	13 37
Wheat, Garnet	2	26½ bush.	27 bush.	0 80 per bush.	0 77 per bush.	20 54
Mixed, oats and peas for hay	1	2½ tons	.....	16 45 per ton	.....	−8 62
Potatoes	5	2½ tons	6¾ tons	20 25 per ton	18 05 per ton	111 12

Marquis wheat has outyielded other varieties on this Station. Maturity and general quality of the grain has been very good. The Early St. George potato, in test with other varieties has proven most satisfactory. This potato is two weeks earlier in maturing than other main crop varieties in this district and for that reason is superior in cooking qualities. On account of the rush of work last fall the potato field was not ploughed until spring and this accounts to a large extent for the low yield. Time of ploughing has a great influence on the productivity of the land in central British Columbia. If possible, land should be ploughed in the fall.

Each year sees a steady increase in the alfalfa acreage in the district. This season Mr. Dockrill shipped the first carload of alfalfa out of the Bulkley valley.

CLOVER AND ALFALFA DEMONSTRATION BLOCKS IN CENTRAL BRITISH COLUMBIA

For the past four years the Dominion Experimental Farms Branch, through the Division of Illustration Stations, has conducted clover and alfalfa demonstration work in central British Columbia. This work was undertaken in order to test out the crops under local natural conditions and to encourage the growing of these valuable forages. Standing crop competitions were organized to create added interest.

Results have been most encouraging for the success of the trials has given confidence to farmers to extend their acreage in these crops. During the first two years the crops on the test blocks were grown for hay. In 1926 the first seed plots were laid out and this season, thirty one-acre plots of common red clover, thirty one-acre plots of alsike and fourteen one-acre plots of alfalfa were sown for demonstration purposes. All seed is Canadian grown of high quality.

Last year the operator on the Vanderhoof Illustration Station made up the first car of alfalfa shipped out of the Nechako valley and this season the operator at Telkwa shipped the first carload of alfalfa hay from the Bulkley valley. When work started on the Salmon Valley Station in 1924, there was no clover on the farm. This season the operator cut over one hundred acres of splendid clover and timothy hay.

VANDERHOOF, NECHAKO VALLEY

OPERATOR, D. TURCOTTE

All land on the Station to be sown to crop was ploughed in the fall. In central British Columbia fall ploughing is one of the most important field operations on the farm. Demonstrations in fall versus spring ploughing clearly show that the yield of crops are considerably increased by ploughing the land in the fall.

Considerable winter killing of the clovers and alfalfas weakened the stands and reduced the yield of hay. Spring was backward and seeding delayed until May 14. Hay was cut July 15. Grain matured very quickly and was cut August 27.

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

OPERATIONS AT VANDERHOOF, FOUR-YEAR ROTATION

Crop	Number of years grown	Yield per acre		Cost		Average profit or (—) loss per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Hay, third year stand..	1	¾ ton	.....	11 22 per ton	.....	0 68
Hay, second year stand	3	¾ ton	¾ ton	16 96 per ton	16 08 per ton	0 09
Wheat, Garnet.....	2	20 bush.	32½ bush.	0 87 per bush.	0 56 per bush.	34 91
Oats and peas, hay.....	5	1½ tons	1¾ tons	12 94 per ton	16 64 per ton	4 48
Demonstration Block—						
Alfalfa, third year stand.....	1	¾ ton	.....	19 34 per ton	.....	—1 01
Alfalfa, second year stand.....	2	¾ ton	1¼ tons	27 16 per ton	18 57 per ton	5 15

Several years work with alfalfa and clovers on this Station show that alfalfa is more adapted to this soil and more winter hardy than the clovers. The Ontario Variegated and Grimm varieties from Canadian grown seed have proved reliable. Most satisfactory stands have been obtained by selecting land which was on hoed crops or grain the preceding year and ploughing it in the fall. Alfalfa should be treated with nitro culture and sown with a grain drill at the rate of ten to twelve pounds of seed to the acre. Seed is drilled in from one to three inches deep, depending on the texture and moisture of the soil. Nurse crops of grain should not be used. If weeds appear in the stand the field should be mowed, setting the cutting bar high. Stock should not be permitted to graze over newly established stands of alfalfa and the crop should go into the winter with a good covering growth.

MEETINGS AND EXHIBITIONS IN CENTRAL BRITISH COLUMBIA

Field days where held on the Illustration Stations in central British Columbia at which the University of British Columbia, the Dominion Live Stock Branch and the provincial Department of Agriculture were represented. The local Farmers' Institute co-operated at each point in making the day a success and provided refreshments and entertainment in the evening. The meetings commenced at McBride on July 5 with an attendance of thirty persons. At Prince George fifty-five attended, at Salmon Valley, twenty-seven, at Vanderhoof, fifty, at Wistaria, thirty-five, at Francois Lake, thirty-five, at Telkwa, twenty-seven and at Smithers, thirty, making a total of 289 persons. During the season the supervisor addressed three farmers' meetings, judged in three standing crop competitions, co-operated with the provincial department in the Potato Field Day at Courtenay, and judged at the Central British Columbia Seed Fair at Smithers and the Provincial Winter Fair at Vancouver.

REPORT OF THE ILLUSTRATION STATION, PEACE RIVER DISTRICT

W. D. Albright, Superintendent, Experimental Sub-Station, Beaverlodge, Alta.

FORT ST. JOHN, PEACE RIVER DISTRICT

OPERATOR, J. W. ABBOTT

The season opened unusually late, nearly one month later than last year. Work commenced on the land about May 1 but was not general until the 6th. May was cool and there was very little growing weather until June. No killing frosts were registered on the Station after the first week of May until the 23rd of September. The total precipitation for the growing season from May 1 to August 20 was 10·18 inches; 3·85 inches fell in July. The fall was unfavourable for threshing due to continued rain.

WHEAT

Three varieties, namely, Garnet, Reward and Marquis, were sown on late breaking summer-fallow, on May 14. The Garnet was the earliest maturing variety and gave the best yields.

YIELDS OF WHEAT AT FORT ST. JOHN

Variety	Date harvested	Yield 1927	Average
		bush.	
Garnet	Sept. 1	33	
Marquis	" 6	26	24 (3 years)
Reward	" 6	19½	23 (2 years)

Although Reward was cut five days later than Garnet it could have been safely harvested the same day. Its low yield can be traced to flooding and to from 5 to 10 per cent of the stand being cut down due to some unknown cause.

OATS

Legacy oats gave a very vigorous and uniform stand and a yield of 104 bushels per acre. Banner oats sown with peas yielded 66 bushels per acre. The peas gave a yield of only 3¼ bushels per acre in the mixture.

GRASSES AND CLOVERS

Work was begun with grasses and clovers in 1925 and the following yields obtained:—

AFTER SUMMER-FALLOW

Mixture	Yield 1927	Average yield (2 years)
	tons per acre	tons per acre
Western rye grass	2	1¼
Bromie grass	2	2
Brome and western rye grass	2¼	2
Brome and sweet clover	2	2
Alfalfa	2	1¼
Sweet clover	1½	

AFTER STUBBLE

Mixture	Yield 1927	Average yield (2 years)
	tons per acre	tons per acre
Western rye grass	1¾	1½
Brome grass	1¾	1½
Brome and western rye grass	1¾	1½
Brome and sweet clover	1½	1½
Alfalfa		(1 year) 1

The hay from all plots was perfectly cured this year and made excellent feed. On the stubble land the alfalfa has practically failed due to winter-killing. On the summer-fallow, however, alfalfa gave a heavier crop than last year, and a second growth of at least one ton per acre which was not cut.

YIELDS FROM MISCELLANEOUS CROPS

Crop	Yield per acre
Potatoes (Irish Cobblers)	208 bush.
Swede turnips	31¾ tons
Mangels	29 tons
Sugar beets	13½ tons
Sunflowers	20 tons
Howe's Alta. Flint corn	Did not mature seed.
Fall rye	31 bush.
Dwarf Essex rape	Fed as cut to hogs.

J. W. Abbott in his field of Garnet wheat on the Illustration Station at Fort St. John, Peace River district.

REPORT OF THE ILLUSTRATION STATIONS IN ALBERTA

Supervisor, R. E. Everest

THE SEASON

The year 1927 was favourable to crop production in Alberta. The autumn of 1926 and the winter of 1926-27 were a little above the average in the amount of precipitation received. Moisture conditions for germination were good at the time of commencing to sow in the spring of 1927. The supply, however, was not so large that farmers were exuberant over the prospects. But when May opened with showers recorded each of the first eight days, and resuming again on the 17th with heavy rains on the 18th, 20th, 21st, 22nd, 29th and 30th rain having been recorded on nineteen out of the thirty-one days of the month for a total at Lethbridge of 7·32 inches, the farmers became optimistic, and much more land was seeded to wheat and coarse grains than had been planned for earlier in the season.

Those who took this hint to seed a large acreage in the spring were amply rewarded at harvest when crop yields of wheat ran from 30 to 60 bushels per acre.

These good crop conditions, it is pleasing to report, extended to the easterly and southerly bounds of the province covering areas that the rains of 1926 had not reached.

Three factors worked against certain small sections and affected some individuals more than others, even in the localities touched. These factors were hail, frost and unfavourable weather for harvesting operations.

The precipitation record of 1927 goes down as one of the best in the past twenty-six years. For this period 1902 stands first, 1916 second and 1927 third.

These seasonal comments based on Lethbridge figures apply fairly well to the province in general. The rains of 1927 were generous in amount and general in distribution.

That the moisture conditions for the crop year 1927 may be more clearly depicted, the autumn precipitation of 1926 appears in tabular form followed by the precipitation records of 1927.

PRECIPITATION AUTUMN MONTHS, 1926

—	Bindloss	Cessford	Empress	Glenwoodville	Grassy Lake	High River	Jenner	Kipp	Orion	Pincher Creek	Sunnynook	Wainwright	Whitla	Youngstown	Lethbridge
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
September	0·97	0·69	0·57	4·25	1·98	4·28	1·11	4·42	1·57	7·17	1·80	1·41	1·23	0·84	4·62
October	0·03	Nil	0·22	0·36	0·09	0·40	0·44	0·34	0·16	0·45	0·15	0·20	0·25	0·30	0·31
November	0·55	1·22	0·85	0·25	0·64	0·60	1·30	0·30	0·65	0·36	1·80	0·80	0·80	1·52	0·52
December	0·15	0·93	0·40	0·44	0·28	1·10	0·65	0·80	0·30	0·80	0·30	1·30	0·40	0·50	0·56
Totals	1·70	2·84	2·04	5·30	2·99	6·38	3·50	5·86	2·68	8·78	4·05	3·71	2·68	3·16	6·01

MONTHLY PRECIPITATION AT STATION POINTS IN ALBERTA, 1927

—	Bindloss	Cessford	Chedderville	Empress	Glenwoodville	Grassy Lake	High River	Iron Springs	Jenner	Kipp	Orion	Pincher Creek	Sunnynook	Wainwright	Whitla	Youngstown	Lethbridge
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	Nil	0·30	.....	0·10	0·70	0·42	0·80	.....	0·20	0·30	0·45	0·50	Nil	0·05	0·40	Nil	0·31
February	0·25	0·77	.....	0·60	0·80	0·70	Nil	.....	0·92	1·35	1·25	0·30	0·45	0·05	1·00	0·80	1·39
March	0·40	1·27	.....	0·55	0·67	0·48	Nil	.....	0·81	0·45	1·45	0·75	0·90	0·60	1·10	1·20	0·37
April	1·05	2·52	.....	0·78	0·82	1·45	Nil	0·65	2·10	1·08	1·72	1·07	1·03	1·00	1·85	2·85	1·48
May	6·79	3·67	3·02	6·63	9·48	6·34	3·23	6·50	4·06	7·15	4·31	7·98	4·03	2·13	7·54	4·20	7·32
June	3·02	2·45	2·27	2·99	1·57	2·70	2·22	2·13	3·72	1·57	1·82	2·58	2·45	2·01	1·81	2·15	1·60
July	2·99	3·42	4·53	4·20	4·29	2·76	5·62	0·95	3·21	1·38	3·57	5·02	3·78	4·99	3·86	3·47	1·93
August	1·97	0·02	2·78	2·23	2·89	2·12	2·62	1·04	1·36	1·34	3·33	3·69	0·50	0·63	2·39	0·64	1·74
September	1·40	2·04	3·02	1·49	5·17	2·95	4·14	3·48	1·45	2·85	0·84	6·44	2·18	2·18	0·88	2·30	3·29
October	0·47	1·43	0·53	0·74	0·95	0·66	1·36	0·58	0·66	0·65	1·14	1·40	0·55	1·36	1·65	1·16	0·58
November	0·60	2·55	2·00	1·00	2·00	1·80	1·80	.....	2·30	3·30	0·85	2·37	0·73	0·75	2·00	1·20	2·88
December	0·90	2·70	2·05	1·40	1·40	1·00	0·60	.....	1·85	0·95	1·60	1·50	.....	0·30	1·80	1·10	0·96
Total	19·84	23·14	*	22·71	30·74	23·38	22·39	*	22·64	22·37	22·33	33·60	.....	16·05	26·28	21·07	23·85

* Incomplete,

During the year 1927 fifteen Illustration Stations were operated in the province of Alberta and one near the border in Saskatchewan was included in the Alberta control, making sixteen Stations in all that were supervised from the Experimental Station at Lethbridge.

CROP SEASON, 1927

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	8 cents per hour.
Manual labour, per hour	Rates prevailing in the district.
Threshing, per bushel	
Binder twine, per pound	

COST OF SEED

Wheat, per bushel	$ 1 50
Oats, per bushel	0 80
Barley, per bushel	1 00
Corn, per pound	0 09
Sunflowers, per pound	0 08
Sweet clover, per pound	0 12
Brome grass, per pound	0 12
Western rye grass, per pound	0 08
Alfalfa, per pound	0 30
Potatoes, per ton	30 00

RETURN VALUES

Wheat, per bushel	1 15
Oats, per bushel	0 52
Barley, per bushel	0 68
Hay, per ton	10 00
Oat sheaf feed, per ton	10 00
Corn fodder, green (weight when harvested), per ton	3 50
Potatoes, per ton	18 00

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.

Dry Land Stations

BINDLOSS, ALBERTA

OPERATOR, JOHN BARNES

In 1927 work on the land commenced at this station April 26th. The early part of the season was cool and wet. The cool condition was good for horse work and the wet weather insured a good early growth of grain crops.

May precipitation was higher than that of any other month with 6·79 inches and in the three succeeding months the precipitation was sufficient. The five months, April to August inclusive totalled 15·82 inches of rainfall. This was more than three times the amount received for the same period in 1926.

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 26.

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

Rotation and Crops	Yield per acre		Cost per acre		Profit per acre 1925–1927 average
	1927	Average 1925–1927	1927	Average 1925–1927	
Three-year Rotation—			$ cts.	$ cts.	$ cts.
Summer-fallow			5 51	5 21	
Wheat, Marquis after fallow	48 bush.	23 bush. 44 lb.	16 98	12 84	14 70
Wheat, Marquis after wheat	37 bush. 24 lb.	19 bush. 32 lb.	14 49	10 32	12 43
Three-year Rotation—					
Summer-fallow			5 10	5 07	
Wheat, Marquis after fallow	49 bush. 12 lb.	26 bush. 24 lb.	17 11	13 02	17 60
Sweet clover hay	Failure.				
Oats replacing hay	62 bush. 7 lb.		14 70		
Two-year Rotation—					
Wheat after corn	38 bush. 12 lb.	18 bush. 42 lb.	12 31	9 23	12 40
Corn, N.W. Dent	11 tons	5 tons 666 lb.	9 43	9 48	9 18
Demonstration Test Fields—					
Alfalfa hay	1 ton 1,500 lb.		8 34		
Western rye grass	1 ton 1,000 lb.		7 46		

Field of North Western Dent corn on the Illustration Station at Bindloss, Alberta.

The 1927 corn crop was the best so far grown on the Station. The open frost free period in this district permitted the cobs to develop to a stage of real feeding value.

A noticeable feature of the particular strain of North Western Dent corn used was that the cobs were borne unusually high on the stalk and though a little later than the 1926 strain of the same variety, it exceeded the 1926 seed in the height and weight of crop obtained.

So well did the growing crop of Marquis wheat recommend itself that at threshing time the operator received orders for 1,000 bushels to be used for seed purposes in 1928.

In conjunction with the Provincial Agriculturist from Medicine Hat, on the afternoon of July 27, a meeting was held on the Station farm. At this gathering one hundred and fifty farmers of the district were present to view the fields and attend at the short talks given later on the lawn.

CESSFORD

Operator, G. E. Griffith

In 1927 work on the land commenced at this Station April 28. Seeding operations were performed in somewhat low temperature. Damp cool weather prevailed to such an extent that corn sowing was delayed until May 31. Moisture conditions were favourable throughout the growing period, the five months, April to August inclusive, totalling 12·08 inches of rainfall. On July 27 a heavy hail storm was experienced which reduced crop yields appreciably.

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 20.

TABLE GIVING RESULTS OF THE SEASON'S WORK AT CESSFORD

Rotation and Crops	Yield per acre	Cost per acre	Profit per acre
		$ cts.	$ cts.
Three-year Rotation—			
Summer-fallow		5 04	
Wheat, Marquis after fallow	34 bush. 48 lb.	15 79	24 36
Wheat, Marquis after wheat	22 bush. 30 lb.	10 24	15 52
Three-year Rotation—			
Summer-fallow		4 55	
Wheat, Marquis after fallow	37 bush.	15 74	26 64
Sweet clover hay	Failure.		
Oats replacing clover	35 bush.	12 56	5 60
Two-year Rotation			
Wheat after corn	32 bush.	11 76	24 96
Corn, North Western Dent	10 tons	12 09	22 90
Demonstration Test Field—			
Western rye grass	1 ton	4 96	5 04

This being the second year of work at Cessford, and the first season that the rotations approach their cropping sequence, the preceding table covers only the 1927 results.

Waiting for a favourable soil and weather condition for planting corn proved to be a good policy from the fine yield of feed that was cut on September 5. This corn crop was kept clean throughout the season by early ploughing of stubble, late seeding (owing to weather conditions), harrowing when six inches high, and once corn cultivating, throwing the soil into the rows. At harvesting the cobs were sufficiently advanced to add a considerable grain value to the crop for fodder.

Commencing in the autumn, sales of wheat were being made for seeding purposes in 1928.

CHEDDERVILLE

OPERATOR, A. MAY

The location of Chedderville is in section 18, township 37, range 6, west of the 5th meridian. The farming is in a pioneer state over a country that ranges from brush to timber.

Peculiar to the Chedderville locality is a soil fertility problem which, at the request of settlers already there, is being investigated. Hence the work on the Station for the present is more of an experimental than of an illustrational nature.

Considerable headway was made the first season in laying down and starting work with farm yard manure, commercial fertilizers, clovers, grain and grasses. Fields of two acres area are in use for fertility work with oats and sweet clover as the crop used. The application of a nitrogenous fertilizer considerably increased the oats crop in 1927.

The production of feed crops for stock is of primary importance to the settlers. At present some work with poultry is being conducted and more with hogs. Dairying is the main line of effort.

EMPRESS, SASKATCHEWAN

OPERATOR, WILLIAM ROWLES

In 1927 work on the land commenced at this point on May 6. Moisture conditions throughout the growing season were good and the resulting crop excellent. The five months, April to August inclusive, totalled 16·83 inches of rainfall. Wheat cutting was sarted on the 2nd of August.

TABLE GIVING RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF THREE YEARS AT EMPRESS

Rotations and Crops	Yield per acre		Cost per acre		Profit per acre average 1925–1927
	1927	Average 1925–1927	1927	Average 1925–1927	
			$ cts.	$ cts.	$ cts.
Four-year Rotation—					
Summer-fallow			6 09	5 32	
Wheat, Marquis after fallow	45 bush.	27 bush. 40 lb.	16 74	13 02	19 16
Corn for ensilage	Failure	3 tons	7 68	10 32	0 18
Wheat, Marquis after corn	36 bush.	17 bush. 30 lb.	11 51	9 41	10 90
Five-year Rotation—					
Summer-fallow			5 97	5 17	
Wheat, Marquis after fallow	39 bush.	27 bush. 40 lb.	15 33	12 29	17 08
Corn for ensilage	Failure	3 tons	7 06	9 09	1 41
Wheat, Marquis after corn	45 bush. 30 lb.	20 bush. 30 lb.	13 48	8 74	14 91
Sweet clover hay	2 tons	1,700 lb.	5 84	4 39	4 11
Demonstration Test Fields—					
Brome grass	1 ton 1,500 lb.	1,083 lb.	3 75	4 27	1 15
Western rye grass	2 tons 1,000 lb.	1,967 lb.	3 75	3 69	6 14

The failure of corn is attributable to an infestation of cutworms which towards the end of June took the plants off rapidly.

The wheat crop of 1927 gave those who had persisted through the dry years in this district a good return for the season's labour.

GRASSY LAKE, ALBERTA

OPERATOR, J. E. JAMES

In 1927 work on the land commenced at this Station on April 6.

Precipitation for May amounted to 8·36 inches. This amount of moisture put the soil in good shape to carry the crop along. June rainfall was 1·34 inches and July gave 2·76 inches of moisture. These favourable conditions contributed to the success of the season in producing an abundant harvest. 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 started on August 26.

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

Rotations and Crops	Yield per acre		Cost per acre		Profit per acre 1925–1927 average
	1927	Average 1925–1927	1927	Average 1925–1927	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow			5 39	5 56	
Wheat, Marquis after fallow	46 bush.	28 bush. 20 lb.	15 67	13 93	19 14
Wheat, Marquis after wheat	37 bush.	20 bush. 4 lb.	14 49	11 70	11 68
Three-year Rotation—					
Summer-fallow			5 81	5 86	
Wheat, Marquis after fallow	48 bush.	23 bush. 30 lb.	15 59	12 67	14 65
Sweet clover hay	2 tons 1,500 lb.	1 ton 700 lb.	12 05	9 43	4 07
Two-year Rotation—					
Wheat after corn	40 bush.	21 bush. 48 lb.	12 56	9 72	15 68
Corn, North Western Dent	8 tons	3 tons 333 lb.	8 01	10 42	0 66

On June 14 in fifteen minutes ·78 inches of water fell with a hail storm which flattened the country out, in so far as plant growth was concerned. From hail so early in the season an almost complete recovery was made before harvest and a wheat yield of forty-eight bushels per acre was returned at threshing time.

HIGH RIVER

OPERATOR, B. F. KISER

At the close of the year this Station cannot be included in a crop report as Mr. Kiser with numbers of others had not completed threshing when winter conditions prevailed in early November.

JENNER

OPERATOR, NELS KLEIN

In 1927 work on the land commenced at this Station April 26. The spring was cool and wet which aided greatly in the work of seeding and in the germination and uniform stand of the wheat and oat crops. Corn planted at the usual time, the middle of May, failed to germinate evenly on this Station.

Precipitation for the five months, April to August inclusive, totalled 14·45 inches. This improved moisture conditions and gave the district the largest crop that it has harvested for a number of years. Wheat was sown at the rate of one bushel per acre and cutting started on August 25.

RESULTS OF THE SEASON'S WORK AT JENNER

Rotation and Crops	Yield per acre	Cost per acre	Profit or (−) loss per acre
		$ cts.	$ cts.
Three-year Rotation—			
Summer-fallow		5 32	
Wheat, Marquis after fallow	40 bush.	15 41	30 40
Wheat, Marquis after wheat	33 bush.	12 68	25 41
Two-year Rotation—			
Wheat after corn	36 bush.	11 64	29 88
Corn, North Western Dent	3 tons	13 32	−2 82

The work on this farm was started in 1926, hence, a three-year average cannot be given. The corn crop at Jenner suffered from being planted at the date it is customary to seed. Following corn sowing on May 17 came wet cool weather with the result that poor germination took place and a scant stand was obtained.

This Station will function in an excellent way for seed distribution. From good Marquis wheat supplied for fallow fields in 1927, the operator has a surplus for seed sales which was applied for by his neighbours at threshing time.

Farmers in the district have not had the means in the past few years to renew their seed, consequently mixtures and reversions have taken place. The spread of this improved seed will therefore have a beneficial influence on the product of the locality.

ORION

OPERATOR, GEO. WAGER

In 1927 work on the land commenced on this Station on April 27. The moisture reserve at the spring opening was not great enough to enthuse those who were persisting in the district to seed large acreages. Rains coming freely in May changed this attitude and those who seeded to the limit of their equipment were amply repaid at harvest time. Rainfall for the five months, April to August inclusive, totalled 14·75 inches. Wheat was sown at the rate of one bushel per acre and cutting started on August 22.

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

Rotations and Crops	Yield per acre		Cost per acre		Profit per acre average 1925–1927
	1927	Average 1925–1927	1927	Average 1925–1927	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow			4 26	4 49	
Wheat, Marquis after fallow	37 bush.	18 bush. 12 lb.	12 94	10 55	10 48
Wheat, Marquis after wheat	31 bush. 30 lb.	13 bush. 16 lb.	11 90	9 90	5 43
Three-year Rotation—					
Summer-fallow			4 82	4 63	
Wheat, Marquis after fallow	35 bush.	17 bush. 50 lb.	13 11	10 61	10 07
Sweet clover hay	Failure				
Oats replacing clover	64 bush.		11 93		
Two-year Rotation—					
Wheat after corn	30 bush.	12 bush. 46 lb.	9 47	6 49	8 20
Corn, North West Dent	12 tons	4 tons 1,000 lb.	14 40	10 35	5 40

62680—5

In the early spring of 1927 the operator found that for the 800 bushels of Marquis wheat he had saved for seed sales there was no demand. Rains came, and by May 27 this supply was disposed of and more wheat would have sold for seed purposes had it been on hand.

Mr. Wager's pen of Barred Plymouth Rock hens entered in the egg-laying competition for Alberta, conducted at the Experimental Station, Lethbridge, finished in twelfth position out of 28 pens starting. Four of these hens qualified for registration laying in the year respectively 225, 235, 244 and 256 eggs.

FIELD MEETING

On July 25 an evening meeting was held on the Station fields. It was stated that all the farmers who had remained in the district were present. Following a review of the fields, the Assistant in Cereals from the Lethbridge Experimental Station gave an instructive talk on cultural and cereal work in Southern Alberta.

PINCHER CREEK

Operators, Sandgren & Carlson

In 1927 work on the land commenced on this Station April 27.

Frequently this foothill country receives rains which do not extend far east over the prairie. Both in precipitation and temperature this southwest area is distinctive from the plain country.

In the Pincher district rainfall was ample in the summer season for good crop development. The difficulty was that the rains did not cease at the ripening period, consequently harvest was retarded, frost came, and grain was cut amid most trying conditions with soaked fields and overcast dripping skies. Rainfall for the five-month period, April to August inclusive, totalled 20·34 inches. September rainfall was 6·44 inches.

RESULTS OF THE SEASON'S WORK AT PINCHER CREEK

Crops	Date sown	Date cut	Yield per acre	Cost per acre	Profit per acre
				$ cts.	$ cts.
Summer-fallow				8 06	
Marquis wheat after fallow	April 28	Sept. 23	22 bush. 24 lb.	19 89	5 82
Garnet wheat after fallow	April 28	Sept. 5	36 bush.	22 29	19 08
Alfalfa hay		July 19	1 ton 1,000 lb.	11 03	13 97
		Sept. 6	1 ton		

The year 1927 was a very discouraging one for the farmers of the Pincher Creek district. Early in April there was a chance to seed a certain amount of grain. Soon, however, rains set in and delayed operations to such an extent that the 17th of June found oat seeding not entirely completed. Added to this early hold back were harvest rains with early frost which reduced the otherwise promising crop to a very poor paying proposition. Garnet wheat as in 1926 showed to good advantage on our Station work in this locality.

The operator writing November 12, 1927, states as follows: "The Garnet and the Marquis wheat were seeded the same day last spring, and the Garnet turned out far better than the Marquis both last year and this year. If we are going to have any more seasons like the last three, I believe we should sow all Garnet. A number of farmers have already asked us if we have any Garnet seed for sale next spring."

Fortunately this foothill area retains some of its old love for livestock. Upon the Sandgren Carlson Ranch are kept large herds of breedy beef cattle and pure-bred Yorkshire swine.

SUNNYNOOK

Operator, Robt. Montgomery

A change of station location was made at this point for 1927.

Mr. Montgomery's old farm was very blowy in nature. The soil was noticeably light and, as others from adjacent land had moved, Mr. Montgomery abandoned this farm for a prairie half section which he purchased. The new location is the east half of section 22, township 26, range 13, west of the 4th meridian. Twenty-five acres of prairie were broken in June 1927 for station purposes. The cost of breaking in June, disking in July and again in August and floating in October was $10.67 per acre.

This land is in excellent shape for sowing to good clean seed in 1928. 1927 was a favourable crop year in the Sunnynook neighbourhood.

WAINWRIGHT

Operator, G. C. Boyd

In 1927 work on the land commenced at this station May 5. Moisture conditions throughout the season were good with the heaviest month's precipitation coming in July. This amounted to 4·99 inches. A very successful year was experienced both in feed and grain crops.

The five months April to August inclusive totalled 10·76 inches of rainfall. Wheat cutting started August 22.

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

Rotations and Crops	Yield per acre		Cost per acre		Profit per acre 1925–1927 average
	1927	Average 1925–1927	1927	Average 1925–1927	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow			6 52	6 25	
Wheat, Garnet after fallow	45 bush. 12 lb.		18 70		
Wheat, Garnet after wheat	41 bush.		14 24		
Four-year Rotation—					
Summer-fallow			6 52	6 67	
Wheat, Marquis after fallow	49 bush. 48 lb.	31 bush. 52 lb.	18 89	16 29	20 58
Western rye grass hay (first year)	2 tons 1,200 lb.	2 tons 933 lb.	9 54	9 94	14 73
Western rye grass hay (second year)	1 ton 1,200 lb.	1 ton 933 lb.	6 60	6 96	7 72
Three-year Rotation—					
Summer-fallow			6 52	6 42	
Oats, Victory after fallow	51 bush.	56 bush. 21 lb.	15 33	15 77	10 02
Sweet clover hay	2 tons 400 lb.	1 ton 1,200 lb.	11 60	8 91	7 09
Two-year Rotation—					
Wheat, after sunflowers	31 bush. 12 lb.	26 bush. 56 lb.	13 00	12 24	19 03
Sunflowers	10 tons 1,000 lb.	5 tons 333 lb.	9 56	10 35	7 73
Demonstration Test Fields—					
Oats, Banner (second crop)	70 bush. 14 lb.	56 bush. 9 lb.	13 24	14 21	12 18
Alfalfa hay	3 tons		10 48		

Of the Stations in Alberta, Wainwright returned the highest yield of wheat in 1927.

Garnet gave a satisfactory account of itself in 1927 as it did in 1926 and the Operator regards it as being well suited to second crop purposes and plans to sow 75 acres to this variety, in 1928, on spring ploughed stubble land. All surplus seed of Garnet was spoken for in the autumn.

From the preceding table it may be observed that over the three year period western rye grass was a more profitable fodder crop than either sunflowers or sweet clover. Second crop oats have given a larger profit than oats seeded on fallow ground because the oats on fallow make such a heavy growth in a favourable year that the crop goes down and cannot be harvested in a satisfactory condition.

The work and appearance of this Station in 1927 as in previous years reflected credit upon all who have to do with its conduct. The amount of seed sold and the information sought from the operator show the value of the work carried on upon this farm.

WHITLA

Operator, R. H. Babe

In 1927 work on the land commenced on this Station April 26. Moisture conditions were good throughout the summer. May, the important month, gave 7·54 inches of rainfall which was excellent from a crop standpoint.

Unfortunately for the station results, this area was visited by a hail storm between three and four a.m. on July 29 which damaged the wheat fields to 50 per cent and the oat field to 60 per cent of the crop. A fair recovery was made by harvest time, one field of wheat yielding 30 bushels and 12 pounds per acre.

The five months, April to August inclusive, totalled 17·45 inches of rainfall. Wheat was sown at the rate of one bushel per acre and cutting was started on September 6.

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

Rotation and Crops	Yield per acre		Cost per acre		Profit or (−) loss per acre average 1925–1927
	1927	Average 1925–1927	1927	Average 1925–1927	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow			5 39	5 91	
Wheat, Marquis after fallow	30 bush. 12 lb.	19 bush. 4 lb.	14 53	13 17	8 98
Wheat, Marquis after wheat	20 bush.	12 bush. 52 lb.	12 66	12 69	2 32
Three-year Rotation—					
Summer-fallow			5 56	6 08	
Wheat, Marquis after fallow	28 bush.	17 bush. 28 lb.	14 06	13 03	7 24
Sweet clover or replaced by oat hay	Failure	1,067 lb.	5 73	9 22	−3 89
Demonstration Test Fields—					
Wheat after corn and sunflowers	27 bush. 24 lb.	17 bush. 16 lb.	10 24	8 80	11 30
Oats as sheaf feed	1 ton 400 lb.		8 01		

The station fields are not a true index to the yields of the district for 1927 as the hail storm of July 29 did not affect the whole community.

The fact that threshing rigs had left the locality during the dry light crop years created a situation at harvest that could only be met by the purchase of new rigs in order that the 1927 crop might be handled expeditiously.

YOUNGSTOWN

Operator, G. S. Coad

In 1927 work on the land commenced on this Station April 26. Moisture for the summer was good. The district however suffered from a severe hail storm on July 9, which damaged the crop 60 to 80 per cent.

Rainfall for the five month period, April to August inclusive, totalled 13·31 inches.

Wheat was sown at the rate of one bushel per acre. Wheat cutting commenced with Garnet August 29 and for Marquis September 15.

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

Rotation and Crops	Yield per acre		Cost per acre		Profit per acre 1925–1927 average
	1927	Average 1925–1927	1927	Average 1925–1927	
			$ cts.	$ cts.	$ cts.
Three-year Rotation—					
Summer-fallow			6 01	5 38	
Wheat, Marquis after fallow	22 bush. 30 lb.	21 bush. 15 lb.	12 80	12 88	11 90
Wheat, Marquis after wheat	17 bush.	16 bush. 45 lb.	13 15	12 78	6 86
Four-year Rotation—					
Summer-fallow			5 81	5 27	
Wheat, Marquis after fallow	16 bush.	14 bush. 48 lb.	12 54	10 89	6 35
Western rye grass hay (first year)	2 tons 500 lb.	1 ton 1,000 lb.	7 18	8 83	6 17
Western rye grass hay (second year)	1 ton 1,000 lb.	1 ton 500 lb.	6 33	5 73	6 76
Three-year Rotation—					
Summer-fallow			5 87	6 45	
Wheat, Garnet after fallow	21 bush.		14 42		
Sweet clover and oat hay	2 tons 1,000 lb.	1 ton 1,500 lb.	8 83	9 67	7 83
Two-year Rotation—					
Wheat after corn and sunflowers	15 bush.	16 bush. 10 lb.	8 94	8 79	10 11
Corn and sunflowers	Failure	4 tons 1,333 lb.	7 16	10 00	6 33
Demonstration Test Field—					
Alfalfa hay	1 ton 1,000 lb.		5 73		

In seventeen days following the hail storm of July 9, only one slight shower amounting to ·03 of an inch was received. This rainless period retarded the recovery of crops from hail damage.

Three lines may be mentioned in which this station has exerted a direct beneficial influence during the past year. First, through breeding stock, the spread of improved Yorkshire hogs. Second, increased returns from poultry by sales of settings and cockerels throughout the neighbourhood. The station flock is built up from bred to lay Barred Rocks. Third, and of greatest importance, is improvement in the wheat produced in the district through the distribution of good seed by sales made from the station.

Irrigated Stations

GLENWOODVILLE

OPERATOR, GLEN WOOD

Irrigation water was not used at this point in 1927. For the five months, April to August inclusive, rainfall totalled 19·05 inches. September followed with 5·17 inches of rain, making harvesting of grain crops well nigh impossible. Winter set in November 4, cutting off some of the harvesting and a good deal of the threshing.

The first cutting of alfalfa was done on July 11, and the second cutting on August 25.

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

Crop	Yield per acre		Cost per acre		Profit per acre, Average 1925-1927
	1927	Average 1925-1927	1927	Average 1925-1927	
			$ cts.	$ cts.	$ cts.
Alfalfa hay	2 tons 1,760 lb.	2 tons 1,890 lb.	14 94	14 97	11 96

The permanent pasture on the Station, owing to the abundance of wild grass, was taken for hay on July 13 and gave a yield of one ton, thirteen hundred pounds per acre. Later in the season when required for grazing, this 10 acres was used to the extent of 462 horse days pasturage.

At Glenwoodville, this was a very trying year for the performance of all farm operations, and the crop results from a grain standpoint were far from satisfactory. Rain, frost and snow worked against a good harvest. Alfalfa, though giving a fair return, is not included on a sufficient scale in the farming programme of this district to have a very appreciable influence on the years results.

IRON SPRINGS

OPERATOR, J. C. DOHERTY

Very little irrigation water was used on this station during 1927. Applications were made on barley, oats and permanent pasture. Potatoes, wheat and the six fields of alfalfa went without being irrigated.

Rainfall for the five months, April to August inclusive, totalled 11·27 inches. Winter set in before the threshing was done on this farm, consequently alfalfa and potatoes are the only crops that can be reported this season.

The first cutting of alfalfa was made on July 13, and the second cutting on August 13.

RESULTS OF THE SEASON'S WORK AND AN AVERAGE OF THREE YEARS FOR ALFALFA, AND 1927 RESULTS FOR POTATOES AT IRON SPRINGS

Crops	Yield per acre		Cost per acre		Profit per acre, Average 1925-1927
	1927	Average 1925-1927	1927	Average 1925-1927	
			$ cts.	$ cts.	$ cts.
Alfalfa	4 tons 917 lb	5 tons 97 lb.	18 29	22 00	28 47
Potatoes	3 tons 1,000 lb.	.....	46 69		

Nineteen hundred and twenty-seven marked another year of development and progress in the Iron Springs' district. The soil of the Station in its adaptability to the producing of high yields of alfalfa continues to stand out noticeably.

KIPP

OPERATOR, C. M. NICOL

Irrigation water was not used at this point in 1927. For the five months, April to August inclusive, the rainfall totalled 12·52 inches. May was the high moisture month with 7·15 inches.

The grain and hay crops on this Station were all garnered. Hay suffered somewhat in quality through being rained upon, while in the making. The first cutting of alfalfa started on July 5 and the second cutting on August 12.

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

Crop	Yield per acre		Cost per acre		Profit or loss (−) per acre, average 1925-1927
	1927	Average 1925-1927	1927	Average 1925-1927	
			$ cts.	$ cts.	$ cts.
Alfalfa hay	2 tons 1,417 lb.	3 tons 372 lb.	17 88	19 75	12 11
Barley O.A.C. No. 21	27 bush. 24 lb.	24 bush. 32 lb.	23 11	26 16	−11 40
Oats, Banner	65 bush.	54 bush. 31 lb.	21 12	22 53	2 86
Wheat, Marquis	31 bush. 30 lb.	.....	37 43	.....	.....
Corn, Minnesota No. 23	6 tons	.....	31 23	.....	.....

The permanent pasture field of ten acres was grazed for three weeks in April, giving pasture for 294 cow days and 105 horse days. Following this grazing the field was allowed to produce a hay crop, which was cut July 22 and yielded at the rate of two tons per acre.

The corn crop Minnesota No. 23 (seed for which was provided by and grown under the direction of the Cereal and Forage Crops Assistant Superintendent, Lethbridge Experimental Station) made a very fair growth and developed cobs to a valuable feeding stage. An exhibit from this field obtained second prize at the Provincial Corn Show held in Calgary, November 17 and 18. The class was for White Dent corn.

The Kipp Station farm is developing well along the logical lines for continued successful irrigation farming. A large flock of Barred Plymouth Rock poultry is giving a good account of itself. Three Yorkshire brood sows with a pure-bred Yorkshire hog make a foundation for profitable swine husbandry. The grade Holstein herd of dairy cows, now supplemented with some pure-bred females and a registered Holstein male, forms one of the major lines of effort upon this farm. In these three lines of live stock breeding work, blood of value for improving the offspring has been secured from the Lethbridge Experimental Station.

In the Lethbridge Beef Calf Club competition judged at the Jubilee Celebration, July 2, the operator's son, Will Nicol, with his Hereford steer, "Buster," took first place in a class of sixteen.

At the Lethbridge Fair in September the same boy, with a Holstein heifer, stood third in a Dairy Calf Club class of eight.

The Kipp Station, through the interest and influence of our operator in the community life, is functioning well in this sector of the Lethbridge Northern Irrigation district.

At the majority of stations in Alberta, the year 1927 has marked a step ahead in the quality of work done and the beneficial results accruing to the localities served.

REPORT OF THE ILLUSTRATION STATIONS IN SASKATCHEWAN

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

Twenty-five Illustration Stations were operated in the province of Saskatchewan during the year 1927. Twenty of these were supervised from the Swift Current Experimental Station, four of which are in the east part of the province from Brandon and one near the western border from the Lethbridge Farm. This report deals with those Stations administered from Swift Current. Three new Stations were added and work started this year at the following places: Loverna, Piapot, and Fox Valley.

THE SEASON

From the standpoint of moisture this was one of the most favourable seasons for crop production which we have had in this province. Spring was later than usual in most districts and seeding operations were delayed by the extremely wet weather during May. However, growth was rapid during June and July and prospects for an excellent crop on all the Stations looked very bright until the rust developed in the latter part of July or early August.

On the night of August 7 a severe frost occurred over a large part of the province. This did very serious damage in many districts, particularly to the wheat crop which was headed out and the kernels in the milk or soft dough stage. The rust was very widespread, none of the Stations escaping it entirely. It continued its destructive work, reducing both yield and grade of the grain very considerably. Hail also took its toll at two of the Stations, practically destroying the wheat crop in one case. In spite of these adverse factors, excepting in a few cases where frost and rust were both severe, the yields of grain were well above the average and on some of the Stations exceptionally high. The quality, however, was considerably lower than in the average seasons with wheat grading No. 1 and 2 on only three Stations and grading 3 and 4 on most of the others, while in two places some of the wheat was No. 5 and feed.

The favourable yields, on the whole, compensated to some extent for the deterioration in quality. This was a favourable season for hay crops and yields were above the average, but corn did not do as well as usual. Harvesting and threshing were both delayed by wet weather and winter set in with a fairly heavy snowfall on November 6.

The record of the rainfall at each Station for the season April to November inclusive is given in the following table:—

RAINFALL APRIL-NOVEMBER FOR 1927, IN INCHES—SASKATCHEWAN

Station	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Total
Riverhurst	.....	7·06	0·68	3·66	1·25	.....	2·05	.....	14·70
Radville	.....	2·28	1·33	3·72	1·97	3·04	1·06	.....	13·40
Avonlea	.....	.....	1·0	2·91	1·40	0·90	.....	.....	.....
Trossachs	.....	3·10	0·72	3·79	1·45	2·66	1·11	.....	12·83
Shaunavon	0·39	5·76	1·61	4·41	1·87	0·76	0·28	.....	15·08
Parkbeg	.....	5·47	1·58	2·35	0·58	1·80	1·23	.....	13·01
Weyburn	0·20	3·14	2·17	4·33	1·21	3·69	0·60	.....	15·34
Meota	.....	1·27	2·41	5·97	0·47	1·67	0·94	.....	12·73
Kindersley	.....	4·42	3·28	3·79	1·68	1·91	1·45	.....	16·53
Herbert	.....	5·89	1·33	2·99	0·33	2·19	1·55	.....	14·28
Spruce Lake	.....	1·27	1·06	6·40	0·46	1·25	0·76	.....	11·20
Guernsey	.....	2·74	2·88	3·90	0·50	2·07	.....	.....	12·52
Tugaske	.....	4·94	0·76	5·42	0·54	1·98	.....	.....	13·64
Lloydminster	.....	0·59	2·18	7·83	0·40	2·75	1·13	.....	14·88
Ogema	.....	3·00	0·61	5·13	0·40	1·74	0·76	.....	11·64
Marcelin	.....	1·57	1·14	4·65	1·70	1·77	0·65	.....	11·48
Davidson	0·55	3·74	0·61	2·68	0·55	0·86	1·40	0·34	9·87
Loverna	.....	.....	.....	.....	1·17	1·73	1·70	.....	4·60
Fox Valley	.....	.....	.....	.....	1·89	0·91	0·80	.....	3·60
Piapot	.....	.....	.....	.....	1·49	1·06	0·89	.....	3·44

SUMMER-FALLOWING METHODS

The method followed on most of the Stations is as follows: Surface working the land by giving a stroke of the disk in the spring, then ploughing a little later by the time the second crop of weeds have made a start. After this sufficient cultivation is given to control weed growth, but no more. When the work is done carefully this method has proven satisfactory. On a few Stations cultivating only (not ploughing at all) has been tried to compare it with the ordinary method. In a few places where the land drifts frequently the common method of summer-fallowing has been modified by delaying the ploughing until the middle or latter part of July and doing no further work after that. It may be found necessary sometimes to give more than one cultivation previous to ploughing in order to control weeds. This method leaves the soil in a lumpy condition and has been found helpful in combatting soil drifting. At the Kindersley Station, surface working only, with disk or cultivator, has been carried on for two years. The average yield of wheat has been practically the same as on the ploughed fallow. Where there is grass on the land or deep-rooted perennial weeds this method would not be satisfactory.

The disking previous to ploughing the summer-fallow has been found a great help in killing weeds and thus preventing the loss of the soil moisture which they use.

WHEAT VARIETIES

On most of the Illustration Stations during the last two years, at least one variety of wheat in addition to Marquis has been grown. On all of the North Stations and on three in the South this year three varieties in all were tested in order to obtain some information as to the most suitable variety for a certain territory.

While Marquis is considered the standard variety for most of the districts where Illustration work is carried on, particularly in the southwest and central west parts of the province, there are many districts in the North where an earlier good-quality wheat is desired. In areas where rust frequently occurs, there is also a demand for an earlier wheat or one which will in some way escape the rust damage. Garnet has been tested for two years on most of the Stations and Reward, another early variety of high quality, was tested this year on six of the Stations. This was a good year to test these early wheats and on the whole they came through with a better grade than Marquis. Reward in some places withstood rust damage better than Garnet. This was particularly noticeable at one Station where rust was severe and there was no frost damage to complicate the situation. This was a year when early seeding was a very important factor, as well as the use of an early variety.

Renfrew, a selection from Marquis, was grown this year on two of the Stations (Shaunavon and Loverna) but it did not yield nor grade quite so well as Marquis. It is a little later in maturing and was more affected by the rust. More details of the results with the different varieties are given in the report of each Station where they were grown.

ROD ROW TESTS

A number of the Illustration Station operators are testing different varieties of wheat in rows a rod in length, five rows being used for each variety. This test is carried on for a period of three years. The purpose is to find out which variety or strain of wheat gives the best results under the conditions prevailing in particular districts. This work is carried on in co-operation with the Cereal Division, Central Experimental Farm, Ottawa.

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WESTERN RYE GRASS

This crop usually catches well and gives a fair yield of good quality hay when the season is reasonably moist, but under conditions of light rainfall the growth is generally short. The average yield for a period of four years on the Illustration Stations in the western half of the province has been approximately 1 ton per acre. When used in a crop rotation it has not as a rule given satisfactory results in the southwest and central west parts of the province. Even after the sod has been summer-fallowed for a year, as it is in most of the rotations, the yield of the following wheat crop on the average has been somewhat less than that after a summer-fallow in the three-year grain rotation of wheat, wheat, fallow. The crop of wheat following hay is also frequently thin and uneven. This can be attributed in some cases at least to the work of the wire worms which are in the sod.

The hay crop, being a perennial, has a long growing period and uses more soil moisture than does a grain crop. For this reason under conditions of light rainfall the yield of the succeeding grain crop is usually depressed. On the Stations in the northwest part of the province western rye grass has usually given better results. On one of these Stations a rotation including this crop has given almost as high a yield of wheat as has the three-year grain rotation.

Western rye grass adds considerable fibre to the soil and is quite effective in preventing soil drifting, and under favourable conditions it assists in weed control.

SWEET CLOVER

Sweet clover has been found more uncertain than western rye grass in making a stand with a nurse crop but once established will usually give a heavier yield of hay and even in a dry season will produce something. It has given much better results in a rotation than has western rye or Brome grass. After the clover sod is summer-fallowed, the following grain crop is usually quite an even stand and gives practically the same yield as the summer-fallow in the ordinary three-year grain rotation. Sweet clover seems to have a good effect on hard clay soils such as on the " burn out " spots. This was noticeable on the Radville Station last year when the summer-fallow following sweet clover gave a heavier yield of wheat than any other summer-fallow.

ALFALFA

This crop has not been grown to the same extent as the other hay crops. It has, however, given very good results in many places. At one Station in the southwest it has given an average yield of two tons per acre over a four-year period, when grown in rows $2\frac{1}{2}$ feet apart, and this is probably the most satisfactory method for this district. It seems more difficult to obtain a catch with alfalfa than with rye grass or sweet clover and it often has to be seeded alone. Good stands have often been obtained on the heavy soils and in seasons when the moisture conditions are favourable. It has been used a good deal in a mixture with western rye grass. The quality of the hay is excellent.

BROME GRASS

This has been dropped out of the rotations as it is difficult to eradicate and volunteers in the grain crop. It is grown at a few Stations as a permanent pasture or hay. It gives a very palatable hay, but usually does not yield quite as well as western rye grass.

CO-OPERATION WITH THE UNIVERSITY

Four of the Illustration Stations located in districts with soil typical of a large adjacent area have been co-operating with the Chemistry Department of the university in an important experiment to determine the influence of environ-

mental factors such as soil and climate on the protein quality of wheat. This year the operators of these Stations grew four different varieties of wheat in one-tenth acre plots. After the grain was threshed it was forwarded to the university. Following are the Stations co-operating: Weyburn, Tugaske, Kindersley, and Lloydminster.

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 40
Oats, per bushel	0 70
Barley, per bushel	0 80
Fall rye, per bushel	1 00
Peas, per bushel	3 00
Corn, per bushel	4 25
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 basis.	$1 25
Oats, per bushel		0 50
Barley, per bushel		0 70
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 50
Corn (fodder), per ton		7 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 AND EXHIBITIONS

In addition to the regular supervision of the work at the different Stations, the supervisor held field meetings at the following places: Herbert, Parkbeg, Avonlea, Radville, Guernsey, Marcelin, Spruce Lake, Meota, and Kindersley. At all these meetings he was assisted by either the superintendent or the assistant superintendent of the Swift Current Experimental Station. He also acted as judge of the grains and forage crops at the Ogema Agricultural Fair.

AVONLEA

Operator, J. W. Miller

The first seeding on the Station was done this spring on May 6, and this field was cut on August 17. The rainfall during the growing season was heavier than the average and all crops made good headway. Before the wheat ripened, however, rust set in and reduced both yield and grade. The result was that about an average crop of grain of lower grade than usual was harvested. Hay

crops were above the average, but the season was not favourable for corn. Harvest was late; wheat cutting was completed August 26.

OPERATIONS AT AVONLEA

Rotations and Crops	Yield per acre, bush. or tons		Cost per bushel or ton		Profit or loss (−) per acre	
	1927	Average 4 years	1927	Average 4 years	1927	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	8 70*	7 71*		
Marquis wheat	22	16	0 74	0 63	10 12	8 02
Marquis wheat (2nd crop)	15	.....	0 93	.....	2 55	
N.W. Dent corn	3½	3¾	3 98	3 64	−1 68	−0 15
Marquis wheat (seeded)	18	11¼	0 58	1 20	11 16	5 34
Hay—rye grass	1½	1	5 20	8 27	7 20	3 32
" sweet clover	2	1¾	4 35	4 86	11 30	10 54
Three-year Rotation—						
Fallow	.....	.....	7 47*			
Marquis wheat	20	.....	0·95	.....	5 00	
Marquis wheat (2nd crop)	14	12	1 06	1 41	0 56	1 00
Demonstration Test Fields—						
Wheat after hay	16	.....	0 82	.....	4 48	

* Cost per acre.

The land for the second crop of wheat was prepared in two ways. One-half of the field was spring ploughed, and the other half was disked early in the spring, left for weeds to germinate, then cultivated before sowing. No difference could be observed in the stand of the two crops this year, and one appeared about as clean as the other. Any difference there may have been in this respect was in favour of the spring ploughing.

Wheat after hay gave a fairly good yield of grade 2-3. This field was ploughed July 1 last year and worked down after the hay was taken off. The moist season favoured this crop. Usually the yield of grain is low directly following a hay crop.

The operator of this Station grew considerable Marquis wheat this year from the seed originally sown on the plots, which was Experimental Farm stock and 600 bushels were sold to farmers in the district for seeding last spring. There were also 200 bushels of Banner oats sold for seed.

A number of settings of eggs of the Barred Rock breed were sold to neighbours who wished to make a start with stock of good production.

DAVIDSON

Operator, Reuben Lloyd

The first wheat seeding was done on this Station on May 14. The spring was wet and seeding was delayed considerably. The rainfall from the opening of spring until the first of August was 7·62 inches. This was sufficient for favourable growth of all crops. The late July rains were favourable for the development of stem rust in both wheat and oats and the loss from this cause in both yield and grade was very considerable. On the whole, the hay crops were the best we have had on this Station, but corn failed to make a successful stand, and the field was fallowed. Harvest was started August 18, when the Garnet wheat was cut, while the first cutting of Marquis was done four days later.

OPERATIONS AT DAVIDSON

Rotations and Crops	Yield per acre bushels or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1927	Average 2 years	1927	Average 2 years	1927	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	6 74*	7 70*		
Garnet wheat	10¼	14¼	1 24	1 02	−1 44	3 59
Banner oats	45	.....	0 33	.....	7 65	
N.W. Dent corn	Poor stand; ploughed down July 12.					
Marquis wheat (seeded)	13¾	22¼	0 72	0 62	5 26	15 49
Hay (sweet clover and rye grass)	1½	(1,800 lb.)	6 41	10 48	4 31	1 51
Three-year Rotation—						
Fallow	.....	.....	7 04*	6 80*		
Marquis wheat	15¼	18	1 06	0 88	8 27	9 91
O.A.C. 21 barley	40	.....	0 36	.....	13 60	
Demonstration Test Fields—						
Grimm alfalfa	1½	.....	6 41	.....	4 31	

* Cost per acre.

The Garnet wheat was sown this year on a field which was fallowed after the hay was taken off last. This did not give it very favourable conditions and probably accounts for the yield falling below the Marquis fields. Last year it yielded practically the same as Marquis. Next year the comparatively new early wheat, "Reward," will also be given a trial.

Wheat, second crop after alfalfa, gave a better yield than wheat after corn this year, and the quality was also one grade better. Last year this field gave the heaviest yield of wheat of any on the Station. The alfalfa had been down three years.

O.A.C. 21 barley was grown this year in place of the second crop of wheat in the three-year rotation of wheat, wheat, fallow. This proved to be a very profitable change. Not only did we get the most profitable crop on the Station, but the weeds were so well smothered by the heavy growth of barley that the crop was very clean. A couple of cultivations with an interval between before seeding also helped to clean the land.

FOX VALLEY

Operator, Chris. Mutschler

A request for some Illustration work was received from this district last fall and this spring a start was made on the farm of Mr. Chris. Mutschler. This farm is located immediately west of the town site and along a main highway running from Maple Creek to Prelate, therefore it is ideally located for the purpose of Illustration work. The land which is gently rolling, is a fairly light loam of good quality quite typical of that in the district.

The land selected had been previously cropped for a number of years and required summer-fallowing, so the work this year was largely of a preparatory nature. Quite an extensive crop plan has been worked out and this will be put into operation more completely next year. This year a number of the fields were sown to different crops in order to lay the foundation for the different rotations. Alfalfa, western rye grass and sweet clover were all seeded this year without a nurse crop and made a successful catch. Fall rye was also sown on two of the fields.

Though there have been quite a number of dry seasons in this district, this year was very favourable for crop productions. There was a good moisture supply, all crops made strong growth, and both yield and quality of grain were good.

The crops which were sown on the Station were on the old land (spring ploughed), yet even under these conditions they gave good yields. Following are the yields obtained:—

Marquis wheat—21 bushels per acre,
Banner oats—51 bushels per acre,
Hannchen barley—37 bushels per acre.

Corn made a good growth but was late and was not cut when the first September frost came. Some of it went down after this and it was used for pasture.

The rainfall at this Station from the end of July until winter set in, the time for which records were kept, was 3·60 inches.

GUERNSEY

Operator, C. H. Snider

Spring opened in good time and seeding on the Station fields was started on May 6. The moisture conditions were quite favourable and all crops made good growth. During the four months from April 1 to August 1, which is practically the growing period for grain crops, there was a rainfall of 9.95 inches. There was a heavy rainfall throughout July with warm weather, which favoured the development of rust. Toward the end of the month the wheat stems were infected and before the grain was ready to cut considerable damage was done. The wheat was reduced about two grades and there was a corresponding loss in yield. Oats were rusted to some extent, but not seriously affected, and gave a good yield. Barley was not damaged and gave a good yield of plump grain. Hay crops made a good growth, but corn did not do well this year. Harvest was started on August 24 when Garnet wheat and barley were cut, Marquis being cut nine days later.

OPERATIONS AT GUERNSEY

Rotations and Crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1927	Average 2 years	1927	Average 2 years	1927	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Four-year Rotation—						
Wheat (seeded)—						
Marquis	14½	13½	1 01	1 07	1 31	1 40
Garnet	13¾	13½	1 06	1 07	0 55	1 40
Hay (rye grass and sweet clover)	1½	1½	6 45	5 18	5 33	8 72
Banner oats	51½	.....	0 26	.....	12 30	
Fallow	.....	.....	9 15	8 63		
Three-year Rotation—						
Garnet wheat	15½	15¾	0·62	0 75	7 32	6 58
O.A.C. 21 barley (seeded)	30	.....	0 32	.....	11 40	
Hay (sweet clover)	(Clover ploughed in this year)					
Two-year Rotation—						
Marquis wheat	14½	13	0 84	0 91	3 70	3 43
(Corn half)	1½	.....	5 35	.....	−2 77	
(Sweet clover half)	1	¾	6 77	9 46	3 25	1 58
Demonstration Test Fields—						
Grimm alfalfa	3	.....	2 50	.....	22 50	
Hay (rye grass and alfalfa)	1	.....	7 44	.....	2 56	
Reward wheat	12½	(Grown on fallow land adjoining the station)				

Three varieties of wheat were grown here this year, namely, Marquis, Garnet, and Reward. The yields are shown in the above table. Being a season of rust, it was a good test of the reaction of each variety to this disease. Reward came through with a plumper kernel, though did not give quite as heavy a yield as the others. Garnet gave practically the same yield as Marquis and there was very little difference in the appearance of the two, though the Garnet was probably slightly less damaged. This is the second year for Garnet on this Station and each year it has yielded practically the same as Marquis. Reward is a new introduction which looks quite promising for rust areas and where an early wheat is desired. The operator will have a limited quantity of Garnet seed for sale from this year's crop to anyone who would like to give it a trial. It is well worth trying as it yields well and its earliness may often enable it to escape the rust damage to some extent, even though it is not resistant to rust.

These wheats will all be further tested next year to gain more information as to their suitability for the conditions prevailing here.

Barley (O.A.C. 21) was grown this year in the three-year rotation and proved to be quite a profitable crop, and also useful in controlling weeds, such as sow thistles and also wild oats. Alfalfa proved to be the best hay crop this year, giving two cuttings with a total yield of three tons per acre.

The field which has been used for permanent hay was broken up this summer after the hay crop was taken. It was worked down and seeded to fall rye the first week of September. This made a very fair start.

A small plot of winter wheat (Turkey Red) was sown last fall on fallow land. It winter killed considerably, and was not worth leaving this spring.

There were not many sow thistles showing in the grain fields this year and it would seem that the rotations used and the thorough method of cultivation practised by the operator have been efficient controlling factors.

Some sales of seed wheat and peas were made by the operator. Ten Barred Rock cockerels were sold in the district for breeding purposes.

A very interesting field meeting was held on this Station on the afternoon of August 13 and the good attendance was evidence of the keen interest taken in the Illustration work by the people of the district.

HERBERT

Operator, Milton Holmes

Spring was later than usual and seeding on the Station fields was not started until May 12, though considerable preparatory work had been done on the land previous to this. There was a plentiful supply of moisture during the growing season, particularly during May, when 5.89 inches fell. June gave 1.33 and July 2.99 inches. This resulted in a very favourable growth of all crops and prospects were excellent until the rust, hail and frost each wrought its havoc. Rust began to develop the latter part of July, then on the first week of August there was a hailstorm and on the night of August 7 a severe frost did the worst damage of all. The hail damage was estimated at from 10 to 25 per cent. The frost damaged practically all the wheat and the grade was reduced to No. 5-6 and feed, with a very heavy loss also in yield. The Garnet came through much better than the Marquis, giving a heavier yield and a better quality of grain, as it was further advanced when the frost and rust came. Oats suffered considerable damage also, but gave better results than the wheat.

Harvest was started on August 18, when Garnet wheat was cut. Marquis was cut eight days later.

Rotations and Crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1927	Average 5 years	1927	Average 5 years	1927	Average 5 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow	.....	.....	7 37*	8 28		
Marquis wheat	14	18	1 12	0 93	−5 88	3 64
Wheat (second crop)—						
Marquis	12	9	1 00	1 47	−2 64	−2 10 (4 yrs.)
Garnet	20	.....	0 65	.....	4 60	
Six-year Rotation—						
Fallow	.....	.....	6 13*	8 5		
Marquis wheat	15	18½	1 09	0 95	−4 65	4 19
Marquis wheat (second crop)	10	.....	1 30	.....	−5 20	
N. W. Dent corn	Corn frozen August 7	1¾ (fodder)		8 28	.....	−7 69 (4 yrs.)
Wheat after corn (seeded)	17	16½	0 62	0 67	2 72	5 45
Hay—Sweet clover (oats substitu'd)	28	1,700 lb.	0 39	9 88	3 08	0 90
Western rye grass	1	1,400 lb.	7 68	12 09	2 32	−2 47
Two-year Rotation—						
Fallow	.....	.....	8 00*			
Marquis wheat, half seeded to sweet clover	14	.....	1 35	.....	−7 98	
Demonstration Test Fields—						
Grimm alfalfa (in rows 30 inches apart)	⅞	1 9/10	9 97	5 12	0 02	10 09 (4 yrs.)

* Cost per acre—$6.13 (cultivated only).
$7.37 (ploughed and cultivated).

Corn was caught by the early August frost and never recovered. The two-year rotation of wheat, summer-fallow, was started two years ago. One half of the wheat field is seeded with sweet clover each year for the purpose of ploughing under when summer-fallowing. This is being done to obtain some definite information as to the effect of ploughing under sweet clover under the conditions prevailing in this district. In this rotation of wheat, summer-fallow, half of the land will be summer-fallowed each year and wheat will always be sown on fallowed land. This system is being followed now by some farmers in districts of light rainfall. At the Swift Current Experimental Station for a period of four years it has not given as profitable returns as the old three-year rotation of two crops of wheat and summer-fallow.

The alfalfa field on this Station was seeded in 1921 in rows, without a nurse crop, 2½ feet apart, with a hardy strain of Grimm. This field has shown a profit every year since, even including this year. The average yield for a period of four years has been almost two tons per acre of excellent quality hay. This spring it looked badly winter-killed and most of the field was reseeded. However, it made a strong recovery, and even this year the old stand produced a total yield of three tons of hay. The new seeding made a start and bids fair to restore the stand to normal.

A field meeting was held on this Station on the afternoon of July 13 and was well attended by farmers of the district. After an inspection of the fields, addresses were given by the superintendent of the Swift Current Experimental Station as well as by the Illustration Station supervisor.

KINDERSLEY

OPERATOR, ROBERT SIMPSON

Some late snow storms and cold weather delayed the opening of spring, and after the disappearance of the snow it took considerable time before the heavy soil of this district was in a fit condition to work. The first week of May was extremely wet, and it was near the middle of the month before any seeding could be done on the Station fields. The rainfall during the most important growing period for grain crops, from the opening of spring until the first of August, was 11·49 inches. This was away above the average for this district and was over three times as much as last year. It was also favourably distributed, 4·42 inches coming in May, 3·28 in June, and 3·79 in July. All crops made excellent progress once the weather became warm. The first adverse factor was a severe frost on the night of August 7 which did considerable damage, particularly to the late-sown crops and those on low-lying land. The wheat on fallowed land on the Station, which was sown in good time, came through well, but the wheat on stubble which was sown later by about two weeks, suffered extreme damage. The oats also were frosted. After this frost, the rust set in and caused more damage; however, the early-sown wheat was far enough advanced to largely escape this, but the late-sown suffered severe damage. The result was that on the early-sown fields the wheat yields were as high as 40 bushels of No. 2 grade, while on the late-sown second-crop fields there was a low yield of feed wheat.

Harvest was fully two weeks later than last year, Marquis wheat being cut September 7, and Garnet, August 24. Threshing was also late owing to the unfavourable weather.

OPERATIONS AT KINDERSLEY

Rotations and Crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1927	Average 4 years	1927	Average 4 years	1927	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	7 77*	8 02*		
Marquis wheat	26¼	19¼	0 68	0 88	13 68	10 44
Garnet wheat	30¾	20½	0 60	0 93	18 45	9 17 (2 yrs.)
Victory oats	41¾	.....	0 33	.....	7 07	
Fallow Substitutes—						
N. W. Dent corn	2	.....	4 03	.....	−1 06	
Victory oats (triple rows)	1	.....	6 64	.....	3 36	
Wheat (seeded)	23	.....	0 72	.....	11 04	
Hay—Western rye grass	2	1	4 00	1 89	12 00	7 03
Sweet clover	2¾	2	3 13	5 43	18 89	12 31
Three-year Rotation—						
Fallow (ploughed and surface worked)	.....	.....	8 95*	7 93*		
Fallow (surface worked only)	.....	.....	6 64*	5 73*		
Wheat after Fallow—						
Ploughed and surface worked	36¾	29½	0 50	0 61	25 73	19 76 (2 yrs.)
Surface worked only	41	31½	0 43	0 54	31 57	23 48 (2 yrs.)
Wheat after wheat	9½	9½	1 23	1 86	−5 09	0 30 (3 yrs.)
Demonstration Test Fields—						
Brome grass hay	1	½	6 71	11 02	3 29	0 47
Grimm alfalfa hay	2½	1	3 82	13 77	15 45	5 00
Wheat after Fallow—						
Early ploughed (June 8)	41½	.....	0 48	.....	29 68	
Late ploughed (July 8)	28	.....	0 64	.....	15 68	

* Cost per acre.

This was a season full of promise, yet disappointing to many in the final returns. Rust and frost were the limiting factors in crop production, rather than lack of moisture. Early seeding had a great advantage this year and in most cases resulted in a profitable crop. Seeding an early variety of wheat such as Garnet did not give the advantage which might be expected. The frost came too early for even the earliest wheat and the rust seemed to do as much damage to the Garnet as to the Marquis, at least on the Station fields. By reference to the table it will be noted that the yields of the Garnet and Marquis after clover sod fallowed were nearly the same, with two bushels more of Marquis per acre, while the grade was also practically the same. Garnet has now been tested here for two years. Last year it yielded one bushel more than Marquis, which is not a significant difference. In some seasons, however, its earliness may be quite an advantage.

Another new, early wheat, the Reward, was grown this year on a one-acre plot on a fallow field west of the illustration fields. The land was lower and this wheat, as well as the Marquis adjoining, was badly damaged by the early frost. It yielded 26 bushels per acre of grade 5, while the Marquis on the same field gave 23 bushels of the same grade. The reaction of Reward to the rust could not be determined this year, owing to the frost damage. It has proven more rust-resistant in some tests.

One of the outstanding features of the rotations this season was the wide difference between the yield of wheat after sweet clover and after western rye grass in the six-year rotation. In this rotation the land is fallowed for a year after the hay crop is taken. The wheat following the sweet clover germinated strongly and was a uniform stand all summer, while after the rye grass the stand was thin. The resulting yields showed a difference of 14 bushels per acre in favour of the clover this year. Sweet clover has always given better results than Western rye grass in a rotation on this Station. In comparing the yields on fallowed land after sweet clover with the yields after the fallow in the regular three-year grain rotation of wheat, wheat and fallow, for the past four years they are practically the same, with a little less than one bushel per acre in favour of the grain rotation.

The cultural work in the three-year rotation was continued this year. Wheat on the fallow which was disked and cultivated only and not ploughed gave a higher yield, by four bushels per acre, this year than the fallow which was ploughed. In 1925 the yields were practically the same. The second-crop wheat land was all prepared by disking the stubble this spring, as it was too wet to do any ploughing. The experiment to find out the actual difference in yield of wheat on a late- and early-ploughed summer-fallow was started last year. The two dates of ploughing were June 8 and July 8. The first crop was taken this year. Unfortunately, the results were upset by a difference in the dates of seeding of the two plots. This was unavoidable as a heavy rain prevented the completion of the seeding for some time. The early-ploughed part was seeded before the rain, but most of the late-ploughed part could not be seeded until ten days later. This gave it a handicap. The actual results are given in the preceding table. The great importance of either early ploughing or surface working of the land to be summer-fallowed has been pretty well demonstrated already by every careful farmer in the district. Disking the stubble of the land which is to be summer-fallowed, then following with the plough in time to catch the second growth of weeds, is the practice now followed on the Station.

The hay crops all gave good returns this year, particularly the sweet clover and alfalfa, both yielding over two tons per acre.

The acreage of corn was cut down this year to one acre, and this was produced at a loss. Corn has not given good results on the Station fields here so far. Three acres of oats in triple rows were grown to replace part of the land usually used for corn. This gave one ton per acre of good sheaf feed and was easier to harvest.

Mr. Simpson has already sold 325 bushels of seed wheat from this year's crop to his neighbours, and last spring sold 830 bushels. He also distributed through sales in the district 17 Barred Rock cockerels and 25 settings of hatching eggs from his flock of Experimental Farm stock.

The rod-row test of six different varieties of wheat was carried on again in co-operation with the Cereal Division. This is the final year of the test, and Mr. Simpson will be presented with one bushel of the variety which has given the best results. New seed will be raised from this start.

A field meeting was held at this Station on the afternoon of August 20, and was attended by about seventy-five farmers of the district.

LOVERNA

Operator, Robert Brumwell

Illustration work was started in this district this spring on the farm of Mr. Robert Brumwell. This land adjoins the town on the west and lies along the main road, so is very suitably located for an Illustration Station. The soil is a fairly light but fertile loam inclined to drift in high spots if worked much, and the surface is level to gently rolling. When selected this land was all in summer-fallow, so all the crops in the rotations could not be started in regular order this year. However, a start was made with two short rotations and besides some grass clover and alfalfa plots were sown with wheat as the nurse crop. In all 36 acres was divided into plots of two and four acres. Following is the plan of crops as laid down this year:—

Marquis wheat seeded with Brome grass and Sweet Clover mixture.
Marquis wheat seeded with Western rye grass.
Marquis wheat seeded with alfalfa.
Marquis wheat seeded with alfalfa and rye grass mixture.

Four-year Rotation—

1st year—Half corn, half fallow (oats green feed this year).
2nd year—Renfrew wheat seeded with sweet clover and rye grass mixture.
3rd year—Banner oats (substituted for the hay this year).
4th year—Marquis wheat.

Three-year Rotation—

1st year—Fallow (wheat this year).
2nd year—Marquis wheat.
3rd year—Fall rye (wheat this year).

This was a very favourable season for this district with a much heavier rainfall than usual and almost ideal growing conditions. Crop yields were very high and grade good except in one case. There was not any frost before the wheat was ripe and though some rust made its appearance it was not sufficient to injure the grain to any extent. Following are the yields, costs and profits or loss for each crop:—

OPERATIONS AT LOVERNA

Crop	Yield per acre bush. or tons	Cost per bush. or ton	Profit per acre
		$ cts.	$ cts.
Marquis wheat	53	0 35	47 70
Renfrew wheat	50	0 36	37 00
Banner oats	115	0 17	37 95
Corn (N. W. Dent)	6 tons (green weight)	2 08	8 52

Renfrew wheat did not make as good a grade as Marquis which was mostly No. 1, the Renfrew being all No. 3.

The seedings of the different hay crops all made a successful catch and looked quite promising this fall when last inspected.

A rain gauge was set up on the Station on August 1 and a record of the rainfall kept for the remainder of the season. This amounted to 4·60 inches. Next year the whole season's rainfall can be recorded.

Although the illustration work had to be organized on short notice last spring, a very successful start has been made. There was a keen demand for this work both from farmers and the business men of the town and it was largely due to their enterprise and co-operation through their joint organization that the start was made possible this year. The Supervisor wishes to express his appreciation for the assistance and co-operation given him in this work.

LLOYDMINSTER

Operator, Hugh Hill

Spring opened about the usual time in this district and seeding was well underway by the end of April. The wheat on the Station was sown on April 29 and 30. During the early part of the growing season the rainfall was light, but later in June and July there was plenty of moisture and all crops made excellent growth. During the growing season for grain crops, April to August 1, the rainfall was 10·60 inches, which is much heavier than usual in this district. For the month of July alone 7·83 inches fell, which is practically the same as fell during the whole growing period last year. Crop prospects were excellent until the night of August 7, when a frost occurred. The wheat on the Station was well advanced and did not suffer as much damage as the later-sown crops. However, it caused a reduction in grade. Rust also developed about this time and though it did not have time to do serious damage it tended to reduce the grade. The result was that grain crops gave a heavy yield of about No. 3 grade, which was a very profitable crop. Hay crops did not make a heavy growth early in the season and were late, but gave yields fully up to the average. Corn and sunflowers did well. The first grain cut was the Garnet wheat on August 15, and Marquis was cut August 24. Total rainfall for the year was 14·88 inches.

OPERATIONS AT LLOYDMINSTER

Rotations and Crops	Yield per acre bushels or tons		Cost per bushel or ton		Profit per acre	
	1927	Average 3 years	1927	Average 3 years	1927	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Marquis wheat	41	35½	0 36	0 45	30 34	25 55
Banner oats (seeded)	86½	61	0 18	0 23	27 68	15 37
Sweet clover hay	2	1½	3 27	2 92	13 46	8 28
Five-year Rotation—						
Marquis wheat	46½	.....	0 32	.....	36 27	
Banner oats (seeded)	80½	.....	0 21	.....	23 35	
Hay (rye grass, alfalfa)	1½	.....	6 01	.....	5 49	
Wheat—Marquis	45½	.....	0 45	.....	29 80	
" Garnet	44	.....	0 47	.....	27 72	
Fallow	.....	.....	8 34*			
Demonstration Test Fields—						
Corn	7	4½	2 26	4 11	8 68	0 01 (4 yrs.)
Sunflowers	12	8½	1 50	2 11	24 00	10 12 (4 yrs.)
Wheat after corn and sunflowers	52	33½	0 29	0 40	42 12	25 35 (5 yrs.)
Chancellor peas	17½	16½	1 03	1 05	34 48	26 39 (3 yrs.)
Oats in triple rows	2¼	.....	4 04	.....	23 89	
Reward wheat	32					

* Cost per acre.

Garnet wheat was grown on the Station fields again this year. It gave almost the same yield but was cut nine days ahead of the Marquis. However, even as early as it was, it was not early enough to avoid the frost this season and shows some bran frost as did the Marquis. Garnet kept its colour better, however, after passing through a wet spell in the stook. Last year, Marquis yielded a little more than the Garnet. Reward, another comparatively new early wheat was tested this year on a one-acre plot of fallowed land. It did not yield quite so well as the Marquis or Garnet, but was the best looking sample of all. Next spring, Mr. Hill will sow more of this wheat so as to increase the supply for distribution.

Sweet clover gave a good yield of hay of finer quality than usual. This was the yellow blossom variety. One-half of this field was seeded with white clover (Arctic variety) and the other half with the yellow blossom. The white clover did not make as uniform a stand as the yellow, and was ploughed under. This is the first year yellow clover has been grown on this Station, and it is possible that it may prove more hardy under the conditions prevailing here than the white.

Oats sown in triple rows gave an excellent yield of sheaf feed this year. Peas did not give a heavy yield this year the season not being very favourable for this crop.

The operator of this Station sold during the year in his district 265 bushels of Marquis and 210 bushels of Garnet wheat for seed, also 450 pounds of Western rye grass and 85 bushels of Gold Coin seed potatoes.

There is now a fair-sized flock of Barred Rocks established on this Station from Experimental Farm foundation stock. Breeding cockerels, as well as hatching eggs, are distributed to the neighbours through sales each year.

MARCELIN

OPERATOR, J. B. GODBOUT

The first seeding on this Station was done on May 10, the land being quite wet and the weather cool previous to this date. The rainfall during the early part of the growing season was fairly light but sufficient to keep crops growing. July was a wet month with 4.65 inches, and during this time growth was rapid. Conditions were favourable for a good crop, but frost came on the night of August 7 and did considerable damage, particularly to the late-sown crops. About the same time as the frost came rust set in and did more damage than the frost, reducing the grade of wheat on the Station to No. 4.

Barley and oats did well, the late, heavy rains favoured these crops and they did not suffer damage from frost and rust so much. Hay crops were well up to the average.

Harvest was started August 18, when Garnet wheat was cut, and Marquis was cut one week later.

Total rainfall for the season was 11.48 inches.

OPERATIONS AT MARCELIN

Rotations and Crops	Yield per acre bushel or tons		Cost per bushel or ton		Profit per acre	
	1927	Average 2 years	1927	Average 2 years	1927	Average 2 years
			$ cts.	$ cts.	$ cts.	$ cts.
Grimm alfalfa	2	.....	4 18	.....	11 64	
Early Red Fife wheat (after hay)	22	.....	0 74	.....	5 72	
Garnet wheat (second crop)	22¼	29¼	0 61	0 57	8 68	17 21
Marquis wheat (second crop)	23	29	0 59	0 57	9 43	16 79
Banner oats (after barley)	86	.....	0 21	.....	24 94	
O.A.C. 21 barley	53	43	0 33	0 35	19 61	13 25
Hay (rye grass, sweet clover)	2½	.....	3 53	.....	16 18	
Fallow	.....	.....	7 93*			

* Cost per acre.

Three varieties of wheat were grown on the Station this year: Marquis, Early Red Fife, and Garnet. By referring to the table above it will be noted that these wheats all gave almost the same yield and the grade of all was the same (No. 4). The average for two years of Marquis and Garnet shows them as yielding practically the same. Next year, another early wheat, Reward, will also be tested on this Station.

Though Garnet was a week earlier than Marquis, it was not early enough to escape the frost of August 7. Some years, however, this earliness might be quite an advantage. Just what place Garnet will have in this district is difficult to judge until it has been further tested. It yields well, is quite early, and seems to hold its colour well. The fact that it cannot as yet be graded higher than No. 2 would not be so much of a disadvantage in districts where all wheats usually grade below No. 1.

Mr. Godbout has sold seed wheat to quite a number of farmers in his district every year since he has operated the Station. Though the wheat on the Station this year is not a good sample, the Operator has a field of Garnet which was grown on breaking and is a better quality, grading No. 2. The surplus seed from this field will be offered for sale.

Alfalfa proved a very satisfactory crop this year giving a good yield of excellent quality hay.

A field meeting was held at this Station on August 15.

MEOTA

OPERATOR, WALTER TAIT

The spring was cold and backward. First seeding on the Station was done May 6, and the wheat was all sown by May 10. This was a very favourable season from the standpoint of moisture as 9.65 inches of rain fell from spring

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

to the first of August. May and June gave about the average rainfall, but July was exceptionally wet, with almost six inches. All crops made excellent growth. On the night of August 7 it turned cold and there were three degrees of frost registered on the Station. The wheat on the Illustration fields was apparently not damaged, except on a few low spots. The crop was well advanced

and the grain in the firm dough. Some rust developed in both wheat and oats before they ripened, but did not do much damage. Harvest was started August 15, when the Garnet wheat was cut, while Marquis was cut nine days later.

OPERATIONS AT MEOTA

Rotations and Crops	Yield per acre bushel or tons		Cost per bushel or ton		Profit per acre	
	1927	Average 5 years	1927	Average 5 years	1927	Average 5 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow	.....	.....	7 32*	7 02*		
Marquis wheat	52½	36⅛	0 36	0 54	44 10	24 83
Wheat (second crop)—						
Marquis	33½	22⅛	0 45	0 95	25 13	11 91
Garnet	34½	.....	0 45	.....	24 94	
Six-year Rotation—						
Fallow	.....	.....	8 10*			
Marquis wheat	43	.....	0 41	.....	33 97	
Wheat (second crop)—						
Marquis	30½	.....	0 49	.....	21 50	
Garnet	31½	.....	0 49	.....	22 37	
Corn (wide rows)	2	.....	6 05	.....	1 90	
Sunflowers (wide rows)	6	.....	1 97	.....	9 18	
Wheat (seeded)	19	.....	0 52	.....	12 92	
Hay (rye grass, alfalfa)	2	.....	5 51	.....	8 98	
Three-year Rotation—						
Marquis wheat	52½	.....	0 36	.....	44 10	
Oats (seeded)	74	.....	0 22	.....	20 72	
Hay (sweet clover)—						
White blossom	2	.....	5 61	.....	8 78	
Yellow blossom	2½	.....	4 97	.....	12 32	
Demonstration Test Field—						
Alfalfa	2	.....	3 77	.....	12 46	

* Cost per acre.

NOTE.—Two of the rotations in this table were only started last year, hence averages of these are not available.

Garnet wheat has now been grown on this Station for two years, last year on fallow land, and this year as second crop on the same field. Each year a field of Marquis, the standard variety for the district, has been sown alongside of it for comparison under the same conditions. The results have shown that Garnet is an excellent yielding wheat and that it is distinctly earlier than Marquis. Last year, it exceeded Marquis in yield by four bushels per acre, and was harvested five days earlier. This year, it gave practically the same yield as Marquis, actually one bushel more, and was harvested nine days before. The grain compares very favourably with Marquis in appearance, though the kernel is a little smaller. Garnet though it bakes a good loaf, does not make quite so white a flour as Marquis, and for this reason, for the present at least, it will not be graded higher than No. 2 on the market. This must be taken into consideration, though its other good features may offset this handicap. This year the frost came too early for even the Garnet, and on some land on the Tait farm a couple of miles south of the Station, where the frost was heavier, Garnet suffered severe damage. Further tests will be necessary in order to ascertain the place which this wheat may have in this district. Apparently no one need hesitate to give it a trial, as it has given satisfactory results for two years on the Station. The most suitable place for it would probably be on fallow land or on any field where the crop is frequently late in ripening. Marquis still holds its place as the standard wheat for the district, until we have proven something superior. Mr. Tait, the operator of this station, has the following to say in

reference to Garnet: "I think Garnet wheat has come to stay. It is a pretty wheat and always yields better than it looks and it takes a lot of rain to make it soft."

Another comparatively new early wheat, Reward, was given a test this year on a plot one acre in size. Unfortunately, this was sown on the south farm, where the frost was the worst, and it was so badly damaged that the seed was not worth saving. A two-acre plot will be sown again next year to give it a further test.

The Tait farm, in conjunction with the Illustration Station, has now become practically a seed centre where the neighbours for miles around come regularly each spring for their seed, particularly the Marquis wheat. Last year, forty-two were supplied in this way. Mr. Tait was fortunate in obtaining a few years ago a vigorous, high-yielding strain of Marquis from one of the

Walter Tait, operator of the Meota Illustration Station, standing in a crop of sunflowers grown for silage in rows 6 feet apart.

Experimental Farms. He has multiplied this and now grows it on the large fields of his farm. This gives a good supply for distribution. Great care is taken in cleaning this seed so that all noxious weeds are removed and good quality seed obtained. In order to further improve the seed he plans on using a Carter Disk cleaner this winter. During the year, the following sales of seed were made in the district: 1,544 bushels of Marquis wheat, 340 bushels of Banner oats, 63 bushels of O.A.C. 21 barley, and 3,109 pounds of western rye grass.

This year records the highest yield of wheat on both summer-fallow and stubble land (spring ploughed) during the nine years the Station has been in operation; namely, 52½ bushels per acre on fallow and 33½ bushels on stubble. The net profit from the fallow crop was $44.10 per acre and from the stubble land, $25.13 per acre.

In order to get the six-year rotation started this year, one field of wheat was sown after a hay crop which had been down two years, and the sod of which was ploughed last October. This accounts for the low yield of 19 bushels, even in a moist season, and shows how a hay crop exhausts the soil moisture. Summer-fallowing seems necessary after a hay crop, except in those districts where there is a heavy rainfall.

Arctic (white blossom) sweet clover and yellow blossom were both grown on the Station this year. Both grew well, but the yellow gave a more uniform stand and a little heavier yield of hay. Alfalfa also gave a heavy yield. Part of the field winter-killed and this was reseeded. The western rye grass and alfalfa mixture makes a nice hay and gave a good yield this year.

Corn and sunflowers were sown in rows six feet apart again and cultivated with the field cultivator. This plan proved quite satisfactory. The corn was cut for fodder, but the sunflowers were ensiled.

A small plot of winter wheat was sown on this Station last fall on summer-fallow. It was so thinned out by winter-killing that it was not worth leaving this spring. Mr. Tait co-operated with the Cereal Division again this year in testing a number of varieties of wheat in rod rows.

A very successful field meeting was held on this farm on the afternoon of August 19. After an inspection of the crops and free discussion of the methods followed, addresses were given by a number of speakers.

OGEMA

Operator, T. E. Gamble

Spring was a little later than usual and first seeding on the Station was done on May 3. It was a wet spring with three inches of rain for May, but June was drier than usual with only ·61 of an inch, and July gave over five inches. Under these conditions all crops made favourable growth and promised very heavy yields, but a very severe hailstorm struck this locality on July 19 and caused serious damage particularly to the wheat crop. This was estimated at fully 90 per cent on all wheat plots on the Station. Oats were also badly damaged, but being later came on again and gave 45 bushels per acre of fair grain. Some of the wheat was cut for sheaf feed and one plot was threshed. This gave a low yield of No. 5 grade. The hay crop was cut before the hail came and it gave two tons per acre. This was a mixture of western rye grass, and alfalfa and was of excellent quality. There was no corn sown this year. The total rainfall for the season was 11·64 inches.

At the annual meeting of the Ogema Agricultural Society Mr. Gamble gave an account of the work of the local Illustration Station.

PARKBEG

Operator, Thos. L. Humphrey

The first seeding on this Station was done May 10, as the spring was late and wet. There was more moisture this year than usual, with 9.40 inches from the opening of spring to August 1. All crops made favourable growth until about the time the wheat was beginning to ripen, when the rust developed, but the grain was advanced too far to be damaged to any extent. Wheat came through well and gave a yield above the average, and a grade of No. 1-2. Hay crops were also heavier than the average. Corn made slow growth early in the season, as it was too cool and damp. Later, however, it grew rapidly and attained about the average height. Harvest was later than usual, Marquis wheat being cut August 22.

OPERATIONS AT PARKBEG

Rotations and Crops	Yield per acre, bushel or tons		Cost per bushel or ton		Profit per acre	
	1127	Average 4 years	1927	Average 4 years	1927	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Corn (fallow this year)	.....	.....	7 28*			
Marquis wheat (seeded)	12	.....	0 67	.....	6 36	
Sweet clover hay	3	1½	2 87	4 19	11 39	4 87
Five-year Rotation—						
Fallow	.....	.....	6 45*	6 99*		
Marquis wheat	22	21	0 67	0 75	11 66	11 56 (3 yrs.)
Garnet wheat	20	22½	0 72	0 63	9 60	12 30 (2 yrs.)
North Western Dent corn	†	2⅝	.....	4 05	.....	1 39 (3 yrs.)
Wheat (seeded)	25	1	0 39	.....	20 25	
Hay—Rye grass, alfalfa	1½	1	3 67	3 31	9 50	6 52
Sweet clover	1	1½	3 41	5 51	3 18	5 82
Two-year Rotation—						
Fallow (sweet clover ploughed in)	.....	.....	6 84*			
Marquis wheat	26	.....	0 57	.....	16 38	
Two-year Rotation—						
Marquis wheat (seeded)	18	.....	0 61	.....	10 62	
Sweet clover hay	2	.....	7 18	.....	12 82	
Demonstration Test Field—						
Brome grass	½	.....	6 31	.....	2 95	

* Cost per acre. † Crop frozen; pastured.

Corn was replaced by fallow in the three-year rotation this year, as there was considerable volunteer Brome grass in this field. Corn has given good results at this Station, but this year was frozen by the September frost.

Garnet wheat gave a little lower yield than Marquis in 1927, and the average for two years is almost the same. There does not appear to be any particular advantage in growing this variety in place of Marquis in this district.

The operator of this Station distributed through sales in the district this year 350 bushels of Marquis and five bushels of Garnet wheat for seed. There will be a fair quantity of good seed wheat for sale from this year's crop also.

By referring to the summary table, it will be noted that there are four crop rotations now under way at this Station, a three-year, five-year, and two two-year rotations. The object is to find out which rotation gives the most profitable returns. In one two-year rotation half the land is summer-fallowed every year and sweet clover is ploughed in on one-half of this field. After a number of years' work some valuable information should be gained from these rotations.

RADVILLE

Operator, J. H. Stockton

Spring opened later than usual and seeding on the Station commenced on May 7. There was a good supply of moisture during the growing season. May was quite wet, and seeding operations were delayed on this account. June was drier and July exceptionally wet. The rainfall for the four months, April to July, inclusive, was a little over seven inches, which was about the same as last year. Rust set in before the grain ripened and reduced both yield and grade of wheat and oats. The early-sown wheat came through fairly well, but the late-sown suffered severely and gave a very low grade. Practically all the wheat was tough also, owing to the wet autumn. The yield of the first sown wheat was above the average, but the later sown was much below. Oats also were below the average and hay crops were only fair. Harvest was started August 17.

OPERATIONS AT RADVILLE

Rotations and Crops	Yield per acre, bushel or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1927	Average 4 years	1927	Average 4 years	1927	Average 4 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	7 11*	7 51*		
Marquis wheat	28½	27	0 59	0 60	11 98	16 28
Banner oats	25½	30⅝	0 50	0 48	Nil	0 94
N. W. Dent corn	(Crop fr	ozen; past	ured)			
Wheat (seeded)	2⅛	10⅓	3 39	1 39	−5 26	5 06
Hay—Rye grass	⅜	¼	9 90	10 81	−0 06	−0 11
Sweet clover	¼	1¾	8 56	5 09	1 08	12 13
Three-year Rotation—						
Fallow	.....	.....	6 99*	6 74*		
Marquis wheat	27½	25¾	0 60	0 61	11 00	16 29
Marquis wheat (second crop)	4½	12	2 57	1 28	−7 06	3 71
Garnet wheat (second crop)	6½	.....	1 82	.....	−5 33	
Two-year Rotation—						
Marquis wheat	7	.....	1 68	.....	−4 76	
Sweet clover	(Plough	ed in)				

* Cost per acre.

The advantage of early seeding was well demonstrated this year. The wheat on the fallow fields was sown on May 7, but the other fields were wet and unfit to work, so it was the first week in June before they were sown. The fallow crops gave 27 and 28 bushels per acre of No. 3 grade, while the other fields gave a very low yield of No. 6 wheat. The rust set in as the grain was ripening and the later crop was much more damaged than the early.

The operator sold a considerable quantity of Marquis seed wheat in the district last spring. This wheat was from registered seed and passed field inspection.

Sweet clover hay did not give as good a yield as last year. It was cut with the binder and stooked. By this method the leaves are saved. The stooks have to be left out until cured, which will take usually about three weeks, depending on the weather. If the stooks are made fairly small they will usually dry out after a rain without turning out. On one field sweet clover was ploughed in again this year.

SPECIAL WORK IN THE RECLAIMING OF "BURN OUT" LANDS

In the spring of 1926 considerable expansion took place in the work of this Station. The object of this was to carry on more experimental work in the reclaiming of the burn out lands.

Another quarter-section was taken over and partly broken and worked down that summer. This was laid off in one and two-acre plots and a fairly comprehensive line of experiments undertaken. One range of plots was given the necessary treatments as far as possible in preparation for seeding the next spring. In 1927 these plots were sown and the breaking completed and a new range of plots prepared for seeding in 1928. In preparing the land a specially large, heavy scrubber hauled by a 15-30 tractor was used, following the disk. After the general preparation the different treatments were given the plots as required. Certain ones were given no further treatment and these were used for checks on the others. Following are the most important experiments under way at present:—

(1) Breaking different depths.
(2) Backsetting different depths.
(3) Subsoiling different depths.

(4) Treatment with manure.
(5) Treatment with nitrate of soda.
(6) Treatment with lime.
(7) Ploughing in sweet clover (whole crop) (stubble after hay is taken off).
(8) Growing of a grass crop in a rotation.
(9) Growing of other grain crops besides wheat, such as oats barley and fall rye.

This work has only become established, so has not progressed far enough as yet to furnish definite results, but in a short time some valuable information should be available.

PIAPOT

Operator, E. Scherk

Illustration work was started here this spring on the farm of Mr. E. Scherk, nine miles northwest of the town and a successful beginning has been made.

The land selected lies along a main road and is fairly level. The soil is a light loam quite typical of that in the district. The land on which the Station was located was partly in corn stubble and partly sod and some preparatory work had to be done to put it in shape for the different crops. A start was made with two rotations and also a number of different hay crops which were seeded alone this year.

The following is the plan of crops:—

Three-year Rotation—
1st year—fallow.
2nd year—wheat.
3rd year—fall rye.

Six-year Rotation—
1st year—corn.
2nd year—wheat seeded with rye grass and sweet clover.
3rd year—hay—break up as soon as crop is off.
4th year—wheat.
5th year—fallow-sow fall rye.
6th year—fall rye.
(All the above on four-acre fields).

Hay crops sown alone on two-acre fields—
Brome and sweet clover mixture.
Western rye grass.
Grimm alfalfa (in 2½ rows).
Grimm alfalfa (sown solid).

One of the problems of farming in this district is to keep the soil at home. If it is given too much work it will drift in the spring when the winds are high and the fields are bare before the grain crops are well established. The purpose kept in view in making this crop plan was to work out a system whereby we can make best use of the soil moisture for the production of the most profitable crops and at the same time to keep the soil in such a condition that the top layer will not blow away. The hay crops are being used to restore fibre or organic matter and also to test out their capabilities as producers of feed. Grain is the cash crop and under the prevailing conditions usually the most profitable.

The season was very favourable for crop production this year as the rainfall was much heavier than the average. There was no early frost to do any damage and rust was not a limiting factor. The seeding was later than usual and it was the latter part of August before the grain was ripe.

The following are the yields, cost of production and profit or loss from each crop this year:—

OPERATIONS AT PIAPOT

Crop	Yield per acre, bushel or tons	Cost per bushel or ton	Profit per acre
		$ cts.	$ cts.
Marquis wheat	24	0 35	20 40
Kitchener wheat	27	0 33	23 49
Garnet wheat	25	0 35	21 25
Banner oats	55	0 19	17 05
Corn (N. W. Dent)	1½ tons fodder	5 60 per ton	2 10
Summer-fallow		4 54 per acre	

The corn produced a good growth of cobs much of which ripened though the season was not as favourable as usual for seed corn production. Both wheat and oats were of good quality. Kitchener wheat gave a better yield than either the Garnet or Marquis, but was not quite as good a grade. Further tests will be made with these wheats as one-year results are not enough on which to base judgment. Fall rye was seeded in the stubble after the Kitchener wheat was harvested.

The method of summer-fallowing followed on this Station is designed to prevent soil drifting as far as possible. The stubble was first disked early in June, but the ploughing was not done until July 23. After ploughing no further work was done. This field was quite clean, and in rather a lumpy condition this fall.

One of the ways an Illustration Station serves the people of the district is by supplying some pure seed grain to them. Mr. Scherk, the operator of this Station has a limited quantity of both wheat and oats from this year's crop which will be distributed as far as it will go at quite reasonable prices.

A rain gauge was set up on this Station the latter part of July for the purpose of keeping a record of the rainfall. From August 1 until winter set in there were 3·44 inches recorded.

RIVERHURST

OPERATOR, R. F. RUDD

Spring was later than usual and the first seeding on the Station was done on May 10. This was one of the wettest seasons this district has experienced. For the month of May the rainfall was seven inches, but June was dry with only ·68 or less than three-quarters, and July gave 3·66 inches, making a total of 11·4 during the growing season. All crops made excellent growth and had not the rust set in before the grain ripened, a very heavy yield would have been obtained. As it was, the yield and grade were both a good deal reduced, but in spite of this, yields were well above the average. The heavy early rains favoured the hay crops this year and we have secured the best yields we have ever had. Corn also gave good results on this soil which is a medium to light loam. Garnet wheat was the first cut on August 18, and Marquis on August 27.

OPERATIONS AT RIVERHURST

Rotations and Crops	Yield per acre, bushel or tons		Cost per bushel or ton		Profit per acre	
	1927	Average 5 years	1927	Average 5 years	1927	Average 5 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	6 87*	6 46		
Marquis wheat	25	19	0 60	0 81	15 00	9 29 (3 yrs.)
Wheat (second crop)—						
Marquis	24	.....	0 58	.....	14 88	
Garnet	24⅔	.....	0 57½	.....	15 25	
N. W. Dent corn	6	3	2 06	6 19	8 64	2 87
Wheat (seeded)	24	19½	0 45	0 54	18 00	14 36 (3 yrs.)
Hay—Sweet clover	2½	.....	2 88	.....	17 80	
Western rye grass	1⅔	.....	4 31	.....	9 10	
Three-year Rotation—						
Fallow	.....	.....	6 61*	6 40		
Marquis wheat	26	21⅓	0 61	0 81	15 34	10 35
Wheat (second crop)—						
Marquis	24	16½	0 58	1 34	14 88	6 46 (3 yrs.)
Garnet	24⅔	.....	0 57½	.....	15 25	
Two-year Rotation—						
Marquis wheat (seeded)	24⅓					
Sweet clover hay	2⅔	.....	3 12	.....	16 52	
Demonstration Test Field—						
Grimm alfalfa	2	.....	3 98	.....	12 04	

* Cost per acre.

The operator of this Station did not have as much good quality seed grain this year as last; however, he distributed some of the best he had at practically the market price for commercial grain of a similar grade. The following are the amounts: 300 bushels Marquis wheat; 100 bushels Banner oats; 6 bushels good quality Irish Cobbler potatoes were also sold for seed.

This spring some new registered Marquis wheat was supplied this Station in order to maintain the quality. Marquis is the standard wheat for this district. Some other varieties have been tried on the Station fields, but on the whole none have done any better. Garnet has been grown for two years now, last year on fallow and this year on the spring ploughed stubble. In comparison with Marquis it has given about the same yield and has been a week earlier in ripening. However, as its milling quality is not quite so high and as frost is seldom a factor in this district, there is not likely to be any advantage in growing Garnet here.

Mr. Rudd has been very active in poultry improvement, not only on his own farm, but in his community as well. He distributed through sales last year 35 cockerels for breeding purposes and 102 settings of eggs of the Barred Rock breed. In addition to this he was instrumental in having a poultry culler visit that district and cull the flocks. The co-operation of the provincial Department of Agriculture in supplying the culler was much appreciated.

SHAUNAVON

Operator, Stanley Murch

Spring opened later than usual and the first seeding was done on the Station's fields on May 17. During the growing season the rainfall was much heavier than is usually received. From April 1 to August 1, 12·17 inches fell, while last year there were only 5·16 inches. May gave the heaviest, with June fairly light, and July heavy rainfall. With this favourable moisture condition all crops made good headway. A frost on the night of August 7 caused damage

to some fields of wheat in the district, particularly late-sown crops on low-lying land, but the fields on the Station escaped with only slight damage. Before the wheat ripened, however, the rust set in and caused some shrinkage in the kernel, though the grain was too far advanced to be affected seriously. The result was the yields of wheat were very good and considerably above the average, and the grade was good for this season. Hay crops also made excellent growth, but corn did not do well. Harvesting was started August 26, when the Garnet wheat was cut, while Marquis was cut September 9.

OPERATIONS AT SHAUNAVON

Rotations and Crops	Yield per acre, bushel or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1927	Average 3 years	1927	Average 3 years	1927	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow	.....	.....	7 03*	7 18*		
Marquis wheat	34¼	20¾	0 63	0 90	15 46	7 73
Marquis wheat (second crop)	29¼	13⅞	0 54	1 56	19 26	4 57
N. W. Dent corn	¾	1	10 77	9 90	−5 17	−3 70
Wheat (seeded)	30	18	0 42	0 63	23 40	12 65
Hay—Rye grass, alfalfa	2	1½	4 96	9 43	10 08	4 16
Sweet clover	2⅜	1⅞	3 02	9 68	16 76	5 23
Three-year Rotation—						
Fallow	.....	.....	6 69*			
Marquis wheat	34¼	.....	0 53	.....	22 92	
Garnet wheat (second crop)	33	.....	0 46	.....	24 36	
Demonstration Test Field—						
Renfrew wheat on fallow	27	(Grown	on land ad	joining St	ation)	

* Cost per acre.

The correlation between rainfall and crop yield is clearly shown by comparing the results this season with 1926. The highest yield of wheat was 35 bushels this year, compared with 20 last year, a season of low rainfall. Hay crops were twice as heavy this year as in 1926. This illustrates the value of moisture and the importance of saving it in the soil. The most effective practical method yet devised for doing this, under the conditions prevailing here, is by means of the summer-fallow. The second crop of wheat on spring ploughing gave just about the same yield as on summer-fallow this year and was produced at a lower cost. This often happens in a season of heavy rainfall, preceded by a dry season. When the season is dry, little moisture can be stored in the fallow and the heavy rains the next summer are sufficient to produce a good crop without any reserve being necessary. If we could depend on a heavy rainfall every year, the summer-fallow could be done away with, or at least greatly reduced.

Mr. Murch grew a 5-acre field of first-generation registered Marquis wheat this year and it gave a good yield. This wheat will be used as foundation stock and sown again next year to increase the supply for distribution to any one requiring pure seed. The people of this district realize the importance of sowing good seed, and purchased 1,160 bushels of seed wheat last year from the Station Operator. Of this 60 bushels was of the new variety "Garnet." There will be more seed available again from this year's crop. Garnet wheat showed up well this year, giving practically the same yield as Marquis, and was cut two weeks earlier. Two years' results with this wheat on the Station fields have not shown it to have any advantage over Marquis in yield. Whether its earliness is of sufficient importance for this district to give it a place has not been proven. The fact that it cannot grade higher than No. 2 must be taken into consideration, and in order to offset this it must have some distinct advantage for the district.

Mr. Murch is also a grower of certified Early Ohio potatoes, and distributed 30 bushels through sales in the district this year.

Renfrew wheat, a selection from Marquis, was tested this year, one acre being sown on fallowed land adjoining the Station. The result was a yield of 27 bushels per acre of No. 4 grade. It seemed to be affected more by the rust than the Marquis. It will be further tested next year.

SPRUCE LAKE

Operator, Harry Eagle

The spring was cold and backward, and it was near the middle of May before wheat seeding was started on this Station. During the early part of the growing season, May and June, the rainfall was less than the average, but July was exceptionally wet, with 6·40 inches. The total for the four months April 1 to August 1 was 8·73 inches. Though the heavy rains came late, they were in time to produce a good crop. There was an early frost on the night of August 7 which caught some of the wheat on the Station in spots, but on the whole it escaped without much damage. Rust set in before the grain was ripe and reduced the yield and grade to some extent. However, yields were good and the grade of wheat No. 2-3. Oats gave a very heavy yield. Hay crops, on the whole, were not so heavy as usual. Harvest was started August 22, when the Garnet wheat was cut.

OPERATIONS AT SPRUCE LAKE

Rotations and Crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit per acre	
	1927	Average 3 years	1927	Average 3 years	1927	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Five-year Rotation—						
Fallow	.....	.....	7 41*			
Marquis wheat	29	29	0 48	0 53	17 98	21 17
Banner oats	92	.....	0 17	.....	30 26	
Hay (rye grass and sweet clover)	1	1¾	6 63	4 86	3 37	8 77
Marquis wheat	23	.....	0 54	.....	12 88	
Garnet wheat	21	.....	0 54	.....	11 76	
Demonstration Test Fields—						
Alfalfa and rye grass hay	2	.....	4 48	.....	11 04	
Garnet wheat on fallow	32	29	0 46	0 48	20 48	19 99 (2 yrs.)
Early Triumph wheat on fallow	34	.....	0 36	.....	25 16	
O.A.C. 21 barley	(Used	for sheaf	feed.)			
Western rye grass (3rd year)	1	.....	5 69	.....	4 31	
Marquis wheat (after oats in rows)	36	.....	0 33	.....	27 72	
Reward wheat on fallow	27	(grown o	n land ad	joining the	station.)	

* Cost per acre.

Three varieties of wheat were grown on the Station this year: Marquis, Garnet and Early Triumph. The results as shown in the above table are quite interesting. Garnet and Marquis were grown side by side last year on fallow land and this year they were grown as second crop on the same fields. This year the Marquis exceeded Garnet in yield by two bushels per acre, but last year on the fallow Garnet exceeded Marquis by five bushels. It would, therefore, seem that the Garnet makes a better showing on fallow than as a second crop. Early Triumph on fallow exceeded Garnet in yield by two bushels this year, and also last year, but it was not so good a sample on account of the

presence of more starchy kernels. Judging from the two years' results, Garnet has evidently proven itself a suitable wheat for this district, and it will probably come into use a good deal particularly on land which is most subject to frost. Mr. Eagle, the Station Operator, has a high regard for Garnet and states that he will sow most of his land with it next spring, though he will also sow some to Marquis. Marquis is of such a high quality and yield that it would be a mistake to go out of it unless one is certain he has a more suitable wheat for his conditions. Early Triumph has proven itself a high yielder and slightly earlier than Marquis, but was affected more by the rust than either of the other varieties. The number of days each variety took to mature this year is as follows: Garnet, 102; Early Triumph, 108; Marquis, 111.

Early Red Fife was dropped from the tests in the fields this year, but was included in the rod-row test. Six different varieties of wheat were tested in rod rows. This work is carried on in co-operation with the Cereal Division, Ottawa. The object of this test is to find out the variety or strain of wheat most suitable for a district.

Another early high-quality wheat, Reward, a cross between Marquis and Prelude, was grown on a one-acre plot of fallow land for the first time this year. It did not come quite up to the other varieties in yield as it was more damaged by the frost. It will be further tested next year.

There is always a keen demand for seed grain, particularly wheat, from this Station by the farming community. Last year, the Operator sold about 400 bushels of the different varieties of wheat as well as 40 bushels of Banner Oats.

A small flock of pure bred Barred Plymouth Rocks has been built up by the operator, and last year some breeding cockerels and hatching eggs were purchased by some of the neighbours to improve their flocks. At this Station as in many other cases, much of the success in the poultry work is due to the efficient co-operation of the Operator's wife.

A field meeting was held at this Station on the afternoon of August 18, and was well attended by the people of the district.

TROSSACHS

Operator, Charles Carlson

The first seeding on the Station fields was done on May 13. The rainfall during May was quite heavy with 3·10 inches, which delayed seeding, but this gave all crops a good start and carried them along through June which was much drier than usual, then July gave a heavy rainfall, so that crops came through well until struck by rust the latter part of that month. This reduced the yield and grade of both wheat and oats, however, wheat gave fully an average yield, but the grade was No. 3. Oats were quite late and were cut for green feed. Hay crops benefited by the early rains and were above the average. Corn was a light crop as the season was not favourable for it here. The rainfall for the four-month period, April 1 to August 1, was 7·61 inches and for the season 12·83 inches. Harvest was started August 27, when Garnet wheat was cut and Marquis on a part of the same field was cut six days later.

Rotations and Crops	Yield per acre, bushels or tons		Cost per bushel or ton		Profit or (−) loss per acre	
	1927	Average 3 years	1927	Average 3 years	1927	Average 3 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow	.....	.....	7 50*	7 52		
Marquis wheat	18½	21	0 82	0 72	4 68	11 05
Wheat, second crop—Garnet	6	.....	2 33	.....	−7 38	
Marquis	.....	.....	(Not threshed)			
Six-year Rotation—						
Fallow	.....	.....	6 18*	6 68		
Marquis wheat	30	29	0 49	0 54	18 30	20 63
Banner oats	1 (green feed)	40	10 00	0 36	.....	5 44 (1924–1926)
N. W. Dent corn	1	3	8 35	4 61	−1 35	1 56
Wheat (seeded)	20	19	0 48	0 49	12 40	14 72
Hay—Western rye grass	1¼	1¼	4 36	5 49	7 05	6 46
" Sweet clover	1¾	.....	3 62	.....	11 17	

* Cost per acre.

Wheat after the summer-fallow in the six-year rotation gave a much heavier yield this year than wheat after the summer-fallow in the three-year rotation. By reference to the above table it will be noted that this holds true also for a three-year average, there being a difference of eight bushels per acre. In the six-year plan sweet clover and rye grass are grown, and it would seem that these crops have a beneficial effect on the burnt-out soils on this Station. The three-year rotation is a straight grain rotation of wheat, wheat, fallow. Our observation has been that sweet clover has a more beneficial effect than the grass crop in this rotation.

The operator distributed, through sales in his locality this year, the following amount of seed grain from the foundation stock grown, first on the Illustration fields: Marquis wheat, 985 bushels; Garnet 6 bushels; Banner oats, 50 bushels.

Poultry keeping has always been a profitable and interesting branch of the work on this Station. The breed is Rhode Island Reds from Morden Experimental Station stock. Good results have been obtained and there is always some surplus breeding stock or hatching eggs to spare for the neighbours. Last year 13 cockerels were sold for breeding purposes.

The area which has been used for some experiments in soil treatment was extended this year to take in 15 acres in order that more continuous results may be obtained.

TUGASKE

Operator, Robert Wilson

The spring was late and backward in this district, and work on the land did not commence until the latter part of April. The first week of May was very wet and unfavourable for seeding. The second week was fine and during this time all the wheat except second crop was sown on the Illustration fields. The second crop fields were not sown until the first of June. There were eleven rains in May, with a total of almost five inches. This gave all crops an excellent start. June rainfall was very light, with only three-quarters of an inch, but July gave 5·42 inches, with over two inches in one rain on the 19th. Crop prospects late in July were never better, with a heavy stand of straw, but stem rust developed after this and reduced both yield and grade, so that about an

average yield was obtained of grade No. 3 wheat. Harvest was late, the first wheat being cut August 22. Threshing was also late, owing to the unfavourable weather.

OPERATIONS AT TUGASKE

Rotations and Crops	Yield per acre bushels or tons		Cost per bushel or ton		Profit per acre	
	1927	Average 5 years	1927	Average 5 years	1927	Average 5 years
			$ cts.	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow	.....	.....	6 80*	6 73*		
Marquis wheat	25⅜	20	0 66	0 87	11 18	7 81
Marquis wheat (second crop)	20⅜	14¼	0 67	0 70	8 94	4 41
Garnet wheat (second crop)	23⅜	.....	0 62	.....	11 14	
Six-year Rotation—						
Fallow	.....	.....	7 26*			
Marquis wheat	34	.....	0 49	.....	20 74	
Marquis wheat	19¾	.....	0 72	.....	7 67	
N. W. Dent corn	10	.....	1 36	.....	21 40	
Wheat (seeded)	25⅜	.....	0 60	.....	12 80	
Hay, (rye grass, alfalfa)	1	.....	9 29	.....	0 71	
Three-year Rotation—						
Fallow	.....	.....	6 31*	6 88*		
Wheat (seeded)	24½	17½	0 59	0 92	12 34	5 95
Sweet clover hay	1¾	1¾	6 62	7 44	5 92	6 45
Demonstration Test Field—						
Wheat after corn	20	.....	0 52	.....	11 60	
Grimm alfalfa	2⅜	.....	5 18	.....	11 57	

* Cost per acre.

Though the season was a disappointing one, every crop on the Station shows a profit this year. The average profit from all the wheat fields is $12.10 per acre. While the rust lowered the grade considerably, the yield was above the average and this compensated to some extent for the other loss.

Garnet wheat was tested again in comparison with Marquis, both being sown as second crop on adjoining fields, where they were grown on fallow last year. Garnet yielded slightly more than Marquis and was cut 13 days before it. Last year, the two varieties gave practically the same yield.

The outstanding wheat field this year, from the standpoint of both yield and grade, was that after alfalfa, the sod of which was fallowed in 1926, after being in hay for five years. This field gave 34 bushels per acre, eight bushels more than any other field and the grain was plumper.

Some of the wheat from the Station fields was sold in the district for seeding last spring and there have been a number of inquiries for seed this fall. Owing to the rust, however, the quality of the seed is not as good as usual.

The best hay crop here this year was Grimm alfalfa seeded last year on fallow with a nurse crop of wheat. Two cuttings were taken with a total yield of two tons, 800 pounds per acre of a fine-quality hay. Sweet clover came next, with one and three-quarter tons, while a mixture of western rye grass and alfalfa gave one ton per acre.

Previous to this year, the corn on this Station has always been sown in rows 3—3½ feet apart, using the grain drill. This year, the rows were spaced six feet apart, and this method proved very successful. The yield was apparently fully as heavy as could be obtained from any other spacing and by spreading out the rows the field cultivator could be used in keeping the crop clean, thus economizing labour. This corn crop presented a fine appearance and was a credit to the operator.

WEYBURN

OPERATOR, E. MEREDITH

Spring opened in fair time and work on the land was started by the end of April. Wheat seeding on the Station started on April 30 and was completed by May 5 and oats were sown three weeks later. There was a very heavy rainfall during the growing season amounting to 9·84 inches, which was a half inch more than last year. All crops made very favourable growth and prospects were good until the frost on the night of August 7. This affected a good deal of the wheat and about the same time rust developed which further reduced both yield and grade. In spite of this, wheat gave about an average yield, but the grade was lower than usual, particularly in the case of Marquis. Oats gave a heavy crop and all hay crops were above the average. Harvest was started on the 22nd of August.

OPERATIONS AT WEYBURN

Rotations and Crops	Yield per acre bushels or tons		Cost per bushel or ton		Profit per acre	
	1927	Average	1927	Average	1927	Average
			$	$ cts.	$ cts.	$ cts.
Three-year Rotation—						
Fallow	.....	.....	8 38*	8 30	.....	(5 yrs.)
Wheat	27	32½	0 62	0 58	10 26	18 77 (4 yrs.)
Wheat	25	31	0 42	0 51	14 50	21 78 (3 yrs.)
Six-year Rotation—						
Fallow	.....	.....	8 26*			
Wheat (second crop this year)	20	.....	0 55	.....	9 00	
Victory oats	80	70	0 21	0 21	23 20	15 49 (4 yrs.)
Corn (fallow this year)	.....	.....	8 38*			
Wheat (seeded)	28	.....	0 42	.....	16 24	
Hay—Western rye grass 10 lbs., alfalfa 6 lbs	2	1½	5 22	6 52	9 56	6 61 (3 yrs.)
Hay—Alfalfa 6 lbs., western rye grass, 6 lbs	2½	1⅞	3 83	6 18	17 28	8 90 (3 yrs.)
Garnet wheat, on fallow	36½					
Reward wheat, on fallow	40					

* Cost per acre.

Mr. Meredith grew three varieties of wheat this year, namely, Marquis, Garnet and Reward. With the early frost and rust, it was a strenuous year for any wheat, but the two earlier varieties, Garnet and Reward, came through with a heavier yield and better grade than Marquis. Marquis gave 28 bushels per acre of No. 4 grade, while Garnet gave 36½ bushels and Reward 40 bushels, both of No. 2. These two latter wheats were further advanced and seemed to escape the effects of the frost and rust much better than the Marquis. However, last year the Marquis exceeded the Garnet in yield by five bushels per acre, when rust was not a limiting factor.

Since Reward has proven itself somewhat resistant to rust in tests at Brandon, it is being grown on the Illustration Station here and other places in the hope that it may prove of some help in avoiding the rust menace. The results this season were quite promising.

Garnet also gave a good account of itself this year and looks quite promising as a help in the rust situation by escaping a good deal of damage by virtue of its earliness. There is now a fair quantity of Garnet wheat available which will be offered for sale by the operator to anyone who wishes to give this variety a trial. Experience this year as well as other seasons has shown that early seeding is a very important factor particularly in a year of rust and probably just as important as the use of an early variety.

Further tests of these wheats will be made here in order to obtain more information as to their value for this or similar districts.

The operator of this Station made a record this year of the pure seed grain, seed potatoes and poultry stock, which he sold in his district. The following are the amounts of each:—

Marquis wheat	1,751 bushels
Garnet wheat	80 "
Victory oats	50 "
Early Ohio seed potatoes	50 "
White Wyandotte cockerels for breeding purposes	4
Hatching eggs	40 settings

REPORT OF THE ILLUSTRATION STATIONS FOR MANITOBA AND EASTERN SASKATCHEWAN

J. D. Guild, B.S.A., Supervisor

Seasonal conditions for the last crop year in Manitoba were far from ideal. The wet harvest of 1926 with consequent delay in threshing and fall cultivation made it doubly important that the spring of 1927 should open even earlier than usual if crop acreages were to be efficiently maintained. So far from this being the case, however, the season opened from two weeks to a month later than usual, and this, combined with the wettest month of May ever recorded in this province, delayed seeding operations far beyond the normal planting time. Perhaps the most frequent question addressed to the Brandon Farm during this period concerned the latest date at which it might still be considered safe to sow wheat. With such a combination of circumstances there could be but one result: wheat acreages were reduced, while fallow and coarse grain acreages increased.

The prevalence of weeds later in the season was directly attributable to the causes mentioned. Rotations on a few of the Illustration Stations which had previously appeared promising in the matter of weed control proved again, that thorough and timely operation, rather than the mere systematizing of production through the use of crop rotations, is absolutely essential to profitable farming. The reappearance of mustards and the spread of Canada thistles were features in the weed situation.

The damaging effect of the severe rust attack may also be largely ascribed to the generally late condition of all crops. Oats especially suffered severely from this cause. In fact it may fairly be said that relatively few oats of good quality, either for feed or seed, were produced in this province this year. Wheat varieties fared no better and the question of the suitability of any particular variety for existing conditions appears to be even more complicated than previously.

A redeeming feature of the crop outlook was the abundance of feed, and the excellent stands of hay. Sweet clover, alfalfa, and the various grass mixtures never appeared to better advantage. It is true that owing to the uncertain nature of the weather, difficulty was experienced in curing many of these crops, nevertheless some excellent yields were secured. In some cases sweet clover, intended for hay, had to be ploughed down instead, and the actual quality of many fields which finally were stacked remains in doubt.

The harvesting weather was much better than that of the previous year, but it was still far from good. Rains at intervals, followed by dull, cold days, prolonged the work of threshing and again tended to delay fall cultivation. As far as Manitoba is concerned sprouted wheat was not this year a problem, but the generally late season which seemed to result in a more or less immature condition in the grain, coupled with a desire on the part of farmers, remembering

their last year's experience in this regard, to get the threshing cleaned up as quickly as possible, must be held responsible for the majority of the grain going into the tough grades.

During the year two new stations, one at Roblin and one at Tisdale, were established. This brings the total number under Brandon supervision to sixteen. In addition to this, co-operative tests were again conducted at seven points along the Hudson Bay railway.

The cost of production of the different crops on the stations included in this report have been worked out from records covering the actual time and labour involved on each field. These are forwarded by the operators, weekly, to the Brandon Experimental Farm. The actual prices and return values used in compiling these cost figures are given in the following table:—

RATES AND PRICES USED IN COMPILING REPORT

Rent of land	8 per cent of land value.
Use of machinery	$1.35 per acre.
Manual labour	Prevailing district rates.
Horse labour	8 cents per hour.
Threshing	Wheat 12 cents, barley 10 cents, oats 8 cents per bushel.
Twine	Prevailing rates.

SEED COST IN 1927

Wheat, Marquis	$1 75	per bushel
" Garnet	3 00	"
" Ceres	3 00	"
Barley, O.A.C. No. 21	1 00	"
Oats, Banner	0 75	"
" Victory	1 10	"
Flax, Premost	3 00	"
Sunflowers	0 08½	per pound
Corn, N. W. Dent	4 85	per bushel
Alfalfa, Grimm	0 34	per pound
Brome grass	0 11	"
Timothy	0 10½	"
Alsike clover	0 35	"
Sweet clover	0 12	"
Red clover	0 38	"
Meadow fescue	0 17	"
Western rye grass	0 08	"

RETURN VALUES IN 1927

Wheat	$1 20 and $1.00 per bushel*
Oats	0 55 per bushel
Barley	0 67 "
Corn	3 00 per ton
Legume hay	10 00 "
Mixed grass hay	8 00 "

Straw values not considered.

Summer-fallow—Two-thirds of cost of previous year's fallow charged to succeeding crop, one third to second crop.

Manure was valued at one dollar per ton and divided over full course of rotation.

* Badly rusted and shrunken samples of wheat were valued at $1.

ARBORG

Operator, M. Shebeski

Although satisfactory progress continues to be made at this station, the five-year rotation cannot of itself be given all the credit for this condition. The improvement to date has been due rather to the very thorough field work practised by the operator. The crop yields do not indicate the true progress that is being made since these have suffered from a number of uncontrollable causes. Spring floods, August frosts, and a severe rust attack, all took their toll. The control of sowthistles and other weeds is a much more reliable gauge by which to measure the effectiveness of the work at this point and in this connection it is quite fair to say that good results are being secured.

Wheat seeding commenced on May 7 with the seeding of two plots of Marquis. Garnet was sown four days later. One plot of Marquis sown alone as second crop, outyielded the Garnet on corn land by 6 bushels per acre and gave a much better sample. A complex hay mixture was seeded down with the other plot of Marquis and this grew so vigorously that the stand of wheat was appreciably affected. This field yielded the same as the Garnet. In fairness to the latter it should be said that the corn land on which it was grown, was given an extra amount of work by way of ploughing and cultivation, and that as a result the Garnet lodged badly and rusted more than the Marquis.

Barley was frozen on August 22 and the sample was poor. The variety O.A.C. 21 gave a good return in 1926 and considerable seed was sold from one plot at that time. As this strain of barley is in particularly good demand throughout the province it will be continued in 1928.

Corn again proved to be quite a reliable crop and a six-ton yield was produced at a cost of $2.28 per ton. In common with all hay crops this year, excellent catches were obtained with both the alfalfa and the complex clover and grass mixture. Red clover in particular presented a most vigorous appearance, so much so, that the operator wanted to remove the crop for hay after the wheat was threshed.

The precipitation from January to September inclusive was 20.4 inches.

YIELDS AND COST OF GROWING CROPS AT ARBORG

Rotations and Crops	Number of years grown	Yield per acre		Cost		Average profit or (—) loss per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Five-year Rotation—						
Fallow..... acre	.....	.....	.....	7 75	8 82	
Wheat, Marquis replacing barley..... bush.	2	17½	27½	0 68	0 62	18 42
Wheat, Marquis replacing hay bush.	2	23¾	30	0 52	0 54	21 85
Corn, N. W. Dent..... tons	2	6	5½	2 28	3 21	—0 71
Wheat, Garnet..... bush.	1	17¼	.....	0 83		
Demonstration Test Plots—						
Barley, O.A.C. 21..... bush.	3	17½	30	0 60	0 48	4 09

CHURCHBRIDGE

OPERATOR, HENRY GRUBE

This Station was started in 1923 and is, therefore, the oldest of the Brandon group. Substantial progress was again observed in the general condition of the plots this year. The season on the whole was fairly favourable and returns from both grain and hay fields satisfactory. Rust damage was recorded but this Station probably suffered less in this regard than many of the eastern Manitoba points.

A Field Day was held on the Station on July 18, when a small but extremely interested group of farmers were taken over the rotation and test plots by the cerealist from the Brandon Experimental Farm and the supervisor. At that date the crops looked very promising, being quite free from weeds and the grain well headed. The absence of weeds was in fact, remarked on by one of the visitors who was drawing comparisons between the plots and adjacent areas.

Wheat seeding commenced on April 29, which was an earlier date than such work was possible on any of the Manitoba stations this year. Two plots of Garnet sown on May 9, or ten days later than the Marquis, were cut six days

earlier and yielded nearly ten bushels more per acre than the Marquis. This presents perhaps the most favourable report on Garnet that these stations have submitted this year.

Hay crops were exceptionally good. Alfalfa and grass mixtures yielding three tons per acre showed a very nice profit even when valued at only $10 per ton. Corn grown from Northern Minnesota seed also produced a very fair crop of fodder. Sweet clover was greatly improved over the previous year but this was a condition common to all clover crops this year.

The precipitation from April to September inclusive was 13·75 inches.

YIELDS AND COST OF GROWING CROPS AT CHURCHBRIDGE

Rotations and Crops	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Corn..... tons	3	4	4	3 62	4 12	0 18
Wheat, Garnet..... bush.	2	25	24½	0 65	0 57	17 84
Hay, Western rye and alfalfa (first crop)..... tons	4	3	2½	3 45	3 29	17 62
Hay, Western rye and alfalfa (second crop)..... tons	3	3	2	3 35	4 10	12 18
Wheat, Marquis..... bush.	2	15½	15	0 87	0 83	6 30
Oats, Banner..... bush.	5	40	46	0 32	0 29	8 09
Demonstration Test Plot—						
Timothy seed..... lb.	1	300				
Sweet clover..... tons	2	2	2½	4 24	4 75	11 68
Alfalfa..... tons	4	2	1½	3 49	5 49	8 65
Timothy hay..... tons	4	1	1½	5 69	5 03	6 11

During the time this Station has been in operation a large amount of seed grain has been disposed of to neighbours. In 1926 this amounted to over 500 bushels. Further sales were effected this year. Another feature of this Station this year was the success attending the growing of strawberries in the garden. Pails of these were removed on the morning of the Field Day.

DAUPHIN

Operators, French Bros.

Few Stations could have presented a finer appearance than the Dauphin Station this year. Clean fields and good yields, especially in the hay plots were the result of the year's operations.

A successful Field Day was held at this point on August 11. At that date only the hay crops had been removed and these with their excellent aftermath, together with the corn and grain plots approaching the harvest, provided ample scope for discussions relative to rotations, varieties, and cultural practices.

Wheat seeding commenced on April 10. Garnet wheat sown on corn land outyielded the same variety on sod land by two bushels per acre and was produced at a greatly reduced cost. Both plots showed considerable rust but the sample was not materially injured.

Banner oats suffered most from the rust infection and the yield of 47 bushels per acre is only half the normal yield for this farm. For the fourth consecutive year corn produced an abundance of fairly mature fodder. This plot was cut on September 20 with the ordinary grain binder and again disposed of to a neighbour, the operators not having sufficient cattle to handle this class of feed.

Hay crops were outstanding. The mixtures of alfalfa, rye grass and meadow fescue averaged three tons per acre, while a similar mixture without the alfalfa yielded 2½ tons of excellent hay. The test plot of alfalfa in two cuttings again outyielded the mixed hays by a substantial margin and showed a handsome profit when valued as low as ten dollars per ton.

Although this Station is surrounded by sowthistles, they have not been allowed to secure a hold on the plots. The rotation itself appears to be partially responsible for this satisfactory state of affairs, but the credit belongs chiefly to the operators. No effort has been spared to keep the plots in the best of shape at all times and the extra yields thus obtained have been more than sufficient to offset the extra labour and expense involved.

YIELDS AND COST OF GROWING CROPS AT DAUPHIN

Rotations and Crops	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Corn, N. W. Dent..... tons	2	10	9	2 25	2 24	5 11
Wheat, Garnet..... bush.	2	27	31½	0 48	0 51	23 40
Hay, western rye, meadow fescue and alfalfa..... tons	1	3¾	.....	2 90		
Hay, western rye and meadow fescue (second crop)..... tons	1	2½	.....	3 98		
Wheat, Garnet..... bush.	1	25¾	.....	0 69		
Oats, Banner..... bush.	1	47	.....	0 34		

This Station is one of the best seed centres of the district. Sales in 1926 amounted to over 500 bushels of wheat and oats, and requests for Garnet wheat this year were numerous. The price of the latter however, prevented sales to a large extent.

DUGALD

Operator, Thos. Roberts

An abnormally late and wet spring made it impossible to start plot work at this station before June 3. Results, therefore, are just what might be expected.

Garnet wheat sown on the above date was a very badly rusted crop in August and the yield of slightly over eight bushels per acre would grade "feed." The virtue of an early wheat, lies, amongst other things, in its supposed ability to escape, or partially escape a severe rust attack, but that theory has been almost exploded this year. The very late seeding, however, could scarcely have had any other result in a year such as this has turned out to be.

O.A.C. barley was frozen in August and the sample consequently poor. A field of flax which appeared to be promising until closely examined proved also to have been frozen and greatly damaged.

Fair hay crops were secured, but the yields of these were still inferior to those reported from many of the other Stations. The season was entirely too wet and late for most of the crops. Two fields which otherwise would have been in crop, had to be fallowed because of the delay occasioned by the late spring.

YIELDS AND COST OF GROWING CROPS AT DUGALD

Rotations and Crops	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow..... acre	.....	.....	.....	8 79	8 32	
Flax, Premost.....						
Hay, western rye, meadow fescue and alfalfa (first crop) tons	2	1½	1¾	5 49	4 95	10 96
Hay, western rye, meadow fescue and alfalfa (second crop)..... tons	1	1¼	.....	4 78		
Wheat, Garnet..... bush.	1	8¾	.....	1 65		
Fallow replacing oats..... acre	1	.....	.....	8 79		
Three-year Rotation—						
Fallow replacing corn..... acre	1	.....	.....	8 79		
Barley, O.A.C..... bush.	2	16	29	0 70	0 52	3 54
Hay, sweet clover..... tons	2	1½	1½	5 85	6 91	5 12

ERIKSDALE

OPERATOR, R. G. COWDERY

This is the second year of operations at this point. Moisture conditions were much more favourable than in 1926 and crops correspondingly better. Rust damage was prevalent in both oats and wheat, but barley fared much better than either.

The chief aim of this station is to produce feed crops. Garnet wheat has also been tested on additional land in the past two years but with very poor results. The district is not well adapted to wheat production as the soil is inclined to be light and shallow. Oats and barley constitute the nurse crops in the seeding down years and it is hoped that by the introduction of sweet clover, brome and alfalfa a gradual improvement may be effected.

Seeding commenced this year on May 12. Trebi barley sown on that date secured first prize in the sheaf competition at the local fair and later threshed out a good sample yielding forty-two and one-half bushels per acre. This is a very good yield for this year in this area. This barley is being used in the two-year rotation which consists of barley and sweet clover, the hay being removed and the plot partially fallowed in preparation for barley and clover in the succeeding year.

In the four-year rotation, fallow, oats, hay and barley, little headway has been made owing to the failure of the sweet clover in 1926. Similarly the oat crop this year was worthless on account of the rust damage. The original intention was to introduce corn and mangels in place of the fallow but these have not done well to date and the bare fallow will now replace these crops until the land is thoroughly cleaned up.

Sowthistles are prevalent in this area and on that account it has been difficult to get a good stand in the test plot of alfalfa. Some improvement was observed this year in this field after it had been topped back twice with the mower.

GILBERT PLAINS

OPERATOR, G. W. BEST

This Station was established in 1926. Yields during the past two years have been only medium, drought and rust being the limiting factors on all plots. A further handicap is to be found in the presence of couch grass patches.

Outstanding crops this year were sweet clover and alfalfa. These were sown in 1926, using sweet clover and Marquis wheat as a nurse crop. The sweet clover was rated as one of the best crops ever seen on "The Plains." Similarly, alfalfa proved to be a very profitable crop.

The five-year rotation consists of corn or fallow, wheat, barley, hay and wheat or oats. It is the only rotation in this group where the seeding down does not take place immediately after the fallow or the fallow substitute crop. It is still too early to predict the outcome of this practice, but the success attending the hay crops to date is encouraging. Sweet clover sown this year with barley again showed a very uniform and heavy stand after the barley was removed.

Corn was a failure. Couch grass opposition was too severe to warrant leaving the crop so the plot was fallowed. A spring tooth harrow frequently applied to the fallow plots in the last two years has made a very appreciable difference in lessening the amount of couch remaining in these fields.

Garnet wheat on fallow rusted badly and yielded only 15 bushels per acre. The sample was one of the poorest seen on the Stations this year. O.A.C. barley from second generation seed has depreciated in quality considerably since the original first generation seed was introduced. This year's sample was not particularly attractive.

YIELDS AND COST OF GROWING CROPS AT GILBERT PLAINS

Rotation and Crops	Yield per acre	Cost	Average profit or (−) loss per acre, 1927
		$ cts.	$ cts.
Five-year Rotation—			
Corn, N. W. Dent	Failure		
Wheat, Garnet ... bush.	15	1 15	−2 25
Barley, O.A.C. 21 ... bush.	29	0 49	5 22
Hay, sweet clover, western rye and timothy ... tons	3	3 32	20 04
Fallow replacing wheat ... acre	.....	8 61	
Test Plot—			
Alfalfa hay ... tons	2¾	3 42	18 09

GUNTON

Operator, E. Fraser

In more ways than one the wet spring proved to be a real handicap to the continued progress of this Station. In the first place substitution of crops was necessary and in the second sowthistles became rather vigorously entrenched in one or two of the plots. It was observed in this connection, that one plot which was two years away from grass was much freer of sowthistles than another plot just one year removed from grass. The difference was due entirely to the amount of fall and spring cultivation, that it was possible to give to these plots.

Three varieties of wheat were grown. Garnet yielded 16 bushels and Marquis 8 bushels per acre. Mindum threshed a better sample than either. The difference between the Garnet and Marquis was partly due to the fact that the former was on corn ground where the crop had failed the previous year, while the latter followed a rye grass and fescue sod.

Mackay field peas made quite a good showing and yielded at the rate of 45 bushels per acre. These were grown on a three-quarter acre field and therefore give a fairly accurate indication of their yielding power.

One of the best plots was the alfalfa and grass mixture. Two cuttings yielded over two tons per acre. This plot has consistently outyielded the western rye and meadow fescue on the main rotation plots, each of the years this Station has been in operation.

The precipitation from January to September inclusive was 14·06 inches.

YIELDS AND COST OF GROWING CROPS AT GUNTON

Rotations and Crops	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow..... acre	3	.....	.....	6 22	6 89	
Wheat, Garnet..... bush.	2	16	22½	0 91	0 80	11 02
Hay, western rye and meadow fescue (first crop)..... tons	3	1¾	1½	3 63	5 18	5 94
Hay, western rye and meadow fescue (second crop)..... tons	2	2	1½	3 18	5 31	5 77
Wheat, Marquis..... bush.	3	8	19¾	1 63	0 96	8 71
Wheat, Mindum replacing oats bush.	1	15	.....	1 05	.....	2 25
Demonstration Test Plot—						
Hay, western rye, meadow fescue and alfalfa..... tons	3	2¼	1¾	3 91	4 38	13 44

INWOOD

Operator, Wm. Cossette

Three years' works at this Station has not sufficed to bring it to a state of profitable production. Some small acre profits are shown in one or two instances this year, but the general condition with respect to sowthistles and stones is not very satisfactory. The latter especially are a source of distraction to the operator and certainly make good work difficult and expensive.

The most promising crop this year was sweet clover. Previous seedings have not established good stands, but the field this year returned approximately one and three-quarter tons of hay per acre. Garnet wheat yielded 10 bushels per acre and the sample, while poor, was not worse than that produced by the majority of the Stations. Banner oats barely paid their way and one plot removed for hay was below sweet clover in point of yield.

A small plot of alfalfa yielded at the rate of one ton per acre. Western rye and meadow fescue under similar conditions gave approximately the same return. This is the first year in three that even a reasonable amount of hay has come from these plots, due, no doubt to the carry over of moisture from last fall.

YIELDS AND COST OF GROWING CROPS AT INWOOD

Rotations and Crops	Yield per acre, 1927	Cost, 1927	Average profit or (−) loss per acre, 1927
		$ cts.	$ cts.
Five-year Rotation—			
Fallow..... acre	.....	7 96	
Oats, Banner..... bush.	20	0 51	0 80
Hay, sweet clover..... tons	1¾	4 20	10 15
Wheat, Garnet..... bush.	10	1 56	−3 60
Oats for feed..... tons	1	9 18	0 82

KAMSACK

Operator, F. Craig

This has been the best year in three at the Kamsack station. The spring opened early and better weather was experienced throughout the seeding period than at most of the other points. Some concern is still occasioned by the recurrence of French weeds and mustards in the plots, but the favourable season this year enabled the grain crops to withstand the competition.

Ceres wheat, sown on sod land, was outyielded by Garnet on corn ground by almost 9 bushels per acre. The corn in the previous year was frozen off early in the season so that the plot was fallowed and prepared for wheat and seeded also to alfalfa and grasses, this year. The comparison, therefore, was between a fallow wheat and a sod land wheat and the advantage in favour of Garnet may be explained on this basis. The samples of both of the grains, as well as of Marquis, were of good quality. Oats running at over 79 bushels per acre were naturally free from rust and proved to be the most paying crop of all.

Hay crops were not as good as might have been expected. The original seedings which consisted of straight grasses have been supplanted by an alfalfa and grass mixture which should greatly increase the value of these crops. A test plot of alfalfa was sown in 1926, but the nurse crop, an exceptionally heavy stand of oats, choked out the new alfalfa. This, rather than any form of winter-killing, necessitates further seedings of this valuable hay.

YIELDS AND COST OF GROWING CROPS AT KAMSACK

Rotations and Crops	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Corn..... tons	2	6	5½	2 59	2 94	0 60
Wheat, Garnet..... bush.	3	32	25	0 65	0 65	13 72
Hay, western rye and meadow fescue (first crop)..... tons	3	1¼	1¼	5 95	6 37	3 86
Hay, western rye and meadow fescue (second crop)..... tons	2	1	1	7 31	7 17	1 83
Wheat, Ceres..... bush.	1	23¾	.....	0 69		
Oats..... bush.	1	79¾	.....	0 23		

PETERSFIELD

Operator, Wm. Michael

In common with other Red River valley points this station was greatly handicapped by the late spring. Seeding was not possible until well on in June, so that wheat had to be omitted entirely. Coarse grains and flax comprised the grain crops, of which, the yield of the former was below the average. Outstanding plots were corn, and the alfalfa and grass mixtures.

Two rotations are in progress, one, a six-year rotation, and the other, a three-year one. To date, a great deal of preparatory work has been necessary in order to eliminate as far as possible sowthistles and wild oats. In this, success has not been complete. Sowthistles are no longer a menace, but wild oats still present some difficulty and on this account the rotations are not as far advanced as they might have been under more favourable circumstances.

Premost flax, grown on a well prepared fallow, yielded 17¼ bushels per acre. The object of flax in the six-year rotation is to avoid the almost inevitable losses, which attend the growing of fallow wheat in these sections in rust years.

It further serves as a nurse crop for the seeding down years. The 1926 crop was an exceedingly heavy one and it is unfortunate that the wet harvest at that time made it impossible to cut this field. From observations made in both years the practice of using flax in this way appears to be sound. Certainly the alfalfa and grass catches have not suffered through its use as a nurse crop.

The precipitation from January to September inclusive was 14·7 inches.

YIELDS AND COST OF GROWING CROPS AT PETERSFIELD

Rotations and Crops		Yield per acre, 1927	Cost, 1927	Average profit or (−) loss per acre, 1927
Six-year Rotation—			$ cts.	$ cts.
Fallow	acre	.....	12 01	
Flax, Premost	bush.	17½	1 31	7 59
Hay, western rye and fescue (second year)	tons	¾	10 33	−1 74
Hay, western rye, fescue and alfalfa (first year)	tons	2¾	3 91	16 74
Barley, O.A.C. replacing wheat	bush.	24	0 53	3 36
Oats, Victory	bush.	12½	0 94	−4 87
Three-year Rotation—				
Corn, N. W. Dent	tons	10	2 49	5 10
Barley, O.A.C. 21	bush.	25	0 73	−1 50
Hay, western rye	tons	1¼	6 74	1 57
Test Plot—				
Alfalfa in rows	tons	3¼	3 83	20 05

A new garden has been laid out at this station. Out of over 400 Caragana seedlings supplied from the Brandon Experimental Farm, to be used as a hedge surrounding this garden, practically none failed to grow. A few varieties of fruit trees, including raspberries will be introduced in 1928.

PIPESTONE

Operator, Wm. Forder

This station was established in 1927, two plots of hay being sown at that time. The remainder of the field was fallowed and this year a five-year and a three-year rotation were laid out. The soil is inclined to be light and it dries out quickly in periods of drought. Couch grass patches are one of the acquired problems.

Seeding commenced on May 4. Mindum wheat outyielded Garnet by nearly five bushels per acre, but owing to the necessity of charging two-thirds of the previous fallow costs to the crops, and with yields ranging from 8 to 13 bushels, scarcely any profit could be shown. Victory oats gave a better return than Banner, but still showed insignificant profits.

One plot of sweet clover was ploughed down, while a field of brome and sweet clover yielded approximately one ton per acre.

YIELDS AND COST OF GROWING CROPS AT PIPESTONE

Rotations and Crops		Yield per acre, 1927	Cost, 1927	Average profit or (−) loss per acre, 1927
Five-year Rotation—			$ cts.	$ cts.
Fallow replacing corn	acre	.....	6 46	
Wheat, Garnet	bush.	8½	1 64	−3 74
Hay, sweet clover		Ploughed down		
Wheat, Mindum	bush.	13	1 27	−0 91
Oats, Victory	bush.	30½	0 48	2 11
Three-year Rotation—				
Hay, sweet clover and brome grass	tons	1	5 65	4 37
Wheat, Mindum	bush.	13	1 16	0 52
Oats, Banner	bush.	28	0 58	−0 84

PLUMAS

OPERATOR, F. BUSCHAU

This Station has now been operating for three years. In 1926 Plumas was in the dry area. This year it suffered badly from rust. Yields to date have been mostly well below the average of the Stations, but this has been due to circumstances beyond control and not to the character of the work attempted. Of the Operator's field work it can be said that it is in no way inferior to the best that we have on Manitoba Stations.

Seeding commenced on May 10, but owing to the excessive rains and consequent flooding, reseeding was necessary on some of the plots. None of the grain fields showed any significant profits and Garnet was produced at a loss. Oats, reseeded, were worthless for threshing. Fall rye gave the best returns that have been secured from this crop. One acre of this plot was entirely drowned out, so that a yield of 83 bushels from three acres is considered fairly satisfactory.

Sweet clover and brome also showed improvement over other years, but the oustanding crop was alfalfa. A yield of four tons per acre, with an acre profit of $32.16 must be considered a very satisfactory return in a year, when rusted wheat and oats fail to provide their share of the annual income. Similarly, corn proved to be quite a profitable crop, although less mature than it was some previous years.

The precipitation from June to September inclusive was 8·03 inches.

YIELDS AND COST OF GROWING CROPS AT PLUMAS

Rotations and Crops	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Fallow..... acre	3	.....	.....	5 85	8 96	
Fall rye..... bush.	1	21	.....	0 50		
Hay, brome and sweet clover (first year)..... tons	2	1	1	5 84	5 21	6 70
Hay, brome and sweet clover (second year)..... tons	1	1	.....	5 02		
Wheat, Mindum..... bush.	1	12½	.....	0 99		
Oats, Victory.....	Cut as feed					
Three-year Rotation—						
Corn..... tons	2	8	7	2 05	2 59	4 19
Wheat, Garnet..... bush.	1	8	.....	1 24		
Hay, western rye..... tons	2	1½	1	3 16	6 99	3 42
Demonstration Test Plot—						
Hay, alfalfa..... tons	2	4	2½	1 96	3 14	19 92

An excellent garden was produced from seed supplied by the Division, an outstanding feature of which was ripe tomatoes. Native plum trees grown from seed secured in 1926 and planted after freezing ranged in height from 6 inches to over two feet in September of this year.

ROBLIN

OPERATORS, ARNOTT BROS.

This new Station commenced under fairly favourable conditions this year. The objective in rotations is one of five-years duration, consisting of, fallow, wheat, hay, wheat and oats, and one of three-years—wheat, barley and hay. An additional two acres was sown to alfalfa, this to be added to in 1928 by seeding down an adjoining plot, which this year was in corn.

The field is slightly rolling and presents some difficulty in seeding owing to the presence of water in the lower areas. Canada thistles are present in a number of patches.

Preparatory crops this year consisted of Marquis and Garnet wheat, Banner and Victory oats, and Trebi barley. North West Dent corn was tried in a small way and alfalfa, sweet clover and western rye grass constituted the hay crops. Good catches in the latter were observed previous to harvest.

Considerable work was carried on by the operators in improving and cleaning up the front of the field. A new fence replaced the old one after the headland and road allowance had first been broken and seeded down to timothy.

ST. ROSE

Operator, J. Fitzmaurice

A wet spring delayed seeding on all but one plot this year. Garnet wheat was sown on May 12 but oats and barley could not be sown until late in June. Owing to rust and other adverse conditions, crop returns were light.

Some changes have been effected in the original rotation and still others are contemplated which it is hoped will bring this Station to a productive stage. For instance, corn has been replaced by the bare fallow and Mindum wheat will now replace spring wheat. Alfalfa will be added to the test plots and sweet clover continued with a view to proving the efficacy of this legume as a soil builder.

RESULTS AND COST OF GROWING CROPS AT ST. ROSE

Rotations and Crops		Yield per acre, 1927	Cost, 1927	Average profit per acre, 1927
			$ cts.	$ cts.
Five-year Rotation—				
Fallow	acre	.....	5 78	
Barley, O.A.C. 21	bush.	25	0 38	7 25
Hay, sweet clover	tons	1	5 20	4 80
Wheat, Garnet	bush.	10	1 07	1 30
Oats, Victory	bush.	15	0 55	
Test Plot—				
Hay, western rye	tons	1½	4 39	7 01
Wheat, Mindum	bush.	25		

TISDALE

Operator, Geo. McMurdo

This Station was started in 1927. Tisdale is located in the heart of a highly productive country. While the farm on which the plots are located is a strictly dairy proposition, the object of the Station will be to feature grain growing even more than the production of the feed crops necessary to carry a growing Holstein herd.

The soil is a heavy clay loam, showing occasional burnt over spots. Owing to previous arrangements of the fields with a view to fodder and hay production, it was not advisable to lay out too elaborate a program in the first year. A five-year rotation has been adopted as a start, this to consist of fallow, wheat, hay, wheat and oats. One test plot of alfalfa was sown this year using oats as a nurse crop. Other plots will gradually become available, when a second rotation of shorter duration may be demonstrated.

Two plots of fallow, and four of oats, one of which was sown to a brome and sweet clover mixture, and another to alfalfa comprised the preparatory work this year.

WAWOTA

OPERATOR, CHAS. PRYCE

This Station has completed its fourth crop year. Moderate yields were secured this year, and considerable progress in the general condition of the field and plots was recorded.

A very successful Field Day was held at this point on July 13. Twenty automobiles and ten buggies brought out a large number of visitors including women and children, and the tour of the gardens, the trench silo and the plots were followed with marked interest.

Seeding commenced on May 12. Garnet wheat on corn land outyielded Marquis on sod land by 5 bushels per acre. Banner oats at 35 bushels per acre were considerably better than the average this year, but the weight of only 25 pounds per measured bushel gives a correct indication of the sample.

Corn again failed and the trench silo was filled with sunflowers, a much more reliable crop for this district. Mr. Pryce has had good results with sunflower ensilage and is an enthusiast for this class of feed as well as the method of storing.

A field of Registered Crown flax grown on sweet clover sod was quite promising at harvest time, but wet weather necessitated the use of the mower in harvesting. Cost data were incomplete at the writing of this report.

The precipitation from January to September, inclusive, was 19·89 inches.

YIELDS AND COST OF GROWING CROPS AT WAWOTA

Rotations and Crops	Number of years grown	Yield per acre		Cost		Average profit per acre
		1927	Average	1927	Average	
				$ cts.	$ cts.	$ cts.
Six-year Rotation—						
Corn	Failure					
Wheat, Garnet bush.		20		75		
Hay, western rye and alfalfa (first year) tons	3	1½	1½	3 92	4 76	6 22
Hay, western rye and alfalfa (second year) tons	2	1½	1½	3 92	5 04	4 98
Wheat, Marquis bush.	2	15	20	0 84	0 68	11 20
Oats, Banner bush.	3	35	53	0 31	0 24	9 46
Demonstration Test Plot—						
Flax, Crown bush.	1	18				

REPORT OF CO-OPERATIVE TEST WORK ALONG THE LINE OF THE HUDSON BAY RAILWAY

This is the third consecutive year in which co-operative tests have been conducted at points along the Hudson Bay railway. These were located at Hudson Bay Junction, The Pas, Mile 42 (two tests), Mile 81, Mile 137, Mile 185, and Port Nelson.

Returns from Port Nelson were not received in time to be included in this report. At Mile 185, which was the second farthest point north, the tests were unfortunately placed on a new, burnt over, piece of land which lay quite close to the granite beneath, and this combined with a rather cool season resulted in a very poor growth of practically all tests. The rainfall recorded

at this point from June to September, inclusive, was a little over 9 inches, but July was very dry. A field of oats adjoining the co-operative tests made a good growth and appeared to be quite a promising crop in August. Sowthistles, however, were getting a start and no doubt will spread to the other small plots. A very good garden not two hundred yards from the original plots was observed, which was sown by the fire-ranger at that point from seed, which had been supplied by the Division to Mr. Cowan.

At Mile 137 much of the grain was destroyed by birds and chipmunks. Garden stuff also suffered from cutworm damage. Had it not been for this the grain tests at least would have been quite successful as the growth was all that could be desired. In the table below, the actual yield data for Mile 137 are given without making any allowance for the losses sustained. This could have been fairly conservatively placed at ten per cent. The sample of all the grains received was excellent and the weights per bushel normal.

At Mile 81, frost unfortunately cut off everything on August 22, one day after the inspection trip was made. The growth here was much better than in 1926 and quite promising results were looked for. As it was, none of the tests were worth threshing.

The returns from Mile 42 were excellent. The co-operative work carried out by Mr. Louckes, is a particularly reliable guide by which to estimate the productive power of much of that area, where care and attention is given to the work. The garden at this point was a revelation even to one who has visited this territory for the last three years. Garden products of all kinds flourished. On August 19 all the early grains were ripe, some of them were just starting to shell, and the later varieties were rapidly turning. The threshed samples of the grain finally received from these tests were the finest that have come out of the north. Garnet wheat especially showed an excellent sample and it is doubtful if a better sample of this variety has ever been grown.

The second test carried out by Mr. Turnbull at Mile 42 was sown later than the other tests at Mr. Louckes' and were, therefore, harvested on the green side. In fact had the season not been favourable for maturing these crops well on into September little would have come of them. As it is they show quite a satisfactory return and in the barley varieties at least compare well with any of the northern tests.

The McKay School at The Pas again had little difficulty in maturing the bulk of the crops. This is the eleventh year in which wheat has been matured at this school without frost injury. It was not possible to inspect this work this year, but the yield data itself is sufficient evidence, that a successful year was experienced.

Reports from Hudson Bay Junction were not received in time for inclusion in this report.

TABLE OF RESULTS FOR GRAIN TESTS, NORTHERN MANITOBA

Variety	Mile 137 R. Davidson		Mile 42 J. Turnbull		Mile 42 W. Louckes		The Pas Rev. E. Bird	
	Bushels per acre	Weight per bushel	Bushels per acre	Weight per bushel	Bushels per acre	Weight per bushel	Bushels per acre	Weight per bushel
		lb.		lb.		lb.		lb.
Wheat—								
Reward	.....	.....	39·1	62·0	36·5	65·1	53·2	64·5
Marquis	26·7	60·8	43·1	61·1	49·6	63·0	63·2	63·5
Prelude	.....	.....	25·9	64·3	.....	.....	44·4	62·0
E. Triumph	25·7	59·3	34·7	56·8	38·0	61·6	56·1	61·5
Garnet	32·8	63·0	46·9	61·3	48·3	63·5	55·1	62·0
Huron	25·9	58·6	48·9	59·8	52·9	62·3	65·0	63·5
Bishop	29·3	60·3	.....	.....	33·2	63·1	61·0	63·5
Barley—								
O.A.C. 21	84·8	49·8	99·7	48·1	64·4	48·5	69·4	49·0
Charlottetown	62·7	53·5	80·6	51·8	66·9	54·8	71·9	54·5
Himalayan	.....	.....	63·1	62·6	30·3	63·0	61·9	62·5
Bearer	84·8	45·6	97·8	48·8	85·6	49·0	73·9	49·5
Duckbill	.....	.....	73·2	52·0	60·0	50·1	69·0	48·5
Oats—								
Gold Rain	Oats		88·0	33·0	95·6	37·8	67·4	36·5
Banner	destroyed by		55·1	28·1	88·6	36·5	101·5	37·5
Victory	birds		103·0	25·0	109·7	35·3	97·1	40·0
Alaska	.....	.....	75·4	34·5	87·5	39·1	41·9	38·0
Daubeney	.....	.....	83·0	33·0	87·4	36·5	87·5	38·0
Legacy	.....	.....	101·2	32·8	92·7	37·6	100·0	37·5

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