DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

DOMINION EXPERIMENTAL FARMS

# REPORT OF THE CHIEF SUPERVISOR

J. FIXTER

ON

# THE ILLUSTRATION STATIONS

IN

## BRITISH COLUMBIA, ALBERTA, and SASKATCHEWAN

FOR THE YEAR 1923


The corn field on the Illustration Station at Tagaske, Saskatchewan

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OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1924

# ILLUSTRATION STATIONS

IN

## BRITISH COLUMBIA, ALBERTA, SASKATCHEWAN

## 1923 REPORT OF THE CHIEF SUPERVISOR, J. FIXTER

During the year the division has increased the number of Illustration Stations from eighty-seven in 1922 to one hundred and twenty-five in 1923. Six Stations were in operation in Prince Edward Island, fifteen in Nova Scotia, seventeen in New Brunswick, thirty-five in Quebec, twenty in Saskatchewan, twelve in Alberta, and thirteen in British Columbia. New districts have been investigated in the provinces of Ontario and Manitoba where illustration work is being undertaken for the first time. Seven sites for Stations were located in Ontario, five in northern Ontario along the Timiskaming and Northern Ontario railway, and two in the eastern part of the province. It is also planned to have work underway at four points in Manitoba, in 1924, in the Dauphin and Selkirk constituencies.

For the careful collection of data and recording of results which have made possible the following complete 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*

Mr. J. A. Clark,
Charlottetown, P.E.I.

Mr. W. S. Blair,
Kentville, N.S.

Mr. F. C. Bailey,
Fredericton, N.B.

Mr. J. A. Ste. Marie,
Ste. Anne de la Pocatière, Que.

Mr. S. Ballantyne,
Kapuskasing, Ont.

Mr. J. G. Taggart,
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Mr. W. H. Fairfield,
Lethbridge, Alta.

Mr. E. M. Straight,
Sidney, B.C.

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Mr. W. L. Chauvin,
Ottawa, Ont.

Mr. E. C. Sackville,
Swift Current, Sask.

Mr. R. E. Everest,
Lethbridge, Alta.

Mr. A. E. Richards,
Summerland, B.C.

# REPORT OF THE ILLUSTRATION STATIONS FOR BRITISH COLUMBIA

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

Eleven Illustration Stations have been in operation in British Columbia during the past year. Seven of the Stations are located along the Canadian National railway in central British Columbia. The points served by Stations in this district extend from Smithers in the Bulkley valley along the main line for four hundred miles to McBride at the western entrance to the Yellow Head pass. The remaining four Stations are located in the southern portion of the province.

## THE SEASON

Favourable weather conditions prevailed generally throughout British Columbia during the season and crop production was somewhat above the average. Spring work commenced April 15 in central British Columbia, and by April 25 seeding was general.

Each Illustration Station is provided with a rain gauge from which the following precipitation records were obtained during the year 1923. Where blanks occur, records were not obtained.

RAINFALL—INCHES

| Month | Armstrong | Francis Lake | Kamloops | Prince George | McBride | Salmon Arm | Smithers | Vanderhoof | Telkwa |
|---|---|---|---|---|---|---|---|---|---|
| January | ..... | ..... | 0·23 | ..... | 2·27 | 0·85 | ..... | ..... | 1·21 |
| February | ..... | ..... | 0·36 | ..... | 1·67 | 0·67 | 0·98 | 0·17 | 0·61 |
| March | ..... | ..... | 0·54 | ..... | 2·05 | 1·11 | 0·47 | 2·00 | 0·87 |
| April | ..... | ..... | 0·71 | 0·36 | 0·33 | 1·05 | ..... | 0·20 | 0·30 |
| May | ..... | ..... | 1·32 | 1·45 | 0·98 | 1·44 | 0·95 | 1·53 | 0·77 |
| June | ..... | ..... | 2·20 | 2·12 | 1·31 | 5·48 | 3·17 | 1·82 | 2·52 |
| July | 1·47 | ..... | 1·12 | 1·10 | 2·03 | 1·25 | 1·85 | 3·10 | 1·91 |
| August | 1·45 | 0·43 | 1·66 | 2·97 | 2·40 | 1·23 | 2·96 | 1·84 | 1·93 |
| September | 0·53 | 2·00 | 0·83 | 1·27 | 1·93 | 0·72 | 0·70 | 0·54 | 0·39 |
| October | 0·62 | 0·68 | 0·53 | 1·96 | 0·88 | 1·04 | ..... | 0·91 | 0·88 |
| November | ..... | 0·73 | 0·61 | 0·80 | 2·22 | 1·52 | 3·51 | 0·86 | ..... |
| December | ..... | 0·61 | 1·12 | 0·61 | 7·30 | 3·14 | 2·04 | 0·93 | ..... |
| | 4·07 | 4·45 | 11·23 | 12·64 | 25·37 | 19·50 | 16·63 | 13·90 | 11·39 |

## 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 | $3 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, Victory, Banner | per bushel | $0 95 |
| Wheat, Marquis | " | 1 65 |
| Wheat, Ruby | " | 2 75 |
| Winter rye | " | 1 40 |
| Barley | " | 1 80 |
| Potatoes | " | 1 50 |
| Potatoes (certified seed) | " | 2 50 |
| Vetch | per pound | 0 08 |

PRICES CHARGED IN CALCULATING COST OF PRODUCTION OF CROPS—*Concluded*

| | | |
|---|---|---|
| Grass, Orchard | per pound | $0 28 |
| Grass, Western rye | " | 0 17 |
| Alfalfa, Turkestan | " | 0 35 |
| Peas | " | 0 08½ |
| Sunflowers | " | 0 12 |
| Timothy | " | 0 14 |
| Clover, Red | " | 0 31 |
| Clover, Alsike | " | 0 23 |
| Clover, White Sweet | " | 0 14 |
| Corn, N.W.D | " | 0 07 |
| Mangels | " | 0 40 |
| Turnips | " | 1 00 |

The cost of manure is distributed over the crops in the rotation in the following proportions:—
40 per cent is charged to the hoed crop.
30 per cent is charged to the hoed grain.
20 per cent is charged to the hoed clover hay.
10 per cent is charged to the hoed timothy hay.

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

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

Values placed on farm crops in determining profit or loss per acre, are based on prices prevalent in the district. These values are estimated and may vary with local conditions. The purpose of this column is to draw the attention of the farmer more forcibly to the very important factor in farm operations, viz., cost of production. A low profit or a loss will emphasize the need of checking up and eliminating waste, if any, in the production of the crop.

## ARMSTRONG, B.C.

### Operator, T. Ball & Son

A seven-year rotation is being established on this Station. The fields which were taken over had been under alfalfa sod for several years. They were in a worn-out condition and showed the need of renewal. Already the increased returns are showing the value of re-establishing the stand. Each field is seeded to alfalfa alone at the rate of fifteen pounds per acre, and is left down for five years. In the fifth year, after the first alfalfa crop is taken off, the land is prepared by means of after-harvest cultivation for the hoed crop to be grown in the sixth year. After the hoed crop is removed winter wheat is sown and harvested in the seventh year of the rotation. In order to obtain the fullest advantage of somewhat meagre soil moisture conditions, the grain drill is used for sowing alfalfa on this Station. The seed is thereby put down to the moisture which is necessary for germination to take place.

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

SEVEN-YEAR ROTATION

| Field | Crop | Yield per acre | Actual Cost | Estimated value of crop on the farm | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | $ cts. | $ cts. | $ cts. |
| A | Alfalfa hay | 4 tons | 7 75 per ton | 17 00 per ton | 37 00 |
| B | Alfalfa hay | 4 tons | 7 75 per ton | 17 00 per ton | 37 00 |
| C | Alfalfa hay | 4 tons | 7 75 per ton | 17 00 per ton | 37 00 |
| D | Alfalfa hay, 1st year | 1 ton | 20 36 per ton | 17 00 per ton | − 3 36 |
| E | Winter wheat | 41½ bush. | 0 83 per bush. | 9 25 per bush. | 17 32 |
| F | Sunflowers, Mammoth Russian | 7½ tons | 8 29 per ton | 5 00 per ton | −24 68 |
| G | Mixed—oats, peas and vetch | 3¾ tons | 11 95 per ton | 16 00 per ton | 15 18 |

Sunflowers were sown at the rate of ten pounds per acre, winter wheat at one and a half bushels. Rates of seeding in the mixed crop were, Victory oats one and a half bushels, Arthur peas fifty pounds, and spring vetch forty-five pounds. This gave a heavy crop of hay which was harvested July 24. Three cuts of alfalfa were taken from fields "A", "B" and "C" on June 19, July 26, Sept. 5.

## FRANCIS LAKE, B.C.

### Operator, R. C. Stanyer

Soil on this station is a black loam with patches of hard clay. Results of the season's work are given in the following table:—

| Field | Crop | Yield per acre | Actual Cost | Estimated value of crop on the farm | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | $ cts. | $ cts. | $ cts. |
| A | Field peas, Arthur | 20 bush. | 1 84 per bush. | 3 00 per bush. | 23 20 |
| A | Potatoes, Irish Cobbler | 183½ bush. | 0 57 per bush. | 0 75 per bush. | 32 99 |
| B | Wheat, Ruby and seeded | 30 bush. | 0 58 per bush. | 1 25 per bush. | 20 10 |
| C | Timothy hay | 1½ tons | 3 85 per ton | 20 00 per ton | 24 22 |
| D | Mixed—oats, peas and vetch (grain) | 55 bush. | 0 35 per bush. | 1 00 per bush. | 35 75 |
| E | Fall rye | 38 bush. | 0 40 per bush. | 1 00 per bush. | 20 90 |
| F | Oats, Banner, and seeded | 65 bush. | 0 30 per bush. | 0 75 per bush. | 29 25 |
| G | Barley, O.A.C. No. 21 | 45 bush. | 0 42 per bush. | 1 00 per bush. | 26 10 |

Arthur peas sown May 8 and harvested September 25 made very satisfactory growth on new land. Clover and grasses sown with wheat on field "B" went into the winter in good condition. The Banner oat crop on field "F" was seeded down to sweet clover.

#### CLOVERS SHOULD GO INTO THE WINTER WITH A STRONG COVERING GROWTH

In some parts of British Columbia, farmers hesitate to grow clovers on account of the danger from winter killing or the heaving out of plants through the action of spring frosts. Frequently winter killing is due to light seeding or to close grazing of the crop by stock in the fall of the year. With a heavy seeding clover roots intertwine, forming a matted sod which is able to withstand the alternate freezing and thawing of opening spring. Animals should not be allowed to pasture on newly-seeded fields. The more top covering left as winter protection, the greater are the possibilities of harvesting heavy crops.

## KAMLOOPS, B.C.

### Operator, E. L. Burgess

This Station is operated under irrigation, water being pumped by electric power from the Thompson river. The soil is a deep silt. An application of water was given field "D" just before the grain crop was harvested. The young alfalfa benefited to such an extent that a cutting of one and one fifth tons per acre was removed on September 18. Three cuttings of alfalfa were taken off fields "A", "B", "C", "F", "G".

Due to the increase in ensilage crops, Mr. Burgess found it necessary to build another silo. As the trench silo had given satisfaction on Illustration Stations in other parts of British Columbia and in the Prairie Provinces this type of silo was excavated by the operator in the summer of 1923. Mr. Burgess reports that the ensilage is coming out in excellent condition.

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

SEVEN-YEAR ROTATION

| Field | Crop | Yield per acre | Actual Cost | Estimated value of crop on the farm | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | $ cts. | $ cts. | $ cts. |
| A | Alfalfa hay | 6 tons, 1320 lbs. | 6 51 per ton | 17 00 per ton | 69 86 |
| B | Alfalfa hay | 6 tons, 540 lbs. | 7 37 per ton | 17 00 per ton | 46 22 |
| C | Alfalfa hay | 5 tons 260 lbs. | 8 13 per ton | 17 00 per ton | 45 50 |
| D | Oats, Reg. Banner, and seeded | 58 bush. | 0 45 per bush. | 0 90 per bush. | 26 10 |
| E | Sunflowers, Mam. Russian | 12 tons | 7 08 per ton | 5 00 per ton | −24 96 |
| E | Corn, N.W.D. | 9 tons | 9 51 per ton | 6 00 per ton | −31 59 |
| E | Potatoes, Irish Cobbler | 153 bush. 20 lbs. | 0 92 per bush. | 0 75 per bush. | −26 06 |
| F | Alfalfa hay | 5 tons 100 lbs. | 8 61 per ton | 17 00 per ton | 42 37 |
| G | Alfalfa hay | 5 tons 200 lbs. | 8 73 per ton | 17 00 per ton | 42 18 |

It may be of interest to compare the yield per acre and the cost of producing a ton of alfalfa hay under irrigation with the cost under dry farming conditions as on the Armstrong station.

| —— | Number of cuts | Dates of cutting | Average yield per acre | Average cost per ton | Estimated value per ton | Profit per acre |
|---|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. | $ cts. |
| Armstrong (dry farming conditions) | 3 | June 19<br>July 26<br>Sept 5 | 4 tons | 7 87 | 17 00 | 36 52 |
| Kamloops (under irrigation) | 3 | June 9<br>Aug. 4<br>Sept. 11 | 5 tons 1,620 lbs. | 7 75 | 17 00 | 53 74 |

## KAMLOOPS, B.C.

### Operator, C. R. Green

Soil is a deep, chocolate loam, although frequent showers fell during the growing season, the intense heat and high winds which followed kept the soil in a parched condition and crop yields were low.

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

THREE-YEAR ROTATION—TRIPLICATE

| Field | Crop | Yield per acre | Actual Cost | Estimated value of crop on the farm | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | $ | $ | $ |
| A1 | Sweet clover hay | ½ ton | 21 50 per ton | 12 00 per ton | − 4 75 |
| A2 | Sunflowers, Mammoth Russian (ensilage) | 2½ tons | 12 38 per ton | 5 00 per ton | −18 45 |
| A3 | Winter rye | 14 bush. | 0 99 per bush. | 1 00 per bush. | 0 14 |
| B1 | Sunflowers, Mammoth Russian (ensilage) | 4¾ tons | 4 02 per ton | 5 00 per ton | 4 63 |
| B2 | Sweet clover hay | 1½ tons | 9 41 per ton | 12 00 per ton | 3 11 |
| B3 | Oats, Banner, and seeded | Crop destroyed by grasshoppers. | | | |
| C1 | Sweet clover hay | 1 ton | 10 93 per ton | 12 00 per ton | 1 07 |
| C2 | Sunflowers, Mammoth Russian (ensilage) | 2 tons 117 lbs. | 14 82 per ton | 5 00 per ton | −20 07 |
| C2 | Corn, N.W.D. (ensilage) | 2½ tons | 12 19 per ton | 6 00 per ton | −13 92 |
| C2 | Sweet clover hay | ½ ton | 20 50 per ton | 12 00 per ton | − 4 25 |
| C3 | Wheat, Marquis and seeded | 11⅛ bush. | 1 26 per bush. | 1 25 per bush. | − 0 11 |

It was observed that wheat on that part of the field which produced corn the year previous was stronger than that on which sunflowers grew.

## McBRIDE, B.C.

### Operator, J. T. Oakley

Sunflowers were used as fodder on this Station for horses and cattle. All animals took to them readily. The land was immediately disced and kept cultivated until autumn for the purpose of killing weed growth: it was then thoroughly ploughed.

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

| Field | Crop | Yield per acre | Actual Cost | Estimated value of crops on the farm | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | $ | $ | $ |
| A | Sunflowers, Mammoth Russian | 5 tons | 9 03 per ton | 6 00 per ton | −15 15 |
| A | Mixed, oats, peas and vetch (fodder) | 2⅔ tons | 12 42 per ton | 18 00 per ton | 14 88 |
| B | Mixed, oats, peas and vetch | 1 ton | 27 25 per ton | 18 00 per ton | − 9 25 |
| C | Oats, Banner, and seeded | 40 bush. | 0 49 per bush. | 0 75 per bush. | 10 40 |
| D | Wheat, Marquis | 16 bush. | 1 25 per bush. | 1 25 per bush. | 0 00 |

Tests were conducted on this Station with different rates of seeding of the nurse crop. These tests seem to indicate that no nurse crop, or a light seeding of one and one-half bushels per acre, assures a much stronger stand of clovers and grasses than a heavier seeding of the nurse crop. Clovers and grasses were sown at the following rates per acre; timothy, ten pounds; common red clover, five pounds; alsike clover, five pounds; and orchard grass, two pounds.

It will be noted that two and two-third tons per acre of mixed crop were grown on field "A" and one ton per acre on field "B." The heavier crop on field "A" is due to the application of manure and to fall ploughing.

## PRINCE GEORGE, B.C.

### Operator, R. J. Blackburn

Virgin soil in this district is a fairly heavy clay with one to two inches of black, loamy top soil.

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 | 55 bush. 26½ lbs. | 0 23 per bush. | 0 75 per bush. | 28 99 |
| B | Clover hay | 1½ tons | 7 61 per ton | 20 00 per ton | 22 31 |
| C | Sunflowers, Mammoth Russian | 7 tons 1768 lbs. | 6 37 per ton | 6 00 per ton | − 2 94 |
| C | Mangels, Long Red | 3 tons | 17 33 per ton | 4 00 per ton | −40 00 |
| C | Turnips, Hall's Westbury | 3½ tons | 17 65 per ton | 4 00 per ton | −43 68 |
| C | Mixed—Oats, peas and vetch (ensilage). | 4¼ tons | 6 45 per ton | 9 00 per ton | 10 84 |
| D | Barley, O.A.C. No. 21 | 28⅜ bush. | 0 36 per bush. | 1 00 per bush. | 18 31 |

Clovers and grasses sown on this station in 1922 came through the winter in fair condition and produced a good crop of hay. It was observed that alsike clover sustained less winter injury and made stronger growth than the common red.

Mr. Blackburn has erected an octagonal silo from home-cut timber on a cement base. He grew sufficient sunflowers and mixed crop to fill the silo. Mr. Blackburn reports that the ensilage is coming out in splendid condition. This is one of the first silos in the district and is attracting much interest from neighbouring farmers.

## SALMON ARM, B.C.

### Operator, A. V. Clark

The soil on this Station is a compact, silt and clay mixture.
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 |
|---|---|---|---|---|---|
| | | | $ cts. | $ cts. | $ cts. |
| A | Oats, Banner (cut for hay) | 1½ tons | 18 78 per ton | 14 00 per ton | 7 17 |
| B | Oats, Banner, and seeded | 50 bush. | 0 58 per bush. | 0 75 per bush. | 8 50 |
| C | Corn, N.W.D. | 12 tons | 4 63 tons | 6 00 per ton | 16 44 |
| D | Clover hay | 4 tons | 8 51 per ton | 17 00 per ton | 8 49 |

Manure is applied at the rate of sixteen tons per acre every fourth year. A short rotation is advisable on this Station, as the clover sod is turned under every fourth year. In decomposing, the vegetable matter serves to open up and lighten the clay.

## SALMON RIVER, PRINCE GEORGE

### Operator, J. S. Johnson

This Station was selected in the summer of 1923. The soil is a fairly heavy clay with one to three inches of black loam on the surface. Twelve acres of old timothy meadow were selected, divided into four equal fields and prepared for the crop in 1924, by means of after-harvest cultivation.

## SMITHERS, B.C.

### Operator, Geo. Oulton

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 |
|---|---|---|---|---|---|
| | | | $ cts. | $ cts. | $ cts. |
| A | Sunflowers (ensilage) | 9½ tons | 3 59 per ton | 6 00 per ton | 22 90 |
| A | Mangels, Long Red | 4 tons | 7 03 per ton | 4 00 per ton | −12 12 |
| A | Potatoes, Irish Cobbler | 192 bush. | 0 39 per bush. | 0 75 per bush. | 69 12 |
| A | Turnips, Hall's Westbury | 8 tons | 7 08 per ton | 4 00 per ton | −24 64 |
| A | Mixed—Oats, peas and vetch (grain) | 43½ bush. | 0 57 per bush. | 1 50 per bush. | 40 35 |
| B | Barley, O.A.C. No. 21 | 24 bush. | 0 64 per bush. | 1 25 per bush. | 14 64 |
| B | Mixed—Oats, peas and vetch (fodder) | 3 tons | 8 66 per ton | 20 00 per ton | 34 02 |
| C | Oats, Banner, and seeded | 40 bush. | 0 30 per bush. | 0 75 per bush. | 18 00 |
| C | Oats Banner, and seeded (cut for hay) | 2½ tons | 5 93 per ton | 15 00 per ton | 22 67 |
| D | Oats, Banner, and seeded (ensilage) | 5¼ tons | 4 51 per ton | 7 00 per ton | 14 32 |

Three varieties of certified seed potatoes, viz., Early St. George, Green Mountain, and Irish Cobbler, were grown on this Station. They gave a forty per cent higher yield than uncertified seed.

The growing of certified seed potatoes is one of the features of the Illustration Station work. Foundation stock of three varieties, Early St. Georges, Irish Cobbler, and Green Mountain, is being produced on stations throughout the province.

## TELKWA, B.C.

### Operator, F. M. Dockrill

Soil is of a loamy nature underlain with clay. Ruby wheat was sown at one and a quarter bushels and Banner oats at one and a half bushels. Both grain crops were seeded down with a mixture of timothy at ten pounds, common red five pounds, and alsike clover at five pounds per acre.

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 |
|---|---|---|---|---|---|
| | | | $ cts. | $ cts. | $ cts. |
| A | Wheat, Ruby, and seeded | 35 bush. | 0 74 per bush. | 1 25 per bush. | 17 85 |
| B | Oats, Banner, and seeded | 90 bush. | 0 23 per bush. | 0 75 per bush. | 46 71 |
| C | Timothy hay | 1½ tons | 7 85 per ton | 20 00 per ton | 14 59 |
| D | Sunflowers (ensilage) | 10 tons | 5 43 per ton | 6 00 per ton | 5 70 |
| | Mixed crop, O.P.V. (ensilage) | 4 tons | 12 34 per ton | 9 00 per ton | −13 36 |
| | Potatoes | 433 bush. | 0 26 per bush. | 0 75 per bush. | 212 17 |

Mr. Dockrill excavated a fifty-ton trench silo during the summer of 1922. Ensilage came out in a splendid condition. Several farmers in the district plan following Mr. Dockrill's lead in building this type of silo.

## VANDERHOOF, B.C.

### Operator, D. Turcotte

Spring work commenced April 21. Oats and wheat were sown April 28. Soil of this Station is described as a white silt. Moisture does not penetrate readily and the land puddles easily. The great corrector of this type of soil is the legume. Mr. Turcotte has grown test plots of alfalfa, sweet clover and red clover with most encouraging results.

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

| Field | Crop | Yield per acre | Actual Cost | Estimated value of crop on the farm | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | $ cts. | $ cts. | $ cts. |
| A | Turnips, Halls Westbury | 12 tons | 6 27 per ton | 4 00 per ton | −27 24 |
| A | Mangels, Long Red | 10 tons | 7 69 per ton | 4 00 per ton | −36 90 |
| A | Potatoes, Irish Cobbler | 110½ bush. | 0 71 per bush. | 0 75 per bush. | 4 42 |
| A | Mixed—Oats, peas and vetch (fodder) | 3 tons | 7 06 per ton | 18 00 per ton | 32 82 |
| B | Oats, Banner and seeded | 92 bush. | 0 08 per bush. | 0 75 per bush. | 61 64 |
| C | Wheat Ruby, and seeded | 39¼ bush. | 0 28 per bush. | 1 25 per bush. | 38 07 |
| D | Barley, O.A.C. No. 21, and seeded | 21 bush. | 0 21 per bush. | 1 00 per bush. | 16 63 |
| E | Mixed—Oats, peas and vetch (fodder) | 2 tons | 10 70 per ton | 18 00 per ton | 14 59 |
| F | Oats, Banner, and seeded | 91 bush. | 0 07 per bush. | 0 75 per bush. | 61 88 |
| G | Oats, Banner | 75 bush. | 0 08 per bush. | 0 75 per bush. | 50 25 |

## ILLUSTRATION STATION'S EXHIBIT

The local supervisor visited fall fairs at Prince George, Vanderhoof, Smithers and Prince Rupert with an Illustration Station's exhibit.

The purpose of the exhibit was to bring the work of the division more prominently before the people and to encourage them to visit and take an interest in the Illustration Station in their neighbourhood. It also afforded the supervisor an excellent opportunity to meet the farmers in each district.

The exhibit was in the main educational. Produce from each of the Stations was shown. Special features of the exhibit included the growing of certified seed potatoes, injurious insects and diseases among farm crops, identification and eradication of troublesome weeds and the value of growing leguminous crops. Literature on timely subjects relating to farm crops and operations was on hand for distribution.

## NEW STATIONS

During the past year the work of the division in British Columbia has been extended to include Vancouver island. Two Illustration Stations have been established under the supervision of Mr. E. M. Straight, Superintendent of the Sidney Experimental Station, one at Courtenay, operated by Halliday Bros., and the other at Comox, operated by Mr. J. A. Carthew.

# REPORT OF THE ILLUSTRATION STATIONS FOR ALBERTA

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

Twelve Illustration Stations were operated in the province of Alberta during the year 1923. This is an increase of one Station over the previous year 1922. Orion, in the southeast of the province, is the new point where work was started.

In general the crop season of 1923 was favourable, and in some sections may be described as wonderful. The good results at harvest may not be attributed entirely to the abundance of rain, but more stress must be laid upon its timeliness. Speaking broadly, the rainy season was well on at the end of May and extended over July.

MONTHLY PRECIPITATION AT STATION POINTS, 1923

| | Dela-cour | Fore-most | Grassy Lake | High River | Jenner | Milk River | Orion | Pincher Creek | Vulcan | Wain-wright | Whitla | Youngs-town | Leth-bridge |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | inches | inches | inches | inches | inches | inches | inches | inches | inches | inches | inches | inches | inches |
| January.. | 0·20 | 1·10 | 0·32 | 1·00 | No rept. | 1 47 | 0 80 | 1 06 | 0 41 | 0 20 | 0·70 | 0 15 | 0 48 |
| February | 0 30 | Nil | 1·10 | 1·00 | " | 1·10 | 0·75 | 0·88 | 1·03 | 0·85 | 0·90 | 0·50 | 0·42 |
| March... | 1 08 | 0·50 | 0·70 | 1·30 | " | 0·03 | 0·80 | 2·10 | 1·13 | 0·90 | 1·50 | 0·25 | 0·75 |
| April..... | 1·00 | 0·60 | 0·99 | 0·38 | 0·20 | 1·15 | 0·50 | 2·55 | 1·50 | 0·40 | 1·01 | 0·48 | 1·09 |
| May..... | 4·80 | 2·15 | 1·14 | 5·33 | 3·08 | 2·35 | 1·00 | 5·97 | 3·52 | 1·49 | 1·95 | 1·16 | 3·48 |
| June..... | 9·17 | 3·28 | 3·63 | 5·83 | 5·94 | 4·30 | 3·89 | 6·88 | 7·18 | 3·56 | 6·04 | 8·25 | 4·45 |
| July..... | 2·77 | 5·27 | 3·93 | 3·76 | 3·25 | 2·90 | 2·17 | 2·30 | 2·64 | 1·98 | 3·63 | 2·71 | 2·55 |
| August... | 1·50 | 0·35 | 0·58 | 0·60 | 1·11 | 2·26 | 1·51 | 2·80 | 0·14 | 2·25 | 0·82 | 1·69 | 1·01 |
| Sept..... | Nil | 0·22 | Nil | Nil | Nil | 0·73 | 0·11 | 0·65 | 0·30 | 0·43 | Nil | 0·15 | 0·18 |
| October.. | 0·05 | 0·65 | 0·60 | Nil | No rept. | 1·57 | 0·63 | 0·56 | Nil | Nil | 0·65 | 0·06 | 0·55 |
| Nov..... | 0·20 | Nil | 0·50 | 0·60 | " | 0·40 | 0·08 | 1·66 | 0·20 | Nil | Nil | 0·10 | 0·53 |
| Dec..... | 0·80 | Nil | 0·50 | 1·20 | " | 0·30 | 0·45 | 1·20 | 1·10 | 0·05 | 0·10 | 0·10 | 0·91 |
| | 21·87 | 14·12 | 13·99 | 21·00 | 13·58 | 18·56 | 12·69 | 28·61 | 19·15 | 12·11 | 17·40 | 15·60 | 16·40 |

## SILAGE CROPS AND SILOS

A special feature of illustration work in 1923 (as it was in 1922) has been the growing of corn and sunflowers for ensilage, and showing the value of the trench silo; the aim being to assist farmers in securing a supply of succulent feed for winter use at a small cash outlay. Ten acres yielding six tons per acre will give a supply of ensilage sufficient to carry fifteen head of dairy cows over a five months' winter feeding period.

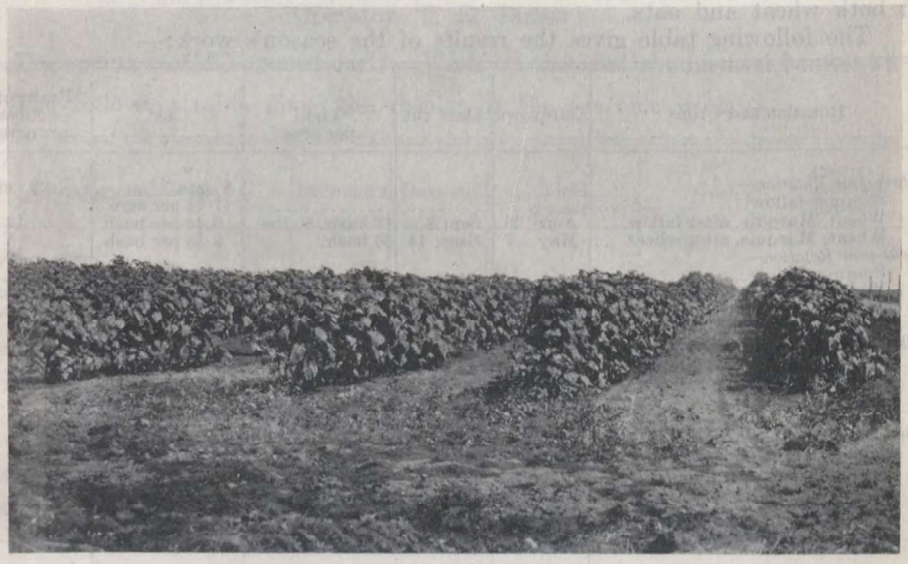
In addition to growing demonstration of corn and sunflowers in rows thirty-six inches apart, there was at one point, Wainwright, under observation a field of sunflowers growing as a summer-fallow substitute with the rows nine and a half feet apart. The past season this plan was not entirely satisfactory as the sunflowers made too strong a growth for easy handling.

## SUBSTITUTE FOR SUMMER-FALLOW

The advantages of this wide spacing were that the four horse outfit cultivated the sunflowers when they worked over the summer-fallow, and these rows of coarse growing crop protected the soil from wind.

Mr. Boyd of Wainwright, in a letter comments as follows:—

"The rows were nine feet six inches apart and eighty rods long, and were sown at the rate of five pounds per acre. I think this thin sowing is one reason for the crop blowing over with the wind. When you harrow two or three times you will pull out some plants every time. It would be better to sow eight pounds per acre, harrow twice, and then use the horse rake till ready to cultivate. I think they should be cut when about seven feet high; after they get above seven feet, the wind seems to blow them down more easily."



Sunflowers used as a summer-fallow substitute

COST FIGURES

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 | $1.00 per acre. |
| Ensiling | 1.75 per ton. |
| Manual labour per hour | Rates prevailing in the district. |
| Horse labour per hour | |
| Threshing wheat per bush | |
| Threshing oats per bush | |
| Threshing winter rye per bush | |
| Binder twine per pound | |
| *Cost of Seed—* | |
| Wheat, Marquis, per bush | $1 20 |
| Wheat, Red Fife, per bush | 1 20 |
| Wheat, Ruby, per bush | 1 20 |
| Oats, Banner, per bush | 0 68 |
| Oats, Victory, per bush | 0 68 |
| Winter Rye, per bush | 1 12 |
| Corn, N.W. Dent, per bush | 2 50 |
| Sunflowers, Mammoth Russian, per lb | 0 12 |
| Sweet clover, per lb | 0 10 |
| Western Rye Grass | The price paid the season the field was seeded; divided equally over years the meadow remains down. |
| Alfalfa | |

Allocation cost of summer-fallowing.
Two-thirds charged to the first crop and one-third charged to the second crop.

## DELACOUR

### Operator, A. H. Fennessey

Wheat was sown at the rate of one and a quarter bushels and oats at two bushels per acre.

On June 1 and July 22 this farm was in the track of severe hail-storms and as a result the crop outlook on these occasions was somewhat dismal. Moisture and soil conditions, however, were so favourable that a remarkable recovery was made, and though cutting was late, a heavy yield was obtained in both wheat and oats.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 11 24 per acre | |
| Wheat, Marquis, after fallow | April 26 | Sept.8 | 42 bush. 30 lbs. | 0 44 per bush. | 13 16 |
| Wheat, Marquis, after wheat | May 7 | Sept. 14 | 30 bush. | 0 55 per bush. | 5 94 |
| *Four-year Rotation—* | | | | | |
| Summer-fallow | | | | 10 96 per acre | |
| Wheat, Marquis, after fallow | April 26 | Aug. 31 | 41 bush. | 0 49 per bush. | 10 86 |
| Western Rye Grass (1st year) | | Aug. 20 | 3 tons | 3 69 per ton | 18 94 |
| Western Rye Grass (2nd year) | | Aug. 20 | 2 tons 400 lbs. | 4 22 per ton | 12 72 |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 8 02 per acre | |
| Oats, Banner, after fallow | May 7 | Sept. 14 | 104 bush. | 0 20 per bush. | 22 84 |
| Sweet Clover | | July 16 | 1 ton, 400 lbs. | | |
| | | Sept. 27 | 1 ton 400 lbs. | 4 93 per ton | 4 97 |
| *Demonstration Test Fields—* | | | | | |
| Victory Oats (2nd crop) | May 11 | Sept. 17 | 65 bush. | 0 24 per bush. | 11 93 |
| Alfalfa in rows | | July 24 | 1 ton | 8 05 per ton | 2 92 |
| Sweet clover | | July 17 | 1 ton, 800 lbs. | | |
| following nurse crop of oats | | Sept. 27 | 1 ton 800 lbs. | 4 21 per ton | 7 81 |
| Sunflowers after fallow | May 22 | Sept. 24 | 10 tons | 3 10 per ton | 3 97 |
| Sunflowers after wheat | May 22 | Sept. 25 | 7 tons 1000 lbs | 3 46 per ton | 0 34 |

Average yield of four years 1921 to 1923 inclusive:—

| | |
|---|---|
| Wheat on fallow | 22 bushels per acre |
| Wheat on second crop | 15 bushels per acre |
| Oats on fallow | 51 bushels per acre |
| Oats, second crop | 31 bushels per acre |
| Western rye grass hay | 1 ton per acre |

## FOREMOST

### Operator, T. H. Frankish

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 6 34 per acre | |
| Wheat, Marquis, after fallow | May 1 | Aug. 16 | 21 bush. 12 lbs. | 0 62 per bush. | 2 75 |
| Wheat, Marquis, after wheat | May 1 | Aug. 16 | 13 bush. 42 lbs. | 0 92 per bush. | − 2 26 |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 7 82 per acre | |
| Wheat seeded to Sweet Clover | May 1 | Aug. 16 | 28 bush. | 0 50 per bush. | 6 90 |
| Oats, Banner, in lieu of hay crop | May 3 | Aug. 10 | 29 bush. 27 lbs. | 0 36 per bush. | 1 67 |
| *Two-year Rotation—* | | | | | |
| Wheat, Marquis | May 1 | Aug. 17 | 28 bush. 48 lbs. | 0 50 per bush. | 7 29 |
| Corn, North West Dent, after wheat | May 21 | Sept. 14 | 2 tons 1000 lbs. | 3 40 per ton | 0 25 |

## SALIENT FEATURES

Averaging three fields of wheat on fallow the yield was double the amount received from a field of second crop wheat.

Average yield of wheat on fallow for nine years 1915-1923 inclusive, is 22 bushels per acre.

## GRASSY LAKE

### Operator, T. E. James

The spring of 1923 opened early. Work on the land commenced March 31.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (—) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 7 22 | |
| Wheat, Marquis, after fallow | April 26 | Aug. 14 | 41 bush. 15 lbs. | 0 38 per bush. | 15 19 |
| Wheat, Marquis, after wheat | April 26 | Aug. 9 | 26 bush. 36 lbs. | 0 48 per bush. | 7 23 |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 5 78 per acre | |
| Oats, Banner, after fallow | April 28 | Aug. 13 | 80 bush. | 0 24 per bush. | 14 45 |
| Oats, Banner, after oats | April 28 | Aug. 2 | 40 bush. | 0 25 per bush. | 4 92 |
| *Four-year Rotation—* | | | | | |
| Summer-fallow | | | | 6 50 per acre | |
| Wheat, Marquis, seeded to Rye Grass | April 26 | Aug. 14 | 21 bush. 36 lbs. | 0 56 per bush. | 3 02 |
| West Rye Grass (1st year) failure fallowed | | | | 6 13 per acre | |
| West Rye Grass (2nd year) | | July 24 | 800 lbs. | 13 05 per ton | — 1 51 |

SALIENT FEATURES OF WORK

Farmers are anxious to secure seed grain from a clean growing productive field. Mr. James exchanged five hundred bushels of wheat for use as seed in 1924.

The average yield of wheat on fallow for eight years, 1916 to 1923 inclusive, is eighteen bushels per acre.

## HIGH RIVER

### Operator, B. F. Kiser

The farm on which the station is located at High River was in the heart of a July 1 hail-storm. This storm cut the then promising crops to the ground. The recovery growth was remarkable until early frosts August 1 and September 10 put the possibility of a good grain harvest beyond hope. Some fields of wheat were threshed and gave a yield from thirteen to seventeen bushels per acre.

A ten-acre field of sweet clover was of interest from early spring until its second cutting September 4. On May 4, less than a month from the going of snow, the sweet clover plants had come on so well that thirty-seven head of cattle were staying on the field for pasture, neglecting entirely other areas.

One half of this clover field was allowed to grow for nay. The first cut of the crop was not rated as hay, owing to its badly stripped, hailed condition, but the second cutting of September 4 gave a yield of one ton, twelve hundred pounds per acre of fair quality sweet clover.

The average yield of wheat on fallow for seven years, 1917 to 1923 inclusive, is nineteen bushels, and of wheat, second crop, over the same period, twelve bushels per acre.

Filling the trench silo. Horses are used to tramp down the ensilage

## JENNER

### Operator, Jerry Fisher

The spring of 1923 opened in good time. Work on the land commenced April the 13. The following table gives the results of the season's work:—

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 6 63 per acre | |
| Wheat, Marquis, after fallow | May 2 | Aug. 18 | 18 bush. 48 lbs. | 0 62 per bush. | 2 40 |
| Wheat, Marquis, after wheat | May 2 | Aug. 17 | 15 bush. 48 lbs. | 0 70 per bush. | 0 73 |
| *Two-year Rotation—* | | | | | |
| Wheat, Marquis | May 1 | Aug. 17 | 16 bush. 36 lbs. | 0 70 per bush. | 0 83 |
| Corn, North West Dent | | Sept. 12 | 6 tons | 1 75 per ton | 10 48 |
| Sunflowers | | Sept. 13 | 4 tons | 2 63 per ton | 3 48 |

## MILK RIVER

### Operator, P. W. Stimson

The spring of 1923 opened in good time. Work on the land commenced April 13.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 5 65 | |
| Wheat, Marquis, after fallow | April 20 | Aug. 24 | 40 bush. | 0 38 per bush. | 14 89 |
| Wheat, Marquis, after wheat | May 11 | Aug. 24 | 18 bush. | 0 73 per bush. | 0 39 |
| *Four-year Rotation—* | | | | | |
| Summer-fallow | | | | 5 95 per acre | |
| Wheat, Marquis | April 20 | Aug. 23 | 40 bush. | 0 37 per bush. | 15 39 |
| West Rye Grass (1st year) | | July 23 | 1 ton | 7 08 per ton | 2 92 |
| West Rye Grass (2nd year) | | July 26 | 1 ton, 400 lbs. | 5 08 per ton | 5 90 |
| *Demonstration Test Fields—* | | | | | |
| Rosen Rye (2nd crop) | | Aug. 4 | 15 bush. 1600 lbs. | 0 70 per bush. | − 1 49 |
| Alfalfa in rows | | July 3 / Aug. 29 | 800 lbs. | 9 83 per ton | 0 20 |
| Corn, North West Dent, | May 29 | Sept. 11 | 6 tons | 2 00 per ton | 9 02 |
| Sunflowers | May 29 | Sept. 11 | 8 tons | 1 50 per ton | 16 02 |

Average yield of wheat on fallow for eight years, from 1916 to 1923 inclusive, is twenty-one bushels per acre, and wheat, second crop, for seven years 1917 to 1923 inclusive, is ten bushels per acre.

## ORION

### Operator, George Wagar

Work was commenced at this point in the spring of 1923. The location of Mr. Wagar's farm is south ½ of section 6, township 6, range 6, west of the 4th meridian. The lay of the land chosen is in a flat and the nature of the soil is more or less tight and clay-like.

This first season, work was of a preliminary order.

## PINCHER CREEK

### Operators, Sandgren and Carlson

April was well advanced when the spring of 1923 opened up for work on the land. The following table gives the results of the season's work:—

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 9 94 per acre | |
| Wheat, Marquis, after fallow | May 3 | Sept. 4 | 27 bush. 24 lbs. | 0 64 per bush. | 2 95 |
| Wheat, Marquis, after wheat | May 2 | Sept. 4 | 20 bush. | 0 78 per bush. | −0 61 |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 8 74 per acre | |
| Wheat, Ruby, seeded sweet clover | May 4 | Aug. 28 | 26 bush. 36 lbs. | 0 69 per bush. | 1 55 |
| Sweet clover | | Aug. 27 | 1000 lbs. | 18 84 per ton | −5 92 |
| *Demonstration Fields—* | | | | | |
| Western Rye Grass (3rd year) | | Aug. 14 | 1 ton, 400 lbs. | 6 33 per ton | 4 41 |
| Alfalfa (7th year) | | July 3 | 2 tons 666 lbs. | 3 91 per ton | 16 91 |
| Oats, Banner, after fallow | May 4 | Sept. 14 | 40 bush. | 0 42 per bush. | None |

SALIENT FEATURES

The yields of grain in 1923 did not increase above the average in a way to correspond with the season's high rain-fall.

Alfalfa sown in rows in 1916 has for the succeeding seven years given an average yield of one and one quarter tons per acre. These rows of alfalfa, in years when timothy and rye grass meadows were brown, stood out in a luxuriant green.

Average yield of wheat on fallow for eight years from 1916 to 1923 inclusive is twenty-one bushels, and of wheat, second crop, for seven years 1917 to 1923 inclusive, eleven bushels per acre.

## VULCAN

### Operator, J. H. Cook

The spring of 1923 opened near the average date. Work on the land commenced April the 20. First seeding on the Station was done on May 1.

One of the outstanding features on the Illustration Station was a field of Arctic sweet clover grown in rows for purpose of seed. This field was well and carefully kept, and at maturity stood to a uniform height of about six feet.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | ..... | ..... | ..... | 9 23 per acre | |
| Wheat, Marquis, after fallow | May 1 | Aug. 27 | 58 bush. | 0 39 per bush. | 20 62 |
| Wheat, Marquis, after wheat | May 5 | Sept. 1 | 38 bush. | 0 47 per bush. | 10 47 |
| *Cultural Treatment—* | | | | | |
| Wheat, Marquis, after fallow | May 2 | Aug. 28 | 54 bush. | 0 40 per bush. | 18 65 |
| Wheat, Marquis, after field peas | May 4 | Aug. 28 | 45 bush. | 0 37 per bush. | 17 05 |
| Wheat, Marquis, after corn and sunflowers | May 3 | Aug. 27 | 45 bush. | 0 36 per bush. | 17 44 |
| *Demonstration Test Fields—* | | | | | |
| Alfalfa in rows | ..... | July 18 | 1 ton, 400 lbs. | | |
| seeded 1922 | ..... | Sept. 15 | 1600 lbs. | 5 72 per ton | 8 55 |
| Arctic sweet clover in rows as seed | ..... | Aug. 30 | 6 bush. | 3 65 per bush. | 32 08 |
| Corn, North West Dent, after wheat | May 25 | Sept. 13 | 3 tons, 100 lbs. | 4 58 per ton | −3 79 |
| Sunflowers after wheat | May 25 | Sept. 14 | 5 tons, 1000 lbs. | 2 92 per ton | 3 21 |

SALIENT FEATURES

Wheat after good summer-fallow produced a greater yield and profit than wheat grown after other treatment.

*Note.*—This crop bears two-thirds the charges of the 1922 fallowing.

Stubble land for fallow is cultivated in the spring, ploughed before June 15, harrowed and cultivated again.

Sweet clover carefully grown in rows will reach a high standard as a seed crop.

The field of Arctic sweet clover in the standing field inspection for registration received eighteen out of a possible twenty points. The yield of clean seed was six bushels per acre, with a germination test of ninety-four per cent in five days.

Arctic sweet clover harvested for seed

## WAINWRIGHT

### Operator, G. C. Boyd

The spring of 1923 opened near the average date. Work on the land commenced April the 17. Wheat was sown at the rate of one and a quarter bushels and oats at two bushels per acre. The following table gives the results of the season's work:—

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 8 58 per acre | |
| Wheat, Marquis, after fallow | April 24 | Aug. 30 | 45 bush. 48 lbs. | 0 42 per bush. | 15 28 |
| Wheat, Marquis, after wheat | April 24 | Aug. 30 | 37 bush. 48 lbs. | 0 46 per bush. | 11 00 |
| *Four-year Rotation—* | | | | | |
| Summer-fallow | | | | 8 34 per acre | |
| Wheat, Marquis, after fallow | April 24 | Aug. 29 | 48 bush. | 0 38 per bush. | 17 96 |
| West Rye Grass (1st year) | | July 30 | 2 tons, 1200 lbs. | 3 07 per ton | 18 02 |
| West Rye Grass (2nd year) | | July 25 | 2 tons | 4 74 per ton | 10 51 |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 8 20 per acre | |
| Oats, Banner, after fallow | May 22 | Sept. 7 | 92 bush. 14 lbs. | 0 20 per bush. | 20 14 |
| Oats, Banner, after oats | May 22 | Sept. 7 | 102 bush. 20 lbs. | 0 19 per bush. | 23 73 |
| *Two-year Rotation—* | | | | | |
| Wheat, Marquis, after corn and sunflowers | April 24 | Aug. 30 | 41 bush. 12 lbs. | 0 36 per bush. | 16 15 |
| Corn, after wheat | May 26 | Sept. 10 | 12 tons | 1 33 per ton | 26 06 |
| Sunflowers, after wheat | May 26 | Sept. 10 | 13 tons | 1 23 per ton | 29 56 |
| *Demonstration Test Fields—* | | | | | |
| Wheat, Ruby, after fallow | May 4 | Aug. 28 | 41 bush. | 0 44 per bush. | 12 69 |
| Oats, Victory, after fallow | May 22 | Sept. 8 | 92 bush. | 0 20 per bush. | 20 23 |
| Alfalfa in rows | 1921 | July 10<br>Sept. 17 | 1 ton, 500 lbs.<br>1200 lbs. | 7 05 per ton | 5 46 |

SALIENT FEATURES

Wee McGregor potatoes turned out 544 bushels per acre.

Howes Alberta Yellow Flint corn was much appreciated as a table corn.

Wheat following a western rye sod fallow in a four-year rotation gave a yield of two bushels and twelve pounds more per acre than wheat following a fallow of grain stubble in a three-year wheat rotation. This comparison will require the results of further cropping before it will be safe to draw definite conclusions. The indication is that the fibre of grass sod going back into the soil has a beneficial influence upon field of grain as well as on soil texture.

Second crop oats gave a larger yield than first crop after fallow. The latter, from heavy straw growth, lodged to such an extent that the yield of grain was reduced.

Western rye grass is proving a safe hay crop for this district. In four years, 1920 to 1923 inclusive, the first year hay crop has averaged a yield of one and three-quarter tons, and second year hay crop in three years, 1921 to 1923, a yield of one and a quarter tons per acre.

Wheat on fallow in a three-year grain rotation, for four years, 1920 to 1923 inclusive, has given an average yield of thirty-one bushels and thirteen pounds; and wheat second crop, over the same years, twenty-four bushels and thirty pounds per acre.

Oats over corresponding years and conditions with wheat gave an average yield, on fallow of seventy-nine bushels, and a second crop, sixty-four bushels per acre.

## WHITLA

### Operator, R. H. Babe

The spring of 1923 opened in good time. Work on the land commenced April 10. First seeding on the Station was done on April 21. Conditions here, though improved over recent years, left much to be desired in the way of rain and good crop season.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation*— | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 9 24 per acre | |
| Wheat, Marquis, after fallow | April 21 | Aug. 20 | 13 bush. 12 lbs. | 0 89 per bush. | −1 82 |
| Wheat, Marquis, after wheat | May 5 | Aug. 20 | 7 bush. | 1 52 per bush. | −5 36 |
| *Three-year Rotation*— | | | | | |
| Summer-fallow | | | | 8 89 per acre | |
| Wheat, Marquis, seeded to sweet clover | April 21 | Aug. 23 | 12 bush. | 1 02 per bush. | −3 26 |
| Oats as substitute hay crop | May 9 | Aug. 25 | 1 ton 800 lbs. | 6 49 per ton | 4 91 |
| *Two-year Rotation*— | | | | | |
| Wheat, Marquis, after corn and sunflowers | April 21 | Aug. 23 | 11 bush. | 0 89 per bush. | −1 56 |
| Corn, North West Dent | May 11 | Aug. 31 | 4 tons | 5 20 per ton | −6 82 |
| Sunflowers | May 11 | Sept. 1 | 6 tons | 3 47 per ton | 0 18 |
| *Demonstration Test Fields*— | | | | | |
| Oats, Banner, after fallow | May 10 | Aug. 24 | 85 bush. | 0 23 per bush. | 16 47 |
| Rosen Rye (2nd crop) | | | Failure | | −9 98 |

SALIENT FEATURES

A non-ploughed summer-fallow, in a first year trial, did not prove satisfactory, in so far as the following year is concerned. First, the cost of work

was higher to obtain similar soil conditions than for a ploughed fallow. Comparing 1922 ploughed fallow with 1923 non-ploughed fallow, the latter cost $4.12 more per acre.

Second, weed control was difficult this year in the non-ploughed fields. When an attempt was made to leave the land untouched for six weeks from August 1 to September 15 in order that cut-worm moth's egg-laying might be avoided through maintaining the desired crusted soil surface, the weeds took possession of these fields to such an extent that only tedious effort would remove them.

Wheat after fallow for an average of seven years, 1917 to 1923 inclusive, has given a yield of nine and one third bushels per acre.

## YOUNGSTOWN

### Operator, G. S. Coad

On June 15 a terrific hail-storm went over the district flattening and washing the crops. With continued good moisture conditions, a fair recovery was made in grain growth, and a medium crop was harvested.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 7 85 per acre. | |
| Wheat, Marquis, after fallow | April 21 | Aug. 21 | 25 bush. 45 lbs. | 0 55 per bush. | 5 07 |
| Wheat, Marquis, after wheat | May 10 | Aug. 27 | 26 bush. 30 lbs. | 0 46 per bush. | 7 64 |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 6 63 per acre. | |
| Wheat, Marquis, seeded to Rye Grass | April 23 | Aug. 18 | 28 bush. | 0 53 per bush. | 6 27 |
| West Rye Grass (1st year) | | July 23 | 2 tons. | 3 19 per ton | 7 23 |
| *Three-year Rotation—* | | | | | |
| Summer-fallow | | | | 7 65 per acre. | |
| Wheat, Red Fife, seeded sweet clover | April 24 | Aug. 27 | 25 bush. | 0 58 per bush. | 4 24 |
| Sweet Clover | | July 18 | 3 tons | 3 56 per ton | 10 31 |
| *Two-year Rotation—* | | | | | |
| Wheat, Marquis, after corn and sunflowers | April 23 | Aug. 18 | 23 bush. | 0 42 per bush. | 7 61 |
| Corn, after wheat | May 11 | | Hailed out. | 10 90 per acre | −10 90 |
| Sunflowers, after wheat | May 11 | Sept. 19 | 12 tons | 1 95 per ton | 18 60 |
| *Demonstration Test Fields—* | | | | | |
| Oats, Victory (2nd crop) | May 2 | Aug. 29 | 55 bush. | 0 28 per bush. | 7 83 |
| Banner, oats (2nd crop) | May 12 | Aug. 29 | 43 bush. | 0 33 per bush. | 3 82 |
| Alfalfa in rows | | July 25 | 2 tons | 4 89 per ton | 10 22 |

#### SALIENT FEATURES

Western rye grass sod fallow gave two and a quarter bushels more in yield per acre than a wheat stubble fallow.

Western rye grass has proved itself a possible hay crop even amid adverse conditions. Over the period 1919-1923, the average yield of this hay has been one ton per acre.

Wheat on fallow for four years, from 1920 to 1923 inclusive, gave an average yield of sixteen bushels eleven pounds per acre, and wheat, second crop, for the same period, gave an average yield of twelve bushels, thirty-seven pounds per acre.

# REPORT OF THE ILLUSTRATION STATIONS IN SASKATCHEWAN

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

Twenty Illustration Stations were operated in Saskatchewan this year. Five of these are new Stations on which work was started this spring.

One feature of this work which has created interest in the districts served is the use of the trench silo for making ensilage from corn and sunflowers. The results obtained by the farmers who are operating these Stations have been so encouraging that many other farmers in the district are taking up this line of work.

The season of 1923 in point of the amount and distribution of rainfall was favourable for crop production, particularly of grain crops in both the north and south part of the province. However, there was one adverse factor, the rust, which was very widespread. In three of the twenty districts the damage was quite serious, while in other places, the effect was not so noticeable, but in many cases wheat crops which promised a heavy yield did not come up to expectations.

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

| | |
|---|---|
| Rent of land | 8 per cent interest on land value. |
| Use of machinery per acre | $1 00 |
| Manual labour | Rates prevailing in the district. |
| Horse labour | |
| Threshing | |
| Binder twine | |

| *Cost of Seed*— | $ cts. |
|---|---|
| Wheat per bushel | 1 20 |
| Oats per bushel | 0 60 |
| Barley per bushel | 0 75 |
| Rye per bushel | 0 75 |

In calculating the profit from each crop, the following values have been placed on them:—

| | $ cts. |
|---|---|
| Wheat, per bushel | 0 80 |
| Oats, per bushel | 0 30 |
| Barley, per bushel | 0 50 |
| Rye, per bushel | 0 60 |
| 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 to 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, Herbert, Meota, Parkbeg and Weyburn.

RAINFALL FOR 1923—INCHES—SASKATCHEWAN

| Stations | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Total |
|---|---|---|---|---|---|---|---|---|---|
| Tugaske | 0·22 | 3·69 | 2·27 | 2·04 | 1·70 | 0·13 | 0·15 | ..... | 10·20 |
| Meota | 0·60 | 0·67 | 4·50 | 2·76 | 1·73 | 0·39 | 0·40 | ..... | 11·05 |
| Shaunavon | 0·18 | ..... | 7·48 | 4·23 | 0·13 | ..... | ..... | ..... | 12·02 |
| Parkbeg | 0·34 | 2·59 | 3·15 | 2·52 | 1·13 | 0·09 | 0·32 | 0·25 | 10·39 |
| Radville | ..... | 0·22 | 6·33 | 6·25 | 0·85 | 2·83 | 0·32 | 1·07 | 17·87 |
| Kindersley | ..... | 0·85 | 4·66 | 4·27 | 2·30 | 0·04 | 0·33 | 0·06 | 12·51 |
| Pambrum | 0·60 | 4·43 | 6·52 | 1·51 | 1·24 | ..... | 0·42 | ..... | 14·72 |
| Avonlea | 0·12 | 1·91 | 4·22 | 3·90 | 0·51 | 1·40 | ..... | ..... | 12·06 |
| Riverhurst | 0·10 | 1·06 | 6·90 | 2·73 | 1·88 | 0·16 | 0·26 | 0·42 | 13·51 |
| Lloydminster | 0·02 | 0·77 | 4·78 | 3·56 | 3·23 | 0·51 | 0·85 | ..... | 13·72 |
| Davidson | 0·76 | 0·87 | 4·63 | 2·31 | 2·13 | 0·41 | 0·14 | ..... | 11·25 |
| Ogema | 0·15 | 0·44 | 5·82 | 6·84 | 1·50 | 1·44 | 0·30 | 2·05 | 18·54 |
| Spruce Lake | 0·10 | 0·76 | 3·86 | 0·64 | 2·33 | ..... | 0·82 | ..... | 8·51 |
| Weyburn | 0·80 | 2·48 | 5·53 | 0·53 | 0·79 | 2·85 | 0·42 | 0·84 | 14·24 |
| Herbert | ..... | 1·57 | 3·00 | 1·99 | 0·71 | ..... | ..... | ..... | ..... |
| Trossachs | ..... | 1·00 | 6·00 | 4·35 | 0·77 | 2·31 | 0·25 | 0·93 | 15·61 |
| Demaine | ..... | ..... | 9·37 | 3·05 | 2·38 | ..... | 0·29 | ..... | 15·09 |
| Churchbridge | ..... | 0·67 | 5·55 | 5·14 | 2·62 | 0·73 | ..... | ..... | 14·71 |
| Zealandia | 0·77 | 1·21 | 4·30 | 2·59 | 0·37 | ..... | 0·25 | ..... | ..... |
| Empress | ..... | 0·21 | 6·28 | 3·17 | 1·99 | 0·29 | 0·18 | 0·18 | 12·30 |
| Swift Current | 0·64 | 2·00 | 7·01 | 3·87 | 1·41 | 0·02 | 0·39 | 1·16 | 16·50 |

## AVONLEA

### Operator, J. W. Miller

Spring opened here later than usual and seeding of wheat was started May 4 on the Station. The early part of the season was fairly dry, but beginning the latter part of May there was a good supply of rain throughout the rest of the growing season.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| *Three-year Rotation*— | | | | | |
| Summer-fallow | ..... | ..... | ..... | 6 59 per acre | |
| Wheat on fallow | May 4 | Aug. 21 | 20 bush. | 0 77 per bush. | 0 61 |
| Wheat (Hay, Rye Grass substituted) | ..... | July 16 | 1 ton | 8 21 per ton | 1 79 |
| *Six-year Rotation*— | | | | | |
| Summer-fallow | ..... | ..... | ..... | 7 48 per acre. | |
| Wheat (Corn, N.W. Dent substituted) | May 24 | Sept. 11 | 6 tons (green weight) | 1 58 per ton | 11 53 |
| Oats | May 23 | Aug. 13 | 42 bush. | 0 39 per bush. | −3 83 |
| Corn (N.W. Dent) | May 23 | Sept. 12 | 5½ tons | 1 53 per ton | 10 82 |
| Wheat seeded down with Rye Grass and Sweet Clover hay | May 4 | Aug. 13 | 13 bush. | 0 78 per bush. | 0 24 |
| | | July 19 | 1½ tons | 3 82 per ton | 9 27 |
| *Demonstration Test Plots*— | | | | | |
| Sweet Clover Hay | ..... | July 14 | 2 tons | 5 41 per ton | 9 18 |
| Sunflowers | May 24 | Sept. 13 | 6 tons (green weight) | 2 11 per ton | 3 83 |
| Barley (O.A.C. 21) | May 22 | Aug. 4 | 25 bush. | 0 58 per bush. | −1 95 |
| Kubanka wheat (2nd crop) | May 14 | Aug. 23 | 18 bush. | 0 71 per bush. | 1 13 |
| Early Red Fife (2nd crop) | May 17 | Aug. 22 | 11 bush. | 1 27 per bush. | −5 18 |

## CHURCHBRIDGE

### Operator, Henry Grube

Work was started in 1923 on the farm of Mr. Henry Grube. The land selected had been fall-ploughed. An area of thirty-two acres was laid off into seven fields of four acres each, and two fields of two acres each.

Marquis wheat gave a yield of fifteen bushels per acre and the Ruby wheat fourteen bushels. Both were damaged considerably by the rust, but the Ruby, ripening seven days earlier, suffered the least and gave a better quality of grain. The cost of production was eighty cents a bushel for the Marquis, and eighty-three cents for the Ruby.

A crop of North West Dent corn at Churchbridge Illustration Station

Corn (N.W. Dent) made very good growth on the high land in the field, but there was too much moisture for it on the low land, and here the growth was short. There was a good development of cobs, many reaching the early dough stage. This corn was sown in check rows. The yield was approximately three tons per acre.

## DAVIDSON

### Operator, R. Lloyd

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 7 19 per acre | |
| Marquis wheat | May 5 | Aug. 29 | 18 bush. | 0 87 per bush. | −1 28 |
| Marquis wheat (2nd crop) | May 4 | Aug. 21 | 22⅜ bush. | 0 68 per bush. | 2 73 |
| *Six-year Rotation—* | | | | | |
| Summer-fallow | | | | 9 03 per acre | |
| Marquis wheat | May 5 | Aug. 29 | 18 bush. | 0 87 per bush. | −1 28 |
| Banner oats | May 18 | Aug. 21 | 62 bush | 0 29 per bush. | 0 76 |
| Corn (N.W. Dent) | May 24 | Sept. 6 | 3 tons (fodder) | 2 72 per ton | 12 85 |
| Wheat seeded with Sweet Clover Hay, Sweet Clover seeded alone. | May 4 | Aug. 29 | 18⅜ bush. | 0 85 per bush. | −0 96 |
| *Demonstration Test Plots—* | | | | | |
| Marquis Wheat after corn | May 4 | Aug. 21 | 26⅜ bush. | 0 43 per bush. | 9 65 |
| Alfalfa | | July 2 / Aug. 18 | 2 tons | 5 62 per ton | 8 75 |
| Sweet Clover | | | Ploughed in for | green manure. | |

Wheat after corn gave a larger yield than on any other land. The corn crop this year gave a good yield of excellent fodder, and was cut before frost damage.

Alfalfa gave two cuttings of hay this season with a total yield of two tons per acre. This was well harrowed in the spring with the spring-tooth harrow.

## DEMAINE

### Operator, W. J. Swan

Work was started on the farm of Mr. W. J. Swan this spring. Two rotations will be started next year as follows: A three-year rotation, first year fallow, second year wheat, third year wheat; and a six-year rotation of fallow, wheat, oats, corn, wheat (seeded with western rye grass and sweet clover), hay.

One field each of pure Marquis wheat and Banner oats was sown on spring-ploughed stubble land this spring. The wheat yielded twenty-six bushels per acre and cost fifty cents a bushel to produce. The oats yielded eighty-two bushels and the cost of production was twenty-two cents a bushel. The grain was a good quality and the seed will be used for sowing the fields next spring. Another large field of pure Marquis was seeded on a field adjoining the Station. One purpose of this work is to grow selected seed, and the surplus grain from these fields is sold at a reasonable price.

A four-acre field of corn was also grown, and gave a yield of about six tons per acre.

Mr. Swan excavated a trench silo this fall, 30 feet by 12 feet by 8 feet, and filled it with corn.

Western rye grass, brome, sweet clover and alfalfa were all seeded this year without a nurse crop, on spring-ploughed stubble land, for a hay crop in 1924.

## EMPRESS

### Operator, Wm. Rowles

Work was started here this spring. A start was made with two rotations. One includes a combined rotation of corn-wheat and fallow-wheat; the other is a six-year rotation: first year fallow, second year wheat, third year oats, fourth year corn, fifth year wheat seeded with western rye grass and sweet clover, sixth year hay.

The crops sown this year include corn (North Western Dent), millet (Hungarian), western rye grass and sweet clover. The corn was sown May 21 with the grain drill, at about twenty pounds per acre, and cut September 1. It made a good growth and gave a yield of about three tons per acre, of excellent fodder.

The millet was sown June 1 at twenty pounds per acre and cut August 2. It gave a yield of three tons of hay per acre.

The cost of fallowing on this station was $7.51 per acre.

## HERBERT

### Operator, Milton Holmes

The regular rates of seeding on this station are: wheat on fallow, one and a quarter bushels; second crop, one bushel; oats, one and three-quarter

bushels; western rye grass, twelve pounds; sweet clover fifteen pounds. There was sufficient moisture during the growing season for the favourable growth of crops.

Some rust developed in the wheat late in the season, but did not advance far enough to do serious damage.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| *Three-year Rotation—* | | | | | |
| Fallow | | | | 8 32 per acre | |
| Marquis wheat | May 3 | Aug. 24 | 26 bush. | 0 62 per bush. | 4 48 |
| Sweet clover | | July 2 | 2¾ tons | 4 58 per ton | |
| *Six-year Rotation—* | | | | | |
| Fallow | | | | 8 65 per acre | |
| Marquis wheat | May 4 | Aug. 25 | 26 bush. | 0 62 per bush. | 4 48 |
| Oats (Brome grass substituted this year). | | | | | |
| Corn (N.W. Dent) | May 12 | Sept. 12 | 2 tons | 3 34 per ton | 3 98 |
| Wheat after corn, seeded half Sweet Clover, half rye grass. | April 28 | Aug. 20 | 21 bush. | 0 49 per bush. | 6 39 |
| Hay (Brome grass), 1st year | | July 23 | 1¼ tons | 4 90 per ton | 6 37 |
| *Demonstration Test Plots—* | | | | | |
| Early Red Fife wheat (2nd crop) | May 12 | Aug. 29 | 25 bush. | 0 58 per bush. | 5 49 |
| Barley (O.A.C. 21) | May 26 | Aug. 20 | 34 bush. | 0 40 per bush. | 3 32 |
| Rye Grass hay (2nd year) | | July 19 | 1 ton | 6 04 per ton | 3 96 |
| Alfalfa hay | June, 1921 | July 4 (1st cut) Aug. 1 (2nd cut) | 2¾ tons | 3 35 per ton | 18 77 |

SUMMARY OF MOST IMPORTANT FEATURES

Sweet clover hay gave two cuttings with a yield of nearly three tons per acre.

Wheat after corn yielded only five bushels per acre less than after fallow. However, the net profit from this crop was $1.91 per acre greater than from the wheat on fallow. Early Red Fife wheat rusted more than Marquis, and the grade was lower.

Alfalfa gave two cuttings of hay this year, with a yield of nearly three tons per acre. This was seeded in rows thirty inches apart in 1921. This spring it was harrowed twice, later cultivated between the rows.

A considerable acreage of corn was grown in this district this year and a number of trench silos put in. The supervisor visited a number of farmers at the time they were starting their silos, and gave assistance to those who were doing the work for the first time.

## KINDERSLEY

### Operator, Robert Simpson

Spring was late in this district, the first seeding of wheat on the illustration fields was done on May 5. A light frost came on the last night of July and the first night of August which damaged the wheat on the fallow fields, particularly on low land. Wheat on the stubble land, being earlier, was not injured to any extent and gave a good yield of excellent quality. The oats were not damaged and gave a heavy yield.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| *Three-year Rotation*— | | | | | |
| Summer-fallow | ..... | ..... | ..... | 7 71 per acre | |
| Marquis wheat (2nd crop this year) | May 5 | Aug. 31 | 36¼ bush. | 0 39 per bush. | 14 74 |
| Marquis wheat (2nd crop this year) | May 5 | Aug. 31 | 30⅛ bush. | 0 35 per bush. | 13 62 |
| *Six-year Rotation*— | | | | | |
| Summer-fallow | ..... | ..... | ..... | 8 72 per acre | |
| Marquis wheat | May 3 | Sept. 10 | 27½ bush. | 0 59 per bush. | 5 90 |
| Banner oats | May 19 | Sept. 10 | 103 bush. | 0 21 per bush. | 9 35 |
| Corn (N.W. Dent) | May 22 | Aug. 1 | | | |
| Wheat and seeded half with Western rye grass, half sweet clover | May 7 | Aug. 30 | 22½ bush. | 0 59 per bush. | 1 59 |
| Hay (wheat substituted this year) | May 5 | Aug. 30 | 45 bush. | 0 37 per bush. | 19 49 |
| *Demonstration Test Plots*— | | | | | |
| Brome grass seeded with one bushel of oats per acre | May 19 | Sept. 15 | 3½ tons oats | 4 41 per ton | 18 17 |
| Alfalfa seeded with half bushel of oats | May 19 | Sept. 15 | 2¾ tons oats | 5 09 per ton | 13 51 |

SUMMARY OF MOST IMPORTANT FEATURES

This is the first year illustration work has been carried on in this district and a good start has been made. A foundation has been laid for two rotations of crops as follows: a three-year rotation (which is usually followed by most farmers in the district), first year, fallow; second year, wheat, third year, wheat: also a six-year rotation of fallow, wheat, oats, corn, wheat (seeded with western rye grass and sweet clover), and sixth year, hay. The grass and clover catch with the wheat made a successful stand. Selected Marquis wheat and Banner oats were supplied from the Experimental Station, Swift Current. The crop from this, except what was damaged by frost, gave an excellent yield of high quality grain—wheat as high as forty-five bushels, and oats one hundred and three bushels per acre. One of the purposes of this work is to distribute pure seed in the district and all surplus grain is sold at a reasonable price.

Corn was frozen back by the August frost, but previous to this date it had made a fairly good growth. Both corn and sunflowers will be grown again next year and it is hoped that the crop will warrant the use of a trench silo. A number of the neighbours grew corn or sunflowers and excavated trench silos.

A two-acre field of alfalfa and the same of brome grass were sown with a light nurse crop of oats. In both cases an excellent catch was obtained, besides a heavy yield of green feed from the nurse crop.

An interesting test is being made in methods of fallowing in the three-year rotation. One part of the field was ploughed and worked in the usual way, while another part was worked with the duck-foot cultivator alone. Wheat will be sown on both next spring.

## LLOYDMINSTER

### Operator, H. Hill

Spring opened here at the usual date. The following table gives the results of the season's work:—

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation*— | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 7 08 per acre | |
| Marquis wheat on fallow | April 26 | Sept. 3 | 26½ bush. | 0 56 per bush. | 6 36 |
| Wheat (2nd crop) fall rye for hay substituted this year | Sept. 5 | June 30 | 1¼ tons | 5 89 per ton | 7 39 |
| *Five-year Rotation*— | | | | | |
| Summer-fallow | | | | 7 01 per acre | |
| Wheat | April 27 | Aug. 29 | 28½ bush. | 0 55 per bush. | 6 99 |
| Oats (seeded with Western Rye grass and sweet clover | May 26 | Sept. 8 | 81 bush. | 0 21 per bush. | 6 95 |
| Hay, 1st year | | July 30 | 1¾ tons | 4 21 per ton | 8 10 |
| Hay, 2nd year | | Aug. 13 | 1¾ tons | 3 54 per ton | 10 34 |
| *Demonstration Test Plots*— | | | | | |
| Corn (N.W.D.) | May 21 | Sept. 15 | 6 tons (green weight) | 3 12 per ton | 2 30 |
| Sunflowers (Giant Russian) | May 21 | Sept. 14 | 10 tons | 2 01 per ton | 7 32 |
| Sweet Clover Hay | | July 4 | 2½ tons | 2 77 per ton | 15 90 |
| Early R.F. wheat (after corn) | April 27 | Aug. 29 | 35½ bush. | 0 46 per bush. | 12 24 |
| Peas (Arthur) | | | 17 bush. | 1 15 per bush. | 14 39 |
| Alfalfa (seeded alone). | | | | | |

#### SUMMARY OF MOST IMPORTANT FEATURES

Selected Marquis wheat and Banner oats sufficient for five acres each were supplied for the illustration fields from the Swift Current Experimental Station this spring. This gives the operator a fresh start with pure seed.

Both corn and sunflowers gave a good yield, sunflowers being much the heavier crop. Both were cut with the corn binder, run through the cutting box into a trench silo. A number of other farmers in the district put in trench silos.

Peas were grown for the first time on this Station. "Arthur" was the variety used. While the yield was not large it proved a fairly profitable crop.

Sweet clover gave a good yield of hay, first crop. The second crop was left for seed, but the frost came before it ripened. Two cuttings of hay, however, can usually be depended on.

## MEOTA

Operator, Walter Tait

Spring opened here about the usual date with first seeding on April 20. The following table gives the results of the season's work:—

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation*— | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 7 41 per acre | |
| Marquis wheat (on fallow) | April 20 | Aug. 20 | 49 bush. | 0 40 per bush. | 19 48 |
| Marquis wheat (on spring plowing) | April 21 | Aug. 14 | 30½ bush. | 0 52 per bush. | 8 66 |
| *Five-year Rotation*— | | | Profit per acre | for rotation. | 9 38 |
| Summer-fallow | | | | 8 22 per acre. | |
| Marquis wheat (after sod fallow) | April 21 | Aug. 21 | 43 bush. | 0 44 per bush. | 15 46 |
| Banner oats, and seeded with West Rye grass | May 12 | Aug. 14 | 2½ tons (green feed) | 4 30 per ton | 14 25 |
| Hay (1st year) | | Aug. 7 | 1½ tons | 4 35 per ton | 8 48 |
| Hay (2nd year) | | Aug. 7 | 1½ tons | 4 29 per ton | 8 57 |
| *Two-year Rotation*— | | | Profit per acre | for the rotation | 9 35 |
| Corn (N.W.D.) | May 24 | Sept. 12 | 2 tons (fodder) | 4 84 per ton | 4 32 |
| Marquis wheat (after corn) | May 4 | Aug. 24 | 42 bush. | 0 32 per bush. | 20 30 |
| *Three-year Rotation*— | | | Profit per acre | for the rotation | 12 31 |
| Summer-fallow | | | | 7 15 per acre | |
| Marquis wheat, and seeded with Sweet Clover | May 4 | Aug. 22 | 24 bush. | 0 60 per bush. | 4 70 |
| Hay (Sweet Clover) | | | Winter killed, | land fallowed | |
| Alfalfa (Grimm) | | July 16 | 2⅞ tons | 4 66 per ton | 13 90 |

SUMMARY OF MOST IMPORTANT FEATURES OF THE SEASON'S OPERATIONS

The profits from three of the rotations under test at this Station are compared. By reference to the table it will be noted that the rotation of corn and wheat gave the greatest average profit per acre this year, while the three-year and five-year rotations gave practically the same profit.

Wheat in the five-year rotation on a fallow after two years of hay, yielded six bushels per acre less than wheat on the fallow after two years of wheat. This rotation work, however, must be carried on for a number of years before any definite information can be obtained.

Alfalfa gave a good yield of hay with one cutting.

The corn crop was light, there apparently being too much moisture late in the summer for the best growth of corn. The sunflower crop on another part of the farm gave a heavy yield. This was used to fill the two silos. A second silo was put in this year (a trench) forty feet long, fourteen feet wide and eleven feet deep, including a lumber wall of four feet on the outside which is banked with earth from the excavation. Both sides and one end wall were made perpendicular, while a short slope was made at the other end for convenience in hauling out the silage with a boat. This winter Mr. Tait will finish a carload of steers for the spring market, using ensilage for a large part of the roughage. Milk cows will also be given this feed. Some of Mr. Tait's neighbours, following his example, grew corn and sunflowers (chiefly the latter) and put in trench silos this season.

Mr. Tait has made a specialty of growing pure seed wheat, not only on the Illustration Station fields, but on other fields of his farm. From the 1922 crop he sold over 1,200 bushels of high quality Marquis wheat at a reasonable price to fifteen farmers of the district. He has also sold considerable sweet clover and western rye grass seed.

A field meeting was held on this farm on the afternoon of August 9, which was well attended by the farmers of the district.

## OGEMA

### Operator, T. E. Gamble

Work on the land was started much later than usual and it was well into May before seeding was started.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Four-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | ..... | ..... | ..... | 7 34 | |
| Marquis wheat seeded with Western Rye grass | May 12 | Aug. 15 | 28¾ bush. | 0 53 per bush. | 7 86 |
| Hay (1st year) | ..... | ..... | Pastured | | |
| Hay (2nd year) | ..... | ..... | " | | |
| *Six-year Rotation—* | | | | | |
| Summer-fallow | ..... | ..... | ..... | 7 34 per acre | |
| Marquis wheat | May 11 | Aug. 14 | 22 bush. | 0 48 per bush. | 6 97 |
| Oats (green feed) | May 25 | Aug. 16 | 1½ tons | 8 77 per ton | 1 84 |
| Corn (N.W.D.) fodder | May 24 | Sept. 12 | 3 tons | 4 53 per ton | 7 42 |
| Wheat seeded with half Sweet Clover and half Brome Grass. Hay (Sweet Clover) for seed. | May 12 | Aug. 15 | 22½ bush. | 0 64 per bush. | 3 65 |

SUMMARY OF MOST IMPORTANT FEATURES

The western rye grass fields were used for pasture this summer and furnished a good supply of feed for the stock. Corn gave a good yield of fodder. It received a slight frost before cutting, but not sufficient to injure its feeding value. It was put up in long stooks beside the building for winter feed.

Sweet clover made a heavy growth this season, but the weather was unfavourable for curing hay at the proper stage, hence it was left for seed.

## PARKBEG

### Operator, T. L. Humphrey

Spring was a little later than usual and the first seeding was done on the illustration fields May 1.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Four-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | ..... | ..... | ..... | 5 30 per acre | |
| Marquis wheat seeded with Brome grass | May 2 | Aug. 8 | 22½ bush. | 0 61 per bush. | 4 18 |
| Hay (brome grass) | ..... | July 16 | ½ tons | 9 31 per ton | 0 55 |
| Hay (brome grass) | ..... | July 16 | ½ ton | 9 31 per ton | 0 55 |
| *Demonstration Test Plots—* | | | | | |
| Western rye grass hay | ..... | July 17 | ½ ton | 9 19 per ton | 0 65 |
| Sweet clover | ..... | July 19 | 1½ tons | | |
| Corn (N.W.D.) | May 22 | Sept. 1 | 6 tons (green weight) | 1 52 per ton | 11 87 |
| Marquis wheat (seeded half with Sweet Clover, half brome grass) | May 1 | Aug. 13 | 24½ bush. | 0 57 per bush. | 5 65 |
| Kubanka wheat | May 3 | Aug. 14 | 17½ bush. | 0 78 per bush. | 0 35 |
| Early Red Fife wheat | May 2 | Aug. 8 | 18 bush. | 0 84 per bush. | −0 70 |

SUMMARY OF MOST IMPORTANT FEATURES

Corn gave a good yield again this year, though not quite so heavy as in 1922. North Western Dent and Minnesota 13 were grown and both proved satisfactory. Mr. Humphrey put in a trench silo twenty-five feet long, twelve feet wide and seven feet deep and the corn crop was run through a cutting box and tramped into this silo. A good quality of ensilage was made which is being fed to milk cows and other cattle with satisfactory results.

In the spring, the supervisor, in company with the operator of the Illustration Station here, visited a number of farmers in the district who were interested in corn growing and discussed with them the handling of this crop. Next year it is expected a number of farmers will put in silos after observing the good results which Mr. Humphrey has had from feeding ensilage.

The first sweet clover crop was cut on this station this year. It was damaged by the rains, but gave a yield of one and a half tons per acre.

## PAMBRUM

### Operator, H. W. Appelgren

Spring opened later than usual and it was May 10 before wheat was seeded. The following table gives the results of the season's work:—

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | ..... | ..... | ..... | 7 16 per acre | |
| Marquis, wheat on fallow | May 10 | Aug. 25 | 30 bush. | 0 47 per bush. | 9 87 |
| Marquis wheat (2nd crop) | May 10 | Aug. 22 | 21 bush. | 0 69 per bush. | 2 31 |
| *Six-year Rotation—* | | | | | |
| Summer-fallow | ..... | ..... | ..... | 8 59 per acre | |
| Marquis wheat | May 12 | Aug. 24 | 13 bush. | 0 96 per bush. | −2 02 |
| Banner oats (on fallow) | May 12 | Aug. 25 | 50 bush. | 0 30¾ per bush | −0 37 |
| N.W. Dent corn (after wheat) | May 10 | Aug. 24 | 2 tons (fodder) | 5 39 per ton | 3 22 |
| Marquis wheat and seeded half Sweet Clover, half Rye grass. | May 11 | Aug. 25 | 27 bush. | 0 60 per bush. | 5 35 |
| Hay (Western Rye grass) | ..... | Aug. 1 | 1½ tons | 10 39 per ton | −0 49 |
| *Demonstration Test Plots—* | | | | | |
| Marquis wheat (after corn) | May 10 | Aug. 24 | 29 bush. | 0 45 per bush. | 10 22 |
| Fall Rye (Dakold) | Sept. 20 | Aug. 18 | 28 bush. | 0 55 per bush. | 1 29 |
| Kubanka wheat (2nd crop) | May 11 | Aug. 25 | 26 bush. | 0 63 per bush. | 4 48 |
| Early Red Fife wheat (2nd crop) | May 2 | Aug. 23 | 25 bush. | 0 63 per bush. | 4 35 |

Western rye grass and brome mixture seed without a nurse crop for hay 1924.

SUMMARY OF MOST IMPORTANT FEATURES

Wheat after corn gave practically the same yield as after the bare fallow.

Banner oats were sown on fallow in order to fit in the six-year rotation which was started this spring. This being a wet season, the difference in yield over oats on stubble was not so apparent.

Early Fed Fife wheat rusted much more than the Marquis, hence the grade was not so good.

It has been found difficult to secure a satisfactory catch of grass with a nurse crop at this station. A field consisting of a mixture of western rye and brome was seeded alone this year for a comparison with the other method of seeding.

The sweet clover catch with a nurse crop this year looks quite promising.

## RADVILLE

### Operator, Olaf Anderson

Spring opened here rather late and the first wheat was sown on the Station May 9. The rainfall, until the beginning of June, was light.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 6 65 per acre | |
| Marquis wheat on fall ploughing | May 9 | Aug. 17 | 18½ bush. | 0 71 per bush. | 1 75 |
| Banner oats | May 17 | Aug. 18 | 45 bush. | 0 30½ per bush | −0 17 |
| Corn (N.W. Dent) | May 24 | Oct. 13 | 3 tons | 4 45 per ton | 7 64 |
| Millet (Hungarian) | May 26 | Aug. 8 | 2 tons | 5 82 per ton | 8 36 |
| Spring rye (for hay) | May 23 | July 30 | 2 tons | 5 24 per ton | 9 51 |
| Western rye grass and sweet clover for hay 1924. | | | | | |

SUMMARY OF MOST IMPORTANT FEATURES

Work was started on Mr. Anderson's farm this spring. The land selected for illustration work had already been fall ploughed. Plans were made for starting a three-year and a six-year rotation. For this year, all the crops could not be sown in the regular order, but next year rotations will be under way. Corn made a good growth and gave a good yield of fodder. Sunflowers were slightly heavier. Millet and spring rye both gave a good yield and quality of hay. Sweet clover and western rye grass were both seeded for hay crops next year. A good stand was secured in both cases.

Five acres of prairie were broken on badly burnt out land. The plan is to give this land different treatments such as manuring, adding gypsum and ploughing in sweet clover, previous to sowing the grain crop.

## RIVERHURST

### Operator, R. F. Rudd

Spring was late in this district, and no wheat was seeded until May 8.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost of production | Profit per acre |
|---|---|---|---|---|---|
| *Three-year Rotation*— | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 5 43 per acre. | |
| Wheat (Marquis) on fallow | May 8 | Aug. 20 | 32 bush. | 0 47 per bush. | 10 44 |
| Wheat (Kubanka) 2nd crop | May 22 | Aug. 24 | 27 bush. | 0 46 per bush. | 9 05 |
| *Six-year Rotation*— | | | | | |
| Summer-fallow (after hay) | | | | 5 49 per acre. | |
| Wheat (Early Red Fife) | May 19 | Aug. 24 | 20 bush. | 0 61 per bush. | 3 69 |
| Oats (Banner) | May 17 | Aug. 20 | 60 bush. | 0 26 per bush. | 2 69 |
| Corn (N. W. Dent) | May 24 | Sept. 12 | 3 tons (fodder. | 3 74 per ton. | 10 21 |
| Wheat seeded with Brome grass | May 8 | Aug. 20 | 32 bush. | 0 46 per bush. | 10 78 |
| Hay (Brome grass) | | July 31 | 2 tons | 3 83 per ton. | 12 34 |
| *Demonstration Test Plots*— | | | | | |
| Western Rye Grass hay | | July 23 | 2½ tons | 3 13 per ton. | 17 18 |
| Wheat after corn | May 8 | Aug. 20 | 32 bush. | 0 35 per bush. | 14 30 |
| Wheat after fallow | May 8 | Aug. 20 | 32 bush. | 0 47 per bush. | 10 44 |

SUMMARY OF MOST IMPORTANT FEATURES

Wheat following the corn crop gave the same yield as wheat after fallow this season.

Sunflowers were sown on another part of the farm this year, and the silo was filled mostly from this crop. The sunflower crop was much heavier than the corn, some stalks reaching over ten feet high. Quite a number of the farmers in this district grew corn and sunflowers this season for the first time, and made trench silos for storage of these crops. It is expected more will be made next season. Mr. Rudd's own experience with feeding ensilage has made him an enthusiastic advocate of the silo and has encouraged others to grow silage crops and make silos.

## SHAUNAVON

### Operator, Stanley Murch

Spring opened about the average date and seeding of wheat was started April 20. The following table gives the results of the season's work:—

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost of production | Profit per acre |
|---|---|---|---|---|---|
| *Six-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | ..... | ..... | ..... | 6 21 per acre. | ..... |
| Wheat (Kubanka, 2nd crop) | May 5 | Aug. 25 | 27 bush. | 0 56 per bush. | 6 61 |
| Oats, Banner | May 18 | Aug. 24 | 59 bush. | 0 22 per bush. | 3 70 |
| Corn (N.W. Dent), ensilage | May 26 | Sept. 10 | 6 tons. | 2 04 per ton. | 8 76 |
| Marquis wheat and seeded half with S. Clover, half rye grass | ..... | ..... | ..... | ..... | ..... |
| Grasses and Clovers seeded alone | ..... | ..... | ..... | ..... | ..... |
| Hay (oats substituted) | May 18 | Aug. 24 | 59 bush. | 0 22 per bush. | 4 60 |
| *Demonstration Test Plots—* | | | | | |
| Marquis wheat on fallow | April 20 | Aug. 25 | 43 bush. | 0 42 per bush. | 16 34 |
| Marquis wheat after corn | April 20 | Aug. 25 | 32 bush. | 0 39 per bush. | 13 24 |
| Early Red Fife wheat after corn | April 23 | Aug. 16 | 22 bush. | 0 49 per bush. | 6 80 |
| Sweet clover (damaged by rain) | ..... | July 13 | 2 tons. | ..... | ..... |
| Alfalfa (Grimm) | ..... | July 14 | ½ ton. | ..... | ..... |
| Sunflowers (Giant Russian), ensilage | May 29 | Sept. 11 | 8 tons. | 1 52 per ton. | 9 84 |

SUMMARY OF THE MOST IMPORTANT FEATURES

Wheat after corn at this Station this year yielded eleven bushels per acre less than wheat after fallow. However, the wheat was produced on the corn land at $5.70 per acre less than on the fallow. Considering also the value of the corn crop of from six to seven tons per acre last year as against a bare fallow on the other, the rotation with corn is the more profitable.

Alfalfa has not given good results here so far, but it will be given further trial. Some of the field had to be reseeded last spring.

Sweet clover hay was grown for the first time this year, having been sown with a nurse crop of wheat last year. There was a rather thin stand, but it grew so vigorously that by July 13, two tons per acre were cut. There was also a fairly good second growth.

Corn again gave a satisfactory yield. Sunflowers gave a heavier yield than corn. Both these crops were ensiled in the trench silo.

Early Red Fife wheat was damaged more by the rust than Marquis.

## SPRUCE LAKE

### Operator, Harry Eagle

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost of production | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| | | | | $ cts. | $ cts. |
| Marquis Wheat on fallow | April 25 | Sept. 1 | 32 bush. | 0 44 per bush. | 11 52 |
| Red Bobs wheat on fallow | May 1 | Sept. 1 | 34 bush. | 0 45 per bush. | 10 19 |
| Ruby wheat on fallow | April 25 | Aug. 17 | 27 bush. | 0 52 per bush. | 7 69 |
| Rye grass hay | ..... | July 17 | 1½ tons | 4 92 per ton. | 6 10 |
| Brome grass hay | ..... | July 10 | 1 ton | 5 47 per ton. | 4 53 |
| Sweet clover | ..... | ..... | ..... | ..... | ..... |
| Corn, N.W. Dent | May 22 | Sept. 10 | 3 tons (frozen Aug. 1) | 4 66 per ton. | −3 47 |
| Sunflowers (Giant Russian) | May 22 | Sept. 10 | 5 tons | 2 25 per ton. | 2 50 |
| Fall rye (after oats) | Sept. 4 | Aug. 15 | 18 bush. | 0 34 per bush. | 3 37 |

SUMMARY OF MOST IMPORTANT FEATURES

Marquis, Red Bobs and Ruby wheats were all grown on fallow on the illustration fields. It will be noted from the yields given in the table that Red Bobs gave the highest yield, but as it rusted more than the others, the grade was not so good. In point of net profit, it stood second, with Marquis first and Ruby third. Ruby ripened about ten days earlier than the others.

Four acres of pure Banner oats were seeded on breaking and gave a yield of 72 bushels per acre of good quality grain. The surplus grain from these fields is for sale to the farmers of the district.

The corn made a good start but was frozen on August 1, which checked further growth. Sunflowers came through without damage. Next season it is planned to grow a larger area of sunflowers and also some corn and store in a trench silo.

## TUGASKE

Operator, Robt. Wilson

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost of production | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation*— | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 6 71 per acre. | |
| Marquis wheat (on fallow) | April 28 | Aug. 18 | 26⅛ bush. | 0 64 per bush. | 4 17 |
| Marquis wheat (on spring plough) | May 11 | Aug. 18 | 22 bush. | 0 65 per bush. | 3 36 |
| Average profit per acre for rotation | | | | | 2 51 |
| *Five-year Rotation*— | | | | | |
| Summer-fallow | | | | 9 68 per acre. | |
| Marquis wheat (on sod fallow) | April 28 | Aug. 14 | 23⅛ bush. | 0 68 per bush. | 2 82 |
| Banner oats, seeded with Western rye grass and S. Clover | May 24 | Aug. 25 | 39 bush. | 0 41 per bush. | −4 19 |
| Hay (W. rye grass, 1st year) | | | | | |
| Hay (W. rye grass, 2nd year) | | July 20 | 1⅞ tons | 5 69 per ton. | 6 03 |
| Average profit per acre for rotation | | | | | 0 93 |
| *Two-year Rotation*— | | | | | |
| Corn (N.W. Dent) | June 2 | Sept. 3 | 3 tons (fodder). | 3 96 per ton. | 9 13 |
| Marquis wheat | April 28 | Aug. 13 | 21⅛ bush. | 0 58 per bush. | 6 73 |
| Average profit per acre for rotation | | | | | 7 93 |
| *Three year Rotation*— | | | | | |
| Summer-fallow | | | | 8 65 per acre. | |
| Marquis wheat (seeded with S. clover) | May 11 | Aug. 25 | 22⅛ bush. | 0 76 per bush. | 0 92 |
| Hay (sweet clover) | | June 25 | 1⅜ tons | | |
| | | Aug. 28 | 1 ton | 3 45 per ton. | 13 57 |
| Alfalfa | | July 13 | 1⅛ tons | 5 27 per ton. | 5 68 |

SUMMARY OF MOST IMPORTANT FEATURES

The comparison made this year between the average profits per acre from the four rotations under test at this Station shows that the most profit was obtained from the corn-wheat rotation. The wheat in this rotation was also freer from weeds than following other preparation. The five-year rotation shows at a disadvantage this season owing to the fact that the first-year hay field failed to make a stand and had to be reseeded. This is the first failure of a hay crop here since work began in 1919. In 1922 the profit from this rotation was $3.12 per acre, from the three-year wheat rotation, $3.37, and the corn-wheat rotation, $8.09.

The three-year rotation with wheat and sweet clover was introduced last year to test out the value of sweet clover, not only as a hay crop, but also for fodder, and its root growth as a preventive to soil drifting. The hay field gave two cuttings this season with a total yield of almost three tons per acre of fair quality hay. A fairly heavy growth of green sweet clover was ploughed in on June 6 on the field which was fallowed. The results from this treatment will be noted in the wheat crop following next year.

The summer-fallow in the five-year rotation comes after two years of rye grass hay. It will be noted that this season the wheat crop on this fallow yielded a few bushels less than on the summer-fallow in the three-year rotation, where it followed two years of wheat. In 1922 the results were similar. It is too soon yet, however, to draw definite conclusions.

Sweet clover is also being tested here as a pasture on a four-acre field. Mr. Wilson seeded this without any nurse crop the latter part of May on spring-ploughed land. The seed germinated well and made sufficient growth by July 23 to furnish pasture for the stock. Care was taken not to pasture it too closely late in the season. No trouble was experienced in getting the stock, both cattle and horses, to eat the sweet clover.

## TROSSACHS

### Operator, Chas. Carlson

Rust did considerable damage on this station, as it infected wheat fairly early and much of it reached the black spore stage.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost of production | Profit per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow (corn substituted) | May 21 | Sept. 4 | 5 tons (green weight). | 2 81 per ton. | 3 46 |
| Marquis wheat | May 2 | Aug. 18 | 21 bush. | 0 67 per bush. | 2 75 |
| Marquis wheat | May 2 | Aug. 18 | 21 bush. | 0 67 per bush. | 2 75 |
| *Six-year Rotation—* | | | | | |
| Summer-fallow | | | | 6 04 per acre. | |
| Marquis wheat | May 4 | Aug. 16 | 13½ bush. | 0 78 per bush. | 0 28 |
| Banner oats | May 16 | Aug. 15 | 57 bush. | 0 24 per bush. | 3 23 |
| Corn (N.W. Dent) | May 25 | Sept. 4 | 5 tons (green weight). | 2 57 per ton. | 4 63 |
| Wheat and seeded half sweet clover, half rye grass | May 3 | Aug. 18 | 19 bush. | 0 72 per bush. | 1 60 |
| Hay (wheat substituted) | May 3 | Aug. 18 | 19 bush. | 0 72 per bush. | 1 60 |
| Sunflowers (Giant Russian) | May 22 | Sept. 3 | 8 tons. | 1 63 per ton. | 8 94 |

#### SUMMARY OF MOST IMPORTANT FEATURES

Work was commenced on this Station this spring. A start has been made with a three-year and a six-year rotation.

Corn gave a fairly good yield, but sunflowers produced a heavier growth. Both these crops were run through the cutting box and stored in a trench silo which Mr. Carlson put in this fall. The size of the silo is twenty-five feet by twelve, by eight. It is the first trench silo in the district and results are being watched with considerable interest by the neighbours.

## WEYBURN

### Operator, E. Meredith

The first work on the land was done the last days of April. The first wheat was seeded May 1. The rates of seeding used on the heavy soil were one and a half bushels for wheat and two bushels for oats. Rust developed before the wheat ripened and reached the black spore stage. This probably reduced the yield about one-third, besides lowering the grade. Kubanka came through well and made a good sample.

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost of production | Profit per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Summer-fallow | | | | 9 77 per acre. | |
| Marquis wheat | May 2 | Aug. 24 | 25 bush. | 0 68 per bush. | 2 94 |
| Sweet clover (sown with nurse crop of wheat), 1922 | May 19 | June 18 and Aug. 29 | 3 tons 1st cut. 1 ton 2nd cut. | 2 83 per ton. | |
| *Six-year Rotation—* | | | | | |
| Summer-fallow | | | | 6 81 per acre. | |
| Kubanka wheat (2nd crop) | May 1 | Aug. 25 | 23 bush. | 0 63 per bush. | 4 60 |
| Victory oats | May 8 | Aug. 17 | 60 bush. | 0 28 per bush. | 1 31 |
| Corn (N.W. Dent) | May 18 | Sept. 11 | 5 tons. | 2 61 per ton. | 4 45 |
| Wheat and seeded with rye grass and sweet clover | May 10 | Aug. 20 | 23⅛ bush. | 0 51 per bush. | 7 90 |
| Hay (Alfalfa) | sown 1921 | June 19 | 2 tons. | 5 77 per ton. | 8 46 |
| Alfalfa for seed | sown 1921 | Sept. 15 | 142 lbs. | 0 16 per lb. | 19 62 |

SUMMARY OF SOME IMPORTANT FEATURES

Corn gave a good yield of fodder again this year. Sweet clover was grown for the first time this season. It gave two cuttings of hay with a total yield of four tons per acre. The second crop made a better quality hay. Sweet clover proved a heavy yielder and when cut early, about the time it is in bud, and properly cured, makes good hay.

Mr. Meredith has had excellent results with alfalfa. This year half of the field was cut for hay and the other half left for seed production. The hay gave a yield of two tons per acre, and the yield of seed was one hundred and forty-two pounds, and excellent quality. Considerable pure seed was sold from this farm last year.

## ZEALANDIA

### Operators, Roberts and Cowan

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

| Rotation and Crops | Date sown | Date cut | Yield per acre | Cost of production | Profit or (−) loss per acre |
|---|---|---|---|---|---|
| *Three-year Rotation—* | | | | $ cts. | $ cts. |
| Corn (N.W. Dent) | May 23 | Sept. 6 | 2½ tons (fodder).- | 4 05 per ton. | 7 38 |
| Marquis wheat | May 10 | Sept. 4 | 17 bush. | 0 83 per bush. | −0 54 |
| Sweet clover | | July 16 | 2 tons. | 4 78 per ton. | 10 43 |
| *Four-year Rotation—* | | | | | |
| Summer-fallow | | | | 7 93 per acre. | |
| Marquis wheat | May 9 | Sept. 4 | 14 bush. | 1 05 per bush. | −3 54 |
| Hay (rye grass) | | July 23 | 1½ tons. | 5 40 per ton. | 6 90 |
| Hay (rye grass) | | July 23 | 1½ tons. | 5 40 per ton. | 6 90 |

Sweet clover hay gave a yield of two tons per acre in one cutting. There was a fair second growth also. This was seeded last year with a nurse crop of wheat on fallowed land. Rye grass hay was seeded in the same manner.

## EXPERIMENTAL PROJECTS UNDER WAY ON THE ILLUSTRATION STATIONS IN WESTERN CANADA

| PROJECT NO. | TITLE |
|---|---|
| I. 1. | Rotations for grain farming. |
| I. 2. | Profitable recurrence of fallow in rotation. |
| I. 3. | Summer-fallow treatment. |
| I. 4. | Corn versus summer-fallow. |
| I. 5. | Introducing suitable varieties of grain. |
| I. 6. | Sale locally of seed produced. |
| I. 7. | Introducing western rye grass as a hay crop. |
| I. 8. | Production of western rye grass seed. |
| I. 9. | Growing alfalfa. |
| I. 10. | Introducing sweet clover as a humus former where light soils occur. |
| I. 11. | Encouraging growth of winter rye. |
| I. 12. | Treating grain for smut. |
| I. 13. | Demonstrating the value of the trench silo. |
| I. 14. | Weather records. |
| I. 15. | Adoption of a suitable rotation for mixed farming. |
| I. 16. | Stimulation of better cultural methods. |
| I. 17. | Stimulation of clover seed growing. |
| I. 18. | Tile drainage. |
| I. 19. | Introducing corn as a fodder or ensilage crop where not previously grown. |
| I. 20. | Introducing sunflowers as a fodder or silage crop where corn cannot be profitably grown. |
| I. 21. | Introducing mangels and turnips where not grown previously. |
| I. 22. | Applying practice of after-harvest cultivation. |
| I. 23. | The influence of lime on crop growth. |
| I. 24. | Demonstrating the most economical fertilizer mixtures. |
| I. 25. | Growing certified seed potatoes. |
| I. 26. | Encouragement of kitchen gardening. |
| I. 27. | Improvement of farm buildings. |
| I. 28. | Advice and direction in records for grading dairy herds. |
| I. 29. | Encouragement for improved poultry. |