DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

DOMINION EXPERIMENTAL FARMS

REPORT OF THE CHIEF SUPERVISOR

JOHN FIXTER

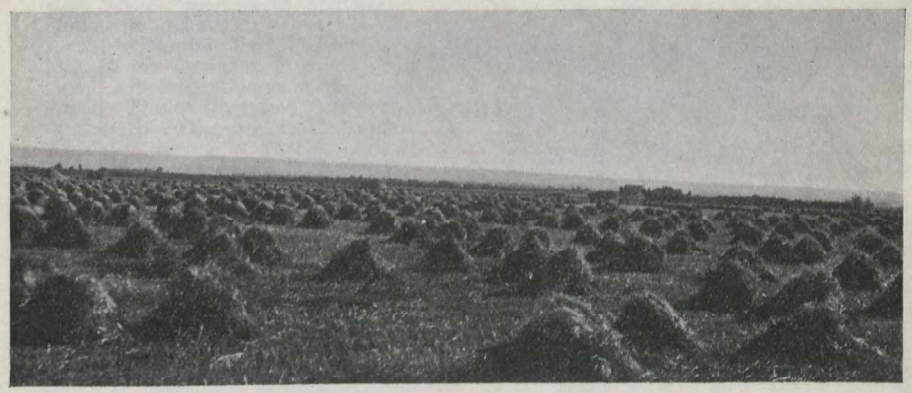
ON

THE ILLUSTRATION STATIONS

IN

BRITISH COLUMBIA, ALBERTA, SASKATCHEWAN AND MANITOBA

FOR THE YEAR 1924



Oat crop of 100½ bushels on the Illustration Station at Dauphin, Manitoba.

Printed by Authority of the Hon. W. R. Motherwell, Minister of Agriculture, Ottawa, 1925

OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1925

CONTENTS

CONTENTS—*Concluded*

ILLUSTRATION STATIONS

IN

British Columbia, Alberta, Saskatchewan and Manitoba

1924 REPORT OF THE CHIEF SUPERVISOR, JOHN FIXTER

During the past year the division has established twenty new Illustration Stations and has investigated a number of new districts with the intention of undertaking work there in the spring of 1925. The number of these Stations has steadily increased from eighty-nine in 1922, to one hundred and twenty-five in 1923, to one hundred and forty-five in 1924. Eight of these Stations are located in Prince Edward Island, thirteen in Nova Scotia, seventeen in New Brunswick, thirty-eight in Quebec, eight in Ontario, eight in Manitoba, twenty-three in Saskatchewan, sixteen in Alberta and fourteen in British Columbia.

For the collection of data and recording of results which have made possible the following report of the work of the division, the superintendents of branch Farms and Stations and supervisors of Illustration Stations as named below, are responsible:—

SUPERINTENDENTS

J. A. Clark,
Charlottetown, P.E.I.
W. S. Blair,
Kentville, N.S.
F. C. Bailey,
Fredericton, N.B.
J. A. Ste. Marie,
Ste. Anne de la Pocatière, Que.
S. Ballantyne,
Kapuskasing, Ont.
M. J. Tinline,
Brandon, Man.
J. G. Taggart,
Swift Current, Sask.
W. H. Fairfield,
Lethbridge, Alta.
W. T. Hunter,
Summerland, B.C.
E. M. Straight,
Sidney, B.C.

SUPERVISORS

F. B. Kinsman,
Kentville, N.S.
T. G. Hetherington,
Fredericton, N.B.
J. H. Tremblay,
Ste. Anne de la Pocatière, Que.
W. L. Chauvin,
Ottawa.
J. D. Guild,
Brandon, Man.
E. C. Sackville,
Swift Current, Sask.
R. E. Everest,
Lethbridge, Alta.
A. E. Richards,
Summerland, B.C.

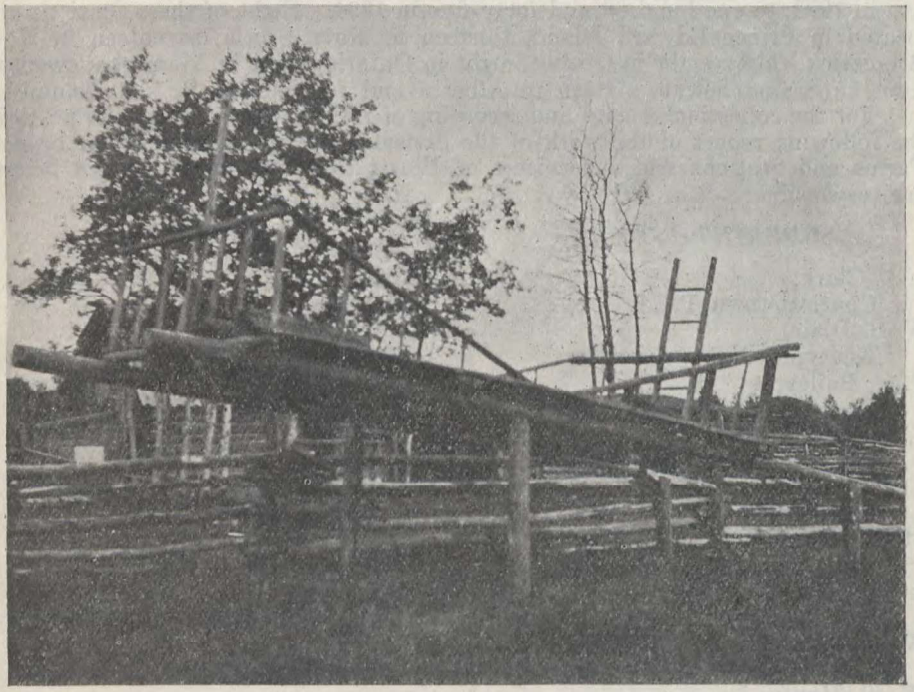
PRODUCTION AND SALE OF SEED.

The use of good seed and the sowing of suitable varieties is being encouraged from the Illustration Stations. New or improved varieties are introduced into the district by growing them first on the Illustration fields so as to let the adjoining farmers see how these perform under local soil and climatic conditions. Any surplus seed is then offered for sale at reasonable prices. The sales of

seeds has increased materially during the past year and 20,943 bushels of seed grain, 3,636 bushels of seed potatoes and 9,399 pounds of grass and clover seed have been sold or exchanged by the different operators.

LIVE STOCK IMPROVEMENT

The weighing of each cow's milk, and the keeping of daily milk records are practices aimed at on all of the Illustration Stations, where dairying is carried on. The results obtained so far clearly indicate that such a procedure is necessary to successful dairying. In a certain herd worked with, the highest producing cow gave 3,891 pounds of milk, the lowest producer 1,836, with a herd average of 3,156 pounds. In another herd the average production was 7,967 pounds of milk, with the highest producer giving 11,049 pounds. This shows somewhat the condition which exists throughout the country and the possibilities for improvement through such means as the weeding out of the low producers, by better feeding and by the use of good sires from high producing dams. During the past year, thirteen operators purchased such herd sires, in most cases the first pure-breds they have had.



Hay-rack and wagon-box unloader.

A CONVENIENT HAY RACK STAND

Many farmers find difficulty in removing heavy hay racks and wagon boxes. The accompanying illustration shows a very convenient rack-stand, loader and unloader, which is made as follows. First secure two good straight ash, cedar or spruce poles measuring not less than six inches at the small end, and twenty-two feet long. Place the long poles on top of the two posts which are set about three feet in the ground and extending 4½ feet above the surface, making sure to brace each post.

To hold the long pole in place a king bolt is placed through a slot in the pole directly into the upright post. This slot should be V-shaped, about twelve inches long on top and just large enough at the bottom to take the bolt and allow the pole to rock up and down, as is necessary to raise or lower the rack. The lower posts are about two feet above the ground and have two pieces of board nailed on each, which extend above the top of the posts sufficiently to catch and hold the poles in place.

To unload the rack the team is driven directly between the long poles. If the sides of the rack are permanent they will slide along the pole until the front end is free of the bolster. The driver then puts his weight on the front end which balances the whole rack to free the back bolsters. The team is then driven through and the rack remains on the stand. To load, the wagon is backed under the rack, which is balanced to catch the back bolsters. The team is then backed out and the rack is loaded. To unload a heavy wagon box, two long strong pieces of wood must be placed under box to represent the sides of the rack. The box is then loaded and unloaded in the same manner as the hay rack.

POULTRY WORK

An effort has been made to arouse greater interest in the housing, feeding and breeding of poultry on the Illustration Stations and in surrounding districts. Good laying strains of Barred Rocks are being developed on the Stations so that these will be in a position to supply the demands of their neighbours for bred-to-lay poultry and hatching eggs. During the past year, 256 cockerels, 198 pullets and 699 settings of hatching eggs were sold by Illustration Station operators.

REPORT OF THE ILLUSTRATION STATIONS FOR BRITISH COLUMBIA

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

Eleven Illustration Stations have been operated in the interior of British Columbia during the past year. Seven are located along the line of the Canadian National Railway in Central British Columbia and the remaining four Stations serve the southern portion of the province.

THE SEASON

The climate of the interior of British Columbia is so variable that one cannot very well speak in general terms. This much may be said, however, that nowhere, except in the Kamloops district, was the season as favourable for crop production as in the year 1923. Poor soil-moisture conditions before winter set in, a comparatively light snowfall and less than a half-inch of rain in May gave all crops a severe set-back. The hay crop failed to recover and new seedings had little chance to establish themselves. Yields as a result were below the 1923 average but the increased prices which the farmer received for his produce offset this drop in production to a very large extent.

1856—2½

PRECIPITATION AT STATION POINTS IN BRITISH COLUMBIA, 1924

Month	Armstrong	François Lake	Kamloops	Kamloops Rose Hill	McBride	Prince George	Salmon Arm	Salmon River Prince George	Smithers	Telkwa	Vanderhoof
	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches
January	2·54	1·20	1·64	1·15	3·67	1·29	2·68	No rept.	1·00	1·46	1·50
February	0·56	0·70	0·29	0·41	0·37	0·68	1·57	"	1·40	2·01	1·10
March	0·45	No rept.	0·14	0·29	0·80	0·87	0·19	"	0·20	0·29	1·30
April	0·18	0·75	0·35	0·85	0·47	0·13	0·30	0·83	0·90	0·78	0·40
May	0·12	0·79	0·67	0·60	0·48	0·55	0·14	0·97	0·22	0·27	0·03
June	1·59	1·55	2·18	3·52	0·53	2·71	1·97	1·46	0·35	1·32	2·40
July	0·40	1·40	1·24	1·15	0·60	0·53	0·76	0·65	1·35	2·22	0·35
August	1·80	1·47	0·89	1·10	3·43	3·05	2·08	3·63	2·38	2·07	0·90
September	0·71	0·80	0·86	1·17	4·58	2·40	1·17	3·55	0·76	1·42	1·31
October	1·15	No rept.	0·35	0·95	1·02	0·68	1·70	2·10	1·37	1·22	0·95
November	1·21	"	0·71	1·25	2·56	1·58	1·72	2·24	0·93	1·10	1·10
December	4·33	2·30	4·18	2·40	0·36	1·70	1·80	0·95	3·02	2·80	2·10
	15·04	.....	13·60	14·84	18·87	16·17	16·08	.....	13·88	16·96	13·44

MAXIMUM AND MINIMUM TEMPERATURES AT ILLUSTRATION STATION POINTS, 1924

(In degrees Fahrenheit)

Month	Armstrong		François Lake		Kamloops		Kamloops Rose Hill		McBride		Prince George		Salmon Arm		Salmon Valley Pr. George		Smithers		Telkwa		Vanderhoof	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max	Min.
January	39	−26	.....	.....	50	−17	.....	−29	43	− 2	50	−39	42	−16	.....	.....	32	−14	46	−22	43	−40
February	47	12	.....	.....	60	23	.....	16	47	4	52	− 7	51	23	.....	.....	34	0	44	2	47	− 8
March	53	17	.....	.....	58	15	46	10	52	12	55	− 8	58	16	.....	.....	44	4	49	5	45	−20
April	75	19	82	18	78	24	72	16	77	18	79	16	76	25	.....	.....	82	16	73	15	54	12
May	88	29	81	28	95	35	90	28	86	22	88	20	90	33	.....	.....	.....	20	85	23	83	19
June	94	39	82	31	101	45	96	38	94	31	86	28	100	41	.....	.....	90	28	78	28	88	28
July	98	39	86	34	101	51	96	34	94	31	92	33	103	45	.....	.....	90	34	84	33	90	31
August	91	34	85	34	90	43	94	34	83	32	87	30	91	40	.....	.....	92	32	48	32	83	30
September	87	30	78	31	89	35	90	30	77	20	82	24	87	36	64	24	74	31	74	30	72	27
October	62	24	.....	.....	70	28	68	18	60	20	64	21	65	29	60	23	60	22	58	20	54	22
November	51	10	.....	.....	54	7	44	2	48	−19	49	−15	57	9	44	−16	38	−10	47	−10	40	−22
December	52	−25	40	−30	55	−21	50	.....	38	−50	46	−43	58	−15	42	−39	36	−28	40	−35	38	−55

PRICES CHARGED IN CALCULATING COST OF PRODUCTION OF CROPS

Rent of land per acre	Based on value of land at prevailing rate of interest.		
Use of machinery per acre			$2 00
Manual labour per hour	Based on price prevalent in the district.		
Horse labour per hour			
Threshing wheat per bushel			
Threshing oats per bushel			
Manure per ton			$2 00
The Cost of Seed—			
Oats, Banner, Victory	per	bushel	$1 00
Wheat, Marquis	"	"	2 00
Wheat, Ruby	"	"	1 50
Winter rye	"	"	1 40
Spring rye	"	"	1 97
Potatoes	"	"	1 50
Potatoes (certified seed)	"	"	2 00
Grass, Orchard	"	pound	0 38
Timothy	"	"	0 16
Alfalfa, Turkestan	"	"	0 29
Alfalfa, Grimm	"	"	0 43
Clover, common red	"	"	0 22
Clover, alsike	"	"	0 14
Clover, white sweet	"	"	0 16½
Peas, Arthur, Golden Vine	"	"	0 08
Corn, N.W.D., Longfellow	"	"	0 08
Sunflowers, Mammoth Russian	"	"	0 13
Turnips	"	"	0 22

The cost of manure is distributed over the crops in the four-year rotation in the following proportions:—

40 per cent is charged to the hoed crops.
30 per cent is charged to the grain.
20 per cent is charged to the first year hay.
10 per cent is charged to the second year hay.

The oat and barley crop is credited with the straw at two-fifths the value placed on hay and the wheat crop with straw at one-half this rate.

Yields of hay and mixed crops are estimated throughout the report.

Field day on the Illustration Station at Prince George, B.C.

THE SILO ON THE ILLUSTRATION STATION

The important place that the silo holds on the general farm has been ably demonstrated on the Illustration Station. There are six wooden silos and three trench silos on the eleven farms which carry on Illustration Station work in the

interior of the province. On six farms these have been built since the Illustration work began. Several farmers in each of the districts served have followed the lead of the operator and now own a silo.

IMPROVEMENT OF THE HOME GARDEN

A special feature of the Illustration Station work in British Columbia during the past two years has been the improvement of the home garden. Flower seeds and bulbs were distributed among the operators by the Dominion Experimental Station, Summerland. Caragana seedlings, six Tetofsky apple and four hardy plum seedings were sent from Ottawa to each Station in central British Columbia. All were making satisfactory growth at the end of the season.

ARMSTRONG, B.C.

OPERATOR, T. BALL & SON

A seven-year rotation is in operation here. Soil is a clay loam. Rain-fall is usually light and for that reason all cultural practices must aim to make the best use of soil moisture. It has been the practice on this Station to sow alfalfa without a nurse crop. Seed is sown through the grain drill at the rate of fourteen pounds to the acre. Although rainfall is light, there is usually a fairly heavy fall of snow, therefore, in order to take fullest advantage of spring moisture early seeding has been practised. Alfalfa was sown April 11. Established fields yielded only two cuttings of alfalfa this season on account of unfavourable weather conditions. Corn was sown with the grain drill May 8 at twenty-eight pounds an acre and harvested September 5.

Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or (−) loss per acre
			$	$	$
A	Alfalfa hay	1 ton 1,667 lbs.	16.34 per ton	17.00 per ton	1.21
B	Alfalfa hay	1 ton 1,667 lbs.	16.34 per ton	17.00 per ton	1.21
C	Alfalfa hay	1 ton 1,667 lbs.	16.34 per ton	17.00 per ton	1.21
D	Alfalfa hay	1½ tons	20.17 per ton	17.00 per ton	−4.75
E	Alfalfa (new seeding)				
F	Winter wheat (cut for hay)	3 tons	13.03 per ton	14.00 per ton	2.91
	Winter rye	2½ tons	16.48 per ton	14.00 per ton	−6.20
G	Corn, N.D.W. (ensilage)	10½ tons	7.37 per ton	7.00 per ton	−3.88

Established fields of alfalfa were disked and harrowed with beneficial effects. It is important that this operation be completed before new growth starts in the spring. Plants disked after new shoots appeared received a set-back from which they did not recover throughout the whole of the season.

FRANCOIS LAKE, B.C.

OPERATOR, J. R. STANYER

Work on the land commenced April 29, ten days later than the season of 1923. Seeding was general by May 10. Hay was cut July 8 and grain harvested September 1.

Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or loss (—) per acre
			$	$	$
A	Wheat, Ruby, and seeded	10 bush.	1.73 per bush.	2.00 per bush.	2.70
	Wheat, Marquis, and seeded	20 bush.	1.16 per bush.	2.00 per bush.	16.80
B	Hay, clover and timothy	1 ton	10.47 per ton.	22.00 per ton.	11.53
C	Oats, Banner, and seeded (cut for bay)	1½ tons	15.51 per ton.	16.00 per ton.	0.73
D	Potatoes, Irish Cobbler	200 bush.	0.37 per bush.	1.25 per bush.	176.00
	Sunflowers (fodder—green weight)	9 tons	2.76 per ton.	6.00 per ton.	29.16
	Demonstration Fields				
E	Winter rye	2½ tons	10.89 per ton.	15.00 per ton.	10.27
	Oats, Banner (ensilage)	7 tons	6.19 per ton.	8.00 per ton.	12.67
F	Sweet clover bay	1,600 lbs.	12.53 per ton.	15.00 per ton.	1.98
G	Mixed, oats and peas	4 tons	9.76 per ton.	19.00 per ton.	36.96
	Field peas, Arthur	18 bush.	2.81 per bush.	3.50 per bush.	12.42
	Field peas, Golden Vine	22 bush.	2.21 per bush.	3.50 per bush.	28.38

Winter rye gave three cuttings, June 30, July 26, and August 25, giving a total yield of two and one-half tons of hay per acre.

Golden Vine and Arthur field peas were grown on adjacent plots. They made strong growth throughout the season and matured with well-filled pods. Both varieties were sown May 13. Golden Vine was harvested September 22 yielding twenty-two bushels to the acre and Arthur variety harvested October 2 gave a yield of eighteen bushels per acre.

KAMLOOPS, B.C.

OPERATOR, E. L. BURGESS

With an average annual precipitation of 10 inches for the past ten years in this district, artificial means of applying water to the land is necessary for the successful production of crops. Water for irrigation is pumped by electric power from the Thompson river at an average cost of six dollars an acre per annum.

Work on the land commenced April 1. Registered Banner oats at the rate of one and one-half bushels an acre were sown on April 7 and seeded down with Grimm alfalfa at twelve pounds to the acre. An application of water on Field "A" just before the oat crop was cut July 31 benefited the young alfalfa to such an extent that it produced one and three-fifths tons of hay to the acre. This crop of alfalfa was cut September 24.

Tomatoes for canning purposes form one of the main cash crops in the district. An interesting line of work was carried out in this Station in cost of growing one acre of tomatoes. Plants cost seventy-five cents a hundred. These were set out at the rate of three thousand to the acre. Picking was done by Indians at four dollars a ton. The mixed varieties, supplied by the nurseryman in mistake for Earliana showed a distinct inferiority in yield and quality to the John Baer variety. It pays to purchase pure stock.

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or loss (—) per acre
			$	$	$
A	Oats, Banner, and seeded	60 bush.	0·79 per bush.	0.90 per bush.	6.60
B	Potatoes	425 bush., 40 lbs.	0.37 per bush.	1.15 per bush.	331.97
	Tomatoes, mixed varieties	7 tons, 38 lbs.	18.02 per ton	17.00 per ton	—7.79
	Tomatoes, John Baer	9 tons, 37 lbs.	15.14 per ton	19.00 per ton	37.13
C	Alfalfa hay	6 tons 240 lbs.	9.10 per ton	17.00 per ton	48.35
D	Alfalfa hay	6 tons 240 lbs.	9.10 per ton	17.00 per ton	48.35

Last cutting of alfalfa September 11, last irrigation November 12.

A late, fall application of water to the alfalfa field means protection from frost injury during the winter and benefits the crop in promoting growth the following spring. There was a noticeable difference in the appearance of the crop and the feel of the soil under-foot on fields to which water was applied in November and on those which went into the winter dry. The former responded with earlier and stronger growth. Fields on which these observations were made were ploughed, so that subsequent comparisons cannot be given. The value of late fall irrigation as insurance against winter injury to the alfalfa crop was demonstrated in a remarkable way on this Station during the severe winter of 1921. Newly seeded alfalfa well supplied with moisture by fall irrigation stood the winter well, while adjacent fields which did not receive the final application, sustained severe winter injury and had to be reseeded.

A comparison in the cost of growing a ton of alfalfa under dry farming conditions on the Armstrong Station with the cost of production under irrigation is shown below. The year 1924 as the precipitation table indicates was unfavourable for the production of crops in areas depending on natural moisture.

ALFALFA UNDER DRY FARMING AND IRRIGATION

—	Number of cuts	Dates of cutting	Average yield per acre	Average cost per ton	Estimated value per ton	Profit per acre
				$	$	$
Armstrong (dry farming conditions) 1923	3	June 19 July 26 Sept. 5	4 tons	7.87	17.00	36.52
" " 1924	2	June 10 July 15	1 ton 1,667 lbs.	16.34	17.00	1.21
Kamloops (under irrigation) 1923	3	June 9 Aug. 4 Sept. 11	5 tons 1,620 lbs.	7.75	17.00	53.74
" " 1924	3	June 11 Aug. 2 Sept. 24	6 tons 240 lbs.	9.10	17.00	48.35

KAMLOOPS, B.C.

OPERATOR, C. R. GREEN

This Station is situated in the centre of the Kamloops dry farming district. Soil is a rich, deep, chocolate loam. During the year the total precipitation

amounted to fourteen and three-quarter inches. On account of the poor moisture conditions which usually exist here, seed is sown comparatively thinly and careful attention is at all times given to cultivation. A four-year rotation with sweet clover is being established on this Station. Marquis wheat was sown at the rate of forty-eight pounds an acre on April 28 and harvested August 11 giving a growing season of one hundred and five days.

Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or loss (−) per acre
			$	$	$
A	Sweet clover hay	1,200 lbs.	18.26 per ton	12.00 per ton	−3.75
B	Sweet clover (seeded)				
C	Sunflowers, Mammoth Russian (ensilage).	5 tons 500 lbs.	6.38 per ton	6.00 per ton	−1.99
	Corn, N.W.D. (ensilage)	4 tons 480 lbs.	9.87 per ton	7.00 per ton	−12.17
D	Wheat, Marquis	19 bush. 10 lbs	0.89 per bush.	1.65 per bush.	14.57
	Demonstration Field				
E	Mixed—oats and spring rye (fodder)	1,800 lbs.	11.20 per ton	12.00 per ton	0.72

Sunflowers gave a higher yield per acre than corn.

A mixed crop of spring rye at one-half bushel and Banner oats at one-half bushel per acre produced nearly a ton of hay to the acre.

Under dry farming conditions corn and sunflowers appear to give the best results when sown in check-rows. This system of planting has a distinct advantage in that it permits cross-cultivation and makes it possible to keep the land practically free from weeds. Corn was seeded at the rate of twelve pounds to the acre and sunflowers at six pounds.

McBRIDE, B.C.

OPERATOR, J. T. OAKLEY

Spring opened here at the usual date. Grain was sown April 29 and harvested August 29 giving a growing season of one hundred and twenty-two days. Oats were sown at the rate of two bushels to the acre and seeded down with a mixture at the folowing rates per acre: eight pounds timothy, five pounds common red clover, five pounds alsike, two pounds orchard grass and one pound alfalfa.

Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or loss (−) per acre
			$	$	$
A	Oats, Banner and seeded	65 bush.	0·32 per bush.	1.00 per bush.	44.20
B	Sunflowers, Mammoth Russian (ensilage.	10 tons	4.16 per ton	7.00 per ton	28.40
	Mixed oats and peas (fodder)	1 ¾ tons	18.72 per ton	19.00 per ton	0.46
	Potatoes, Irish Cobbler	68 bush.	1.13 per bush.	1.25 per bush.	8.16
C	Clover hay	1 ton	10.83 per ton	22.00 per ton	11.17
D	Crop ploughed under				

In telling of his experience in feeding sunflower forage, Mr. J. T. Oakley, operator, writes: "My horses will eat sunflowers in preference to green oat hay, but I find that they get very fat on sunflowers. The cows also eat them up well but not like the horses do. I cut the sunflowers when one-half were in bloom and stacked them around the fence to dry and the horses eat them up clean, big stalks as well."

PRINCE GEORGE, B.C.

Operator, R. J. Blackburn

Spring weather was later than usual in this district. Wheat was sown May 7 and harvested August 22, making a growing season of one hundred and seven days from seeding to maturity.

Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or (−) loss per acre
			$	$	$
A	Hay, clover and timothy (first year)	¾ ton	15.86 per ton	22.00 per ton	3.68
B	Hay, clover and timothy (second year)	1¼ tons	7.68 per ton	22.00 per ton	17.30
C	Mixed, oats and peas (ensilage)	9 tons, 500 lbs.	3.51 per ton	9.00 per ton	50.78
	Sunflowers, Mammoth Russian (ensilage)	5 tons, 500 lbs.	5.93 per ton	7.00 per ton	5.62
	Turnips	2½ tons	14.14 per ton	4.50 per ton	−24.10
D	Oats, Banner, and seeded	39 bush.	0.26 per bush.	1.00 per bush.	28.86
	Wheat, Marquis, and seeded	26 bush.	0.60 per bush.	2.00 per bush.	36.40
	Demonstration Field				
E	Oats, Banner (ensilage)	6 tons, 400 lbs.	3.32 per ton	8.00 per ton	29.01
	Wheat, Ruby	18 bush.	1.23 per bush.	2.00 per bush.	10.01

A mixed crop of peas and oats has proved a very profitable crop for the silo in this district. The mixture used is one and one-half bushels of Victory oats and one bushel of Arthur peas. A decided advantage in growing this crop is that it can be cut early and after harvest cultivation practised until fall ploughing.

Clover came through the winter practically uninjured.

Wheat was sown at the rate of one and one-quarter bushels per acre and seeded down with a grass mixture of timothy eight pounds, common red clover four pounds, alsike clover four pounds, orchard grass two pounds and alfalfa one pound.

In all grass mixtures one or two pounds per acre of alfalfa seed have been added to test the adaptability of this valuable legume to central British Columbia conditions and to inoculate the soil for succeeding crops of this forage plant.

SALMON ARM, B.C.

Operator, A. W. Clarke

Spring work commenced April 5. Sowing of grain was completed by April 21. An unusually dry season made growing conditions unfavourable with resulting low yields. Hay was cut June 18. Corn was harvested September 18.

Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or (−) loss per acre
			$	$	$
A	Corn, Longfellow (ensilage)	9 tons	8.24 per ton	7.00 per ton	−11.16
	Corn, N.W.D. (ensilage)	7 tons	0.60 per ton	7.00 per ton	−25.20
B	Clover hay, crop failure				
C	Oats, Banner, and seeded	44 bush., 3 lbs.	0.70 per bu.h.	0.75 per bush.	2.21
D	Clover and timothy hay	2¼ tons	0.52 per ton	17.00 per ton	16.20

In a variety test with corn, Longfellow averaged one to two feet taller than N. W. Dent, but grain was not so well matured at harvest. Longfellow yielded nine tons to the acre as compared with seven tons of N. W. Dent.

SALMON VALLEY, B.C.

Operator, J. S. Johnson

This Station was selected in 1923. A four-year rotation is being established. In preparation, fields were skim-ploughed immediately after the hay crop was removed. The land was then rolled, disked and harrowed periodically until the second ploughing, October 15. Under this treatment, old timothy sod decomposed completely and worked down into a splendid seed bed in the spring. The season's work commenced on the Station May 5. Seed was sown May 13. Grain was cut August 27.

Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or (−) loss per acre
			$	$	$
A	Sunflowers, Mammoth Russian (fodder-green weight)	6 tons	6.70 per ton	6.00 per ton	−4.20
	Mixed, oats and peas (grain)	22 bush.	1.09 per bush.	1.75 per bush.	14.52
B	Oats, Banner, and seeded	21 bush.	0.90 per bush.	1.00 per bush.	2.10
C	Wheat, Ruby, and seeded	6⅞ bush.	3.70 per bush.	2.00 per bush.	−10.54
D	Oats, Banner, and seeded	18 bush.	1.12 per bush.	1.00 per bush.	−2.16

Sunflowers were given a heavy set-back through wire worm injury; consequently yield is low. Reseeding was necessary to fill the gaps.

Clover and grass mixture drilled in after grain was sown made almost a perfect catch and growth under dry conditions and was surprisingly good throughout the season.

Sunflowers made their strongest growth from the middle of August to the middle of September following several good showers.

SMITHERS, B.C.

Operator, Geo. Oulton

Work on the land commenced April 28, two weeks later than in 1923. Grain was sown May 5. Harvesting was completed by September 1.

Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or (−) loss per acre
			$	$	$
A	Oats, Banner (ensilage)	7tons, 1,750lbs.	2.99 per ton	8.00 per ton	39.45
	Wheat, Ruby	26 bush. 36 lbs.	0.78 per bush.	2.00 per bush.	32.45
B	Winter wheat, Dawson's Golden Chaff	11 bush.	1.33 per bush.	1.50 per bush.	1.87
	Potatoes, Early St. George	253bush.50lbs.	0.23 per bush.	1.25 per bush.	288.91
	Corn, N.W.D. (fodder)	6 tons	4.37 per ton	8.00 per ton	21.78
	Sunflowers, Mammoth Russian (fodder)	5 tons	3.23 per ton	6.00 per ton	13.85
C	Hay, clover and timothy	½ ton	32.66 per ton	22.00 per ton	−2.66
D	Hay, clover and timothy	¼ ton	32.66 per ton	22.00 per ton	−2.66

Three varieties of certified seed potatoes grown in test on this Station gave the following yields per acre: Early St. George, 331 bushels. 30 pounds; Green Mountain, 214 bushels 52 pounds; Irish Cobbler, 137 bushels 28 pounds.

Corn withstood the dry, hot season more favourably than sunflowers. Frequent cultivation kept fields clean and checked surface evaporation.

Many hours of hand labour were eliminated and cost of production of the potato crop cut down by the use of the harrow. The field was harrowed before plants showed above the soil and twice after coming up at ten-day intervals. By following this up with the one-horse cultivator for the balance of the season, weeds were effectively controlled from the start and very little hand hoeing was necessary. Cultivation should be shallower and narrower as plants increase in growth.

Most satisfactory germination of alfalfa and clover has been obtained on a firm seed-bed with seed covered and in contact with moist earth. Putting the seed into a dry surface mulch and hoping for rain is very risky and usually means wasted seed and effort. Either the seed fails to germinate altogether or the young seedling is parched before establishing itself.

TELKWA, B.C.

Operator, F. M. Dockrill

Spring was backward following an open winter. Clover and timothy came through the winter in splendid shape but high temperatures with less than an inch of rain during May and June checked growth to such an extent that the hay meadows failed to produce a reasonable crop.

Wheat was sown May 2 at one and one-quarter bushels per acre. Potatoes were planted May 20.

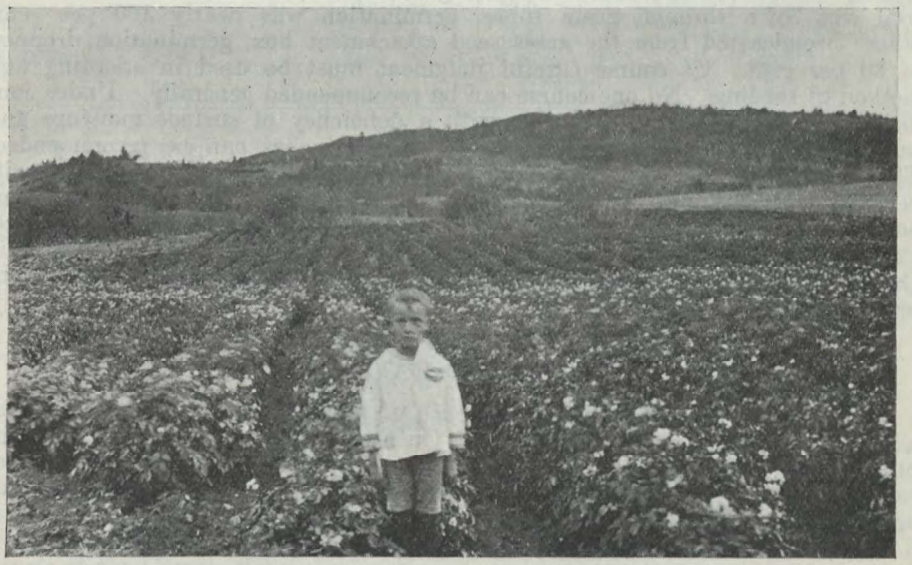
Results of the season's work are given in the following table:—

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or (−) loss per acre
			$	$	$
A	Clover and timothy hay	.....	.....	.....	.....
B	Clover and timothy hay	.....	.....	.....	.....
C	Potatoes, Gold Coin	200 bush.	0.62 per bush.	1.25 per bush.	126.00
D	Wheat, Marquis	25 bush. 19 lbs.	0.87 per bush.	2.00 per bush.	28.59
	Demonstration Field				
E	Sunflowers, Mammoth Russian (ensilage)	8 tons	4.83 per ton	7.00 per ton	17.36

Certified seed potatoes form one of the main cash crops on this Station and have proved one of the most profitable. Largely through the initiative of the Illustration Station Operator, a Bulkley Valley Local to the British Columbia Certified Seed Potato Growers' Association has been organized.

During the past year the operator added a pure-bred Yorkshire sow and boar and a pure-bred Suffolk ram to the live stock on his farm.



Gold Coin certified seed potatoes on Illustration Station at Telkwa in the Buckley Valley, B.C.

VANDERHOOF, B.C.

Operator, D. Turcotte

Fields were wind-swept and blown bare of snow during the winter. Alternate freezing and thawing in the spring resulted in severe winter injury to clovers. Up to the middle of June, a very scanty rainfall was received and hay fields suffered. Spring work commenced April 24. First seed sown May 5. A four-year rotation is now established on this Station along with three demonstration plots. On the demonstration field "E," Grimm and Turkestan varieties of alfalfa are being tested out. Various mixtures with timothy and clover, and alfalfa alone are used. Sweet clover crop on field "F" was turned under. Banner oats on field "G" were cut August 26.

FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual cost	Estimated value of crop on the farm	Profit or (−) loss per acre
			$	$	$
A	Oats, Banner, and seeded (cut for hay)	2½ tons	6.32 per ton	16.00 per ton	24.20
B	Potatoes, Green Mountain	73 bush	0.88 per bush.	1.25 per bush.	27.01
	Mixed, oats and peas (fodder)	1,667 lbs	32.05 per ton	19.00 per ton	−10.88
C	Clover hay (failure)				
D	Clover hay (failure)				
	Demonstration Fields				
E	Alfalfa (new seeding)				
F	Sweet clover (ploughed under)				
G	Oats, Banner, and seeded	41 bush	0.16 per bush.	1.00 per bush.	34.44

Timothy came through the winter with little injury. Alsike proved hardier than common red clover.

Field "G" was seeded down to sweet clover at the rate of fifteen pounds to the acre. On two acres, sweet clover was sown through the grass seed attachment in front of the drill and two acres through grain tubes four days after oats were sown. Later in the season, the advantage of using the grain drill for sowing clovers rather than broadcasting the seed was very evident. Where seed was sown through grain tubes, germination was nearly 100 per cent. Where broadcasted from the grass seed attachment box, germination dropped to 30 per cent. Of course careful judgment must be used in adopting any method of seeding. No one course can be recommended generally. Under conditions as they existed this spring with a deficiency of surface moisture and scanty rainfall, deep seeding from one to two inches can be recommended. This depth, of course, will vary with the character of the soil, for lighter soils permit deeper seeding than the heavier types. The important point to remember is that seed must be covered and put down to the moisture to germinate.

On Field "E" Grimm alfalfa gave a much stronger stand than Turkestan. Drilling in the seed through the grain tubes seems to be the most satisfactory method under test in this field.

FIELD DAY

A field day was held in July on each of the seven northern stations with a combined attendance of 240 persons. On a tour of the Illustration fields the purpose and place of a crop rotation was shown. Crops grown, methods of seeding, cultivator adjustments and other phases of the work were discussed and demonstrated.

REPORT OF THE ILLUSTRATION STATIONS FOR VANCOUVER ISLAND

Report by E. M. Straight, B.S.A.

During 1923 a beginning was made with Illustration Station work, under the Division of Illustration Stations. Two of these stations have been established, one at Courtenay, operated by Halliday Bros. and the other at Comox, operated by Mr. J. A. Carthew. Both operators have undertaken straight four-year cropping systems, viz., roots, grain, clover hay, timothy. Since 1924 was the first year at these Stations, the rotations are not fully established, but well under way.

COURTENAY, B.C.

Operator, Halliday Bros.

This station was selected in 1923. The soil is a fairly good type of red loam, containing some quantity of stones. The field was an old pasture, on which the turf was thick. Many weeds developed, which took an excessive amount of labour to control. A good friable condition of the soil was established, however, and maintained on the cultivated area.

RESULTS OF THE SEASON'S WORK

Field	Crop	Yield per acre	Actual cost per ton	Estimated value of crop per ton	Profit or loss (−) per acre
		tons	$	$	$
A	Potatoes	20.0	7.28	35.00	554.40
A	Corn	22.5	2.36	6.00	81.90
A	Turnips	15.0	3.15	5.00	27.75
B. C. D	Oats	1.05 oats	.....	40.00	
		2.50 straw	30.73	6.00	24.74

The Halliday yield of potatoes was perhaps the best ever produced in the district. Though certified seed potatoes were selling at double the price, seven tons have been sold at $35 per ton, bin run. The entire crop is based on that figure.

The Halliday Bros. have enlarged the range, and are trying out the Experimental Farm ensilage mixture, and the fall seeding of one of our hardy wheats.

COMOX, B.C.

OPERATOR J. A. CARTHEW

Some preparatory work was done on this Station in 1923, but later in the season than desired for best success. Mustard and other weeds gave some trouble, but Mr. Carthew gave the field every possible attention, and the crop responded in 1924. The soil on this area is a clay loam, but not so heavy as much of the Comox soil.

RESULTS OF THE SEASON'S WORK

Field	Crop	Yield per acre	Actual cost per ton	Estimated value of crop per ton	Profit or loss (−) per acre
		tons	$	$	$
A	Corn	22.5	2.36	6.00	81.90
B	Oat hay	3.0	10.00	15.00	15.00
C	Oats	1.05 (grain).	30.73	40.00	
		2.50 (straw)	.....	6.00	24.74
D	Oat hay	3	10.00	15.00	15.00

The fall seeding of wheat, as practised at the Experimental Station has been taken on as part of this project. The seeding of timothy in the autumn, followed by clover in late winter, is being demonstrated at this Station.

REPORT OF THE ILLUSTRATION STATIONS FOR ALBERTA

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

THE SEASON

Over certain parts of Alberta, notably the eastern half of the province, there was a pronounced shortage of moisture for the grain crops of 1924.

Illustration Stations in Alberta were instituted primarily to demonstrate improved methods of farming to the farmers who had settled in the dryer parts of the province. In fact, the policy was a direct outcome of the short crop year of 1914. Having this object in view, the majority of the places selected for work were naturally districts of known low rainfall; consequently this report deals largely with that part of the province which suffers most from adverse moisture conditions.

Upon nine of our dry-land stations the returns class as partial or total crop failures. Such results prevailed in the face of the most approved methods and practice to which our Alberta farmers have so far attained. Over that portion of the province where good crops of grain were harvested, the owners are enjoying a banner year through the enchanced price of wheat.

That the moisture conditions for the crop year of 1924 may be more clearly depicted the autumn precipitation of 1923 appears in tabular form followed by the precipitation records of 1924.

Examining figures for Lethbridge for the last twenty-three years for this four month period September to December inclusive, the fifth lowest year in moisture amount is found to be 1923. Comparing the Lethbridge figure of 2.17 inches for this season, the table shows eight Station points falling below this amount, and only two with a higher autumn rainfall for 1923, further indicating the droughty condition of those areas as they entered the crop year 1924.

Precipitation Autumn Months, 1923

—	De-lacour	Fore-most	Grassy Lake	High River	Milk River	Orion	Pincher Creek	Wain-wright	Whitla	Youngs-town	Leth-bridge
	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches
September	nil	0·22	nil	nil	0·73	0·11	0·65	0·43	nil	0·15	0·18
October	0·05	0·65	0·60	nil	1·57	0·63	0·56	nil	0·65	0·06	0·55
November	0·20	nil	0·50	0·60	0·40	0·08	1·66	nil	nil	0·10	0·53
December	0·80	nil	0·50	1·20	0·30	0·45	1·20	0·05	0·10	0·10	0·91
Totals	1·05	0·87	1·60	1·80	3·00	1·27	4·07	0·48	0·75	0·41	2·17

Monthly Precipitation at Station Points in Alberta, 1924

—	Bind-loss	Dela-cour	Fore-most	Glenwood ville	Grassy Lake	High River	Milk River	Orion	Pincher Creek	Sunny-nook	Wain-wright	Whitla	Youngs-town	Leth-bridge
	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches	inches
January	no report	0·80	1·10	no report	0·60	1·00	0·60	0·60	0·89	no report	0·30	0·70	0·45	0·66
February	"	1·10	0·50	"	0·60	0·20	0·70	0·05	0·73	"	0·45	0·70	0·20	1·04
March	"	1·20	0·30	"	0·30	2·00	1·55	0·17	2·30	"	1·25	0·60	1·02	0·69
April	"	1·60	nil	"	0·19	0·50	0·76	0·30	1·08	"	0·90	0·80	0·44	0·56
May	0·60	0·79	0·46	0·69	0·79	0·70	0·47	0·35	0·76	1·14	1·00	0·56	0·63	1·17
June	2·01	4·64	3·20	6·37	1·83	2·87	5·01	2·05	6·31	2·03	0·56	2·12	1·23	3·82
July	2·28	2·45	0·67	0·62	0·14	2·50	0·63	1·43	1·07	1·58	1·76	2·34	2·54	0·54
August	0·97	2·06	2·72	4·82	2·03	2·43	3·60	1·99	6·13	1·08	3·29	1·86	1·02	2·91
September	0·79	0·55	0·48	0·70	1·09	0·22	0·67	0·77	0·71	1·33	0·80	1·10	2·01	1·46
October	0·75	1·30	nil	1·13	0·37	1·52	1·04	0·73	1·79	0·27	0·40	0·46	0·35	0·59
November	0·63	0·80	0·50	0·80	0·90	0·90	1·00	0·60	1·36	0·30	0·55	1·00	0·60	1·02
December	1·00	1·40	0·80	1·80	0·70	1·60	0·80	0·80	2·25	0·90	1·00	1·20	1·80	1·54
Totals	.....	18·69	10·73	.....	9·54	16·44	16·83	9·84	25·38	.....	12·26	13·44	12·29	16·00

Sixteen Illustration Stations were operated in the province of Alberta during the year 1924. Within this period five new stations were started and one old Station given up, which leaves an increase of four stations over the number conducted in 1923.

The Station at Vulcan was relinquished when the operator, J. H. Cook, gave up his farm there. Two new dry-land Stations were located in the east of the province, one at Bindloss, John Barnes, operator, and the other at Sunnynook with Robert Montgomery as operator. Upon each of these locations nine 5-acre fields were aid out and cropping of a preparatory nature undertaken. Though in a nearly dried-out locality, Marquis wheat on fallow at Bindloss produced 17½ bushels per acre and Banner oats 29 bushels per acre.

These yields were from seed supplied by the Dominion Experimental Farm, Lethbridge, and as Mr. Barnes found that the wheat and oats resulting were true to type and of good quality, the stock is being husbanded for seed purposes in 1925.

Sunnynook is in a district that was completely dried out, and crop returns from the Station fields at this point were practically nothing.

IRRIGATED ILLUSTRATION STATIONS

A new feature was added to Illustration Station work in 1924. This innovation consisted in the establishing of irrigated Illustration Stations on two of the latest projects where the use of irrigation water is in its infancy.

A three-fold object actuated this undertaking; first, the demonstration of a profitable rotation, second, a good permanent pasture, and, third, the border system of irrigation for use on continuous meadows. Upon high-priced land the need is for a vigorous pasture of high carrying capacity for the summer sustenance of such animals as the farmer will find himself required to keep. For a vigorous pasture a number of floodings will be needed during the season, and in this work of pasture irrigation the border system will show itself to be a time-saving method for the application of water.

Three irigated Illustration Stations were started in the spring of 1924.

Two of these Stations are located in the Lethbridge Northern Irrigation District; one at Iron Springs, E. G. Gordon, operator, and the other at Kipp with C. M. Nicol as operator. A third irrigated Illustration Station is located in the United Irrigation District at Glenwoodville upon the land of E. G. Wood with Glen Wood as the operator.

The work upon the irrigated Stations is of an intensive rather than an extensive character. Ten fields of two acres each are laid down to a rotation that for thirteen years has proved itself to be one of the most profitable under irrigation of those employed on the Dominion Experimental Farm, Lethbridge. This rotation consists of six fields in alfalfa, one field in hoed crop, one field in wheat, one field in oats and the tenth field in barley seeded back to alfalfa.

In addition to this rotation, a permanent pasture of eight to ten acres has been laid out with a border system of irrigation and seeded heavily with a mixture of grasses and alfalfa.

On the Lethbridge Northern project where the system of farming must be changed from exclusive wheat growing to a diversification of crops that will permit of the keeping of live stock, assist in maintaining soil fertility and spread the season of work over a longer period, these irrigated Stations will provide an early example that should aid the resident farmers materially over the transition period.

Upon each of these three locations, the fields were laid off, crops seeded, ditches run and water applied in 1924.

Crop Season, 1924

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

Cost Values

Rent of land	8 per cent of land value.
Use of machinery	$1 per acre.
Manual labour per hour	Rates prevailing in the district.
Horse labour per hour	
Threshing per bush.	
Binder twine per pound	

Cost of Seed

Wheat per bushel	$ 1 20
Oats per bushel	0 68
Barley per bushel	0 85
Winter Rye per bushel	1 12
Corn N.W. Dent per pound	0 05
Sunflowers Mammoth Russian per pound	0 10
Sweet Clover, per pound	0 10
Western Rye Grass	The price paid the season the field was seeded; divided equally over years the meadow remains down.
Alfalfa	

Return Values

Alfalfa hay, per ton	$ 10 00
Western Rye Grass, hay per ton	10 00
Oat Sheaf hay per ton	10 00
Sweet Clover hay per ton	10 00
Ensilage per ton	3 50
Wheat per bush	1 40
Oats per bushel	0 50
Barley per bushel	0 80
Winter Rye per bushel	1 00

Allocating cost of Summer-fallowing

Two-thirds charged to the first crop and one third charged to the second crop.

DELACOUR, ALBERTA

Operator, A. H. Fennessey

In 1924 work on the land commenced at this station April 24. Moisture up to the end of May was somewhat scant and in consequence western rye grass did not exceed an average hay crop and sweet clover failed to make a full stand. The rains from June forward, however, were equal to the requirements of the wheat crop so that a good yield of grain was obtained.

Sunflowers were light and corn a complete failure. Climatic conditions other than moisture evidently influenced the welfare of the silage crops.

Wheat was sown at the rate of one and a half bushels per acre. Rainfall for the five months, April to August inclusive, totalled 11.54 inches.

TABLE GIVING RESULTS OF THE SEASON'S WORK AT DELACOUR

Rotation and crops	Date sown	Date cut	Yield per acre	Cost	Profit or (−) loss per acre
				$	$
Three-year rotation					
Summer-fallow				8.27 per acre	
Wheat, Marquis after fallow	April 30	Sept. 6	43 bush	0.46 per bush	40.42
Wheat, Marquis after wheat	April 30	Aug. 30	21 bush. 30 lbs.	0.64 per bush.	16 34
Four-year rotation					
Summer-fallow				8.09 per acre	
Wheat, Marquis after fallow	April 30	Sept. 1	35 bush	0.54 per bush.	30 10
Western Rye Grass (1st year)		Aug. 26	1 ton	9.41 per ton.	0.59
Western Rye Grass (2nd year)		Aug. 27	1 ton, 1,000 lbs.	4.71 per ton	7.94
Three-year rotation					
Summer-fallow				8.29 per acre.	
Wheat, Marquis after fallow	April 30	Sept. 6	38 bush	0.45 per bush.	36 10
Sweet Clover and oat hay	Oats	July 23	1,000 lbs.		
	May 21	Sept. 20	1 ton, 1,000 lbs.	4.84 per ton.	10.32
Demonstration Test Fields					
Wheat after corn and sunflowers	May 12	Sept. 15	18 bush	0.56 per bush.	15.12
Corn, a second crop	May 21		Failure	13.91 per acre.	−13.91
Sunflowers, a second crop	May 21	Sept. 20	3 tons	4.64 per ton.	− 3.42
Alfalfa in rows		Aug. 5	1 ton., 1,000 lbs.	5.16 per ton.	7.26

When sweet clover made a poor stand towards a hay crop, the sowing in of one bushel of oats per acre, May 21, gave good results by increasing hay returns. The first cut, July 23, was of sweet clover, in the second cutting September 20, the oats (fully in head) were taken with the sweet clover, and added considerably to the hay tonnage. This auxiliary oat crop changed the probable sweet clover field failure into a feed crop success.

Wheat following a western rye grass sod fallow in the four-year rotation, averaging the past two years has given five bushels less per acre than wheat following fallow in the straight grain, three-year rotation. This result is not holding constant throughout our work and therefore requires further observation before a conclusion can be arrived at.

In this district the idea is spreading that sunflowers are hard on the land or require considerable soil moisture. This contention is borne out by the present year's results. Comparing a fallow field of wheat, 43 bushels per acre, a second crop of wheat, 21 bushels per acre, with wheat after sunflowers of 18 bushels per acre, it is seen that unless sunflower ensilage is desired for its own feeding value, the crop area had better be restricted in this particular locality.

Delacour was our highest wheat-yielding Station in 1924.

AVERAGE YIELD OF FIVE YEARS 1920 to 1924 INCLUSIVE

Wheat on fallow	26 bushels per acre.
Wheat, second crop	16 bushels per acre.
Western rye grass hay	1 ton per acre.

FOREMOST

OPERATOR, T. H. FRANKISH

Work on the land commenced at this point May 7. The early promise of grain was quite favourable. On July 7, wheat was standing rich and strong in a pleasing uniform growth. This date was practically the crop turning point, a little droop to leaf indicated that the low moisture line had been reached

and that for continued progress rain was imperative. Rains failed to come, July giving less than three quarters of an inch of moisture for the entire month.

The midsummer drought destroyed all hope of a bountiful harvest and only on well-cared-for fallow was there any appreciable amount of grain harvested.

Wheat was sown at the rate of one and one quarter bushels per acre. Rainfall for the five month period April to August inclusive totalled 7.05 inches.

TABLE GIVING RESULTS OF THE SEASON'S WORK AT FOREMOST

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost	Profit or loss (—) per acre
				$ cts.	
Three-year rotation					
Summer-fallow				5.42 per acre.	
Wheat, Marquis after fallow	May 7	Aug. 27	21 bush.	0 62 per bush.	$16.38
Wheat, Marquis after wheat	May 15		Failure	9.06 per acre.	— 9.06
Three-year rotation					
Summer-fallow				5.42 per acre.	
Wheat, Marquis, after fallow	May 7	Aug. 27	20 bush.	0.70 per bush.	14.00
Oat hay, substitute for sweet clover	May 13	Sept. 15	1,200 lbs.	15.77 per ton.	— 3.46
Two-year rotation					
Wheat after corn and sunflowers	May 15		Failure	7.01 per acre.	— 7.01
Corn after wheat	May 16	Sept. 30	1 ton	7.31 per ton.	— 3.81
Sunflowers after wheat	May 16	Sept. 30	1,200 lbs.	12.18 per ton.	— 5.21

Wheat on fallow is the only crop showing a profit per acre.

In the failure of a sweet clover stand for hay the land was ploughed and sown to oats for sheaf feed. This substitute crop gave a light yield of oat hay.

The fallows that gave 21 and 20 bushels of wheat per acre when corn stubble and spring ploughed crops dried out were in 1923 fallow ploughed before June 15 and well cared for during remainder of the summer.

Average yield of wheat on fallow for ten years 1915 to 1924 inclusive is 22 bushels per acre.

GRASSY LAKE

OPERATOR, T. E. JAMES

This Station is in an area where crops were burning for want of moisture by the 1st of July and as no relief came in rains, plants dwindled back to the ground and no grain was harvested.

HIGH RIVER

OPERATOR, B. F. KISER

Work on the land commenced at this point April 19. At the opening of the season rainfall was low and this condition continued throughout May. During June, July and August the moisture received was sufficient to produce good crops of grain and sunflowers. Corn, probably owing to coolness from mountain proximity, failed to make a heavy growth.

Though the yields of wheat were good the returns were reduced to some extent by the low grades obtained in selling, early frost being in part responsible for this loss.

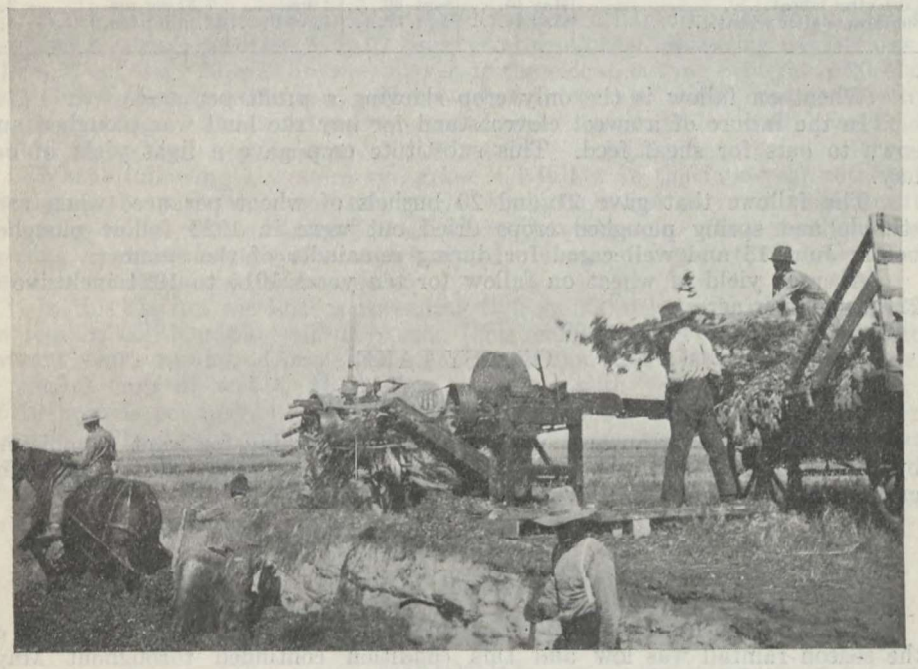
Wheat was sown at the rate of one and one quarter bushels per acre and oats at two and one quarter bushels per acre. Rainfall for the five month period April to August inclusive totalled 9.00 inches.

TABLE GIVING RESULTS OF THE SEASON'S WORK AT HIGH RIVER

Rotation and Crop	Date sown	Date cut	Yield per acre	Cost	Profit or loss (—) per acre
Three-year rotation				$ cts.	$ cts.
Summer-fallow				9.12 per acre.	
Wheat, Marquis after fallow	April 30	Sept. 4	40 bush	0.44 per bush.	38.40
Wheat, Marquis after wheat	May 1	Sept. 3	22 bush	0.57 per bush.	18.26
Two-year rotation					
Wheat after corn and sunflowers	May 1	Sept. 3	38 bush., 30 lbs.	0.34 per bush.	40.81
Corn after wheat	May 12	Sept. 11	1 ton, 667 lbs.	10.81 per ton.	— 9.75
Sunflowers after wheat	May 12	Sept. 11	12 tons	1.20 per ton.	27.60

SUNFLOWERS AND SILO

In the fore part of September, when on Mr. Kiser's farm a good crop of sunflowers was ready for saving, a trench silo was taken out. This silo averaged 43 feet in length 12 feet in width and 6½ feet in depth. Allowing 40 pounds of



Levelling silage in a trench silo with a horse and scraper.

sunflower silage to the cubic foot the capacity would be 67 tons. The silo was was filled expeditiously. Digging the trench was started on Wednesday morning, September 10, and by Saturday noon of same week the filling of silo with cut sunflowers was completed.

In the past two seasons a further aid and labour-saving idea has come into use in filling trench silos. This is to hitch the tramping horse to a slip scraper and by this means slip and sweep the cut material from centre to outer edges of silo.

In the report for 1922 an article was inserted under the heading of " Trench Silos." With the added experience of 1923 and 1924, and having this past season had charge of the work and in this capacity performed all the operations personally for the taking out of a trench silo, I cannot do better than to repeat this description as a useful guide for the carrying out of this piece of work.

"The first consideration in making a trench silo is selecting the site. Obviously the supply of feed should be near where it is to be fed; also, in locating a trench, it is advisable to select a place enclosed from running stock and one

Implements used for taking out a trench silo.

which is not traversed in the ordinary work around the buildings. Two positions are worth looking over in deciding the location. 1. The stack yard; if possible place in a hill side where no moisture could remain in the trench. 2. Adjoining the cattle stable so that ensilage may be taken direct from silo to stable. In this second instance, it probably will be necessary to improvise a roof for the trench; this would not only protect the silo from stock but would also add to the convenience in having the feed free of winter snow. Doubtless, at the present stage of development, we do not fully appreciate the combinations and adaptations that are possible in the construction and use of trench silos.

"Having selected the site, the dimensions required will need to be decided upon. One cubic foot to forty pounds of sunflower ensilage is a fair calculation. The desired width and depth of trench will be fixed while the length will remain flexible and be determined by the tonnage capacity it is aimed to secure. For example a trench twelve feet wide, eight feet deep and length averaging up to twenty-five feet would give a capacity of forty-eight tons of sunflower silage.

"Should a plain, cutting box be employed in cutting the silage crop, the best position will be found about midway along the convenient side of the trench, the box being so placed that the cut material will be delivered well over the trench edge. From the start of filling one man will be required to level silage, and in levelling it is advisable to see that the heavier, solid portions of stalks are well distributed and intermixed with the leaves. The horse and boy are needed in attendance throughout to tramp the cut material, watching for opportunities when waggons are pulling out and in, or, should a wait occur, the tramping at these times can be given extra attention. Prevention of mould pockets and waste is, to quite an extent, dependent upon the amount of levelling and tramping in the silo at the time of filling. Firmly packing the silage is essential.

"When the silo is filled and rounded up above the ground surface for a couple of feet, the silage can be allowed to settle for two days, by which time it will be down near the trench top level then the whole trench should be thoroughly sealed over until time of commencing to feed. The object of this sealing is that the air may be excluded. For covering, first a layer of fine straw, well tramped, then a heavy coarse roughage over all, will answer. A roof may well be added for keeping out the snow. This may be made by laying poles along the edges of the trench to give roof space, from these poles extending over the trench, other strips may be placed and these again may be covered with a straw or hay stack. At the front temporary doors can be put on.

"Once the silo is opened, the ensilage is removed at regular intervals and is taken in layers from the perpendicular face of the mass, working back, as the feed is used.

" The cost of growing ten acres of sunflowers and storing by use of a trench silo is not prohibitive to anyone who is engaged in farming. Where farm stock is being kept, the benefit has already, in some cases, amounted to the difference between ill-fed, degenerate cattle and well-fed, producing stock."

JENNER

Operator, Jerry Fisher

This Station is in an area that suffered from a crop failure as a result of drought.

Where grain was headed, the yield did not permit of returns equal to the cost of production. The largest amount per acre harvested on the station was four bushels. This yield was from a field that had been ploughed before June 15 as fallow in 1923. Wheat after wheat and wheat following corn and sunflowers did not give any return in grain.

MILK RIVER

Operator, P. W. Stimson

Work on the land commenced at this point April 14. This district with favourable autumn moisture in 1923, and over five inches for the month of June in 1924 came through with a fair yield and a good paying crop of wheat. Sunflowers and corn, owing to coolness, low rainfall of May, gophers and rabbits made a poor stand and ultimately the field had to be cultivated over; the plants were so sparse and weed control a necessity.

In this territory considerable organization and propaganda work to promote corn growing has been carried on amongst farmers.

Limited areas in corn well controlled may have beneficial side-line results, however, to feature corn growing as a main and salvational crop to the farmer is somewhat misleading.

Wheat on the Station was sown at the rate of one and one quarter bushels per acre. Rainfall for the five-month period, April to August inclusive, totalled 10.47 inches.

TABLE GIVING THE RESULTS OF THE SEASON'S WORK AT MILK RIVER

Rotation and Crop	Date sown	Date cut	Yield per acre	Cost	Profit of loss (—) per acre
				$ cts.	$ cts.
Three-year rotation					
Summer-fallow				6.68	
Wheat, Marquis after fallow	May 6	Sept. 5	20 bush. 12 lbs.	0.60 per bush.	16.16
Wheat, Marquis after wheat	May 24	Sept. 19	18 bush., 30 lbs.	0.69 per bush.	13.13
Two-year rotation					
Wheat after corn and sunflowers	May 16	Oct. 7	16 bush., 30 lbs.	0.49 per bush.	15.01
Corn and sunflowers after wheat	May 20		Failure	11.10 per acre.	—11.10
Demonstration Test Fields	1923				
Winter rye	Sept. 14	July 30	22 bush.	0.59 per bush.	9.02
Western rye grass (2nd year)		July 18	1 ton	5.43 per ton..	4.57
Sweet Clover Hay		July 7	1 ton, 400 lbs.	7.79 per ton..	2.66
Alfalfa in rows		July 8 Sept. 8	1 ton., 400 lbs. 1,600 lbs.	5.68 per ton..	8.64

The higher cost of production per bushel of second crop wheat over wheat after fallow in the three-year rotation is accounted for in part by the charge from high-priced fallowing of 1922 against the second crop field, and also by a different system of threshing being employed. The second crop wheat field was stack-threshed which made a labour charge of four cents per bushel more than for the threshing from stook of the field of wheat on fallow.

The operator successfully relclaimed from weeds a five acre field of alfalfa in rows.

In early spring, by use of four horses, and harrows, weeds were burnt off the alfalfa field. On may 1 the alfalfa rows were well cultivated, two horses being used for the work. July 8 the alfalfa was cut, drawn on the 15th, and on July 16 the alfalfa rows were again well cultivated. On September 8 a second crop of alfalfa hay was taken.

The alfalfa was cut with binder carried along on a bundle carrier and dumped in windrows, to save raking and to keep the dirt out of it. Early, thorough work was the secret of cleaning this alfalfa field for the season.

Alfalfa in rows gave a higher yield this season, and shows more profit per acre than does a field of western rye grass or one of sweet clover hay.

Of the crops grown under different treatments, wheat after fallow gives the largest per acre profit; next in profit is wheat after corn and sunflowers, though wheat on spring ploughing actually exceeded in yield the wheat upon the cultivated rowed-crop land. The second-crop wheat bearing a third of the 1922 fallow charges gave a cost of production which more than balanced the slight advantage it had in yield.

An excellent quality of wheat resulted from the 1924 harvest.

The average yield of wheat for nine years from 1916 to 1924 inclusive is twenty-one bushels per acre and wheat, second crop, for eight years, 1917 to 1924 inclusive, is eleven bushels per acre.

ORION

Operator, George Wagar

Work on the land commenced at this point April 8. This Station is in an area that suffered from a crop failure as a result of drought. Where grain was headed the yield did not permit of returns equal to the cost of production. Wheat was sown at the rate of one and one-quarter bushels per acre. Rainfall for the five month period April to August inclusive totalled 6.12 inches.

Table Giving Results of the Season's Work at Orion

Rotation and crop	Date sown	Date cut	Yield per acre	Cost	Profit of loss (−) per acre
				$ cts.	$ cts.
Three-year rotation					
Summer-fallow				5.61	
Wheat, Marquis after fallow	April 12	Aug. 25	3 bush., 38 lbs.	2.62 per bush.	− 4.38
Wheat, Marquis after wheat	April 25		Failure	8.36 per acre.	− 8.36
Three-year rotation					
Summer-fallow				5.56 per acre.	
Wheat, Marquis after fallow	April 26	Aug. 25	4 bush., 24 lbs.	2.16 per bush.	− 3.34
Sweet clover and oat hay	Oats, June 27		Failure	7.74 per acre.	− 7.74
Two-year rotation					
Wheat after corn and sunflowers	April 19		Failure	3.58 per acre.	−3.58
Corn and sunflowers after wheat	May 13		Failure	7.71 per acre.	− 7.71
Demonstration Test Field	1923				
Winter rye reseeded with oats	Sept. 21		Failure	9.27 per acre.	− 9.27
	1924 May 21				

PINCHER CREEK

Operator, Sandgren and Carlson

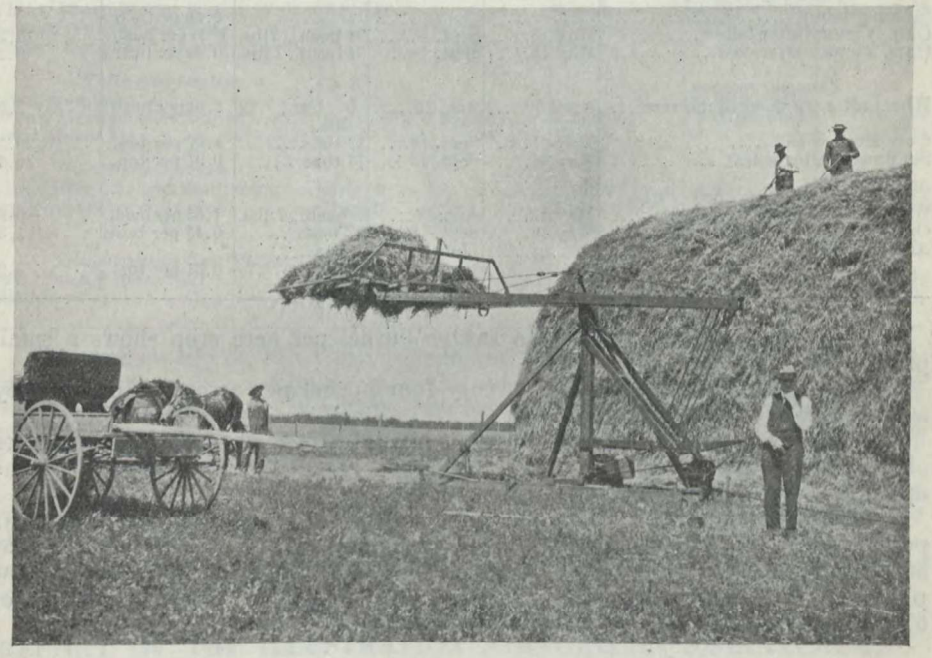
Work on the land commenced at this point April 16. Moisture conditions here have been favourable, as seen by the 1923 total of 28.61 inches of precipitation, which was for that year 6.74 inches above any other of the twenty-eight centres that reported to the Dominion Experimental Station at Lethbridge.

Certain localities of the Pincher Creek district have a weed problem to contend with. The cropping order of the illustration fields the past season was planned and carried out with the object of controlling the existing weed menace.

Barley, sweet clover and winter rye were selected as cleaning crops, barley for the reason that late seeding could be prefaced with early cultivation, thus killing spring weeds, and the early harvesting of grain would catch certain other weeds before they were matured sufficiently to reseed the land. Sweet clover is being used (in part) as a smothering crop. The luxuriance with which this plant grows at Pincher and also its early development would aid in subduing some and early cutting of sweet clover hay would catch other persisting weeds before they went to seed. Winter rye was sown on land that was this year fallowed, that through its early harvesting, weeds that survive the 1924 summer-fallow may be checked with the binder in 1925. Rainfall for the five month period April to August inclusive totalled 15.35 inches.

TABLE GIVING THE RESULTS OF THE SEASON'S WORK AT PINCHER CREEK

Treatments for weed control	Date sown	Date cut	Yield per acre	Cost	Profit of loss (—) per acre
				$ cts.	$ cts.
Summer-fallow				9.81	
Barley, Trebi after fallow	May 24	Sept. 13	54 bush	0.38 per bush.	22.68
Oats, Liberty, hulless	May 24	Sept. 15	22 bush., 20 lbs.	0.66 per bush.	— 3.59
Western rye grass (1st year)		July 21	1,200 lbs	17.84 per ton	— 4.70
Western rye grass (5th year)		July 21	1,200 lbs	10.32 per ton	— 0.19
Sweet clover hay		July 16 Sept. 15	1 ton, 1,200 lbs. 1,400 lbs	7.13 per ton	6.61
Alfalfa hay		July 9 Sept. 15	1 ton 1,000 lbs	6.66 per ton	5.00



A convenient hay stacker in use at Pincher Creek, Alberta.

WAINWRIGHT

OPERATOR, G. C. BOYD

Work on the land commenced at this point April 28. Moisture conditions were unfavourable in the Wainwright district not only during the 1924 growing season but also for the autumn of 1923 and the winter of 1924. The last four months of 1923, September to December inclusive, registered 0.48 inches, less than half an inch of moisture; the winter months of 1924, January, February and March, gave 2 inches, and the five months, April to August inclusive, 7.51 inches of precipitation. These amounts of moisture fell below the requirements for an average crop of wheat and the best yield obtained on the Station fields was 13 bushels and 36 pounds per acre. Wheat was sown at the rate of one and one quarter bushels and oats at two bushels per acre.

TABLE GIVING THE RESULTS OF THE SEASON'S WORK AT WAINWRIGHT

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost	Profit or loss (−) per acre
				$ cts.	$ cts.
Three-year rotation					
Summer-fallow				7.58 per acre.	
Wheat, Marquis after fallow	April 29	Aug. 25	13 bush., 36 lbs.	1.11 per bush.	3.94
Wheat, Marquis after wheat	May 3	Aug. 26	12 bush., 48 lbs.	0.94 per bush.	5.87
Four-year rotation					
Summer-fallow				6.98 per acre.	
Wheat, Marquis after fallow	April 30	Aug. 26	12 bush., 12 lbs.	1.19 per bush.	2.56
Western rye grass (1st year)		July 23	1 ton, 200 lbs.	8.22 per ton..	1.96
Western rye grass (2nd year)		July 23	1,400 lbs.	9.20 per ton..	0.56
Three-year rotation					
Summer-fallow				6.45 per acre.	
Oats, Victory after fallow	May 15	Sept. 8	54 bush., 7lbs.	0.31 per bush.	10.29
Oats, Victory after oats	May 15	Sept. 8	24 bush., 7 lbs.	0.49 per bush.	0.24
Two-year rotation					
Wheat after corn and sunflowers	April 30	Aug. 25	9 bus., 12 lbs.	1.01 per bush.	3.58
Corn after wheat	May 31	Sept. 13	12 tons	1.07 per ton..	29.16
Sunflowers after wheat	May 31	Sept. 13	14 tons	0.91 per ton..	36.26
Demonstration Test Fields					
Wheat, Ruby following wheat	May 12	Aug. 26	7 bush., 7 lbs.	1.53 per bush.	−0.92
Oats, Banner, following oats	May 15	Sept. 8	27 bush.	0.45 per bush	1.35
Alfalfa in rows		July 22	1 ton		
		Oct. 6	1,200 lbs.	6.31 per ton..	5.91

With wheat valued at $1.40, a twelve bushel per acre crop shows a small profit.

With oats valued at $0.50 a twenty-four bushel per acre crop comes very near the cost of production line.

Ten acres of western rye grass, five acres of alfalfa in rows and five acres of corn and sunflowers gave a good feed supply for all live stock carried by the operator's half-section farm.

Ploughing 15 acres of summer-fallow with a two-furrow plough cost $1.81 per acre (valuing horse labour at 10 cents per horse per hour and teamster at 30 cents per hour). Ploughing 15 acres of summer-fallow with a three-furrow plough cost $1.14 per acre. The third mould-board thus effected a saving of 67 cents per acre on the operation of ploughing fallow.

WHITLA

OPERATOR, R. H. BABE

Work on the land commenced at this point April 23. This Station is in an area that suffered a crop failure as a result of drought.

YOUNGSTOWN

Operator, G. S. Coad

Work on the land commenced at this point April 3. Moisture in this district was very low. For the last four months of 1923, October to December, 0·41 of an inch of precipitation was received; for the first three months of 1924, the precipitation amounted to 1·67 inches, and for the five-month period, April to August, a total of 5·86 inches. Summing up the twelve months, September-

1, 1923, to August 31, 1924, the year's precipitation amounts to 7·90 inches. These dry conditions resulted in a very light crop and one which did not meet the cost of production. Late summer rains seemed favourable to a rank growth of pigweed.

TABLE GIVING RESULTS OF THE SEASON'S WORK AT YOUNGSTOWN

Rotation and Crop	Date sown	Date cut	Yield per acre	Cost	Profit or loss (−) per acre
				$ cts.	$ cts.
Three-year rotation					
Summer-fallow				5.02 per acre.	
Wheat, Marquis, after fallow	April 30	Sept. 4	7 bush.	1.68 per bush.	−1.96
Wheat, Marquis after wheat	May 7		Failure	8.22 per acre.	−8.22
Four-year rotation					
Summer-fallow				5.21 per acre.	
Wheat, Marquis after fallow	April 30	Sept. 4	6 bush.	1.82 per bush.	−2.52
Western rye grass (1st year)			Failure	6.03 per acre.	−6.03
Western rye grass (1st year)			Failure	4.15 per acre.	−4.15
Three-year rotation					
Summer-fallow				5.68 per acre.	
Wheat, Marquis after fallow	April 30	Sept. 5	6 bush.	2.00 per bush.	−3.60
Sweet clover hay			Failure	6.11 per acre.	−6.11
Two-year rotation					
Wheat after corn and sunflowers	May 9		Failure	6.10 per acre.	−6.10
Sunflowers after grain crop	May 27	Sept. 5	3 tons, 1,000 lbs.	2.77 per ton.	2.56
Demonstration Test Fields					
Oats, Banner, green feed	May 10	Sept. 3	1,000 lbs.	15.53 per ton.	−2.76
Alfalfa			Failure	3.62 per acre.	−3.62

The trench silo on Mr. Coad's farm was filled or partially filled with whatever green crop was available to make into silage. The corn and sunflower crop being a near failure, weed and late growth grain crops were resorted to, so that at least some measure of succulent fodder would be on hand for feeding the milking cows.

Side-lines of farming (in the short districts) are occupying a growing place in the endeavour to insure a living over a lean period. In fact, side-lines from wheat are receiving increased attention the province over. In times like these, the cow, the hog, the hen, and the vegetable garden, play a strong part in the support of the farm house.

REPORT OF THE ILLUSTRATION STATIONS IN SASKATCHEWAN

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

Twenty-three Illustration Stations were operated in the province of Saskatchewan in 1924. Four of these are new Stations on which work was started this spring. The three Stations in the extreme eastern part of the province, namely, Churchbridge, Wawota and Kamsack, have been placed under the supervision of the Dominion Experimental Farm at Brandon, Manitoba.

The season of 1924 was one of extreme drought in most of the districts where Illustration work was carried on; however, climatic conditions were favourable for crop production at four of the Stations in the southern part of the province. At two points hail did serious damage and upset all results.

The value of the bare summer-fallow as a preparation for a grain crop was well demonstrated this year, when wheat after wheat and wheat after corn in most cases failed, while the crop on the fallow seldom failed to show a profit.

There were some failures in corn, but they were due principally to the cool weather at the time the crop was germinating. Sweet clover made the best

showing of the hay and pasture crops under drought conditions, and gives promise of becoming a suitable pasture and hay crop for semi-arid districts.

Trench silos were put in at three more of the Stations this summer, and filled with corn and sunflowers; at one place green oats and Russian thistles were also used.

In order to arrive at the cost of producing crops, the following charges are used:—

Rent of land, per acre	8 per cent interest on land value.
Use of machinery per acre	$1.
Manual labour	Rates prevailing in the district.
Horse labour	
Threshing	
Binder twine	

The Cost of Seed—

Wheat, per bushel	$1 20
Oats, per bushel	0 60
Barley, per bushel	0 75
Rye, per bushel	0 75
Corn, per bushel	2 50
Sunflowers, per pound	0 10
Sweet clover, per pound	0 10
Western rye grass, per pound	0 10
Brome grass, per pound	0 11
Alfalfa, per pound	0 40

In calculating the profit from each crop, the following values have been allotted:—

Wheat, per bushel	$1 40
Oats, per bushel	0 50
Barley, per bushel	0 80
Hay, per ton	10 00
Corn (silage) per ton	3 50
Corn (fodder) per ton)	7 00
Sunflower (silage) per ton	2 75

MEETINGS

In addition to the regular inspections made of the Stations by the supervisor in connection with the routine work, field meetings were held by the Superintendent of the Dominion Experimental Station at Swift Current, and the Supervisor of Illustration Stations at the following places: Avonlea, Radville, Weyburn, Parkbeg, Tugaske, Herbert, Shaunavon, Kindersley, Meota, Spruce Lake, and Lloydminster.

RAINFALL FOR 1924 IN INCHES—SASKATCHEWAN

Station	April	May	June	July	August	September	October	November	Total
Shaunavon	.....	1·03	2·86	1·65	1·66	0·27	0·87	.....	8·34
Ogema	0·28	0·48	3·00	2·03	2·45	1·02	0·73	.....	9·99
Radville	.....	0·21	4·39	1·29	2·28	2·15	0·94	.....	11·26
Trossachs	0·35	0·30	3·29	1·76	1·78	4·48	1·52	0·05	13·53
Weyburn	0·06	.....	1·84	1·32	1·68	1·47	2·10	0·20	8·67
Avonlea	.....	0·30	1·82	1·87	3·10	0·75	.....	.....	7·84
Parkbeg	0·45	0·95	1·26	1·04	1·44	0·17	1·55	0·13	6·99
Tugaske	0·50	1·10	1·11	1·95	1·70	0·27	3·38	.....	10·01
Riverhurst	.....	1·14	1·35	0·87	.....	0·61	2·21	.....	6·18
Demaine	.....	1·01	2·16	0·89	2·13	0·50	3·74	0·21	10·64
Herbert	.....	2·09	0·87	0·44	1·46	0·65	0·30	.....	5·81
Pamburn	.....	1·81	2·89	2·42	2·66	.....	1·50	.....	11·28
Davidson	0·83	1·01	0·62	1·76	1·56	0·35	1·54	0·30	7·47
Guernsey	.....	.....	0·73	1·04	1·89	0·32	1·09	.....	Recording started June 1
Marcelin	.....	.....	1·09	0·72	2·17	0·95	1·85	.....	Recording started June 1
Meota	.....	0·56	0·39	0·97	1·15	1·43	0·88	.....	5·38
Spruce Lake	.....	1·95	0·54	0·77	1·62	0·38	0·65	.....	5·91
Lloydminster	0·07	0·45	0·57	2·19	4·34	0·07	0·10	.....	7·79
Kindersley	0·32	0·80	0·83	2·32	3·11	1·04	0·60	0·35	9·37
Empress	0·14	0·94	1·33	1·90	1·08	0·77	0·73	0·34	7·23
Cabri	.....	.....	.....	.....	2·41	0·26	2·58	0·40	Recording started August 1
Cadillac	0·37	1·97	5·14	4·21	2·33	0·48	2·15	.....	16·65
Maple Creek	.....	0·28	3·62	1·79	2·36	1·86	0·66	.....	10·57
Carlea	0·42	1·91	1·25	0·52	1·16	0·84	1·57	.....	7·67
Swift Current	0·15	2·73	2·51	2·06	2·32	0·68	3·16	0·55	14·16

AVONLEA

Operator, J. W. Miller

The spring opened about the average time and seeding on the Illustration Station was started April 23. The growing season was one of extreme drought with only 3·99 inches of rain from April to August. A cool, dry spring was followed by a hot wave in June, which checked the growth of all crops. The heavy rains did not come in time to be of assistance to the wheat crop. The first harvesting was done August 23.

The following table gives the results of the season's work:—

OPERATIONS AT AVONLEA

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Six-year rotation—					
Fallow				7.23 per acre.	
Wheat, Marquis		Crop a failure owing to drought.			
Oats, Banner	May 22	Sept. 4	20 bush.	0.44 per bush.	1.20
Corn, N.W. Dent	May 28	Sept. 5	3½ tons	3.14 per ton	1.26
Wheat, Marquis, seeded with half sweet clover half western rye grass	April 23	Aug. 23	3 bush.	2.45 per bush.	−3.15
Hay, sweet clover		July 4	1½ tons	6.77 per ton	4.03
Western rye grass		July 7	½ ton	13.70 per ton	−1.85
Three-year rotation—					
Fallow, Hay, western rye grass this year	1923	July 7	1 ton	6.06 per ton	3.94
Wheat, Marquis	April 23	Sept. 3	7 bush.	1.19 per bush.	1.47
Wheat, Marquis	May 8	Sept. 4	5 bush.	2.58 per bush.	−5.90
Demonstration Test Fields—					
Wheat, Kubanka	May 8	Sept. 3	8 bush.	1.08 per bush.	2.56

The corn made a poor growth early in the season owing to the cool, dry weather, but with the rains and warmth later in the summer, it recovered and produced a fair crop.

Sweet clover hay gave over double the yield of western rye grass on a field where both were sown with wheat on fallow last year. However, western rye grass second year crop, on another field gave a yield of one ton per acre.

DAVIDSON

Operator, Reuben Lloyd

Spring opened late this year, the first seeding on the Station being done May 7. This was a very unfavourable season for the production of all crops. The spring was cold and the rainfall during the growing season was very light, with only 3·72 inches from the opening of spring until August 1, and 5·28 inches until the beginning of harvest, which was the first week in September.

The following table gives the results of the season's work:—

OPERATIONS AT DAVIDSON

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or loss (−) per acre
				$ cts.	$ cts.
Six-year rotation—					
Fallow				6.25 per acre	
Wheat, Marquis	May 7	Sept. 8	1½ bush.	9.26 per bush.	−9.43
Oats, Banner	May 16	Sept. 10	8 bush.	1.54 per bush.	−8.32
Corn, N.W. Dent	Failure on account of cold and drought; ploughed down; land fallowed.				
Wheat (seeded with ½ western rye grass, ½ sweet clover)	May 7	Sept. 8	1⅛ bush.	7.12 per bush.	−9.15
Hay (all sweet clover this year)	1923	July 17	½ ton	13.92 per ton	−1.96
Three-year rotation—					
Fallow				6.25 per acre	
Wheat, Kubanka	May 8	Sept. 8	2½ bush.	2.86 per bush.	−3.65
Oats, Banner	May 16	Sept. 10	4 bush.	2.32 per bush.	−7.28
Demonstration test fields—					
Alfalfa, Grimm	Not sufficient growth for a hay crop this year.				

Wheat on fallowed land, also after corn and on spring-ploughed stubble, and oats after wheat, were all produced at a loss this year. Wheat on a fallow where sweet clover was ploughed in gave a slightly heavier yield than on ordinary fallow. The quality was also the best.

Sweet clover hay was cut once, July 17, then the land was ploughed and fallowed the remainder of the season. This field had been pastured closely the preceding fall and winter, but even with all the adverse conditions, ½ ton per acre of good quality hay was produced.

An alfalfa field which has been down for three years did not make sufficient growth for a hay crop, on account of the extreme drought. This is the first year alfalfa has not given a profitable hay crop.

A start was made in raising a pure-bred flock of Barred Rock chickens this year. A number of cockerels have already been sold in the district.

DEMAINE

Operator, W. J. Swan

Spring opened a little later than usual and the first seeding was done the last day of April. The spring was cool and dry but during the month of June the rainfall was 2·16 inches and all crops made favourable growth. Though it was dry later, yet the season's moisture was sufficient and timely enough to produce a fair crop. Harvest was started September 2.

The following table gives the results of the season's work:—

OPERATIONS AT DEMAINE

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Six-year rotation—					
Fallow				5.72 per acre	
Wheat, Marquis, on fallow	April 29	Sept. 3	19 bush.	0.75 per bush.	12.35
Oats, Banner, on fallow	May 23	Sept. 3	36¾ bush.	0.39 per bush.	4.04
Corn, N.W. Dent	Crop destroyed by wire worms (land fallowed)				
Wheat seeded with half sweet clover and half western rye grass	May 1	Sept. 5	26½ bush.	0.60 per bush.	21.00
Hay (wheat 2nd crop substituted this year)	May 1	Sept. 6	8⅓ bush.	1.24 per bush.	1.33
Three-year Rotation—					
Fallow				7.74 per acre	
Wheat, Marquis, on fallow	April 30	Sept. 6	12½ bush.	1.07 per bush.	4.04
Wheat, Marquis, 2nd crop	May 23	Sept. 13	7½ bush.	1.48 per bush.	−0.60
Demonstration Test Fields—					
Brome and sweet clover seeded with nurse crop of oats (green feed)	May 23	Sept. 3	1¼ tons	4.80 per ton	6.50
Western rye grass and alfalfa seeded with oats	May 23	Sept. 3	1 ton	6.00 per ton	4.00

Wire worms did considerable damage in this district. On the Station fields some of the wheat was quite patchy.

Wheat second crop was sown partly on spring ploughing and partly on cultivated stubble. The ploughed land gave much the better stand, as it did not suffer nearly so much from the wire worms.

Two methods of handling the summer-fallow are being tried on this Station ploughing and surface working as necessary, as against surface working alone, principally with the duckfoot cultivator. This season there was practically no difference in the two crops. There will be quantity of pure Marquis seed wheat for sale at this Station this year.

EMPRESS

Operator, William Rowles

Spring opened about the usual time and the first grain was sown on the illustration fields April 10. The season was one of extreme drought during the growing period, and all crops suffered. Harvesting was started August 19.

The following table gives the results of the season's work:—

OPERATIONS AT EMPRESS

Rotations and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Four-year Rotation—					
Fallow				5.35 per acre	
Wheat, Marquis, on fallow	April 10	Aug. 19	4 bush.	2.51 per bush.	−4.44
Corn, Quebec 28	Crop very thin and short; damaged by wireworms; used for pasture.				
Wheat, Marquis, after corn	A failure; crop ploughed down.				
Five-year Rotation—					
Fallow				4.72 per acre	
Wheat, Marquis	April 10	Aug. 19	3½ bush.	2.61 per bush.	−3.93
Corn, N.W. Dent, destroyed by wireworms; oats resown July 7			(2 tons green feed)	2.59 per ton	14.82
Wheat seeded with half sweet clover, half western rye grass	May 7	Aug. 30	3½ bush.	2.61 per bush.	−3.93
Hay (substituted wheat this year)	April 14	Aug. 19	5½ bush.	1.62 per bush.	−1.11
Demonstration Test Fields—					
Sweet clover, without a nurse crop	1923	July 10	½ ton	6.36 per ton	1.82
Brome Grass	Seeded this year with a light nurse crop of oats				

There are two rotations of crops under way on this Station; namely, a four and a five-year rotation; in each, wheat is always sown on either summer-fallow or corn land.

This year wheat after corn was not worth harvesting and was ploughed down. Wheat on fallow gave a yield of 5¼ bushels per acre.

The corn crop was badly damaged by wireworms and drought combined, so the crop was practically a failure.

Sweet clover gave approximately ½ ton per acre in a dry season. The stand was thin in places due to winter killing.

The only crop which showed a clear profit was oats for green feed sown July 7 after the corn had failed. These had the advantage of the later rains of July and August, and made strong growth, giving a yield of 2 tons per acre.

Mr. Rowles put in a trench silo this summer. It is 50 feet long, 12 feet wide and 8 feet deep. This was partly filled with green oats and Russian thistles. Some corn and sunflowers were added later.

GUERNSEY

Operator, C. H. Snider

Spring opened about the usual time and the first seeding on the illustration fields was done April 28. The rainfall for the growing season was much below the average for this district and all crops suffered from drought. Cool nights in the spring also retarded growth. Some damage was caused from soil drifting on crops after fallow. Corn and sunflowers were able to take advantage of the late summer rains and gave first yields. Harvest was started September 1.

The following table gives the results of the season's work:—

OPERATIONS AT GUERNSEY

Rotations and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
			-	$ cts.	$ cts.
Four-year Rotation—					
Fallow				8.61 per acre	
Wheat, Marquis, on fallow	April 28	Sept. 8	9¾ bush.	1.31 per bush.	0.87
Oats, Banner, on fallow, seeded with western rye grass, brome and sweet clover mixture	May 15	Sept. 1	35 bush.	0.42 per bush.	2.80
Hay	Wheat substituted for this year.				
Three-year Rotation—					
Fallow	Wheat substituted for this year.				
Banner oats seeded with sweet clover	May 15	Sept. 27	35 bush.	0.45 per bush.	1.75
Hay	Wheat substituted this year.				
Demonstration Test Fields—					
Corn, N.W. Dent	May 27	Sept. 25	3 tons	3.98 per ton	9.06
Sunflowers, Giant Russian	May 27	Sept. 25	6½ tons	1.76 per ton	6.45
Western rye grass hay	1923	July 18	1 ton	8.07 per ton	1.93

Work was started in this district in the spring of 1924. One of the main reasons why a request was made by the people of this locality for illustration work was on account of the prevalence of sow thistle, not only in this district but in a large area adjoining. In view of the tendency of the menace to spread and the increased cost of production of crops necessary in order to keep this weed under control it was thought advisable to carry on some work with the object in view of co-operating with the farmer in controlling and, if possible, eradicating this weed; at the same time producing profitable crops.

A beginning was made with two rotations, one of a three-year, and the other of a four-year duration. The three-year rotation is as follows: first year fallow; second year oats seeded with sweet clover; third year sweet clover hay.

On a farm where the thistles are very bad and mature before the oats ripen, the oats could be taken off for green feed or made into silage in a trench silo. This rotation may be changed later to include two crops of oats as well as sweet clover by doing the fallowing after the sweet clover hay crop is taken off or pastured for a time.

The four-year rotation includes the following crops: first year, fallow; second year, wheat; third year, oats seeded with a mixture of western rye grass, brome and sweet clover; fourth year, hay.

The hardest blow is given the thistle in the bare fallow, if it is properly worked. Those who most successfully combat this weed, plough the fallow early in June to a fair depth and follow this with frequent, thorough cultivations, using the duckfoot cultivator so as to prevent the thistle making growth above the ground.

This method is followed on the Station fields. In order to test the value of ploughing the fallow twice, one field is being treated this way.

Pure seed of Marquis wheat and Banner oats was used last spring for sowing the fields. Two of the fields were sown with registered wheat. The aim is to make the Station a source of supply of good seed for the people of the district. Any surplus seed can always be purchased from the operator at a fair price, by neighbouring farmers.

HERBERT

Operator, Milton Holmes

Spring was quite late and there was no seeding done on the illustration fields until May 10. The climatic conditions were unfavourable for crop production this year, with a cold spring and a light rainfall during the growing season. Most of the crops came through better than expected. Harvest began September 1, and alfalfa hay was cut July 7.

The following table gives the results of the season's work:—

OPERATIONS AT HERBERT

Rotations and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Three-year Rotation—					
Fallow				8.90 per acre	
Wheat, Marquis, on fallow	May 10	Sept. 1	18 bush	0.83 per bush.	10.26
Wheat, Marquis, following wheat	May 10	Sept. 1	6⅞ bush	1.85 per bush.	−2.88
Six-year Rotation—					
Fallow				10.19 per acre	
Wheat, brome grass hay this year		July 15	¾ ton	8.99 per ton	0.75
Oats, Banner, green feed	May 10	Sept. 1	1 ton	10.49 per ton	−0.49
Corn, N.D. White Flint	May 16	Aug. 26	3 ton (green weight)	3.88 per ton	−1.14
Wheat, Marquis, seeded with half western rye grass, half sweet clover	May 10	Sept. 2	16 bush	0.94 per bush.	7.36
Hay, sweet clover		July 14	¾ ton	12.44 per ton	−1.83
Western rye grass		July 8	1½ tons	6.28 per ton	2.44
Alfalfa, Grimm (30-inch rows)	June, 1921	July 7	1 ton (1st cut)	3.83 per ton	10.79
		Aug. 20	1,500 lbs. (2nd cut)		

Wheat on fallowed land gave a profitable crop in a dry season, while wheat after wheat was produced at a loss.

Alfalfa in 30-inch rows gave excellent results this year. Two cuttings were taken July 7 and August 20, with a yield of 1¾ tons per acre of high quality hay.

Sweet clover sown 1923 without a nurse crop on spring-ploughed stubble land gave two cuttings of hay this year with a total yield of 1½ tons per acre.

Western rye grass sown the same way gave ¾ ton, while brome second crop gave ¾ ton also.

Corn made a poor germination owing to the cold spring, hence the crop was thin.

The quality of the wheat is fair, but not as good as last year.

The type of silo in use at this Station is a large trench with a framework made of posts with the walls planked. The excavation is in a bank so the open end is on the ground level. When the silo is not completely filled a portion can be used for a stable.

KINDERSLEY

Operator, Robert Simpson

Spring opened here about a week later than usual and the first seeding was done on the Station on April 29. The soil was quite moist at the time of seeding, but the rainfall for the season was only 9·37 inches, which is much below the normal, and from April 1 to August it was only 4·27 inches. Harvest was later than usual; wheat cutting began August 28.

The following table gives the results of the season's work:—

OPERATIONS AT KINDERSLEY

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Six-year Rotation—					
Fallow	.....	.....	.....	8.83 per acre	
Wheat, Marquis, on fallow	April 29	Aug. 28	16½ bush.	0.80 per bush.	9.90
Oats, Banner	May 19	Oct. 1	1½ tons (green feed).	6.37 per ton	5.44
Corn, N.W. Dent, N.D.W. Flint	May 29	Used for pas	ture as crop w	as very light.	
Wheat after corn seeded with half sweet clover, half rye grass	April 29	Sept. 2	7½ bush.	1.07 per bush.	2.47
Hay, sweet clover	1923 (with nurse crop of wheat)	Aug. 4 and Sept. 12	1 ton	10.02 per ton	−0.02
Western rye grass	Not sufficie	nt growth to	make a hay c	rop worth han	dling.
Three-year Rotation—					
Fallow (ploughed and surafce worked)	.....	.....	.....	6.76 per acre	
(surface worked only)	.....	.....	.....	4.74 per acre	
Wheat, Marquis, on fallow	April 29	Aug. 28	15½ bush.	0.87 per bush.	8.12
Wheat, Marquis	April 30 rotation s	Not worth tarted).	harvesting (3r	d crop this ye	ar to get
Demonstration Test Fields—					
Brome grass (hay)	June, 1923	Not sufficie	nt growth to	make a hay cr	op.
Alfalfa, Grimm (hay)	June, 1923 (with nurse crop of oats)	Sept. 12	½ ton	11.92 per ton	−0.96

Wheat on the well-prepared summer-fallow made a remarkable showing in spite of the drought.

Oats looked like a failure, but benefited by the later rains and gave a fair yield of green feed.

Hay crops suffered from the cold, dry spring and growth was short.

Sweet clover made a good showing as a hay crop for a dry season. It was cut twice and gave a total yield of one ton per acre, while western rye grass and brome did not make sufficient growth to cut. These were all sown last year with the grain crop on fallow.

Alfalfa made practically no growth until the July and August rains came; it then recovered and later gave a yield of half a ton per acre of excellent hay.

Considerable seed grain has been sold by the operator of this Station to neighbouring farmers, and some excellent seed wheat is available again this year.

A field meeting was held at this Station early in August, which was well attended by farmers of the district.

LLOYDMINSTER

Operator, Hugh Hill

Spring opened the latter part of April. There was not much work done on the land until the first days of May. The first wheat on the Station was sown May 2. The season's rainfall was below the average (7·72 inches), and the heaviest rains came late in the season; however, grain crops came through much better than expected, but the hay crop was light. Harvesting was started on September 1.

The following table gives the results of the season's work:—

OPERATIONS AT LLOYDMINSTER

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Five-year Rotation—					
Fallow				8.73 per acre	
Wheat, Marquis (Reg.)	May 10	Sept. 8	22 bush.	0.67 per bush.	16.06
Oats, Banner (Reg.), seeded with western rye grass and alfalfa	May 13	Sept. 15	46 bush.	0.28 per bush.	10.12
Hay (1st year)		Aug. 16	¾ ton	6.63 per ton	2.69
Hay (2nd year)		Aug. 16	.0 lbs.(seed)	0.09¾ per lb.	−1.18
Three-year Rotation—					
Fallow				7.46 per acre	
Oats seeded with sweet clover	May 21	Sept. 19	51 bush.	0.26 per bush.	12.24
Hay, Oats substituted this year	May 21	Sept. 19	47 bush.	0.33 per bush.	7.99
Two-year Rotation—					
Corn	May 27	Sept. 15	3 tons	4.64 per ton	−3.42
Sunflower silage	May 27	Sept. 18	8 tons	1.79 per ton	7.68
Wheat after corn and sunflowers	May 2	Sept. 1	21 bush.	0.46 per bush.	19.74
Demonstration Test Field—					
Wheat, Ruby, on fallow	May 7	Sept. 1	19 bush.	0.73 per bush.	12.73

Sunflowers gave a much heavier crop than corn this year. The cool weather in the early part of the season was particularly unfavourable for corn.

Ruby wheat was cut a week earlier than Marquis, but there was no damage from frost to any of the wheats.

All the wheat is an excellent quality and some has been sold already for seed to neighbouring farmers. A part of the land was sown this year with registered Marquis and some of this will also be for sale.

Registered Banner oats were procured from the Scott Experimental Station this spring for sowing the Illustration fields. Some of this seed will also be available for distribution.

A field meeting was held here early in August.

MEOTA

Operator, Walter Tait

Spring opened later than usual and the first seeding on the Station was done April 29. The season was extremely unfavourable for crop production. The rainfall for the four principal months of growth—April to August—was only 1·92 inches, and each rain gave less than ½ inch of moisture. Cold weather also prevailed early in the season and frost was recorded twenty-two nights during May and four nights in June.

Harvest was started August 13.

The following table gives the results of the season's work:—

OPERATIONS AT MEOTA

Rotation and crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or loss (−) per acre
				$	$
Three-year rotation					
Fallow				6.67 per acre	
Wheat, Marquis, on fallow	April 29	Aug. 21	14¾ bush.	0.94 per bush.	6.78
Wheat, Marquis, following wheat	April 30	Aug. 13	4½ bush.	2.46 per bush.	−4.77
Five-year rotation					
Fallow				8.28 per acre	
Wheat, Marquis	April 29	Aug. 21	12½ bush.	1.15 per bush	3.12½
Oats, Banner, seeded with western rye grass and alfalfa	May 13	Aug. 28	½ ton (green feed)	48.30 per ton	−7.66
Hay, western rye grass (1st year)		Sept. 1	½ ton	25.97 per ton	−3.19
Hay, western rye grass (2nd year)		Not worth cutting.			
Three-year rotation					
Fallow				6.67 per acre	
Wheat seeded with sweet clover	April 30	Aug. 22	13 bush.	1.01 per bush.	5.07
Hay, sweet clover killed out re-seeded with millet	June 5	Sept. 9	1 ton	8.39 per ton	1.61
Two-year rotation					
Corn	Crop a failure owing to drought and cutworms.				
Wheat, Marquis, after corn	May 6	Aug. 13	3 bush.	2.84 per bush.	−4.32
Demonstration Test Field					
Alfalfa, Grimm (seed)		Sept. 12	120 lbs.	0.07½ per lb.	39.18

This season demonstrated the value of the summer-fallow, as wheat grown on fallow was the only wheat that was able to come through with a profitable crop. Again this year wheat in the five-year rotation on fallow after two years of hay yielded less than wheat on fallow after two wheat crops. The rotation which showed the most profit this season was the three year rotation with wheat. Western rye grass hay, both first and second year crops made practically no growth worth cutting. First year crop was cut late and gave a small yield of hay.

Sweet clover killed out this year and the field was reseeded to millet (Hungarian). This produced a hay crop of one ton per acre. This is the second year that sweet clover, seeded with a nurse crop has failed to make a stand on this Station. This spring the Arctic variety was used to ascertain if a hardier sort would give better results.

Corn had many enemies this year cold, drought and cutworms; as a result it failed to make a satisfactory stand and the land was fallowed.

Alfalfa was left for seed this year and gave quite a profitable crop.

This Station is now recognized by the people of the district as a source of supply for pure seed, and this spring Mr. Tait supplied pure Marquis wheat to the extent of over 1,800 bushels to his neighbouring farmers. A start was made this year in having the seed inspected and registered.

The pit silo was filled this year with sunflowers. These produced a much lighter crop than last year and there was not sufficient to fill the large trench.

The operator of this Station has specialized in Early Ohio potatoes. Last year the yield was so good that he not only supplied seed for many people in this district, but also sold seed to a number of the other Illustration Stations.

MARCELIN

Operator, J. B. Godbout

Spring was quite late in this district. The first seeding on the illustration fields was started May 12. The rainfall for the growing season was below the average, yet there was sufficient to produce good crops of grain, where the seed-bed was well prepared. Harvest was late—Ruby wheat and barley were harvested August 25, but the other wheats were not cut until September 8. The weather at harvest time was quite favourable and there was no damage from frost or rust.

A rain gauge for recording the rainfall was set up on the Station early in June and a record kept for the remainder of the season; 6.78 inches were recorded.

The following table gives the results of the season's work:—

OPERATIONS AT MARCELIN

Crops	Date sown	Date cut	Yield per acre	Cost	Profit or loss (—) per acre
				$	$
Sunflowers, Giant Russian (after oats)	May 26	Sept. 15	6 tons	3.40 per ton	—3.90
Corn, N.W. Dent (on breaking)	May 27	Sept. 15	4 tons	4.25 per ton	—3.00
Oats, Banner, seeded with sweet clover	May 23	Sept. 8	32 bush.	0.50 per bush.	0.00
Barley, O.A.C. 21, seeded with western rye grass	May 22	Aug. 25	15 bush.	0.96 per bush.	—2.40
Wheat, Marquis (on breaking)	May 13	Sept. 8	33 bush.	0.51 per bush.	29.37
Wheat, Marquis (on fallow)	May 13	Sept. 8	23¾ bush.	0.65 per bush.	17.81
Wheat, Early Red Fife (on fallow)	May 13	Sept. 8	25 bush.	0.63 per bush.	19.25
Wheat, Ruby, on fallow seeded with western rye grass and sweet clover mixture	May 13	Aug. 25	15 bush.	0.97 per bush.	6.45

Illustration work was started in this district in the Spring of 1924. This farm is located close to town and the land is uniform. Thirty-six acres of the farm adjoining the main road was laid off in four-acre fields with ten-foot roadways between. The land was part in fallow and part new breaking. As an early ripening wheat of good yielding power is desired for this district, three varieties; namely, Marquis, Early Red Fife, and Ruby, were tested, and sown the same day all on fallow land. The yields and the number of days in maturing are given in the table above. Next year it is intended to test also one or two of the newer wheats which have been developed more recently at the Central Experimental Farm, Ottawa, and have given excellent results on some of the western Experimental Farms.

It will be noted that Marquis wheat was sown on breaking also, and the yield was much heavier than on fallow. The quality of all the wheat was good. The seed for these fields was procured from the Illustration Stations at Meota and Lloydminster, and was of a high quality. One of the objects of this work is to grow pure seed for farmers at a reasonable price. Mr. Godbout will sell each year a certain amount of seed to any farmer who makes application for it.

One field each of Banner oats and O.A.C. 21 barley was grown. The oats did fairly well, but the barley was somewhat disappointing in both yield and quality. Sweet clover was sown with the oats and western rye grass with the barley. A mixture of western rye grass and sweet clover was sown with the Ruby wheat for a nurse crop. In each case a satisfactory catch was secured for next year's hay crop.

Four acres each of corn, N. W. Dent, and sunflowers, Giant Russian, were grown, and though the season was rather dry, a very fair yield was obtained. These were cut green and used for filling the trench silo which Mr. Godbout excavated this fall. The size of this silo is 35 feet long, 12 feet wide, and 7 feet deep.

OGEMA

Operator, T. E. Gamble

Spring opened about the usual time and the first seeding was done April 25. While the season's rainfall was below the average, yet for the growing months, the moisture was sufficient to produce good crops. Harvest was started August 22.

The following table gives the results of the season's work:—

OPERATIONS AT OGEMA

Rotation and crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or loss (−) per acre
					$
Four-year rotation—					
Fallow				7.25 per acre	
Wheat seeded with western rye grass, (oats substituted this year)	May 28	Sept. 15	3 tons (green feed)	5.12 per ton	14.64
Hay, western rye grass (1st year)			1¼ tons	7.23 per ton	3.46
Hay, western rye grass (2nd year)			Pastured this year.		
Six-year rotation—					
Fallow				7.25 per acre	
Wheat, Marquis	April 25	Aug. 22	14 bush.	0.82 per bush.	8.12
Oats, Banner (green feed)	May 8	Aug. 19	1½ tons	7.76 per ton	3.36
Corn, N.W. Dent	May 28	Sept. 17	2½ tons	5.63 per ton	3.08
Oats in triple rows	May 28	Sept. 17	1½ tons	6.63 per ton	5.06
Wheat seeded with half brome grass, half sweet clover	April 25	Aug. 22	18 bush.	0.52 per bush.	15.84
Hay, all sweet clover this year	1923 (with nurse crop wheat)	2 cuttings July 8 Aug. 13	1¾ tons	5.90 per ton	7.18

A start was made in growing registered seed this year on one field. The surplus grain from these fields can be purchased for seed by any of the neighbours by making arrangements with the operator.

One field of western rye grass, second year, was used for pasture and gave good feed for milk cows and work-horses.

Sweet clover hay gave two cuttings with a yield of 1¾ tons of good quality hay.

Though the early part of the season was unfavourable for corn, yet a very fair yield of fodder was secured.

Oats in triple rows were also grown as a summer-fallow substitute. These gave a yield of 1½ tons per acre of green feed. On another part of the field, corn was sown in wide rows 6½ feet apart and cultivated with the large cultivator by removing the outside teeth. While the yield of corn was less than in the closer rows, yet it would seem to make a better fallow substitute. Wheat will be sown after these different fallow substitutes next year.

PARKBEG

Operator, T. L. Humphrey

Spring was late in opening and no seeding was done on the Station until May 10. This was one of the driest seasons experienced in this district with a

total rainfall of 6.99 inches, and for the principal growing period from April to August only 3.70 inches. All crops suffered severely from drought. Harvesting of wheat was started August 23.

The following table gives the results of the season's work:—

OPERATIONS AT PARKBEG

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or loss (−) per acre
				$	$
Three-year rotation—					
Fallow	.....	.....	.....	8.12 per acre	
Wheat, Marquis, following wheat, seeded with brom and sweet clover mixture	May 12	Practically a failure owing to drought. Only part threshed.			
Wheat, Early Red Fife, following wheat	May 12	Only part of field worth threshing.			
Five-year rotation—					
Fallow	.....	.....	.....	6.69 per acre	
Wheat, Marquis, following wheat	May 19	Crop failure owing to drought.			
Corn, silage	May 31	Sept. 3	3 tons	3.00 per ton	1.50
Wheat after corn, seeded with half sweet clover, half rye grass	May 10	Only part of field worth threshing.			
Hay, sweet clover	May 1923	July 2 / Aug. 16	1 ton	7.48 per ton	2.52
Demonstration test field—					
Hay, brome grass, 2nd year	July 1922	July 3	1,400 lbs.	6.00 per ton	2.80
Oats, Banner	May 27	Aug. 29	13¾ bush.	0.84 per bush.	−4.59
Wheat, Marquis, on fallow, seeded with sweet clover	May 10	Aug. 25	14⅞ bush.	0.80 per bush.	8.64

The only wheat which gave a profitable crop this year was on fallowed land.

Sweet clover gave the heaviest yields of hay; two cuttings with a yield of one ton per acre.

Brome gave a little less than ¾ ton per acre, while western rye grass was not worth cutting.

Corn gave a fair yield even in a dry season. This was ensiled in the trench silo. Three varieties were grown: North Western Dent, Minnesota 13, and Gehu. The Minnesota 13 made the tallest growth, and Gehu the shortest. None of the corn reached maturity this year, but Gehu was the furthest advanced, reaching the soft-dough stage.

Two varieties of certified potatoes; Irish Cobbler and Early Ohio, were grown. The former gave the heaviest yield this year.

A start was made in raising a pure-bred flock of Rhode Island Red poultry at this Station.

PAMBRUM

Operator, H. W. Appelgren

Spring opened in fair time and the first seeding was done April 30. The rainfall was sufficient throughout the growing season to produce good crops of grain. The hay crop did not do so well, as the weather was cool and unfavourable for growth early in the season. Harvest was started September 2.

The following table gives the results of the season's work:—

OPERATIONS AT PAMBRUM

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or loss (—) per acre
				$	$
Three-year otation—					
Fallow				6.75 per acre	
Wheat, Marquis, on fallow, following wheat	April 30	Sept. 3	30⅞ bush.	0.50 per bush.	27.36
Wheat, Marquis—					
Half spring ploughed	May 17	Sept. 3	2 bush	0.60 per bush.	17.60
Half cultivated	May 17	Sept. 3	22 bush.	0.53 per bush.	19.14
Six-year rotation—					
Fallow				7.13 per acre	
Wheat, Marquis	April 30	Sept. 4	29⅜ bush.	0.52 per bush.	26.04
Oats, Banner	May 24	Sept. 2	48 bush.	0.32 per bush.	8.64
Corn, N.W. Dent (fodder)	May 24	Sept. 5	2 tons	6.58 per ton	0.84
Wheat, seeded with half western rye grass and half sweet clover	May 17	Sept. 3	19⅜ bush.	0.49 per bush.	17.83
Hay, sweet clover left for seed		Sept. 15	180 lbs.	0.05½ per lb.	4.63
Western rye grass		July 21	¾ tons	8.12 per ton	0.75
Demonstration test fields—					
Western rye and brome grass mixture		July 15	1 ton	6.05 per ton	3.95

In preparaing the land for the second crop of wheat, half the field was burned and spring ploughed; the other half burned and cultivated. There was no apparent difference in the crops and both were practically as free from weeds. It will be noted, however, that the crop on the cultivated land cost seven cents a bushel less to produce. Burning the stubble apparently accounted for the clean crop.

Sweet clover, seeded with wheat on fallow 1923, was only a fair stand in the spring, but it made a strong growth which was left for seed production and gave a yield of 180 pounds per acre. This was not a favourable season for corn as the weather was too cool early in the season; however, a fair yield of good quality fodder was obtained.

RADVILLE

Operator, J. H. Stockton

Spring opened close to the average date and first seeding on the Station was done April 26. The rainfall for the season was 11.26 inches, over 4 inches of which came in June. This was sufficient and was distributed in such a way as to produce a fairly good crop. Harvesting of wheat was commenced August 19.

The following table gives the results of the season's work:—

OPERATIONS AT RADVILLE

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit on loss (—) per acre
				$	$
Six-year rotation—					
Fallow				8.17 per acre	
Wheat, Marquis after corn	May 2	Aug. 23	9½ bush.	0.76 per bush	6.08
Oats, Banner	May 2	Aug. 29	31 bush.	0.40½ per bush.	2.94½
Corn, N.W. Dent (silage)	May 22	Sept. 17	3 tons	3 44 per ton	0.18
Wheat, seeded half sweet clover; half rye and brome mixture	April 30	Aug. 21	10⅛ bush.	0.70½ per bush.	7.50
Hay, western rye and brome sweet clover	May 1923	July 18	¾ ton	11.24 per ton	—0.93
Sweet clover	May 1923	July 4	1¾ tons	5.15 per ton	8.49
Three-year rotation—					
Fallow				8.17 per acre	
Wheat, second-year crop seeded with sweet clover—					
Marquis	April 30	Aug. 21	11½ bush.	1.04 per bush.	4.03
Kubanka	May 1	Aug. 21	11½ bush.	1.06 per bush.	3.91
Wheat, Marquis, on fallow	April 26	Aug. 19	22⅛ bush.	0.62 per bush.	17.31
Sweet clover—					
Half cut for hay	1923	June 24	¾ ton	11.25 per ton	—0.94
" Half ploughed under	without a nurse crop.				

To test out the effect of the ploughing under of sweet clover and sweet clover stubble, a heavy growth was ploughed in on a field which was fallowed. On another field the sweet clover was first cut for hay and the land fallowed after the removal of the crop. Both these fields will be sown to wheat next year.

Sweet clover sown in 1923 on another field with a nurse crop of wheat on fallow gave a yield of 1¾ tons per acre in the first cutting. There was, besides, a fair second growth which was pastured.

Western rye grass on an adjoining field gave only ¾ ton per acre.

Wheat after a corn crop gave slightly less than half the yield of wheat after fallow.

Mr. Stockton put in a trench silo this fall and ensiled the corn crop and also some sunflowers. This is the first trench silo in this locality. The silo is 40 feet long, 14 feet wide and 8 feet deep. It is excavated in a bank near the the buildings so the entrance is on the level, making it very convenient for hauling out the ensilage.

Some work was also done here in treating hard, burnt-out land with an application of lime, manure, and a combination of both. Sweet clover was also sown for ploughing into the land next year. Five acres of new breaking were used for this work with the following treatments: (1) Manure, (2) Manure and lime, (3) Lime alone, (4) Sown with sweet clover, (5) No treatment. Oats were sown on all fields. The results were not so marked as at Trossachs, yet there were slight increases in yields on the plots treated.

A beginning was made in establishing a pure-bred flock of Barred Rock poultry at this Station this year.

RIVERHURST

Operator, R. F. Rudd

Spring opened much later than usual in this district and the first wheat was sown on the Station May 10. Climatic conditions were most unfavourable for the growth of crops this season.

The rainfall for the growing season was less than 4 inches, with cool weather in the early period. Owing to the extreme drought, the growth of all crops was seriously retarded and yields were quite light. Wheat was cut September 10.

Wheat after corn and after wheat was practically a failure, while wheat on fallow gave a yield of 8 bushels per acre.

Hay crops, both western rye grass and brome, were practically a failure this year. Only part of the crop was cut, the rest being pastured.

Alfalfa in rows in an adjoining field, however, gave a fair yield.

OPERATIONS AT RIVERHURST

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost	Profit or (−) loss per acre
				$ cts.	$ cts.
Six-year rotation—					
Fallow				6.60 per acre	
Wheat, Marquis	Crop very light on account of drought; used for feed.				
Oats, Banner (green feed)	June 7	Aug. 25	½ ton	17.98 per ton	−3.99
Corn, N.W. Dent (fodder)	June 7	Sept. 10	½ ton	14.32 per ton	−3.66
Wheat seeded with half sweet clover and half brome grass	Crop very light on account of drought; used for feed.				
Hay (brome grass this year)	1923	Aug. 4	½ ton	9.83 per ton	−0.08½
Three-year rotation—					
Fallow				6.60 per acre	
Wheat on fallow	May 10	Sept. 10	8 bush.	1.38 per bush.	0.16
Wheat, following wheat	Crop a failure on account of drought.				
Demonstration test field—					
Hay, western rye grass	Used for pasture.				

There was a fairly good supply of moisture during the growing season, the heaviest rainfall being in June, when 2.86 inches were recorded. All crops made a strong growth until July 28, when a disastrous hail storm struck this locality. All crops were badly damaged, particularly the wheat. Forage crops recovered somewhat. Wheat after corn, was cut for feed. The crop on fallow, which was threshed after the storm, gave a yield of six bushels per acre.

A hay mixture of western rye grass and brome, sown alone last year on spring ploughed stubble, gave a yield of 1½ tons per acre, while hay seeded with a nurse crop of wheat on fallow gave only half a ton per acre.

Corn was damaged considerably so there was not sufficient for filling the silo. It was used for fodder.

Sweet clover winter killed for the first time on this Station, and it was necessary to reseed the field.

Summer-fallowing this year cost $6.88 per acre.

SPRUCE LAKE

Operator, H. Eagle

Spring opened at the end of April and was cool and backward. The first seeding on the Station was done on May 6. This was one of the driest seasons experienced in this district, with only 4.65 inches for the season. Grain crops, however, gave a fair yield, but hay, corn and sunflower crops were quite light. Harvesting was started September 1.

The following table gives the results of the season's work:—

OPERATIONS AT SPRUCE LAKE

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Five-year rotation—					
Fallow				5.79 per acre	
Wheat, Early Red Fife	May 9	Sept. 15	17 bush	0.69 per bush.	12.07
Oats, Banner, seeded with western rye grass and sweet clover mixture	May 24	Sept. 18	26 bush	0.46 per bush.	1.04
Hay, western rye grass (1st year)	1923	July 29	168 lbs. seed	0.03½ per lb.	7.67
Hay, western rye grass (2nd year)		July 29	¾ ton	7.42 per ton	1.72
Demonstration test fields—					
Wheat, Marquis	May 8	Sept. 5	15 bush	0.78 per bush.	9.30
Wheat, Red Bobs (Early Triumph)	May 7	Sept. 1	13 bush	0.88 per bush.	6.76
Wheat, Ruby	May 6	Sept. 1	12 bush	0.97 per bush.	5.16
Hay, brome grass		July 22	½ ton	10.10 per ton	−0.05

Owing to a rearrangement of the fields being necessary this year, it was not possible to have the different varieties of wheat on the same kind of land. Ruby was on fallow; Early Red Fife on spring-ploughed stubble; Marquis and Red Bobs after corn and sunflowers; therefore it is not possible to draw any definite conclusions, but it will be noted that Early Red Fife made an excellent showing as a second crop, wheat after wheat, in a dry season. The quality of all is good and a limited quantity of each variety is offered for sale.

Banner oats are also for sale to anyone wishing to make a start with pure seed.

TUGASKE

Operator, Robert Wilson

Spring was late in opening, and the first seeding on the Illustration Station was done on May 8.

This was an exceptionally dry season in this district and very unfavourable for crop production. The whole season's rainfall was 9·81 inches with only 4·66 inches from the opening of spring to August 1. The best rains came too late to be of much benefit to the wheat, but encouraged weed growth. Harvesting was started August 28.

The following tables give the results of the season's work:—

OPERATIONS AT TUGASKE

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Three-year rotation—					
Fallow				6.43 per acre	
Wheat, Marquis, on fallow	May 8	Aug. 28	8¾ bush.	1.51 per bush.	−0.90
Wheat, Marquis, following wheat	May 8	Crop a failure owing to drought.			
Five-year rotation—					
Fallow				6.94 per acre	
Wheat, Marquis	Crop a failure owing to drought.				
Oats, Banner, seeded with western rye grass and alfalfa (green feed)	May 17	Sept. 9	½ ton	21.16 per ton	−5.58
Hay (1st year)	1923	July 22	¾ ton	11.75 per ton	−1.31
Hay (2nd year)	1922	July 21	½ ton	13.68 per ton	−1.84
Two-year rotation—					
Corn, N.W. Dent	May 21	Sept. 8	5¾ tons	3.15 per ton	2.01
Wheat, Marquis, after corn	Crop very light, ploughed down.				
Three-year rotation—					
Fallow				6.43 per acre	
Wheat seeded with sweet clover	May 9	Aug. 29	9 bush.	1.43 per bush.	−0.27
Hay, sweet clover	2 cuttings	July 15 and Sept. 10	1 ton	10.49 per ton	−0.49
Demonstration test fields—					
Alfalfa, Grimm		July 23	½ ton	21.00 per ton	−2.75

Wheat second crop was a failure this year, simply on account of lack of sufficient moisture at the right time. This crop was sown in good time on a well-prepared seed bed, spring ploughed, harrowed and packed. Wheat after corn failed for the first time on this Station.

Corn gave a fairly good yield in spite of the drought, as it benefited by the later rains.

All the hay crop was light, but sweet clover gave the most with a yield of one ton per acre, in two cuttings. The weather was favourable for curing and good quality hay was made.

TROSSACHS

Operator, Charles Carlson

Spring was later than usual and the first seeding on the plots was on May 8. The total rainfall for the season was 13·43 inches, which was about the average, but at the time the wheat was heading there was a period of scanty moisture supply and growth was checked. However, with later rains, grain crops recovered considerably and gave fair yields. The cold, dry spring was not favourable for hay crops nor corn; hay was light, but corn improved and made good growth later in the summer. Harvest was started August 25.

The following table gives the results of the season's work:—

OPERATIONS AT TROSSACHS

Rotation and Crops	Date sown	Date cut	Yield per acre	Cost of production	Profit or (−) loss per acre
				$ cts.	$ cts.
Three-year rotation—					
Fallow				6.36 per acre	
Wheat, Marquis, after corn	May 8	Aug. 29	21 bush.	0.59 per bush.	17.01
Wheat, Marquis (2nd crop)	May 10	Aug. 29	14 bush.	0.88 per bush.	7.28
Six-year rotation—					
Fallow				6.09 per acre	
Wheat, Marquis	May 6	Sept. 2	20 bush.	0.70 per bush.	14.00
Oats, Banner	May 16	Aug. 25	31 bush.	0.37 per bush.	4.03
Corn, N.W. Dent (silage)	May 29	Sept. 2	4 tons	3.00 per ton	2.00
Wheat seeded with half western rye grass; half sweet clover	May 7	Aug. 25	10 bush.	0.74 per bush.	6.60
Hay, western rye grass		July 9	1 ton	9.31 per ton	0.69
Sweet clover		July 9	1½ tons	5.66 per ton	5.42½

Wheat after corn and sunflowers gave only half the yield of wheat on fallow this year.

The wheat grown here this year is of an excellent quality. The oats are rather light. Some of this wheat is available for farmers in the district who wish to get a start with pure seed.

Some work was started in testing the value of applications of manure and lime; also sweet clover on the burnt-out land. A piece of new breaking was selected which had a considerable proportion of burnt-out land on it. This was laid out in one-acre fields. Field No. 1 was manured about 10 tons per acre. Field No. 2 was given an application of manure and lime, 500 pounds per acre. Field No. 3 was given lime alone. Fields Nos. 4 and 5 were not given any treatment. Wheat was seeded on all fields and sweet clover seeded with the wheat on one field for the purpose of ploughing this crop in next year. Following are the yields from each field:—

No treatment	14	bushels per acre
Lime alone	18	" "
Manure alone	18	" "
Lime and manure	20	" "

The fields which were treated with either lime or manure made stronger growth than fields not treated, particularly early in the growing period. Later it was not so noticeable. While increased yields were secured in cases where the lime was used, it was not sufficient to offset the cost of the lime and its application, at the price paid locally, $2 per ton. The second-year effect of this treatment may give an additional increase in the second crop. Considerable experimental work would have to be done in order to get any definite information on this subject. It would seem that applications of manure are profitable.

WEYBURN

Operator, E. Meredith

Spring opened about the usual time and first seeding on the Station was done April 25. There was some snow and cool weather later which delayed seeding for a short time. The rainfall for this year was 8·67 inches, which is considerably below the average, and during the growing season all crops suffered from drought. However, a fairly good crop would have resulted, had it not been for the destructive hail storm which struck this locality on July 29. All crops suffered severely, particularly the wheat, which was just filling at this time. After the storm some of the wheat crop was cut for feed. The remainder, which was cut later and threshed, gave a yield of 7 bushels per acre of medium quality grain.

Oats did not mature and were cut for green feed.

Corn promised a fair crop in spite of a cool spring and dry season, but it was badly cut down by the hail and gave a light yield of fodder.

Hay crops suffered the least from the storm. Sweet clover proved the best yielder with 1½ tons per acre. Alfalfa gave 1 ton per acre of excellent hay. Western rye grass, ¾ ton.

Fallowing this year cost 8.28 per acre.

REPORT OF THE ILLUSTRATION STATIONS IN MANITOBA AND EASTERN SASKATCHEWAN

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

This is the first year that the division has undertaken work in Manitoba. Four Stations were established and crop rotations started under the supervision of the Dominion Experimental Farm, Brandon. At the same time the Illus-

tration work in eastern Saskatchewan was placed under the supervision of Brandon, with two additional Stations opened in that area, and a third located at Churchbridge operating for the first season in 1923. Plans are already under way to start five additional stations in the spring of 1925.

A minimum amount of snow fell during the winter and the ground was bare early in April. The season opened late and was followed by a prolonged period of cold weather, extending practically throughout the summer, the effect of which was noticeable in the slow, uneven germination. Corn crops suffered perhaps most from this condition. Excessive rains during the threshing period greatly delayed the work. Early November snow caught a considerable amount of grain in the stooks, chiefly barley and oats.

The precipitation on four of these Stations, from May-October inclusive was as follows:—

RAINFALL—INCHES

——	May	June	July	Aug.	Sept.	Oct.	Total
Churchbridge	.....	2·84	2·98	0·14	0·65	.....	6·61
Gunton	.....	1·21	2·04	1·02	3·80	2·02	11·09
Shergrove	.....	1·95	3·09	1·21	.....	.....	6·25
Wawota	0·55	2·06	2·41	2·89	1·83	2·5	9·59

PRICES CHARGED WHEN MAKING UP PRODUCTION COST

In working out the production costs the following prices have been charged:—

Rent of land per acre.....Based on land value of district and prevailing rate of interest.
Use of machinery.....$1 per acre.
Manual labour, Horse labour, Threshing, Twine.....Rates prevailing in the district.

COST OF SEED

Wheat, Marquis No. 1	$1.40 per bush.
Wheat, Ruby	1.60 "
Wheat, Kota No. 1	2.50 "
Wheat, Marquis Registered	1.50 "
Oats, Banner No. 1	0.70 "
Oats, Banner Registered	1.00 "
Oats, Victory	0.65 "
Corn, North Western Dent	2.50 "
Western rye grass	0.06½ "
Alfalfa	0.40 per lb.
Meadow fescue	0.18 "
Sunflowers, Mammoth Russian	0.09 "
Alsike	0.18 "
Red clover	0.35 "
Timothy	0.12 "

When calculating the profit or loss from growing the crops, wheat was given a return value of $1.25 per bushel at Kamsack, at the other Stations values were as follows:—

Hay, alfalfa, western rye grass and timothy	$10.00 per ton.
Wheat	1.40 per bush.
Oats	0.45 per bush.

No return value was allowed for straw.

RATES OF SEEDING GRAIN, GRASSES AND CLOVERS

When determining the rates at which those crops should be sown, one must consider such factors as whether the soil is light or heavy; whether fallow, stubble or sod land; and whether sown early or late. Besides this point, the

percentage germination and the viability of the seed, the size of the seed or the number of seeds per bushel, whether the crop is to be used as a nurse crop, the condition of the seed bed, and the danger of fall frosts have all to be considered.

The rates of seeding the various crops on the Illustration Stations in the province are as follows:—

	Rate per acre		Rate per acre
Wheat	1 to 1¼ bush.	Brome grass	12 to 14 lbs.
Oats	2 to 3 bush.	Western rye grass	12 to 14 lbs.
Barley	1¾ to 2¼ bush.	Meadow fescue	12 to 14 lbs.
Fall rye	¾ to 1½ bush.	Timothy	6 to 7 lbs.
Flax	25 to 35 lbs.	Sweet clover	10 to 14 lbs.
Corn	½ bush.	Alfalfa	10 to 14 lbs.
Sunflowers	10 to 12 lbs.	Alsike	5 to 7 lbs.
		Red clover	10 to 14 lbs.

Relatively heavier rates of seeding may be used on heavy soils and on fallow containing a good store of moisture. In areas subject to early fall frost, heavier seeding should be practised in order to hasten maturity. Sowing at slightly increased rates is also advisable where the sample is very plump or where the germination test is low. Similar practices should be adopted when the seed-bed is not in good condition. It will generally be found that the condition of the seed-bed, its moisture content, temperature and tilth, have a greater influence on the resultant stand than the rate of seeding.

Grasses and colvers are not sown as heavily as formerly. Here again, however, local conditions cannot be overlooked. The seed-bed is the all important factor. It is becoming more generally recognized that the sowing of mixtures rather than individual crops is the better practice. It is a part of the work of the Illustration Stations to demonstrate suitable rates of seeding mixtures under varying conditions. As this work develops information will become quickly available.

CHURCHBRIDGE, SASK.

Operator, H. Grube

Work started at this Station in 1923. In addition to the rotation work conducted here, there are demonstration plots of alfalfa, timothy, western rye, grass and sunflowers. Rust and frost affected the wheats. Marquis after corn was an excellent crop all summer.

The following table summarizes the season's work:—

SIX-YEAR ROTATION, CHURCHBRIDGE

—	Date sown	Date cut	Yield per acre	Cost	Profit or (—) loss per acre
				$ cts.	$ cts.
Wheat, Marquis seeded down after corn	May 2	Sept. 2	21 bush.	0.59 per bush.	17.01
Hay alfalfa and western rye grass	May 2	Aug. 11	2 tons	2.87 per ton	14.26
Sweet clover					
Wheat, Ruby	May 2	Aug. 20	20 bush.	0.60 per bush.	16.00
Oats, Banner	May 20	Sept. 11	40 bush.	0.24 per bush.	8.40
Corn		Failure.			
Demonstration Test-Plots					
Fallow				10.42 per acre	
Alfalfa		Aug. 14	1½ tons	4.84 per ton	6.45
Timothy		Aug. 12	1¼ tons	4.16 per ton	7.30

DAUPHIN, MANITOBA

Operator, French Bros.

Work was started here under quite favourable conditions this spring. The six-year rotation laid out here, was similar to the other Manitoba rotations, but included the seeding down of four plots instead of two. In addition to meadow fescue and western rye grass, alsike and timothy were sown.

The following table summarizes the season's work:—

SIX-YEAR ROTATION, DAUPHIN

——	Date sown	Date cut	Yield per acre	Cost	Profit or (−)loss per acre
				$ cts.	$ cts.
Wheat, Marquis seeded down	May 9	Sept. 2	42½ bush.	0 38 per bush.	43 35
Wheat, Ruby seeded down	May 9	Aug. 21	41 bush.	0 39 per bush.	41 41
Wheat, Kota seeded down	May 10	Sept. 5	45 bush.	0 39 per bush.	45 45
Oats, Banner seeded down	May 15	Sept. 4	111 bush.	0 18 per bush.	29 97
Oats, Victory	May 15	Sept. 4	100½ bush.	0 18 per bush.	27 13
Oats, Orloff	May 16	Aug. 14	79½ bush.	0 20 per bush.	19 87
Corn, North-Western Dent	May 27	Sept. 1	10 tons	1 76 per ton.	

GUNTON, MANITOBA

Operator, E. Fraser

Work was commenced on this Station this year and preparatory crops were sown. Three varieties of wheat, two of oats, two of grasses, also corn, sunflowers and alfalfa were grown. The grasses and alfalfa made excellent catches and should be in a satisfactory condition for next year.

All plots were sown on summer-fallow. The following table gives the result of the season's work:—

SIX-YEAR ROTATION, GUNTON

Field	——	Date sown	Date cut	Yield per acre	Cost per bushel	Profit or (−) loss per acre
				bush.	$ cts.	$ cts.
1	Wheat, Marquis seeded down	May 8	Sept. 2	15	1 39	0 15
2	Wheat, Ruby seeded down	May 12	Aug. 26	16	1 32	1 28
3	Sunflowers	May 19	Sept. 2	No records.		
	Corn	May 19	Aug. 26			
4	Kota wheat	May 12	Sept. 5	17	1 36	0 68
5	Oats, Banner	May 13	Sept. 2	48	0 46	−0 48
6	Oats, Victory	May 13	Sept. 2	56	0 39	3 36
7	Wheat, Marquis seeded down	May 8	Sept. 2	23	0 91	11 27

KAMSACK, SASK.

Operator, F. Craig

Work was started here during the spring and a six-year rotation laid out. Results for this year were marred by a severe hail-storm which passed over the district on August 21.

The following table gives the results of the season's work:-

SIX-YEAR ROTATION, KAMSACK

Field	——	Date sown	Date cut	Yield per acre	Cost	Profit or (—) loss per acre
					$ cts.	$ cts.
1	Oats, Gold Rain after wheat.	May 3	Sept. 2	12 bush.	0 92 per bush.	—5 64
2	Oats, Banner after wheat....	May 3	Aug. 25	1¼ tons	10 37 per ton	0 43
3	Wheat, Kota after wheat....	May 3	Aug. 25	[illegible] bush.	2 63 per bush.	6 10
4	Oats, Gold Rain after wheat.	May 3	Aug. 23	1¼ tons	8 75 per ton	1 56
5	Wheat, Ruby after wheat...	May 2	Aug. 23	7 bush.	1 68 per bush.	3 01
6	Wheat, Marquis after wheat..	May 2	Sept. 2	15 bush.	0 81 per bush.	6 60

MAGNET, MANITOBA

Operator, A. Preston

The standard six-year rotation was planned for this Station and the same preparatory crops sown as at the other Station. Owing to flooding of the land by unfinished drainage projects, an early start on the land was impossible. Germination was slow and uneven and the season cool. Corn was the first to suffer, being frozen on August 11.

The following table gives the results of the season's work:—

SIX-YEAR ROTATION, MAGNET

Field	——	Date sown	Date cut	Yield per acre	Cost per bushel	Profit or (—) loss per acre
				bush.	$ cts.	$ cts.
1	Wheat, Marquis seeded down...	May 17	Sept. 15	9½	0 90	4 75
2	Wheat, Ruby seeded down.....	May 17	Sept. 3	7	1 24	1 12
3	Wheat, Kota seeded down.....	May 19	Sept. 13	8	1 46	—0 48
4	Corn.....	June 6	Frozen.			
	Sunflowers.....					
5	Oats, Victory.....	May 25	Sept. 17	25	0 42	0 75
6	Oats, Banner.....	May 26	Sept. 18	35½	0 29	5 68

SHERGROVE, MANITOBA

Operator, F. H. Randall

Work started here in the spring of 1924. The operator, however, gave up farming during the summer and the work was discontinued.

WAWOTA, SASK.

Operator, C. Pryce

Only a part of the permanent work was laid out this year, as the land required a cleaning crop to put it in shape for another year. Two fields were seeded to grasses with a nurse crop of oats. The results of the cultural work conducted this year was as follows:—

WAWOTA

Field	——	Date sown	Date cut	Yield per acre	Cost per bushel	Profit or (−) loss per acre
				bush.	$ cts.	$ cts.
1	Oats seeded down	June 2	Sept. 22	37½	0 27	6 75
2	Oats seeded down	June 2	Sept. 22	37½	0 27	6 75
3	Wheat, Kota on fallow	May 9	Sept. 16	18	1 09	5 58
4	Wheat, Kota on fall ploughing	May 9	Sept. 3	12	1 24	1 92
5	Wheat, Marquis on fallow	May 9	Sept. 16	18	1 95	8 10
6	Oats, Banner on fallow	May 12	Sept. 13	50	0 26	9 50