DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

# REPORT OF THE CHIEF SUPERVISOR

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

ON

# THE ILLUSTRATION STATIONS

IN

## ONTARIO, QUEBEC, NEW BRUNSWICK, NOVA SCOTIA, and PRINCE EDWARD ISLAND

FOR THE YEAR 1930

Home, garden, and small fruit plantation of Forbes McDonald, operator of the Illustration Station at Middle River, N.S.

Printed by Authority of the Hon. Robert Weir, Minister of Agriculture,
Ottawa, 1931

OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1931

# ILLUSTRATION STATIONS

IN

## Ontario, Western Quebec, Eastern Quebec, New Brunswick, Nova Scotia, and Prince Edward Island

During the past season two hundred and seven Illustration Stations have been in operation. Twelve of these stations are located in Prince Edward Island, fifteen in Nova Scotia, eighteen in New Brunswick, sixty-four in Quebec, nineteen in Ontario, fourteen in Manitoba, thirty-one in Saskatchewan, nineteen in Alberta and fifteen in British Columbia. The plan of procedure and type of work undertaken, of necessity, has varied considerably in order to direct attention in a demonstrational way to problems existing in these agricultural districts. The yields and cost of growing the different crops on each station, as well as their average over a period of years are summarized for publication and appear in two reports, one dealing with the work in the East, where mixed farming is generally carried on and the other with that in the western provinces.

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

| SUPERINTENDENTS | SUPERVISORS |
|---|---|
| S. Ballantyne, Kapuskasing, Ont. | F. X. Gosselin, Kapuskasing, Ont. |
| J. A. Ste. Marie, Ste. Anne de la Pocatière, P.Q. | W. L. Chauvin, Ottawa, Ont. |
| C. F. Bailey, Fredericton, N.B. | C. E. Ste. Marie, Ottawa, Ont. |
| W. S. Blair, Kentville, N.S. | R. Caron, Ste. Anne de la Pocatiere, P.Q. |
| J. A. Clark, Charlottetown, P.E.I. | T. G. Hetherington, Fredericton, N.B. |
| | F. B. Kinsman, Kentville, N.S. |
| | R. C. Parent, Charlottetown, P.E.I. |

### MULTIPLICATION OF VARIETIES AND SALE OF SEED GRAIN

Due to the wide range of seasonal and soil conditions existing in the districts where Illustration Stations are located, naturally there is a corresponding variation in the crop sequence, class and varieties which thrive best in each area. Based on the results of comparative trials, the most productive and desirable varieties of grain, grasses and clovers are increased and multiplied on the stations for sale as seed within the district. During the past season, such have included Grimm and Ontario variegated alfalfa seed, common red, alsike and sweet clover seed, timothy and western rye grass seed, Marquis, Reward, Garnet, Crail's Fife, Mindum and Huron wheat, Victory, Banner, Gopher and Alaska oats, Hannchen, Trebi, O.A.C. No. 21 and Charlottetown No. 80 barley, as well as Green Mountain, Irish Cobbler, Netted Gem and Early St. George potatoes. The sales of seed from such varieties, made by the Illustration Station operators during the past year amounted to 31,182 bushels of seed grain, 13,897 bushels of seed potatoes, 16,001 pounds of grass and clover seed.

### CO-OPERATIVE TRIALS ALONG THE LINE OF THE HUDSON BAY RAILWAY

Field and garden crop trials have been carried out with ten co-operators located along the Hudson Bay Railway. For the past six years such trials have been carried out from Hudson Bay Junction in Saskatchewan north to Thicket,

which is one hundred and eighty-five miles by railway north of The Pas. From Thicket to Churchill such trials have only been underway for the past two seasons, while at Churchill the first rod-row trials, aiming to study the growth made by different crops and varieties were carried out, this season, for the first time. Such trials were conducted at Hudson Bay Junction, The Pas, Cormorant, Wabowden, Thicket, Pikwitonei, Arnot, Mile 279, Gillan and Churchill, the details concerning which are recorded in the western edition of this report.

### PHOSPHATIC FERTILIZERS UNDER GRAIN FARMING PRACTICES

Triple superphosphate and ammonium phosphate fertilizer demonstrations on wheat and oats, under a system of grain farming, were carried out on twenty-six Illustration Stations in Alberta, Saskatchewan and Manitoba. These fertilizers were drilled in with a combined grain and fertilizer drill at rates as closely approximating fifty and one hundred pounds as was possible, when using a machine of this kind. A check or unfertilized plot was provided for in each test from which to calculate the effect of each fertilizer on crop yields. In addition at Chedderville in the Jack Pine section, east of Rocky Mountain House, a comprehensive series of fertilizer demonstrations was carried out with quite striking and favourable results. On the four stations in Southern Alberta, where fifty pounds of triple phosphate were applied, increased yields were obtained ranging from 1·32 bushels to 13·03 bushels per acre. At Kipp the only increase in yield occurred where ammonium phosphate was applied at one hundred pounds per acre, here the increase was 1·79 bushels.

In the Northern Alberta and Northern Saskatchewan districts of supervision, similar demonstrations carried on at five stations gave increased yields of wheat ranging from 4·5 bushels to 18 bushels per acre. At Kindersley where sixty-three pounds of superphosphate were applied, quite striking results were obtained. At Guernsey on the plot where no fertilizer was applied, the wheat crop was completely destroyed by soil drifting; where eighty pounds of triple superphosphate were applied, the wheat came on rapidly, covering the ground well before soil drifting started and yielded 36 bushels per acre. On the wooded soils at Meanook, no appreciable difference was obtained from the application of fertilizers.

On the stations in the southern portion of Saskatchewan, eleven fertilizer demonstrations were carried out. At Weyburn the crop was hailed and at Herbert soil drifting occurred to the extent that comparative yields were impossible. However, on the nine stations where yields were obtainable, five show an increased yield ranging from ½ to 7 bushels per acre.

The six stations in Manitoba all show an increase in yield due to the use of fertilizer, ranging from 2·4 to 5·8 bushels per acre of oats. Dry weather prevalent in many of these districts seriously affected yields, both on fertilized and unfertilized crops. From field observations, it was quite evident, however, that the fertilized crop made a stronger and more uniform growth, tillering was increased, weed growth was depressed and time of maturity advanced.

### MILK RECORDS AND LIVESTOCK IMPROVEMENT

Added interest is being taken by the operators of Illustration Stations in the keeping of milk records and systematic improvement of their herds, as the results of their efforts from such practices become increasingly apparent. In this connection reference may be made to accomplishments along this line in the Western Quebec and Eastern Ontario district of supervision. In 1928, the average milk production from the eighteen Illustration Station herds in that area was 6,442 pounds of milk. This year from these same stations and with the addition of one newly established, 255 milch cows were kept, of which number

181 had completed their lactation period at the time this report was compiled. The individual average production was 7,073 pounds or an annual increase of 631 pounds of milk per cow, over that of the former period. The average production included for the new station was 3,848 pounds. A survey of the individual production from each cow in these herds strikingly indicated that there are some very excellent producers and still some which can profitably be discarded as soon as they can be replaced by promising young heifers, the lowest individual production was 2,445 pounds. In the older and more improved herds, where careful breeding has been carried on for a number of years and where milk records have been kept, considerable demand is developing for breeding stock from adjoining farmers within the district. Each year also finds additional operators with their herds in the accredited herd lists. During the past year, the operators sold 288 head of cattle, 330 hogs and 104 sheep for breeding purposes.

### THE SUPPLEMENTARY VALUE OF CHEMICAL FERTILIZERS

The use of chemical fertilizer as a supplement for farmyard manure forms the basis of one aspect of demonstration work on the Illustration Stations in Eastern Canada and British Columbia, particularly those districts where diversified and livestock farming is followed. In many of these sections farm lands are deficient in plant food, resulting in low yields and the production of poor quality hay crops from the feeder's standpoint. On such farms the supply of farmyard manure is insufficient to meet the need, due to the limited number of cattle, which they are capable of sustaining, hence, thorough cultivation, the growing of legumes and the rational use of chemical fertilizer is being studied on one hundred and twenty stations, aiming to determine and demonstrate the practical and economic importance of such practices.

The use of nitrogenous fertilizers, ground limestone, lake mud, marl, superphosphate, varying amounts of potash, high concentrated fertilizers like nitrophoska, as well as complete mixed and home prepared fertilizers are being considered as supplements for the deficiency in plant food, which exists from the lack of farmyard manure in such quantities as will permit the fertilizing of the whole farm with sufficient frequency to promote abundant crops. A review of the fertilizer treatments and the results of these demonstrations are briefly reviewed in the succeeding pages, relating to the work in the different districts of supervision in the eastern provinces. The fertilizer work carried on in British Columbia is dealt with in the western edition of the report.

### GARDEN AND HOME IMPROVEMENT

In order to build up the whole farm on which Illustration Stations are operating, into attractive and efficient units, special attention has been given to the improvement of farm buildings, the home surroundings, the vegetable garden and the production of small fruits for household use and local sale. From small beginnings of 100 strawberry plants and raspberry canes, fruit plantations have been developed by individual operators to the extent that their annual sales now exceed $200 per annum. All of this fruit is sold within the district and in some cases at local summer resorts. The past season has also been marked as one in which a great deal of progress has been made in the way of improvement and remodelling farm buildings. Forty-six operators painted or whitewashed their farm homes, barns or outbuildings. Several did it for the first time, others also put down permanent lawns and made general improvement to their surroundings by planting trees, shrubs and establishing perennial borders.

## COST OF GROWING WHEAT ON THE ILLUSTRATION STATIONS

For purposes of supervision the three Prairie Provinces are divided into four districts and deal with operations on sixty-four Illustration Stations. Seasonal variations prevalent at each station have reflected directly on crop yields and production costs. Dry weather throughout the growing season, soil drifting, hail and wind storms, as well as rust in certain districts resulted in very low yields on some stations, on three, grain crops were a failure. On others, more than average rainfall was obtained with favourable results to crop growth and yields. This latter condition was more prevalent in the northerly portions of these provinces. The yields and cost of growing crops, as well as their average over a period of years, are as herein recorded in the report on each station. A summary of the cost of growing wheat on fallow in 1930, by districts of supervision, shows a variation of from 43 cents to $1.46 per bushel. This cost, it will be noted, varies with the yield per acre and is as follows:—

| — | Yield per acre | Cost per bushel |
|---|---|---|
| | bushels | $ |
| Northern Saskatchewan and Northeastern Alberta | 34·8 | 0 43 |
| Manitoba | 19·7 | 0 77 |
| Alberta | 16·7 | 1 28 |
| Southern Saskatchewan | 13·4 | 1 46 |

## FACTORS CONSIDERED WHEN MAKING UP PRODUCTION COSTS

Cost of production records are kept for each crop on each Illustration Station. The actual time taken to perform the different field operations as well as the quantity of seed, twine, manure, fertilizer are taken into consideration. These in addition to such items as rent of land, use of machinery are charged against the crop.

All cost of production figures are reduced to the basis of one acre, although in the rotation work the fields vary from two to five acres. In determining these costs the following values have been used:—

Rent of land.....Based on value of land at prevailing rate of interest and taxes.
Horse and manual labour, spray material, cost of fertilizers, seed, twine and threshing.....Based on prices in the district.
Use of machinery.....$2.85 per acre.
Manure (spread)..... 2.00 per ton.

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

40 per cent is charged to the hoed crop.
30 per cent is charged to the grain crop.
20 per cent is charged to the clover crop.
10 per cent is charged to the timothy hay.

The cost of chemical fertilizers was charged to the different crops as follows:—

First year..... 55 per cent
Second year..... 30 per cent
Third year..... 10 per cent
Fourth year..... 5 per cent

Where nitrate of soda has been used alone 80 per cent of its cost has been charged to the crop to which it was applied and 20 per cent to the succeeding crop.

# REPORT OF THE ILLUSTRATION STATIONS IN NORTHERN ONTARIO AND NORTHERN QUEBEC

*F. X. Gosselin, B.S.A., Supervisor*

Thirteen Illustration Stations were in operation in the district of Northern Ontario and Northern Quebec during 1930. Lake St. John and Chicoutimi have been withdrawn from this district and are now under the direction of the Supervisor for Central Quebec. A new station has been authorized at Earlton, Ontario, and the preliminary arrangements were made last fall in order to start the work in 1931.

### THE SEASON

In Cochrane, Nipissing and Manitoulin Island districts, the first part of May was rather wet and cold, but the rest of the season was favourable for the growing of crops. In the Abitibi district, seeding was earlier than usual, but the months of June and the first part of July were wet. Cereals and hoed crops were adversely affected by this condition.

### LIVE STOCK

Good progress has been made in the improvement of live stock this year. Several farmers are keeping individual milk records and have purchased pure-bred bulls. A number of calf feeding clubs were organized in the Abitibi district. The operators of the Illustration Stations were the first to join in the movement and results obtained this year were quite satisfactory.

## BARRAUTE, ABITIBI DISTRICT, QUEBEC

### Operator, Herve Marcotte

Compared with 1929 this year's seeding was earlier, oats being sown on May 14 and turnips planted on May 23. The soil was in good condition for seed-bed preparation. However, excessive rainfall throughout June and July retarded growth and probably accounts for the small yield of turnips.

The results and cost of growing the different crops are as follows:—

Operations at Barraute—Five-Year Rotation

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips, Hall's Westbury.....tons | 2 | 2·6 | 4·3 | 18 70 | 13 08 |
| A | Potatoes, Irish Cobbler.....bush. | 1 | 100·0 | ..... | 0 99 | ..... |
| B | Clover hay.....tons | 2 | 1·5 | 1·5 | 5 36 | 6 14 |
| C | Clover hay.....tons | 2 | 1·5 | 1·5 | 5 86 | 6 14 |
| D | Clover hay.....tons | 2 | 1·5 | 1·5 | 6 86 | 6 14 |
| E | Alaska oats.....bush. | 3 | 15·0 | 16·5 | 1 97 | 1 32 |

The alfalfa in the mixture was practically all killed out and as seen in the table the yield of hay in the three fields is identical. When seeding field "E", 2½ bushels of Alaska oats were used per acre along with 8 pounds of red clover, 2 pounds of alsike and 10 pounds of timothy.

## BELCOURT, ABITIBI DISTRICT, QUEBEC

### Operator, Eugene Robitaille

Although the soil was in good condition for seeding, nearly all the crops on this station were affected by too much rain. Alaska oats and O.P.V. were sown May 13 and the turnips on May 22. This is the second year of active demon-

stration work at this station, being but recently established. The land occupied by the station is new and requires considerable drainage.

The results and the cost of growing the different crops are as follows:—

OPERATIONS AT BELCOURT—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 2 | 1·0 | 1·25 | 10 30 | 8 40 |
| B | Alaska oats.....bush. | 2 | 16·0 | 20·0 | 1 41 | 1 08 |
| C | Turnips, Hall's Westbury.....tons | 2 | Failure | ..... | ..... | ..... |
| C | Oats, peas and vetch.....bush. | 1 | 16·0 | ..... | 0 97 | ..... |
| D | Timothy hay.....tons | 1 | 1·25 | ..... | 5 84 | ..... |
| E | Timothy hay.....tons | 1 | 1·25 | ..... | 5 80 | ..... |

The turnips were killed out by the saturated condition of the soil. The oats, peas and vetch were sown for green feed. The percentage stand of peas and vetches was small, hence, the crop was allowed to mature, this was threshed and the yield recorded. The oats, peas and vetch mixture was made up of Banner oats, two bushels; Arthur peas, one bushel; vetch, one-quarter bushel per acre.

## COCHRANE, COCHRANE DISTRICT, ONTARIO

OPERATOR, E. D. CARRERE

The land was in good tilth for seeding. Oats was sown on May 14 and oats, peas and vetch on May 22. Frequent light rains held up planting operations until June 4, when the turnips were seeded. During haying the weather was fine and good quality hay was harvested.

The yields and cost of growing the different crops were as follows:—

OPERATIONS AT COCHRANE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Alaska oats.....bush. | 5 | 11·0 | 25·5 | 2 90 | 1 33 |
| B | Oats, peas and vetch hay.....tons | 5 | 2·0 | 2·25 | 21 77 | 19 09 |
| B | Turnips, Hall's Westbury.....tons | 1 | 17·0 | ..... | 5 31 | ..... |
| C | Timothy hay.....tons | 5 | 2·2 | 1·64 | 4 48 | 10 96 |
| D | Clover hay.....tons | 2 | 1·5 | 1·75 | 7 56 | 7 28 |

Soon after the timothy hay was taken off, the land was ploughed, and at frequent intervals throughout the rest of the summer, was cultivated. In the autumn this land was ploughed again. The summer cultivation was carried on to improve the condition of the soil in preparation for a hoed crop next year. This practice has value in killing weeds and increasing crop yields.

The following yields were obtained for the turnip crop on field B resulting from different fertilizer treatments.

| | Yield per acre |
|---|---|
| Manure alone, 10 tons | 14 tons |
| Manure, 10 tons, 200 pounds nitrophoska | 20 tons |

## GENIER, COCHRANE DISTRICT, ONTARIO

OPERATOR, OLIVER GENIER

The month of May was rather wet, this however, did not delay seeding greatly. Oats, peas and vetches were sown on May 19, oats on May 23 and turnip seeding was finished May 28. For the most of the summer the weather was ideal and hay was harvested in excellent condition.

Cutting alsike clover for seed on the Cochrane, Ontario, Illustration Station.

The results of the season's operations are as follows:—

OPERATIONS AT GENIER—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost of unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 6 | 2·0 | 1·79 | 5 88 | 9 70 |
| B | Timothy hay.....tons | 5 | 2·5 | 1·63 | 4 21 | 9 83 |
| C | Oats, peas and vetch hay.....tons | 3 | 2·4 | 3·0 | 11 02 | 10 24 |
| C | Turnips, Hall's Westbury.....tons | 3 | 5·5 | 7·3 | 11 74 | 11 36 |
| D | Alaska oats.....bush. | 2 | 27·0 | 23·5 | 0 87 | 0 99 |

The turnip crop was not a success, this resulted in a high cost of production. These poor results were probably due to the late seeding and to the cutworms which damaged the small plants considerably.

## GORE BAY, MANITOULIN ISLAND, ONTARIO

OPERATOR, ED. STRAIN

Banner oats were sown on fields "C" and "F" May 21 and 22. This was a few days later than the dates of similar work in 1929. The physical condition of the soil in 1930 resulting from frequent rains would not permit earlier cultivation of the land. Turnips were sown June 4 and O.P.V. seeding was completed on June 10. Though most of the seeding was somewhat late, fortunately the summer and autumn weather was favourable and the yields were satisfactory.

The results of the season's operations are as follows:—

OPERATIONS AT GOOSE BAY——SIX-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 2 | 1·5 | 1·5 | 6 79 | 7 50 |
| B | Clover hay.....tons | 3 | 2·0 | 1·6 | 6 18 | 9 29 |
| C | Banner oats.....bush. | 4 | 60·0 | 42·1 | 0 28 | 0 51 |
| D | Turnips, Hall's Westbury.....tons | 4 | 17·25 | 14·56 | 2 37 | 3 72 |
| D | Oats, peas and vetch hay.....tons | 1 | 2·0 | ..... | 13 07 | ..... |
| E | Clover hay.....tons | 3 | 0·5 | 1·6 | 17 23 | 9 29 |
| F | Banner oats.....bush. | 4 | 48·0 | 42·1 | 0 28 | 0 51 |

Last year field "E" was seeded with red clover at the rate of 12 pounds per acre for seed production in 1930. Owing to severe winter-killing it was decided to cut this field for hay. The after growth was ploughed down for green manure.

A comparative fertilizer demonstration was carried out on the turnip crop. The portion of the field which received an application of 10 tons of manure per acre yielded 15 tons per acre. Where 200 pounds of nitrophoska were applied in addition to the manure, the yield was 19 tons per acre. The use of fertilizer hastened growth making thinning earlier.

## LA REINE, ABITIBI DISTRICT, QUEBEC

OPERATOR, JOS. DESROCHERS

Alaska oats were sown May 26, this was nine days earlier than last year. June 1930 had an excessive rainfall which made the ground very wet resulting in poor growth and a small yield of the oat crop. Potatoes were planted June 20 and turnips were sown on June 22. These late planting dates were a restricting influence on yields. A good hay crop was harvested.

The results of the season's operations are as follows:—

OPERATIONS AT LA REINE—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips, Hall's Westbury.....tons | 2 | 3·0 | 3·13 | 9 20 | 11 90 |
| A | Oats, peas and vetch hay.....tons | 2 | 3·0 | 3·0 | 13 28 | 12 68 |
| A | Potatoes, Irish Cobbler.....bush. | 1 | 84·0 | ..... | 0 74 | ..... |
| B | Timothy hay.....tons | 1 | 2·0 | ..... | 4 36 | ..... |
| C | Clover hay.....tons | 2 | 2·5 | 2·63 | 4 05 | 3 59 |
| D | Clover hay.....tons | 2 | 2·5 | 2·63 | 4 65 | 3 59 |
| E | Alaska oats.....bush. | 2 | 16·0 | 21·3 | 1 54 | 1 13 |

The water furrow system of drainage was not effective, this was noticed particularly in the spring when seeding was delayed considerably as a result. In the autumn work was done to correct this condition.

## MATTICE, COCHRANE DISTRICT, ONTARIO

OPERATOR, ARTHUR BROUARD

There was an early spring this year. The seeding of Alaska oats was completed on May 12 and O.P.V. on May 20.

The results of the season's operations are as follows:—

OPERATIONS AT MATTICE—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 2 | 1·5 | 1·75 | 7 74 | 6 88 |
| B | Alaska oats.....bush. | 1 | 27·0 | ..... | 0 83 | ..... |
| C | Turnips, Hall's Westbury.....tons | 2 | 1·2 | 6·85 | 16 47 | 9 48 |
| C | Potatoes, Irish Cobbler.....bush. | 1 | 120·0 | ..... | 0 75 | ..... |
| C | Oats, peas and vetch hay.....tons | 2 | 2·25 | 1·92 | 17 59 | 15 60 |
| D | Clover hay.....tons | 2 | 2·0 | 1·75 | 6 65 | 6 88 |
| E | Clover hay.....tons | 2 | 2·0 | 1·75 | 6 65 | 6 88 |

The low yield of turnips is probably due to poor condition of the soil and the work of cutworms on the young plants.

Two mixtures of grasses and clover seed were compared. One was composed of 10 pounds of timothy, 8 pounds of red clover and 2 pounds alsike clover. The other was 8 pounds timothy, 5 pounds red clover, 5 pounds alfalfa and 2 pounds alsike clover. The stand of alfalfa was not promising, probably due to insufficient seed bed preparation resulting from a recently broken soil and faulty drainage.

## MINDEMOYA, MANITOULIN ISLAND, ONTARIO

OPERATOR, W. A. HARE

This year the season was exceptionally fine on Manitoulin Island. However, the last of May and the first part of June were very rainy, this adversely affected the corn crop. The soil cultivation started early. Banner oats were sown on May 18 and turnips on May 24.

Two mixtures of grasses and clover seed were sown with the oats. The mixture used on half the field was, timothy 10 pounds, red clover 8 pounds, alsike clover 2 pounds. On the other half the mixture was, timothy 8 pounds, red clover 5 pounds, alfalfa 5 pounds, alsike clover 2 pounds per acre. The alfalfa is a promising addition to the hay mixture.

The results and the cost of growing the different crops are as follows:—

OPERATIONS AT MINDEMOYA—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Banner oats.....bush. | 4 | 45·0 | 46·2 | 0 44 | 0 50 |
| B | Turnips, Hall's Westbury.....tons | 4 | 20·0 | 17·54 | 3 28 | 2 75 |
| B | Corn.....tons | 4 | 7·0 | 8·64 | 6 84 | 4 78 |
| C | Timothy hay.....tons | 2 | 1·0 | 1·41 | 12 00 | 9 18 |
| D | Clover hay.....tons | 3 | 2·0 | 1·67 | 7 24 | 9 55 |

A fertilizer demonstration was carried out on field "B." Half the area in turnips received an application of 10 tons of manure per acre, yielding 12·5 tons per acre; on the remainder 200 pounds of nitrophoska in addition to the manure was applied, the resulting yield was 19·6 tons per acre.

## MOONBEAM, COCHRANE DISTRICT, ONTARIO

OPERATOR, B. GAUDREAULT

This year, all seeding was completed in the month of May. June was rather wet which reduced the yields of Alaska oats and turnips. The weather was fine for haying and good quality hay was harvested. Turnips were not a uniform stand, however, where an application of nitrophoska was made, the roots had a better appearance.

The results of the season's operations are as follows:—

OPERATIONS AT MOONBEAM—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Alaska oats.....bush. | 3 | 19·0 | 25·0 | 1 07 | 0 99 |
| B | Alaska oats.....bush. | 3 | 16·0 | 25·0 | 1 60 | 0 99 |
| C | Turnips, Hall's Westbury.....tons | 2 | 2·38 | 3·44 | 22 80 | 18 41 |
| C | Oats, peas and vetch hay.....tons | 3 | 3·6 | 2·90 | 9 28 | 11 44 |
| D | Timothy hay.....tons | 2 | 2·0 | 1·5 | 4 33 | 7 58 |
| E | Clover hay.....tons | 3 | 1·5 | 1·33 | 5 99 | 9 66 |

An application of 115 pounds of sulphate of ammonia per acre was used on half of field "D" and the yield in hay was increased by one ton per acre.

An application of 10 tons of farm manure per acre on the whole turnip field was made. On half of the plot 200 pounds of nitrophoska per acre was used, the yields obtained were 6·35 and 9·05 tons per acre respectively. In a district such as this, where the season is rather short fertilizers have a beneficial effect by giving the crop a quick start.

## SPRING BAY, MANITOULIN ISLAND, ONTARIO

OPERATOR, WM. MCCOLEMAN

In general seeding was done earlier than it was last year. June was wet. The rain did considerable damage to the hoed crops, thus reducing their yield. The potato crop was a failure due to excessive moisture followed by rapid evaporation which left the ground very hard with the result that the tubers rotted.

The yields and cost of growing the different crops are as follows:—

OPERATIONS AT SPRING BAY—SIX-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 1 | 1·13 | ..... | 9 31 | ..... |
| B | Clover hay.....tons | 1 | 1·38 | ..... | 6 73 | ..... |
| C | Alaska oats.....bush. | 4 | 36·0 | 23·0 | 0 68 | 1 05 |
| D | Oats, peas and vetch grain.....bush. | 1 | 24·0 | ..... | 1 39 | ..... |
| D | Potatoes.....bush. | 1 | Failure | ..... | ..... | ..... |
| D | Turnips, Hall's Westbury.....tons | 3 | 6·3 | 12·15 | 7 15 | 5 84 |
| E | Oats, peas and vetch grain.....bush. | 1 | 24·0 | ..... | 1 38 | ..... |
| F | Clover hay, 1st cut.....tons | 1 | 1·13 | ..... | 8 26 | ..... |
| F | Clover seed.....lb. | 2 | 100·0 | 123·0 | 0 09¾ | 0 13 |

The oats, peas and vetch were sown for green feed. June rains destroyed most of the peas, the Alaska oats of the mixture had time to ripen and were harvested as a cereal crop.

## STE. ROSE DE POULARIES, ABITIBI DISTRICT, QUEBEC

OPERATOR, JOS. LEMOINE

Spring was moderately early this year. The first seed was sown on May 13 and the weather was good throughout seeding time. The month of June was very wet and this affected the crops considerably. However, July and August were favourable and the crops yielded fairly well.

The results of the season's operations are as follows:—

OPERATIONS AT STE. ROSE DE POULARIES—SIX-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 2 | 2·25 | 2·4 | 4 82 | 5 06 |
| B | Clover hay.....tons | 2 | 2·7 | 2·4 | 4 57 | 5 06 |
| C | Alaska oats.....bush. | 2 | 31·0 | 34·5 | 0 81 | 0 69 |
| D | Alaska oats.....bush. | 2 | 31·0 | 34·5 | 0 81 | 0 69 |
| E | Turnips, Hall's Westbury.....tons | 2 | 1·5 | 5·95 | 11 42 | 8 48 |
| E | Oats, peas and vetch hay.....tons | 2 | 3·75 | 5·22 | 7 72 | 6 49 |
| F | Alaska oats.....bush. | 2 | 31·0 | 34·5 | 0 69 | 0 69 |

The turnip crop, which turned out to be mostly rape, was fed to the cows and pigs.

Alaska oats on field "C" was sown at the rate of 3 bushels per acre along with 8 pounds of red clover, 2 pounds of alsike, and 10 pounds of timothy per acre. Because of its early maturity Alaska is well suited to the district and generally recommended.

## VAL GAGNE, COCHRANE DISTRICT, ONTARIO

OPERATOR, H. LABRECHE

The land was ready for seeding comparatively early. Oats were sown on May 15. Rainy weather following, delayed operations for some time. The O.P.V. and turnips were seeded on June 6. Summer weather was favourable for growth, hay was harvested in good condition, a fair yield of good quality grain was also threshed.

The yields and cost of growing the different crops are as follows:—

OPERATIONS AT VAL GAGNE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 6 | 2·5 | 2·0 | 5 56 | 8 74 |
| B | Timothy hay.....tons | 5 | 1·62 | 1·67 | 7 05 | 8 39 |
| C | Potatoes, Irish Cobbler.....bush. | 6 | 151·0 | 175·6 | 0 48 | 0 50 |
| C | Turnips, Hall's Westbury.....tons | 6 | 8·28 | 12·09 | 4 75 | 3 85 |
| D | Alaska oats.....bush. | 7 | 39·7 | 37·2 | 0 37 | 0 61 |
| E | Alaska oats.....bush. | 7 | 26·9 | 37·2 | 0 55 | 0 61 |
| F | Alaska oats.....bush. | 7 | 22·4 | 37·2 | 0 71 | 0 61 |
| G | Oats, peas and vetch hay.....tons | 2 | 2·6 | 2·21 | 6 34 | 10 39 |
| H | Oats, peas and vetch hay.....tons | 2 | 1·75 | 2·21 | 9 21 | 10 39 |

The alfalfa seeded last year gave good results and seems well adapted to the soil, five pounds of Ontario Variegated alfalfa seed was included in the grass and clover mixture at that time. To test the cultural possibilities of peas in

this section, two bushels of the Chancellor variety were sown on an extension field. A yield of 33 bushels was obtained which is quite satisfactory for the first year and peas give promise as a future crop. A test carried out with peas from this field proved them to be of an excellent quality.

## VERNER, NIPISSING DISTRICT, ONTARIO

### Operator, Andre Beaudry

Rains early in May held seeding back to about the same date as last year. In 1929 oats were sown on May 25 and this year on May 24. Throughout the growing season this field of oats had a good appearance and at threshing the yield exceeded expectations. For the reason of seeking to obtain the most that could be made of the crop two-thirds of the timothy hay plot was saved for seed. The return at harvest was 230 pounds high quality seed per acre, which was produced at a moderate cost. Hay was cut and stored in good condition.

Eighteen-ton turnip crop on the Illustration Station at Verner, Ontario. Cost of production, $2.37 per ton.

The season's operations are as follows:—

Operations at Verner—Four-year Rotation

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 2 | 1·67 | 1·88 | 6 71 | 5 96 |
| A | Timothy seed.....lb. | 1 | 230·0 | ..... | 0 05 | |
| B | Clover hay.....tons | 2 | 2·0 | 2·85 | 6 77 | 5 50 |
| C | Alaska oats.....bush. | 4 | 58·0 | 44·87 | 0 41 | 0 52 |
| D | Turnips, Hall's Westbury.....tons | 4 | 18·0 | 19·5 | 2 37 | 2 79 |

The turnip field was divided into three parts in order to compare fertilizers and farm manure with manure alone. Ten tons of manure per acre were spread on the first part; on the second, 10 tons of manure with 200 pounds of nitrophoska per acre and on the third plot, only manure at the rate of 20 tons per acre was spread.

The results are as follows:—

| | Yield per acre |
|---|---|
| Manure, 10 tons per acre | 17·2 tons |
| Manure, 10 tons, 200 pounds, nitrophoska | 19·0 tons |
| Manure, 20 tons per acre | 16·5 tons |

The growing season was rather dry in the Nipissing district, hence, the turnip yields were resultingly affected, however, it will be noted that the chemical fertilizer in addition to a light application of manure stimulated growth, made thinning earlier and gave the highest yield.

## REPORT OF THE ILLUSTRATION STATIONS IN WESTERN QUEBEC AND EASTERN ONTARIO

*W. L. Chauvin, Supervisor*

In 1930 twenty-three Illustration Stations were under my supervision. Eighteen of these stations were located in Western Quebec and five in Eastern Ontario.

### SEASONAL NOTES

Weather conditions were most variable. Spring was early and farm operations well under way in the latter part of April, but unfortunately cold and rainy weather was experienced from mid May until well on in June and many farmers were late completing their seedings. The summer months were favourable to the growth of most crops, especially to those sown on light soils.

Farmers located in the Montreal district, however, experienced severe losses on many of their crops due to late seeding and heavy rains throughout the growing season. Those of the Northern district were more fortunate on account of a lower precipitation and lighter soils.

### PUBLICITY

The Illustration Stations are more and more used as centres of publicity and a source of information for the farmers living in the districts, where they are established.

During the year, twenty public meetings were held on the Illustration Stations, where farmers of the vicinity were invited to come and discuss various agricultural problems. The total attendance at these meetings was 2,630 farmers, giving an average attendance of 131 per meeting. Outside of meetings 904 farmers visited the different Illustration Stations to secure information from the operators.

The supervisor visited, on request, seven farmers in order to establish a systematic rotation system, acted as judge at four ploughing matches and inspected two districts for the purpose of investigating their possibilities and their need for Illustration Station work.

Local fairs and crop competitions received considerable support from the Illustration Stations, thirteen operators took part in these competitions and the following prizes were awarded, fifty-five, firsts; thirty-six, seconds; twenty-three, thirds; twenty, fourths and six, fifths.

### HOG PASTURE ROTATION

With the view to securing greater profits from hog raising, considerable attention has been given to the production of suitable feeds and pasture for hogs.

An acre of land, situated at close proximity to the piggery has been devoted to pasturing. This field is divided into three plots of one-third an acre each

with permanent hog fence. A three-year rotation is practised with the following crop sequence:—

First year—Rape.
Second year—O.P.V. mixture, seeded to grass and clover.
Third year—Clover pasture.

The plan below shows the rotation of different crops in the field.

| | |
|---|---|
| First year of rotation: Rape | 1929—Rape. |
| | 1930—O.P.V. seeded. |
| | 1931—Pasture. |
| | 1932—Rape. |
| Second year of rotation:—Oats, peas, vetch | 1929—O.P.V. seeded. |
| | 1930—Pasture. |
| | 1931—Rape. |
| | 1932—O.P.V. |
| Third year of rotation: Pasture | 1929 Pasture. |
| | 1930 Rape. |
| | 1931 O.P.V. seeded. |
| | 1932 Pasture. |

Each year two fields are ploughed during the fall, namely, the one to be seeded to oats, peas and vetches the following year and the one to be seeded with rape. The rate of seeding rape is four to five pounds per acre, when broadcast, which is preferable to seeding it in rows, but if it is seeded in rows, two to three pounds per acre is sufficient. Rape seed is similar to turnip seed in appearance, hence, it is impossible to differentiate one from the other, it is therefore very important to take all necessary precautions to avoid seeding one for the other. This error happens when farmers are not well informed on this matter and always causes serious losses of land and labour. It is also important to point out that rape seed should not be sown too deeply, as too deep seeding often fails to germinate. The most suitable depth is about one-quarter of an inch; the land should be well prepared and in good tilth, preferably rolled after harrowing. When the soil is light it is advisable to roll again immediately after seeding.

The oats, peas and vetches mixture is composed of two bushels of oats, three-quarters of a bushel of peas and one-quarter of a bushel of vetches, used at the rate of three bushels per acre, to which is added twelve pounds of clover seed per acre, half red and half alsike. Rape and oats, peas and vetches are fed to the hogs in pasture, as soon as these crops have made sufficient growth. After the first cutting of rape, the hogs are allowed to pasture on this field in order to make use of the second growth.

## LIVE STOCK

Steady effort is being made in the general improvement of live stock in order to obtain from this source a profitable market for the farm crops grown. All the herds are headed by a pure-bred sire. The supervisor gives keen attention to the selection of dairy cows, according to the individual milk records which are kept on each Illustration Station. Advice is given the operators in regard to feeding and suitable rations.

The following table gives the average milk production for each herd as well as the individual production for the highest and lowest producing cows in these herds.

MILK PRODUCTION ON WESTERN QUEBEC AND EASTERN ONTARIO ILLUSTRATION STATIONS

*Records of Cows*

| Stations | Breed | Number of cows | Average days of lactation | Highest cow production | Lowest cow production | Average milk production |
|---|---|---|---|---|---|---|
| | | | | lb. | lb. | lb. |
| Aubrey | Hols. Gr. | 18 | 300 | 10,147 | 5,835 | 7,923 |
| Bourget | Ayr. Gr. | 13 | 287 | 9,665 | 5,752 | 7,677 |
| Bourget | Gr. | 10 | 258 | 4,614 | 2,445 | 3,848 |
| Casselman | Ayr. | 7 | 254 | 7,369 | 3,951 | 5,794 |
| Curran | Ayr. | 14 | 300 | 10,868 | 3,689 | 7,470 |
| Daveluyville | Can. Gr. | 13 | 272 | 7,721 | 3,683 | 6,141 |
| Lachute | Ayr. | 14 | 305 | 9,403 | 5,548 | 7,382 |
| L'Annonciation | Gr. | 8 | 258 | 6,264 | 4,858 | 5,500 |
| Ste. Brigide | Ayr. Can. | 5 | 275 | 7,921 | 3,529 | 4,880 |
| St. Casimir | Ayr. | 5 | 344 | 12,630 | 7,699 | 9,801 |
| St. Clet | Hols. Gr. | 10 | 295 | 7,823 | 4,693 | 6,295 |
| St. Constant | Ayr. Gr. | 10 | 333 | 11,839 | 5,364 | 8,495 |
| St. Etienne des Grès | Gr. | 5 | 279 | 7,361 | 4,116 | 6,441 |
| St. Eugène | Hols. Gr. | 12 | 262 | 7,479 | 5,231 | 6,272 |
| St. Eustache | Ayr. | 6 | 285 | 11,350 | 8,675 | 10,182 |
| St. Jérôme | Ayr. Gr. | 6 | 307 | 10,699 | 4,055 | 6,802 |
| St. Léonard | Ayr. Gr. | 9 | 332 | 7,945 | 5,231 | 6,341 |
| St. Simon | Ayr. | 11 | 301 | 10,324 | 6,133 | 8,260 |
| Joliette | Ayr. Gr. | 5 | 282 | 14,063 | 5,880 | 8,705 |

The milk production of 255 cows kept on 19 stations is reported in the above table. Of this number, 181 cows had completed their lactation period, when these figures were compiled, the average individual milk production being 7,073 pounds. The average for 1928 was 6,442 pounds and in 1926, 4,944 pounds, thus giving an individual increased production of 2,029 pounds in four years.

Poultry is the source of considerable revenue and the subject of attention with respect to breeding on the stations. Only birds of good type and heavy layers are kept as breeding stock. Barred Rock is the breed most generally kept.

Raising hogs for bacon purposes is also important as the revenue derived therefrom comes next to dairying on the majority of farms. The selection of good bacon type brood sows and the use of registered boars is commonly adopted. Lowering the cost of pork production is aimed at by growing the necessary crops economically and by providing succulent pastures.

## GARDENS AND HOME SURROUNDINGS

The early spring was favourable to the planting of the home gardens and fair growing weather brought the different crops above the average.

A great deal of interest is shown by the operators in the planting of shrubs, flowers, painting or whitewashing the fences and buildings, which all go towards improving the appearance of the home-surroundings.

## SUPERPHOSPHATE AND LIME FOR CLOVER HAY

The following data indicate the results obtained on thirteen stations, where the undermentioned fertilizers were applied in 1929 prior to being seeded to grain, grasses and clovers. Superphosphate was applied at the rate of 200 pounds per acre; lime 2 tons per acre; superphosphate 200 pounds and lime 2 tons; a check plot was left unfertilized so that comparisons could be gained representative of the effect of each on succeeding crops.

RESULTS OBTAINED WITH SUPERPHOSPHATE AND LIME

| Location | 200 pound superphosphate per acre | 2 tons lime per acre | 200 pound superphosphate and 2 tons lime per acre | check |
|---|---|---|---|---|
| | ton | ton | ton | ton |
| Bourget | 2·25 | 1·40 | 2·25 | 1·30 |
| Campbell's Bay | 0·88 | 0·92 | 0·95 | 0·75 |
| Casselman | 1·75 | 1·88 | 2·00 | 1·78 |
| Lachute | 2·00 | 1·39 | 2·68 | 1·68 |
| L'Annonciation | 0·31 | 0·63 | 0·86 | 0·31 |
| Russell | 0·91 | 0·65 | 0·94 | 0·56 |
| Ste. Brgide | 2·18 | 1·81 | 2·15 | 1·59 |
| St. Casimir | 2·25 | 2·20 | 2·40 | 2·10 |
| St. Clet | 1·00 | 1·20 | 1·40 | 0·80 |
| St. Constant | 1·50 | 1·34 | 2·06 | 1·28 |
| St. Eugene | 2·34 | 1·88 | 1·22 | 2·00 |
| St. Jerome | 0·81 | 0·81 | 0·94 | 0·77 |
| St. Simon | 0·53 | 0·56 | 0·63 | 0·47 |
| Average of 13 stations | 1·44 | 1·20 | 1·57 | 1 18 |

While the yields obtained with superphosphate on several stations are somewhat higher than those obtained with lime, it is interesting to notice, however, that where both superphosphate and lime were used an increase as high as 1,580 pounds per acre was obtained over the unfertilized field.

It may be added that clover plants showed a much healthier growth and were deeper rooted where lime was used, when compared to those where superphosphate was applied.

## AUBREY, CHATEAUGUAY COUNTY, QUEBEC

OPERATOR, SAMUEL REDDICK

The station at Aubrey is continuing to illustrate the advantages of a four-year rotation, thus aiming to grow, at lower costs, suitable crops for profitable milk production, namely, corn as succulent feed, clover hay and grain. Dairying is the main source of revenue in this district. Special attention has been given to the care, feeding, selection and recording of individual milk production of the dairy herd. From the new meadow in this rotation a second cut of clover is harvested for seed production and has been found a very profitable cash crop.

OPERATIONS AT AUBREY—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost of unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats, Banner....bush. | 11 | 70·0 | 51·8 | 0 26 | 0 40 |
| B | Clover hay, 1st cut....tons | 7 | 1·33 | 1·01 | 6 06 | 5 63 |
| B | Clover seed, 2nd cut....lb. | 7 | 80·0 | 98·0 | 0 08 | 0 08 |
| C | Corn, ensilage....tons | 11 | 17·06 | 16·01 | 1 95 | 2 36 |
| D | Timothy hay....tons | 11 | 1·05 | 1·68 | 10 97 | 8 49 |

It will be noted in the above table, that yields are higher than the average of the past eleven years. The cost prices are very satisfactory for all crops grown, except in the case of timothy hay, a low yield being responsible for a relatively high cost of production.

## BOURGET, RUSSELL COUNTY, ONTARIO

OPERATOR, JULES POTVIN

The home canning industry in Eastern Ontario is becoming more important as time goes on. Crops grown for canning purposes supply considerable revenue and serve as a valuable cash crop on farms of this type. Although yields at this station are somewhat lower than last year, very reasonable profits have been realized by following a short rotation and practical cultural methods.

OPERATIONS AT BOURGET—THREE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats, Banner.....bush. | 3 | 29·0 | 33·0 | 0 60 | 0 65 |
| B | Beans.....cans | 3 | 4,480·0 | 5,227·0 | 0 08¼ | 0 07 |
| B | Tomatoes.....cans | 3 | 2,548·0 | 2,739·0 | 0 06½ | 0 06½ |
| B | Corn, Golden Bantam.....cans | 3 | 2,467·0 | 3,577·0 | 0 06 | 0 06 |
| C | Clover hay.....tons | 2 | 1·12 | 1·08 | 13 63 | 13 09 |

Considerable improvements have been effected during the past year to farm buildings and general home surroundings.

## BOURGET, RUSSELL COUNTY, ONTARIO

OPERATOR, NAPOLEON MARTEL

When comparing yields obtained on this station this year with those of 1929, it is pleasing to note, that most crops show an increase. Oats for instance gave an increased yield of 17·5 bushels over last year and 8½ bushels higher than the average for the past seven years. Weather conditions were very favourable in every respect for growth and account to a large extent for these results.

OPERATIONS AT BOURGET—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Corn, ensilage.....tons | 7 | 17·77 | 13·47 | 2 30 | 2 81 |
| A | Turnips (Hall's Westbury).....tons | 7 | 22·31 | 17·56 | 2 47 | 3 33 |
| B | Oats (Banner).....bush. | 7 | 62·50 | 53·0 | 0 29 | 0 40 |
| C | Clover hay, 1st cut.....tons | 6 | 1·80 | 1·60 | 4 52 | 5 42 |
| C | Clover seed, 2nd cut.....lb. | 6 | ..... | ..... | ..... | ..... |
| D | Timothy hay.....tons | 7 | 2·05 | 2·23 | 6 31 | 6 90 |

An application of nitrophoska No. 1 on corn gave an increase in yield of 6·85 tons per acre.

## CAMPBELL'S BAY, PONTIAC COUNTY, QUEBEC

OPERATORS, W. J. HAYES & SON

The oat yields on this station are more than double that of last year. Early seeding coupled with fine growing weather accounts for this increase. The first clover cutting was made on June 26, so as to give all possible chances to the seed crop to ripen prior to frost.

OPERATIONS AT CAMPBELL'S BAY—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats, Banner.....bush. | 10 | 53·0 | 45·0 | 0 33 | 0 47 |
| B | Clover hay, 1st cut.....tons | 5 | 0·87 | 1·25 | 8 34 | 8 00 |
| B | Clover seed, 2nd cut..... lb. | 5 | 144 | 119 | 0 05 | 0 07 |
| C | Timothy hay.....tons | 8 | 1·45 | 1·88 | 8 58 | 7 60 |
| D | Corn, ensilage.....tons | 10 | 14·96 | 11·88 | 2 37 | 3 58 |

Red clover seed production is growing very rapidly in this district. Over five thousand pounds of clover seed were threshed this year. Summer cultivation is becoming more widely adopted by the farmers of this district.

Leaming corn for ensilage on the Illustration Station at Campbell's Bay, Quebec, yielded 14.9 tons per acre.

## CASSELMAN, RUSSELL COUNTY, ONTARIO

OPERATOR, HECTOR LAFLECHE

Due to a shortage of permanent pasture, the rotation on this station has been changed from a four to a five year rotation. The following cultural practices have brought wild mustard, which was very prevalent on this farm, quite well under control. The land was shallow ploughed in July, 1929, and was topworked throughout the season until late fall. In the spring of 1930, a deep ploughing was made, the seed-bed was well prepared and sown to buckwheat at the rate of 1½ bushels per acre.

OPERATIONS AT CASSELMAN—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Buckwheat.....bush. | 1 | 36·0 | ..... | 0 58 | ..... |
| B | Oats, Banner.....bush. | 3 | 52·50 | 46·0 | 0 33 | 0 47 |
| C | Turnips, Hall's Westbury.....tons | 6 | 28·20 | 24·86 | 1 70 | 2 67 |
| C | Corn, fodder.....tons | 6 | 17·80 | 14·49 | 1 72 | 2 47 |
| D | Timothy hay.....tons | 4 | 1·09 | 1·34 | 13 07 | 12 07 |
| E | Clover hay, 1st cut.....tons | 4 | 1·85 | 1·19 | 4 95 | 10 87 |
| E | Clover seed, 2nd cut..... lb. | 3 | 204·0 | 151·0 | 0 10 | 0 14 |

As one will notice in data given above, several crops show an increase in yield over last year. The most outstanding ones being clover seed with an increase of 110 pounds per acre and oats 13·5 bushels per acre.

## CURRAN, PRESCOTT COUNTY, ONTARIO

OPERATOR, A. DUPONT

While hoed crops were sown at the same date as last year, oats were seeded two weeks earlier and this is a contributing factor to the increased yield of 15 bushels per acre over last year. Wet and rather cold weather, coupled with a soil lacking in uniformity, were not satisfactory to the corn crop this year.

OPERATIONS AT CURRAN—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay 1st cut.....tons | 7 | 1·66 | 1·27 | 5·24 | 7 17 |
| A | Clover seed, 2nd cut..... lb. | 7 | ..... | ..... | ..... | ..... |
| B | Timothy hay.....tons | 6 | 2·34 | 2·11 | 6 80 | 6 96 |
| C | Corn, ensilage.....tons | 7 | 11·40 | 11·34 | 2 62 | 2 96 |
| C | Turnips, Hall's Westbury.....tons | 6 | 15·80 | 21·34 | 2 37 | 2 00 |
| D | Oats, Banner.....bush. | 7 | 45·0 | 37·0 | 0 44 | 0 62 |

Steady progress is being made in dairying and some $175 in prizes were awarded to this herd at local fall fairs.

## DAVELUYVILLE, ARTHABASKA COUNTY, QUEBEC

OPERATOR, ALPHONSE POISSON

The soil on this station is rather light and lacks in fertility. A review of the data given below, shows that turnip yields are lower than last year. Rainy wet weather delayed seeding until late June and accounts for this decrease in yield.

OPERATIONS AT DAVELUYVILLE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1390 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips, Hall's Westbury.....tons | 5 | 11·55 | 11·68 | 2 67 | 3 39 |
| B | Oats, Alaska.....bush. | 2 | 21·0 | 27·0 | 0 60 | 0 70 |
| C | Clover hay, 2 cuts.....tons | 2 | 2·0 | 1·82 | 6 80 | 7 30 |
| D | Timothy hay.....tons | 3 | 1·92 | 1·61 | 5 47 | 7 08 |

In spite of poor growing weather it is interesting to note, that the demonstration on turnips where nitrophoska No. I was applied at the rate of 200 pounds per acre gave an increased yield over manure (10 tons per acre) of 3·57 tons per acre.

## L'ANNONCIATION, LABELLE COUNTY, QUEBEC

OPERATOR, DIDYME COTE

Although oats were seeded a few days later than last year, yields are double due to better growing conditions. The other crops gave much the same yields as in 1929, except potatoes, where another increase of 24 bushels per acre is noticed. The following table gives the results of the season's work.

OPERATIONS AT L'ANNONCIATION—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 2 | 0·79 | 0·79 | 15 07 | 14 58 |
| B | Oats, Alaska.....bush. | 4 | 25·0 | 18·0 | 0 51 | 1 14 |
| C | Potatoes, Irish Cobbler.....bush. | 4 | 300·0 | 241·0 | 0 24 | 0 31 |
| C | Turnips, Hall's Westbury.....tons | 5 | 12·20 | 13·26 | 4 48 | 4 30 |
| C | Corn, fodder.....tons | 5 | 13·28 | 11·68 | 2 55 | 2 71 |
| C | Sunflowers, fodder.....tons | 4 | 13·62 | 17·28 | 2 39 | 2 34 |
| D | Clover hay, 2 cuts.....tons | 4 | 1·27 | 1·16 | 12 24 | 12 31 |

Continual improvements towards beautifying the home surroundings are being made. A new poultry house was built and 100 Barred Rocks are being wintered and are doing well.

A meeting held at this station in June was attended by 105 people and proved to be most interesting. The speakers were, the Assistant Chief Supervisor of Illustration Stations, the County Agronomist and the Supervisor.

## LACHUTE, ARGENTEUIL COUNTY, QUEBEC

OPERATOR, S. R. SMITH

Due to very favourable growing conditions in the spring, oats on this station gave yields practically double last year. Other crops, however, show a slightly lower yield.

OPERATIONS AT LACHUTE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats, Banner.....bush. | 11 | 53·50 | 36·0 | 0 33 | 0 58 |
| B | Corn, ensilage.....tons | 11 | 12·32 | 15·05 | 2 62 | 2 34 |
| C | Timothy hay.....tons | 5 | 1·50 | 1·53 | 9 90 | 8 31 |
| D | Clover hay.....tons | 5 | 1·70 | 1·88 | 10 03 | 9 07 |

Two sales of pure-bred stock during the year speak for themselves of the improvements made along breeding and selection work in this Ayrshire herd. The first sale was made to Alta Crest Farm, Spencer, Mass., the second to the Shawbridge Boys' Farm, Quebec.

Whitewashing the buildings, putting up new fences are some of the improvements made during the year towards beautifying the home surroundings.

## PAPINEAUVILLE, LABELLE COUNTY, QUEBEC

OPERATOR, JOS. E. BONHOMME

Although seeding was completed later than last year, increases in several crops are obtained as indicated in the table below. Turnips show an increase over last year of 3·14 tons and oats of 8·34 bushels per acre.

OPERATIONS AT PAPINEAUVILLE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats, Banner.....bush. | 10 | 50·0 | 42·0 | 0 40 | 0 54 |
| B | Potatoes, Irish Cobbler.....bush. | 7 | 156·0 | 190·0 | 0 57 | 0 47 |
| B | Turnips, Hall's Westbury.....tons | 9 | 20·0 | 25·43 | 4 00 | 3 49 |
| B | Corn, ensilage.....tons | 6 | 11·50 | 13·50 | 8 76 | 3 45 |
| C | Clover hay, 2 cuts.....tons | 5 | 2·40 | 1·97 | 6 70 | 6 43 |
| D | Timothy hay.....tons | 8 | 2·40 | 2·43 | 5 24 | 5 99 |

The first clover cutting was done early with the view to keeping the second for seed, but growing conditions and wet weather made it impossible. The second cutting was made rather late and cured for hay.

## RUSSELL, RUSSELL COUNTY, ONTARIO

OPERATOR, KENNETH BOYD

Crops on this station compare quite favourably with those of last year. Higher yields, however, were expected as seeding took place much earlier than usual, but a wet and cold spell came along shortly after the crops were seeded and rendered soil conditions anything but favourable to a good germination and an early start.

Grain crops made a stunted growth and hoed crops stood a severe check, which appears very plainly in the data given below.

OPERATIONS AT RUSSELL—SIX-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost of unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay, one cut.....tons | 2 | 1·0 | 1·0 | 15 68 | 16 65 |
| B | Corn, fodder.....tons | 5 | 10·87 | 10·17 | 2 40 | 3 70 |
| B | Turnips, Hall's Westbury.....tons | 1 | 13·0 | ..... | 2 52 | ..... |
| C | Clover hay.....tons | 2 | 0·76 | 1·0 | 20 50 | 14 93 |
| D | Oats, Banner.....bush. | 5 | 31·0 | 37·0 | 0 67 | 0 94 |
| E | Oats, Banner.....bush. | 5 | 34·0 | 38·0 | 0 62 | 0 83 |
| F | Timothy hay.....tons | 3 | 1·0 | 1·17 | 15 67 | 14 59 |

The soil on this station, which is rather light, has a clayish subsoil which keeps the water table close to the surface and in wet seasons, as the past one, is a serious handicap to most crops.

## STE. BRIGIDE, IBERVILLE COUNTY, QUEBEC

OPERATOR, ALPHONSE GOINEAU

Most crops on this station show an increase in yield over last year. Heavy rains in the spring delayed seeding somewhat and are responsible for a lighter yield in oats. Dairying being the main source of revenue, the increased turnip yield of 5·25 tons per acre can be advantageously utilized.

OPERATIONS AT STE. BRIGIDE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay, 1st cut.....tons | 7 | 1·46 | 1·37 | 5 34 | 6 21 |
| A | Clover seed, 2nd cut..... lb. | 7 | 98·0 | 93·0 | 0 08 | 0 09 |
| B | Corn, ensilage.....tons | 10 | 15·07 | 14·95 | 2 05 | 2 06 |
| B | Turnips, Hall's Westbury.....tons | 10 | 27·50 | 25·25 | 1 34 | 1 73 |
| C | Oats, Reg. Banner.....bush. | 10 | 43·0 | 53·0 | 0 49 | 0 41 |
| D | Timothy hay.....tons | 9 | 2·28 | 1·45 | 5 60 | 6 99 |

The clay soil on this station is well adapted to the production of hay crops. The grass and clover seed mixture used when seeding down was made up of red clover, eight pounds; alsike clover, two pounds; timothy, ten pounds. On the first year meadow it may be noted that an early crop of clover hay was taken, the second growth was allowed to mature as seed.

## ST. CASIMIR, PORTNEUF COUNTY, QUEBEC

OPERATOR, ELOI ST. GERMAIN

Crops on this station gave fair yields, if one considers the heavy type of soil and wet weather experienced. Oats show a slightly lighter yield than last year, but the corn crop even though sown well on in June gave yields of 16·2 tons.

OPERATIONS AT ST. CASIMIR—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 9 | 2·47 | 1·98 | 5 60 | 6 92 |
| B | Clover hay.....tons | 5 | 2·23 | 1·96 | 7 06 | 6 05 |
| C | Oats, Alaska.....bush. | 11 | 40·0 | 47·0 | 0 47 | 0 84 |
| D | Corn, ensilage.....tons | 9 | 16·22 | 12·25 | 2 59 | 3 61 |
| D | Turnips, Hall's Westbury.....tons | 7 | 14·0 | 18·85 | 3 78 | 3 50 |

Great interest is taken in the dairy herd and several prizes were awarded to these Ayrshires at the County Fair. A pure-bred Oxford ram was bought this fall to head the sheep flock. The four-year rotation is well adapted to this dairy district because of the abundance of succulent feeds produced, such as corn, turnips and clover hay.

## ST. CONSTANT, LAPRAIRIE COUNTY, QUEBEC

OPERATOR, ROCH BOULE

A very interesting experiment was carried on at this station regarding hoed crops grown on summer-fallow against fall ploughing. Field "D" was divided in two equal parts. The first half was ploughed shallow the first week in August,

1929, and topworked until late fall when a second ploughing was done. The second half was ploughed in late fall, only. Seeding was done on the same date on both fields, namely June 12. The yields were as follows:—

Summer-fallow—22·40 tons per acre.

Fall ploughing—14·30 tons per acre.

Although these results are only from one year's work, the difference in yield is certainly striking.

Operations at St. Constant—Four-year Rotation

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 8 | 1·38 | 1·42 | 9 60 | 11 30 |
| B | Oats, Banner.....bush. | 10 | 38·58 | 38·0 | 0 53 | 0 60 |
| C | Clover hay, 1st cut.....tons | 5 | 1·89 | 1·48 | 4 23 | 8 92 |
| C | Clover seed, 2nd cut..... lb. | 5 | 102·0 | 99·0 | 0 10 | 0 11 |
| D | Corn, ensilage.....tons | 3 | 17·30 | 10·14 | 1 94 | 2 67 |

In order to improve the dairy herd, careful selection had to be made. As a great deal depends on the sire, this operator recently purchased his second pure-bred Ayrshire bull from the Central Experimental Farm, Ottawa.

## ST. CLET, SOULANGES COUNTY, QUEBEC

### Operator, Louis Besner

A well prepared seed bed and timely cultural operations, in spite of the torrential rains, gave an increase in the turnip crop of 13 tons per acre over last year. The following table gives the results of the season's operations:—

Operations at St. Clet—Four-year Rotation

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Corn, ensilage.....tons | 11 | 9·62 | 10·61 | 3 40 | 3 64 |
| A | Turnips, Hall's Westbury.....tons | 6 | 20·51 | 17·60 | 4 65 | 4 50 |
| B | Timothy hay.....tons | 8 | 1·0 | 1·0 | 13 35 | 12 70 |
| B | Timothy seed..... lb. | 8 | 250·0 | 192·0 | 0 06 | 0 08 |
| C | Clover hay, 1st cut.....tons | 9 | 1·10 | 0·97 | 8 14 | 9 68 |
| C | Red clover seed, 2nd cut..... lb. | 9 | 96·0 | 106·0 | 0 08 | 0 10 |
| C | Alsike clover seed..... lb. | 1 | 110·0 | ..... | 0 14 | ..... |
| D | Oats, Banner.....bush. | 10 | 51·50 | 41·0 | 0 34 | 0 53 |

On this station considerable attention is given to the production of seed crops, the revenue from which augments that otherwise derived from the sale of live stock and dairy products. It will be noted that timothy, red clover and alsike clover seed were produced at quite advantageous cost; to this factor the systematic crop sequence has naturally assisted.

## ST. ETIENNE DES GRES, ST. MAURICE COUNTY, QUEBEC

OPERATOR, ORIGENE BOURNIVAL

The soil on this station is of a sandy texture and lacks in humus. Chemical fertilizers however gave results worthy of notice on potatoes. Where 200 pounds of nitrophoska No. 1 was applied, in addition to manure, an increase of 73 bushels per acre was recorded over the check plot where no fertilizers were applied.

Another experiment on clover where fertilizers were applied at the rate mentioned, the following results were obtained:—

300 pounds, nitrate of soda, gave a yield of 2·33 tons per acre.
200 pounds, nitrophoska No. 1, gave a yield of 1·97 tons per acre.

Check, no fertilizer, gave a yield of 1·95 tons per acre.

OPERATIONS AT ST. ETIENNE DES GRES—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 8 | 2·08 | 1·11 | 5 57 | 11 70 |
| B | Potatoes, Green Mountain.....bush. | 11 | 220·0 | 215·0 | 0 20 | 0 28 |
| B | Turnips, Hall's Westbury.....tons | 10 | 16·30 | 11·98 | 3 08 | 3 45 |
| B | Corn, fodder.....ton | 10 | 16·60 | 9·85 | 1 69 | 1 94 |
| B | Corn, Canadian.....tons | 7 | 12·63 | 8·66 | 2 23 | 3 30 |
| B | Corn, Golden Bantam.....tons | 2 | 15·33 | 13·41 | 2 00 | 2 58 |
| C | Timothy hay.....tons | 9 | 2·20 | 1·18 | 4 77 | 9 10 |
| D | Oats, Banner.....bush. | 10 | 31·0 | 26·0 | 0 45 | 0 65 |

As one will notice by the data given above, crop yields on the whole compare favourably with those of the past year, Golden Bantam corn showing an increase of 3·8 tons, the ears from which were sold for table purposes, at an adjoining market.

## ST. EUGENE, PRESCOTT COUNTY, ONTARIO

OPERATOR, ALBERT SEGUIN

The work under way at this station is progressing favourably and systematic farm practices are proving effective in steadily increasing crop yields, as well as the revenue from live stock. The thirteen grade Holstein cows headed with a pure-bred bull of the same breed are continuing to show interesting and profitable increases in milk production due specially to the better feeding and intelligent selection made each year, according to the results of the individual milk records. The average milk production of the thirteen cows kept this year is 6,261 pounds, in comparison to 5,844 pounds from twelve cows in 1928.

As the milk was sent to the local cheese factory, the whey was utilized for hog raising. Special attention is being given to this branch. In order to cut down the cost of producing pork, an acre of land was devoted to a three-year rotation organized especially for hog pasture. This has given very encouraging results and the operator is convinced that this improvement has effected a considerable reduction in the cost of producing pork.

OPERATIONS AT ST. EUGENE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1390 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats, Banner....bush. | 4 | 73·0 | 51·0 | 0 31 | 0 44 |
| B | Clover hay, 1st cut....tons | 3 | 1·48 | 1·47 | 6 38 | 6 38 |
| B | Clover seed, 2nd cut....lb. | 3 | 165·0 | 135·0 | 0 09 | 0 15 |
| C | Timothy hay....tons | 3 | 2·30 | 1·86 | 6 60 | 8 08 |
| D | Corn, ensilage....tons | 5 | 16·68 | 12·40 | 2 56 | 3 70 |
| D | Turnips....tons | 4 | 14·08 | 17·70 | 3 33 | 3 93 |

## ST. EUSTACHE, TWO MOUNTAINS COUNTY, QUEBEC

OPERATOR, ARTHUR BELANGER

In spite of rainy weather, which delayed seeding operations until late May, also poor growing weather, crops on the whole gave fair yields as indicated in the table below:—

OPERATIONS AT ST. EUSTACHE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Corn- ensilage....tons | 2 | 11·25 | 12·25 | 3 44 | 3 08 |
| B | Clover hay, 1st cut....tons | 1 | 1·25 | ..... | 6 37 | ..... |
| B | Clover seed, 2nd cut....lb. | 1 | ..... | ..... | ..... | ..... |
| C | Clover hay, 1st cut....tons | 1 | 1·25 | ..... | 6 37 | ..... |
| C | Clover seed, 2nd cut....lb. | 1 | ..... | ..... | ..... | ..... |
| D | Oats, Registered Banner....bush. | 2 | 47·0 | 46·0 | 0 48 | 0 52 |

Corn which received an application of 200 pounds of nitrophoska No. 1 per acre, made a rapid growth right from the start and more than doubled in yield the field which received no fertilizer, the yields being as follows: with nitrophoska No. 1, 15·4 tons per acre; without fertilizer, 7·15 tons per acre.

Continual progress is made with live stock. Approximately $80 was obtained as prizes by the operator's Ayrshire herd at the county fair.

## ST. JEROME, TERREBONNE COUNTY, QUEBEC

OPERATOR, WILFRID GUAY

The soil on this station varies considerably, ranging from peat to a sandy loam. Oats were sown May 12. However, it was impossible to plant other crops until considerably later, potatoes being planted on June 14, corn June 16, and turnips June 17. After this date weather conditions were favourable to the growing of crops. Summer cultivation as preparation of land for hoed crops is well demonstrated at this station and stimulated a great deal of interest in better seed-bed preparation.

OPERATIONS AT ST. JEROME—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Potatoes....bush. | 7 | 440·0 | 244·0 | 0 14 | 0 38 |
| A | Turnips, Hall's Westbury....tons | 10 | 23·20 | 19·61 | 2 16 | 2 85 |
| A | Corn, fodder....tons | 10 | 15·60 | 13·26 | 2 37 | 3 30 |
| B | Oats, Banner....bush. | 10 | 36·0 | 33·0 | 0 51 | 0 70 |
| C | Timothy seed....lb. | 3 | 200·0 | 391·0 | 0 06 | 0 04 |
| D | Clover hay, 2 cuts....tons | 5 | 1·37 | 2·15 | 14 20 | 18 18 |

It will be noted in the above table that the yield of potatoes—namely, 440 bushels per acre—was produced at a cost of 0·14 cents. This crop was obtained on a peat soil, which is suitable to potato growing.

## STE. JULIE, VERCHERES COUNTY, QUEBEC

OPERATOR, HENRI DELORME

Due to the heavy stiff clay soil on this station, seeding is usually late. This season oats were seeded on May 9, which was much earlier than the average of previous years. Nevertheless, it was impossible to sow the corn for silage before June 5. Considering the very wet weather suffered in this district, the crop gave a fair yield, due to early seeding, especially to the adequate seedbed preparation and cultivation.

OPERATIONS AT STE. JULIE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Corn, ensilage.....tons | 11 | 15·90 | 13·0 | 2 02 | 2 93 |
| B | Clover hay, 1st cut.....tons | 8 | 1·62 | 1·43 | 5 08 | 7 98 |
| B | Clover seed.....lb. | 8 | 70·0 | 87·0 | 0 11 | 0 14 |
| C | Oats, Banner.....bush. | 11 | 55·0 | 48·0 | 0 33 | 0 43 |
| D | Timothy hay.....tons | 10 | 1·60 | 1·63 | 9 35 | 9 35 |

It will be observed in the above table, that with the exception of timothy hay all crops produced a fair return at a cost of production lower than the average.

## ST. LEONARD JUNCTION, NICOLET COUNTY, QUEBEC

OPERATOR, MRS. E. CARTER

The spring opened up later than usual in this district. Cold wet weather during May and the first two weeks of June was responsible for the late seeding. It was impossible to plant turnips and corn before the 13th of June. Oats, however, were sown on June 3. The season's yields and cost of growing the different crops, as well as their average since starting operations, appear in the following table:—

OPERATIONS AT ST. LEONARD JUNCTION—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost of unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 5 | 1·42 | 1·59 | 8 66 | 9 68 |
| B | Corn, ensilage.....tons | 5 | 11·0 | 11·56 | 3 50 | 4 12 |
| B | Turnips.....tons | 5 | 19·73 | 19·14 | 2 22 | 2 72 |
| C | Clover hay, 1s.....tons | 5 | 1·38 | 1·11 | 6 45 | 8 85 |
| C | Clover seed, 2n..t.....lb. | 5 | 170·0 | 125·0 | 0 08 | 0 12 |
| D | Oats, Alaska.....bush. | 5 | 21·0 | 28·0 | 0 71 | 0 60 |

Satisfactory progress has been made at this station in building up a pure-bred Ayrshire herd, as well as a well-bred winter-laying strain of Barred Plymouth Rock poultry.

## ST. PAUL DE JOLIETTE, JOLIETTE COUNTY, QUEBEC

OPERATOR, GEORGE E. BAZINET

The heavy clay soil on this station and the rainy weather experienced throughout the growing season, made cultural operations rather difficult and lowered yields of hoed crops. The yields of oats, peas and vetches, however, are more than double that of last year.

The yield and cost of growing the different crops are as follows:—

OPERATIONS AT ST. PAUL DE JOLIETTE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay, 1st cut.....tons | 6 | 1·20 | 1·31 | 6 53 | 8 43 |
| A | Clover seed, 2nd cut..... lb. | 4 | ..... | ..... | ..... | ..... |
| B | Timothy hay.....tons | 6 | 1·86 | 1·58 | 8 18 | 10 43 |
| C | Oats, Banner.....bush. | 7 | 22·0 | 36·0 | 0 68 | 0 70 |
| D | Corn, fodder.....tons | 7 | 7·40 | 10·77 | 3 83 | 4 08 |
| D | Turnip, Hall's Westbury.....tons | 5 | 32·0 | 29·53 | 1 56 | 2 63 |
| D | Oats, and pea hay.....tons | 7 | 4·0 | 2·55 | 7 33 | 12 10 |

A point of interest in connection with alfalfa is, that where lime was applied in 1929 the alfalfa seems to be well established. On the contrary, on the plot where no lime was used, very little alfalfa grew the first year and none whatever this past year. Although no conclusion can be made of one year's trial, it is interesting to note the value of lime when such a crop is to be grown successfully.

## ST. SIMON, BAGOT COUNTY, QUEBEC

OPERATOR, DONAT RIVARD

This station continues to maintain a high standard as regards to profitable yields in all crops, clean cultivation, good farm management and general attractiveness. Unfavourable weather during the spring held back the seeding. Turnips were sown on May 30, corn June 2 and barley June 3.

OPERATIONS AT ST. SIMON—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Barley.....bush. | 2 | 28·0 | 27·0 | 0 74 | 0 81 |
| B | Timothy hay.....tons | 8 | 1·20 | 1·57 | 12 00 | 9 99 |
| B | Timothy seed..... lb. | 4 | 350·0 | 344·0 | 0 04 | 0 04 |
| C | Clover hay, 1st cut.....tons | 8 | 0·90 | 1·00 | 7 79 | 9 30 |
| C | Clover seed, 2nd cut..... lb. | 8 | 89·0 | 122·0 | 0 08 | 0 10 |
| D | Corn, ensilage.....tons | 10 | 14·33 | 11·95 | 2 49 | 3 43 |
| D | Turnips, Hall's Westbury.....tons | 10 | 18·50 | 22·30 | 2 23 | 2 61 |

This operator is a breeder of registered Ayrshire cattle; the herd sire is "Ottawa Supreme 6" a typey, well bred individual, purchased from the Central Experimental Farm, Ottawa. An exhibit of Chancellor peas was awarded the first prize and championship at the Central Canada Winter Fair held at Ottawa, November, 1930.

This entire farm is now under a rotation system and can be considered as one of the leading farms in the county. A complete farm accounting system is

being kept. An annual inventory is taken each spring and all expenses and revenues from each department are determined.

On June 21 a field day was held at this station and some fifteen operators attended, also two hundred and fifty farmers. All the branches of the farm were visited and a brief account of the work being carried on was given. The operator's wife gave a short and interesting talk to the ladies on flowers and garden crops.

## REPORT OF THE ILLUSTRATION STATIONS FOR CENTRAL QUEBEC AND LAKE ST. JOHN DISTRICT

*C. E. Ste. Marie, B.S.A., Supervisor*

### THE STATIONS

The Central Quebec and Lake St. John districts have at present twenty-one Illustration Stations located at the following places: St. Camille, St. Cyr, St. Evariste, Ste. Julie, St. Victor, Wottonville, Valley Junction, St. Lazare, Scott Junction, Lake Megantic, Kazubazua, St. Apollinaire, Black Lake, Plessisville, Bromptonville, South Roxton, Notre Dame de Ham, Weedon, Hebertville, Jonquiere and Normandin.

The first six stations mentioned are operated as fertilizer illustration stations and the results obtained are reported further.

### SEASONAL NOTES

The spring 1930 was early and seeding in Lake St. John district was done three weeks sooner than usual. This short period of nice weather was followed by rains in June and many farmers were delayed in their spring's work. The hay crop which was quite promising suffered from wet weather especially where the soil was rather heavy; this was also true of grain and other seeded crops. Throughout the growing season rain was plentiful and in some districts in excess, causing considerable damage to crops and rendering cultivation of hoed crops very difficult, to say nothing of haying and harvesting conditions.

While dry weather in the fall made ploughing almost impossible in Central Quebec, farmers in the Lake St. John District were kept off their fields by continuous rains and many of them were unable to harvest what grain had grown.

Weather conditions were not on the whole favourable to crops and this explains why, even with early seeding in many cases, yields are lower and consequently costs higher than in previous years.

### LIVE STOCK

While steady progress is being made in bettering the herds by the purchase of pure bred sires and the keeping of milk records, a great deal has yet to be done before a profitable average production is reached with all herds. Continual efforts are made to impress our operators of the necessity to use sires which can breed type as well as quality; to improve their management and feed proper rations, so as to raise the production and secure profitable returns.

Fourteen operators this year weighed the milk from their herds regularly and butterfat tests are made for each cow three or four times during the year. This method is undoubtedly the surest one that could be adopted to find out whether an individual is profitable or not.

It is unfortunate that the lactation periods are not complete at this time and will not allow us to publish any figures. We shall continue, however, to file the records as they are sent to us and full information and herd standings will appear in our next report.

## CROP ROTATIONS FOLLOWED

On four stations a five-year rotation is practised, while on the others a four-year rotation is being used. The five-year rotation is as follows: first year, hoed crop; second year, grain seeded down with clover and grass seed; third year, clover; fourth and fifth years timothy. As soon as the hay is taken off the timothy sod is ploughed shallow, top-worked throughout the season and reploughed in late fall for hoed crops the following year. This method generally gives an opportunity to the sod to rot quite thoroughly and for troublesome weeds to be pretty well checked. The same procedure is followed with the four-year rotation except that only one crop of timothy hay is taken off.

## OBTAINING YIELDS

The yields of all crops, except oats, are obtained by measuring and weighing the crops from small representative areas of a definite size at various places throughout the fields.

## GARDENS AND THE BEAUTIFICATION OF THE HOME SURROUNDINGS

Most operators were able to seed and plant their gardens early and results on the whole were most encouraging. Many operators took prizes in garden competitions or with produce taken to the local fairs. These results, we hope, will be a stimulant to their neighbours.

More attention is also given to flowers, the planting of shrubs, the making of lawns and the general layout of the home surroundings.

## SALE OF SEEDS AND LIVE STOCK FOR BREEDING PURPOSES

| | | |
|---|---|---|
| Oats for seed, Banner | 827 | bushels |
| Oats for seed, Alaska | 30 | bushels |
| Barley | 23 | bushels |
| Potatoes | 318 | bushels |
| Cattle for breeding purposes | 28 | |
| Eggs for hatching | 242 | dozen |
| Cockerels, Barred Rock | 43 | |
| Swine | 49 | |
| Sheep | 6 | |
| Pullets, Barred Rock | 138 | |

The Illustration Station operators are supplying a certain amount of good seed to their neighbours and to outside buyers as well. Seed grain is not the only commodity sold by the operators as shown in the above table. The demand for seed grain and live stock exceeds the supplies in many districts, which is a most encouraging fact.

## AVERAGE YIELD AND COST OF PRODUCTION

The table which follows brings out the yield per acre and cost per unit of the different crops grown on the Illustration Stations in Central Quebec and the Lake St. John District. It will be noticed that yields are lower and costs higher in 1930 than in 1929. Comparisons, however, cannot be made very well, as lower yields and higher costs in 1930 are due, in most cases, to the addition of new stations, which have been operated only one or two years, while 1929 results were tabulated from stations which had been established for some time.

Fertilizer station results are not included in this table.

AVERAGE YIELDS AND COST OF PRODUCTION FOR CENTRAL QUEBEC AND LAKE ST. JOHN DISTRICT

| Crops | Number of stations, 1929 | Number of stations, 1930 | Average yield, 1929 | Average yield, 1930 | Average cost per unit, 1929 | Average cost per unit, 1930 |
|---|---|---|---|---|---|---|
| | | | | | $ | $ |
| Corn, Longfellow.....tons | 4 | 6 | 17·04 | 13·20 | 2 35 | 4 08 |
| Hay, clover.....tons | 6 | 12 | 2·41 | 2·36 | 7 66 | 7 26 |
| Hay, oats, peas, vetch.....tons | 3 | 8 | 2·99 | 2·44 | 8 89 | 14 49 |
| Hay, timothy, first year.....tons | 6 | 11 | 2·48 | 1·90 | 5 58 | 7 44 |
| Hay, timothy, second year.....tons | 2 | 5 | 2·25 | 1·55 | 5 79 | 8 19 |
| Oats, Alaska.....bush. | 1 | 1 | 36·00 | 30·00 | 0 67 | 0 80 |
| Oats, Banner.....bush. | 6 | 13 | 50·73 | 46·18 | 0 58 | 0 55 |
| Potatoes, Green Mountain.....bush. | 3 | 5 | 174·50 | 137·88 | 0 31 | 0 41 |
| *Turnips.....tons | 6 | 10 | 15·89 | 12·72 | 2 88 | 4 90 |

*N.B. Manure was used with turnips, no fertilizers used with other crops.

## BROMPTONVILLE, RICHMOND COUNTY

### OPERATOR, VIRTUME MESSIER

Of all the Illustration Stations in Central Quebec, and Lake St. John District, Bromptonville ranks first in Banner oats production with a yield of eighty bushels per acre. From the data given below, one will notice that turnip yields are a great deal lower than those obtained last year. This is mostly due to very late seeding. The soil was rather wet and cold, when seeded, resulting in slow and poor germination and after the roots had started growing, a dry spell came along and sizing failed to take place. Clover hay was cured in good condition and the yield was fair for a first cutting, the second one being for seed.

OPERATIONS AT BROMPTONVILLE—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Banner oats.....bush. | 6 | 80·00 | 59·33 | 0 32 | 0 66 |
| B | Corn, Longfellow.....tons | 8 | 16·70 | 17·75 | 2 46 | 2 63 |
| B | Swede turnips—10 tons manure...tons | 8 | 8·25 | 27·02 | 6 41 | 2 71 |
| B | [1]Manure and Nitrophoska.....tons | 2 | 10·50 | 25·87 | 5 03 | 3 33 |
| B | [2]Manure and Fertilizer.....tons | 2 | 11·25 | 27·50 | 4 70 | 3 35 |
| C | Timothy, second year.....tons | 3 | 2·06 | 2·32 | 5 63 | 5 61 |
| D | Timothy, first year.....tons | 6 | 2·50 | 2·43 | 5 29 | 6 06 |
| E | Clover hay, 1st cutting.....tons | 8 | 2·09 | 1·77 | 6 87 | 8 91 |

[1] 10 tons manure and 200 pounds of nitrophoska per acre.
[2] 10 tons manure and 534 pounds of 5–10–5 fertilizer per acre.

While the operator still has a few grade cows, most of his herd is composed of purebred Ayrshires. Daily milk records are kept, which help considerably towards discarding the low producing individuals.

The farmers' meeting held on this station in late August was well attended and a very profitable afternoon was spent.

## BLACK LAKE, MEGANTIC COUNTY

### OPERATOR, ARCHILLAS DALLAIRE

Excessive rains throughout the growing season in this district have contributed to lower yields than usual, especially on hay and hoed crops. Oats, however, which had an early start gave an increase in yield over last year of 12·5 bushels per acre.

OPERATIONS AT BLACK LAKE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Banner oats.....bush. | 4 | 50·0 | 42·42 | 0 39 | 0 59 |
| B | Swede turnips (manured).....tons | 4 | 18·40 | 23·27 | 4 00 | 3 23 |
| B | [1]Swede turnips.....tons | 2 | 29·10 | 33·55 | 2 65 | 2 37 |
| B | [2]Swede turnips.....tons | 1 | 26·60 | 26·60 | 3 10 | 3 10 |
| C | Oats, peas and vetch hay.....tons | 3 | 3·00 | 3·46 | 13 27 | 13 27 |
| C | Timothy hay.....tons | 2 | 0·98 | 1·61 | 8 63 | 7 88 |
| D | Clover and alfalfa hay.....tons | 3 | 1·52 | 2·54 | 6 71 | 5 83 |

[1] Fertilized with 10 tons manure and 200 pounds of nitrophoska per acre.
[2] Fertilized with 10 tons manure and 534 pounds of a 5–10–5 fertilizer per acre.

When compared with last year's yield in hoed crops, turnips show a slight decrease. The effects of manure and nitrophoska No. 1, however, show a yield of 29·10 tons per acre against 26·60 tons per acre when manure and the chemical fertilizer 5-10-5 is used.

A pure-bred Ayrshire bull is heading the herd and a gradual elimination of the non-profitable cows is being made by following their milk records. Some improvements were made to the buildings and another ten acres of land were cleared and brought under cultivation this year.

## HEBERTVILLE, LAKE ST. JOHN COUNTY

### OPERATOR, JOSEPH GERVAIS

The best crops on this station, as one will notice by the data given below, are Banner oats, with an increased yield over last year of 4·5 bushels per acre and clover hay with 2·09 tons increase over the 1929 crop.

OPERATIONS AT HEBERTVILLE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Banner oats.....bush. | 3 | 44·50 | 36·50 | 0 66 | 0 73 |
| B | Clover hay.....tons | 2 | 3·59 | 2·54 | 5 60 | 8 97 |
| C | Timothy hay.....tons | 1 | 2·96 | 2·96 | 6 32 | 6 32 |
| D | Oats, peas, and vetch hay.....tons | 3 | 2·56 | 2·52 | 15 42 | 13 77 |

Considerable work has been done on Fields "C" and "D" this fall in ridging and filling many pockets where water caused a great deal of damage to the crops, especially in wet years as the past one.

## JONQUIERE, CHICOUTIMI COUNTY

### OPERATOR, EMILE BRASSARD

Seeding was done two or three weeks earlier than last year in this district and heavy yields were hoped for. Unfortunately, this nice early spring was followed by a rainy spell, which in some sections ruined the crops completely.

The hay crop which was fair to good was saved with some difficulty. As for oats, the yields are just about half what they were last year and the quality is poorer. In many cases, not only referring to this station, oats were left on the fields for weeks due to rains.

OPERATIONS AT JONQUIERE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1390 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 2 | 2·98 | 2·74 | 8 07 | 7 10 |
| B | Banner oats.....bush. | 3 | 25·70 | 35·90 | 0 74 | 0 69 |
| C | Turnips, Hall's Westbury 10 tons manure.....tons | 2 | 4·83 | 6·42 | 13 66 | 9 61 |
| C | [1]Manure and nitrophoska.....tons | 1 | 11·46 | 11·46 | 9 49 | 9 49 |
| C | Oats, peas and vetch hay.....tons | 3 | 1·92 | 1·97 | 18 94 | 16 67 |
| D | Timothy hay.....tons | 2 | 2·18 | 2·59 | 8 77 | 7 06 |

[1] 10 tons manure and 200 pounds of nitrophoska per acre.

The pure-bred Holstein herd has recently been increased in number due to the purchase of ten pure-bred cows. The sire which heads the herd bears the characteristics of a good breeder. Daily milk records of each cow are kept and poor producers are gradually being eliminated.

## KAZUBAZUA, WRIGHT COUNTY

### OPERATOR, EPHRIAM ANDERSON

In spite of adverse weather conditions, yields of the different crops grown were quite satisfactory. Rainy weather at haying time made operations a little more difficult and also lowered yield and quality of this crop.

When comparing yields, especially on oats and corn, we notice that 1930 shows an increase of 15·5 bushels of oats more per acre than the 1929 crop. Corn yields show an increase over last year of 1·1 tons per acre where manure alone was used. Where manure and nitrophoska No. 1 were used, the increase in yield was 5·98 tons per acre.

OPERATIONS AT KAZUBAZUA—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Banner oats.....bush. | 2 | 47·20 | 39·45 | 0 37 | 0 44 |
| B | Corn (Longfellow) 10 tons manure tons | 6 | 8·10 | 7·00 | 3 24 | 6 13 |
| B | [1]Manure and nitrophoska.....tons | 1 | 12·98 | 12·98 | 2 40 | 2 40 |
| B | Potatoes.....bush. | 6 | 120·00 | 133·33 | 0 44 | 0 44 |
| C | Timothy hay 1st year.....tons | 3 | 1·32 | 1·77 | 7 69 | 6 26 |
| D | Timothy hay 2nd year.....tons | 1 | 1·16 | 1·16 | 9 50 | 9 50 |
| D | [2]Nitrate of soda, 100 pounds per acre.....tons | 1 | 1·92 | 1·92 | 6 67 | 6 67 |

[1]10 tons manure and 200 pounds nitrophoska per acre.
[2]100 pounds nitrophoska per acre.

Nitrogenous fertilizers generally give very good results on light sandy soil, as that found on this station. Nitrate of soda applied at the rate of 100 pounds to the acre on grass land, gave an increase in yield of 0·76 ton per acre as seen in the table above.

#### FERTILIZER FIELD

The table which follows gives the rate of application of the different fertilizers used and results obtained. One will notice that the highest yield was reached with nitrate of soda. Another point of interest is that plots which

received potash show a considerable increase in yield over plots where potash was not applied.

RESULTS FROM FERTILIZER FIELD

| Crop | Applied 1928 | Applied 1929 | Applied 1929 | Applied 1929 | Applied 1929 | Applied 1929 | Check |
|---|---|---|---|---|---|---|---|
| | 12 tons manure, 200 pounds nitrate, 300 pounds acid phosphate 80 pounds potash | 100 pounds nitrate | 9 tons manure | 4½ tons manure, 50 pounds nitrate, 150 pounds acid phosphate 25 pounds potash | 100 pounds nitrate, 300 pounds acid phosphate 50 pounds potash | 100 pounds nitrate, 300 pounds acid phosphate | No Fertilizer |
| 1930 Hay C | tons 1·92 | tons 2·31 | tons 2·27 | tons 1·93 | tons 1·16 | tons 0·97 | tons 0·42 |
| Field | 1 | 1 | 2 | 3 | 4 | 5 | 6 |

## LAC MEGANTIC, FRONTENAC COUNTY

### OPERATOR, ALCIDE TRUDEL

A five-year rotation is now in operation on this station. Seeding took place under much the same conditions as last year. Although it might be added that fairly nice weather was experienced at seeding time and then rain set in and a light to a severe check was noticed on most crops.

Oats were grown for the first time since this station has been open and a very fair yield was obtained. A first trial with turnips was also made and in spite of rather poor growing weather the yields were satisfactory.

OPERATIONS AT LAKE MEGANTIC—FIVE-YEAR ROTATION

| Field | Crops | Number of years grown | Yield per acre 1930 | Yield per acre Average | Cost per unit 1930 | Cost per unit Average |
|---|---|---|---|---|---|---|
| | | | | | $ | $ |
| A | Banner oats....bush. | 1 | 48·00 | 48·00 | 0 54 | 0 54 |
| B | Timothy hay....tons | 2 | 2·80 | 3·07 | 4 76 | 4 66 |
| C | Timothy hay....tons | 1 | 2·27 | 2·27 | 6 99 | 6 99 |
| D | Swede turnips, 10 tons manure....tons | 1 | 14·68 | 14·68 | 4 57 | 4 57 |
| D | [1]Manure and nitrophoska....tons | 1 | 17·93 | 17·93 | 4 01 | 4 01 |
| D | [2]Manure and fertilizer....tons | 1 | 17·96 | 17·96 | 3 86 | 3 86 |
| D | Potatoes, Irish Cobbler....bush. | 3 | 162·62 | 194·44 | 0 24 | 0 23 |
| D | O.P. hay....tons | 5 | 2·93 | 2·81 | 12 18 | 11 39 |
| E | Clover hay....tons | 3 | 3·55 | 3·08 | 4 54 | 6 09 |

[1]Manure 10 tons and 200 pounds nitrophoska per acre.
[2]Manure 10 tons and 534 pounds of 5–10–5 fertilizer per acre.

The operator is taking a great deal of interest in building up a pure-bred Ayrshire herd. Three pure-bred cows were bought this fall, and together with the young stock this should bring the herd to about twenty head of pure-bred cattle. The dam of the present sire, has just completed a milk record of over 20,000 pounds and 800 pounds of butterfat.

## NOTRE DAME DE HAM, WOLFE COUNTY

### Operator, Pierre Toupin

As one will notice by the data given below, crop yields in general are lower than those recorded in 1929. Late seeding and wet weather may well account for those differences. Oats which show an increase in yield were sown on well drained soil and before the wet spell.

Root crops were practically a failure due to late seeding and the poor growing weather.

Operations at Notre Dame de Ham—Five-year Rotation

| Field | Crops | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Banner oats.....bush. | 5 | 42·00 | 39·44 | 0 84 | 0 71 |
| B | Swede turnips, 10 tons manure....tons | 1 | 5·00 | 5·00 | 7 83 | 7 83 |
| B | [1]Manure and nitrophoska.....tons | 4 | 9·00 | 13·05 | 5 09 | 4 61 |
| B | [2]Manure and fertiiizer.....tons | 1 | 10·00 | 10·00 | 4 39 | 4 39 |
| B | Corn, Longfellow.....tons | 4 | 9·00 | 14·55 | 8 75 | 4 29 |
| C | Timothy, 1st year.....tons | 4 | 1·59 | 1·96 | 7 74 | 7 00 |
| D | Timothy, 2nd year.....tons | 2 | 1·03 | 1·51 | 10 86 | 8 45 |
| E | Clover hay, 2 cuttings.....tons | 5 | 2·49 | 2·48 | 7 00 | 4 93 |
| | *Demonstration Test Field* | | | | | |
| | Banner oats.....bush. | 1 | 51·60 | 51·60 | 0 27 | 0 27 |

[1]Manure 10 tons and 200 pounds nitrophoska per acre.
[2]Manure 10 tons and 534 pounds of 5-10-5 fertilizer per acre.

The building up of a good pure-bred herd is a matter of years of careful breeding, selection and care. The operator has followed these principles fairly closely and the young stock, which is now raised has been greatly improved by the use of a pure-bred sire, which carries both dairying and breeding characteristics.

## NORMANDIN, LAKE ST. JOHN COUNTY

### Operator, Alex. Hebert

In general, seeding in this district was done three weeks earlier than in previous years. This nice weather, however, was of short duration and was followed by continual rains which literally covered the fields and caused serious damage to most crops. While hay yields were lighter than usual, hoed crops were a failure and oats made but a very short stunted growth.

The advantages of drainage are well known to the operator and since this farm has been taken up, considerable work has been done along this line. The land being rather flat and the soil of a clayish nature, good drainage becomes of primary importance.

A flock of Barred Rocks is giving very satisfactory results.

## PLESSISVILLE, MEGANTIC COUNTY

### Operator, Eudore Jutras

This station ranks second for oat yields in the Central Quebec and Lake St. John Illustration Station districts with an average of 70 bushels per acre. All the other crops gave higher yields than last year, except timothy hay and corn, which yielded one ton per acre less than in 1929.

Clover and alfalfa hay almost doubled last year's yield and was cured in very good condition.

OPERATIONS AT PLESSISVILLE—FOUR-YEAR ROTATION

| Field | Crops | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Corn, Longfellow.....tons | 11 | 16·00 | 16·53 | 2 13 | 2 25 |
| A | Swede turnips, 10 tons manure....tons | 10 | 14·60 | 24·66 | 2 71 | 2 32 |
| A | [1]Manure and nitrophoska.....tons | 2 | 21·40 | 21·17 | 2 10 | 2 27 |
| A | [2]Manure and fertilizer.....tons | 2 | 22·70 | 21·74 | 1 98 | 2 14 |
| B | Clover and alfalfa hay, 2 cuttings.tons | 11 | 2·04 | 1·85 | 8 23 | 8 78 |
| C | Banner oats.....bush. | 2 | 70·00 | 65·50 | 0 32 | 0 38 |
| D | Timothy hay.....tons | 11 | 1·78 | 1·78 | 7 37 | 7 03 |

[1]Manure 10 tons and 200 pounds of nitrophoska per acre.
[2]10 tons manure and 534 pounds of 5–10–5 fertilizer per acre.

While there is little difference in yield and cost of producing turnips grown with nitrophoska No. 1 and manure, or commercial fertilizer and manure, there is an outstanding difference in yield when turnips are grown with manure alone. The yields as tabulated above show an 8·1 tons per acre increase in favour of the former. Another point worthy of notice is the low cost of production, which is due to high fertility, good drainage, freedom of weeds and preparation of the soil.

Attention is being paid to improving the appearance of the home surroundings. A lawn in the making has been fenced and several shrubs planted.

## ST. LAZARE, BELLECHASSE COUNTY

### OPERATOR, ADELARD BROCHU

This station which has been established only since the fall of 1929, has achieved some very encouraging results, if we take into consideration the location, type of soil and the extremely wet weather which prevailed throughout the growing season.

OPERATIONS AT ST. LAZARE—FOUR-YEAR ROTATION

| Field | Crops | Number of years grown | Yield per acre—1930 | Cost per unit—1930 |
|---|---|---|---|---|
| | | | | $ |
| A | *Potatoes*, Green Mountains, 20 tons manure.....bush. | 1 | 176·40 | 0 49 |
| A | 10 tons manure and 500 pounds 3–9–6.....bush. | 1 | 205·40 | 0 46 |
| A | 1,000 pounds 3–9–6 fertilizer.....bush. | 1 | 174·60 | 0 62 |
| A | *Swede turnips*, 20 tons manure.....tons | 1 | 21·00 | 2 64 |
| A | 10 tons manure and 500 pounds 3–9–6.....tons | 1 | 11·50 | 4 88 |
| A | 1,000 pounds 3–9–6 fertilizer.....tons | 1 | 14·00 | 4 06 |
| A | *O.P.V. hay*, 20 tons manure.....tons | 1 | 2·25 | 16 35 |
| A | O.P.V. hay 10 tons manure and 500 pounds 3–9–6.....tons | 1 | 2·56 | 13 51 |
| A | 1,000 pounds 3–9–6 fertilizer.....tons | 1 | 2·78 | 11 72 |
| B | *Banner oats*, no fertilizer.....bush. | 1 | 30·00 | 0 38 |
| B | 400 pounds superphosphate per acre.....bush. | 1 | 36·00 | 0 39 |
| B | 2 tons lime per acre.....bush. | 1 | 30·05 | 0 48 |
| C | *Timothy hay*, no fertilizer.....tons | 1 | 0·91 | 10 10 |
| | 150 pounds nitrate of soda per acre.....tons | 1 | 1·56 | 8 44 |
| | 115 pounds sulphate of ammonia per acre.....tons | 1 | 1·46 | 8 19 |
| D | *Timothy hay*.....tons | 1 | 0·91 | 10 10 |

Nitrogenous fertilizers, as one can see by the data given above, have increased the yields quite noticeably.

As for turnips, the low yield obtained with manure and fertilizer is undoubtedly due to the fact, that this particular plot was located on the lowest part of the field where poor drainage, coupled with a very dry spell in the fall were anything but satisfactory.

More care is to be given from now on to the dairy herd, which is composed of grade Ayrshires, but headed by a pure-bred sire. Daily milk records are kept, which will help considerably in eliminating the low producers.

## ST. APOLLINAIRE, LOTBINIERE COUNTY

### Operator, Jos. Coté

This station was not spared more than the other farms in this district from an extremely wet spring. Crops however all show an increase in yield over last year, except turnips, which were a failure due to late seeding, poor drainage and wet weather throughout the growing season.

Although some work has been done towards drainage, a great deal has yet to be accomplished before crops can be grown successfully especially in wet seasons.

Operations at St. Apollinaire—Four-year Rotation

| Field | Crops | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 5 | 1·72 | 1·62 | 8 94 | 8 18 |
| B | Clover hay.....tons | 5 | 1·89 | 1·74 | 9 41 | 9 07 |
| C | Alaska oats.....bush. | 5 | 30·00 | 34·00 | 0 80 | 0 69 |
| D | *Swede turnips, 10 tons manure..... | 1 | failure | failure | failure | failure |
| | [1]Manure and nitrophoska.....tons | 1 | 11·70 | 11·70 | 3 36 | 3 36 |
| | [2]Manure and fertilizer.....tons | 1 | failure | failure | failure | failure |
| D | O.P.V. Hay, 10 tons manure.....tons | 5 | 1·61 | 2·56 | 17 11 | 10 52 |
| | [1]Manure and nitrophoska.....tons | 1 | 4·16 | 4·16 | 6 62 | 6 62 |
| | [2]Manure and fertilizer.....tons | 1 | 3·42 | 3·42 | 8 05 | 8 05 |

*No crop due to wet weather and lack of drainage.
[1]10 tons manure and 200 pounds of nitrophoska per acre.
[2]10 tons manure and 750 pounds of a 4–8–6 fertilizer per acre.

Alaska oats seem to give good results as late seedings are often experienced. The operator has sold all he could dispose of for seed to neighbouring farmers.

Milk records are kept and will help considerably in eliminating the unprofitable individuals.

## SCOTT JUNCTION, DORCHESTER COUNTY

### Operator, Elzear Lacroix

In spite of early seedings crops on this station are showing lighter yields than last year, mostly due to adverse weather conditions. The soil on this station is rather light and the difference is most striking where turnips were grown on manure alone, or manure and nitrophoska as tabulated below.

OPERATIONS AT SCOTT JUNCTION—FOUR-YEAR ROTATION

| Field | Crops | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 3 | 1·36 | 1·65 | 10 01 | 8 76 |
| B | Banner oats.....bush. | 7 | 28·00 | 34·68 | 0 83 | 0 69 |
| C | Clover hay.....tons | 6 | 1·92 | 1·40 | 8 69 | 12 89 |
| D | Swede turnips, 10 tons manure....tons | 7 | 7·04 | 13·86 | 7 31 | 3 68 |
| | [1]Manure and nitrophoska.....tons | 2 | 21·61 | 24·80 | 2 50 | 2 25 |
| | [2]Manure and fertilizer.....tons | 2 | 18·20 | 22·10 | 2 97 | 2 58 |

[1]10 tons manure and 200 pounds nitrophoska per acre.
[2]10 tons manure and 534 pounds of 5–10–5 fertilizer per acre.

Very good work along drainage lines has been done on some fields back of the illustration plots, where a wonderful clover crop was grown this year.

## SOUTH ROXTON, SHEFFORD COUNTY

OPERATORS, A. F. SANBORN & SON

Very good work has been done in the past year on this station along drainage lines. Two plots were partly tile drained with anticipation that higher yields at a lower cost may be grown on this type of soil, which is gravelly in parts and muck and clayish in others. Turnip yields, as seen below are somewhat lower than last year, due to wet weather. The difference in yields and cost between turnips grown with manure alone and manure with fertilizer (nitrophoska No. 1) is well worth noting, as the yield is 10·10 tons higher and cost is $1.40 less per ton in favour of the latter.

OPERATIONS AT SOUTH ROXTON—FOUR-YEAR ROTATION

| Field | Crops | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover and alfalfa hay, 2 cuttings.tons | 1 | 2·30 | 2·30 | 6 64 | 6 64 |
| A | Clover and alfalfa hay, (2 tons lime 1929).....tons | ..... | 3·76 | ..... | 4 06 | ..... |
| B | Corn, Longfellow.....tons | 1 | 7·30 | 7·30 | 4 72 | 4 72 |
| B | Swede turnips, 10 tons manure....tons | 2 | 12·10 | 13·05 | 4 82 | 3 83 |
| | [1]Manure and nitrophoska.....tons | 2 | 22·00 | 23·82 | 2 98 | 2 43 |
| | [2]Manure and fertilizer.....tons | 2 | 20·60 | 22·49 | 2 94 | 2 47 |
| C | Banner oats.....bush. | 3 | 23·40 | 29·46 | 0 78 | 0 65 |
| D | O.P.V. hay.....tons | 2 | 3·20 | 3·40 | 7 30 | 7 35 |

[1]10 tons manure and 200 pounds nitrophoska per acre.
[2]10 tons manure and 534 pounds of 5–10–5 fertilizer per acre.

One of the best clover and alfalfa meadows could also be seen on this station during the past year. Two cuttings were made and stored in very good condition.

During the year five cows made R.O.P. records with an average of 7,503 pounds of milk and 345·13 pounds of butterfat.

## VALLEY JUNCTION, BEAUCE COUNTY

OPERATOR, ERNEST JACOB

Crops on this station are showing slightly lower yields than last year due to later seeding and rather poor growing weather. The turnips, however, in spite of a late seeding and weedy condition of the field gave higher yields than in 1929. Manure and commercial fertilizer show an increase in yield of 6·43 tons per acre over manure used alone and 7·56 tons per acre when manure is used with nitrophoska No. 1.

OPERATIONS AT VALLEY JUNCTION—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 1 | 1·70 | 1·70 | 9 36 | 9 36 |
| B | Banner oats.....bush. | 3 | 35·50 | 38·36 | 0 62 | 0 56 |
| C | Swede turnips, 10 tons manure....tons | 2 | 22·55 | 18·13 | 3 52 | ..... |
| C | [1]Manure and nitrophoska.....tons | 2 | 21·42 | 21·56 | 3 97 | ..... |
| C | [2]Manure and fertilizer.....tons | 2 | 28·98 | 22·64 | 2 94 | ..... |
| C | Potatoes, Green Mountain 10 tons manure.....bush. | 1 | 106·40 | 106·40 | 0 44 | 0 44 |
| C | [1]Manure and nitrophoska.....bush. | 1 | 212·30 | 212·30 | 0 38 | 0 38 |
| C | [2]Manure and fertilizer.....bush. | 1 | 202·10 | 202·10 | 0 39 | 0 39 |
| C | O.P.V. hay, 10 tons manure.....tons | 3 | 2·01 | 2·27 | 15 37 | 12 88 |
| C | [1]Manure and nitrophoska.....tons | 1 | 2·62 | 2·62 | 13 89 | 13 89 |
| C | [2]Manure and fertilizer.....tons | 1 | 2·92 | 2·92 | 12 46 | 12 46 |
| D | Clover hay.....tons | 1 | 1·61 | 1·61 | 8 36 | 7 36 |

[1]10 tons manure and 200 pounds of nitrophoska per acre.

[2]10 tons manure and 750 pounds of a 4–8–4 fertilizer per acre.

Daily milk records are kept at this station, but as the lactation period is not complete, full data with respect to the yearly production cannot be published at this date. A root cellar has been built this year, which should help towards the keeping of the turnips in excellent condition for the dairy cows.

## WEEDON, WOLFE COUNTY

OPERATOR, E. JOS. ALLARD

A five-year rotation has been adopted on this station. Late seeding and insufficient cultivation, due to rainy weather, are two factors, which to some extent contributed to the lowering of the turnip yields below last year's. On the other hand, a gain was recorded on corn. Dry weather in the fall and late frosts were all to the advantage of this crop, which was one of the best in Central Quebec for several years back.

OPERATIONS AT WEEDON—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 9 | 2·25 | 1·74 | 5 98 | 10 00 |
| B | Banner oats.....bush. | 2 | 70·00 | 76·65 | 0 38 | 0 37 |
| C | Timothy hay, 1st year.....tons | 9 | 1·75 | 1 45 | 6 38 | 9 40 |
| D | Timothy hay, 2nd year.....tons | 1 | 1·25 | 1·25 | 8 52 | 8 52 |
| E | Corn, Longfellow, 10 tons manure.tons | 8 | 22·10 | 19·33 | 3 20 | 3 00 |
| E | Potatoes, 10 tons manure.....bush. | 8 | 144·00 | 188·18 | 0 46 | 0 47 |
| E | [1]Manure and fertilizer.....bush. | 2 | 176·00 | 238·20 | 0 41 | 0 32 |
| E | Swede turnips, 10 tons manure....tons | 9 | 10·60 | 15·66 | 5 25 | 3 96 |
| E | [2]Manure and nitrophoska.....tons | 2 | 20·40 | 23·40 | 3 00 | 2 36 |
| E | [3]Manure and fertilizer.....tons | 2 | 24·30 | 30·30 | 2 51 | 1 93 |

[1]10 tons manure and 550 pounds of a 4–8–6 fertilizer per acre.
[2]10 tons manure and 200 pounds of nitrophoska per acre.
[3]10 tons manure and 534 pounds of a 5–10–5 fertilizer per acre.

Improvements have been made to the home surroundings and a new manure shed has been built according to the plans of the Provincial Department of Agriculture.

## FERTILIZER ILLUSTRATION STATIONS

The following fertilizer Illustration Stations were in operation in Central Quebec during the past year: St. Evariste, Ste. Julie, St. Victor, St. Camille, St. Cyr, Wottonville.

Fertilizer work was started on the first three stations mentioned in 1928, and the last three stations were taken on in 1929.

### CROP ROTATIONS FOLLOWED AND METHODS OF FERTILIZING

On all stations, the four-year rotation is used. The rotation is as follows, first year, hoed crops; second year, grain seeded down with clover and grass seed; third year, clover; fourth year, timothy. For the hoed crop, the timothy sod is ploughed shallow, as soon as possible after the hay is cut, top-worked throughout the season and reploughed before the ground freezes. Early ploughing gives the sod a great opportunity to rot and get freed from some of the most troublesome weeds.

In order to be able to compare the effects of manure and commercial fertilizer when used together or singly on hoed crops, the plot is divided into four comparative areas; one of which is the check, where no fertilizers are applied, the others receiving respectively 20 tons of manure; 10 tons of manure and 500 pounds of a 3-9-6 fertilizer; 1,000 pounds of a 3-9-6 fertilizer.

The following table gives complete data on the yields obtained with the different crops grown in 1929 and 1930. Averages for each year and a two year average.

RESULTS FROM DIFFERENT FERTILIZER APPLICATIONS ON HOED CROPS

| Stations | Manure, 20 tons | | | | | | | | Manure, 10 tons, fertilizer 500 pounds 3-9-6 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1929 Corn | 1930 Corn | 1929 Potatoes | 1930 Potatoes | 1929 Turnips | 1930 Turnips | 1929 O.P.V. hay | 1930 O.P.V. hay | 1929 Corn | 1930 Corn | 1929 Potatoes | 1930 Potatoes | 1929 Turnips | 1930 Turnips | 1929 O.P.V. hay | 1930 O.P.V. hay |
| | tons | tons | bush. | bush. | tons | tons | tons | tons | tons | tons | bush. | bush. | tons | tons | tons | tons |
| St. Camille | ..... | ..... | 145·0 | 164·0 | 6·82 | 11·55 | 3·16 | 3·12 | ..... | ..... | 160·0 | 166·0 | 8·21 | 12·92 | 3·39 | 4·21 |
| St. Cyr | 12·70 | 13·69 | ..... | 116·0 | 16·28 | ..... | ..... | ..... | 15·12 | 14·41 | ..... | 120·0 | 15·84 | ..... | ..... | ..... |
| St. Evariste | ..... | ..... | ..... | ..... | 18·32 | 22·55 | 3·51 | 2·81 | ..... | ..... | ..... | ..... | 23·50 | 26·95 | 3·51 | 4·28 |
| Ste. Julie | 10·89 | 14·57 | 297·2 | 451·0 | ..... | ..... | 1·90 | 1·20 | 11·85 | 19·74 | 307·4 | 539·0 | ..... | ..... | 2·01 | 1·30 |
| St. Victor | ..... | ..... | ..... | ..... | 22·11 | 19·99 | 3·05 | 1·42 | ..... | ..... | ..... | ..... | 28·38 | 25·65 | 3·12 | 2·06 |
| Wottonville | ..... | ..... | 280·2 | 26·7 | 15·44 | 5·20 | 2·45 | 1·86 | ..... | ..... | 208·0 | 32·3 | 13·65 | 6·20 | 2·88 | 1·92 |
| Averages | 11·79 | 14·13 | 240·8 | 189·42 | 15·79 | 14·82 | 2·81 | 2·08 | 13·48 | 17·08 | 225·1 | 214·3 | 17·91 | 17·93 | 2·98 | 2·75 |
| Two-year average | 12·96 | | 215·11 | | 15·30 | | 2·44 | | 15·28 | | 219·70 | | 17·92 | | 2·86 | |

RESULTS FROM DIFFERENT FERTILIZER APPLICATIONS FOR HOED CROPS—*Concluded*

| Stations | Fertilizer, 1,000 pounds 3-9-6 | | | | | | | | Check, not fertilized | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1929 Corn | 1930 Corn | 1929 Potatoes | 1930 Potatoes | 1929 Turnips | 1930 Turnips | 1929 O.P.V. hay | 1930 O.P.V. hay | 1929 Corn | 1930 Corn | 1929 Potatoes | 1930 Potatoes | 1929 Turnips | 1930 Turnips | 1929 O.P.V. hay | 1930 O.P.V. hay |
| | tons | tons | bush. | bush. | tons | tons | tons | tons | tons | tons | bush. | bush. | tons | tons | tons | tons |
| St. Camille | ..... | ..... | 180·0 | 210·0 | 8·80 | 14·13 | 2·03 | 4·68 | ..... | ..... | 65·0 | 71·0 | 2·02 | 5·12 | 0·79 | 0·81 |
| St. Cyr | 15·40 | 12·64 | ..... | 125·0 | 14·52 | ..... | ..... | ..... | 3·93 | ..... | ..... | 42·0 | 1·00 | ..... | ..... | ..... |
| St. Evariste | ..... | ..... | ..... | ..... | 15·40 | 30·05 | 3·90 | 4·42 | ..... | ..... | ..... | ..... | 12·20 | 9·40 | 1·42 | 1·21 |
| Ste. Julie | 9·63 | 16·23 | 345·0 | 636·0 | ..... | ..... | 2·16 | 1·10 | 2·90 | 8·85 | 161·8 | 104·0 | ..... | ..... | 0·59 | 0·60 |
| St. Victor | ..... | ..... | ..... | ..... | 26·34 | 26·96 | 3·25 | 1·87 | ..... | ..... | ..... | ..... | 11·22 | 9·20 | 1·70 | 0·93 |
| Wottonville | ..... | ..... | 176·4 | 65·0 | 10·12 | 11·20 | 3·37 | 1·80 | ..... | ..... | 110·5 | 12·0 | 1·50 | 1·20 | 1·05 | 0·91 |
| Averages | 12·51 | 14·43 | 233·8 | 259·0 | 15·03 | 20·58 | 2·94 | 2·77 | 3·41 | 8·85 | 112·4 | 57·25 | 5·59 | 6·23 | 1·11 | 0·89 |
| Two-year average | 13·47 | | 246·40 | | 17·80 | | 2·85 | | 6·13 | | 84·82 | | 5·91 | | 1·00 | |

MANURE VS. CHEMICAL FERTILIZERS ON OATS, 1930

| Station | 20 tons manure, 1929 | 10 tons manure, 500 pounds 3–9–6 fertilizer, 1929 | 1,000 pounds 3–9–6 fertilizer, 1929 | Check, not fertilized, 1929 |
|---|---|---|---|---|
| | bush. | bush. | bush. | bush. |
| St. Evariste | 41·00 | 48·60 | 36·40 | 27·30 |
| Ste. Julie | 47·06 | 58·82 | 52·94 | 17·65 |
| St. Victor | 31·00 | 42·00 | 25·60 | 17·40 |
| St. Camille | 22·00 | 33·00 | 34·00 | 16·00 |
| Wottonville | 16·00 | 17·20 | 14·80 | 11·60 |
| Average yield of 5 stations 1930 | 31·41 | 39·92 | 32·75 | 17·99 |
| Average yield of 3 stations for 2 years | 43·49 | 50·20 | 40·37 | 20·84 |

NITROGENOUS FERTILIZERS ON GRASS LAND

The following table gives the 1930 yield and a three-year average on six fertilizer Illustration Stations, where nitrate of soda and sulphate of ammonia are used as top dressings on grass land. Some of the meadows have been in hay for a number of years.

These fertilizers are broadcast each year after vegetation has started in May. A quantity of 150 pounds of nitrate of soda is used against 115 pounds of sulphate of ammonia. A strip in the middle of the plot is left unfertilized, so as to be able to check the comparative effect of the treatment.

EFFECT OF NITROGENOUS FERTILIZERS ON GRASS LAND

| Stations | 150 pounds nitrate of soda per acre | | Check, not fertilized | | 115 pounds sulphate of ammonia per acre | |
|---|---|---|---|---|---|---|
| | 1930 | Average 3 years | 1930 | Average 3 years | 1930 | Average 3 years |
| | tons | tons | tons | tons | tons | tons |
| St. Camille | 1·00 | 0·95 | 0·62 | 0·57 | 0·87 | 0·79 |
| St. Cyr | 1·08 | 1·31 | 0·62 | 0·95 | 1·20 | 1·39 |
| St. Evariste | 2·25 | 1·98 | 1·18 | 1·07 | 2·30 | 2·18 |
| Ste. Julie | 1·00 | 0·86 | 0·58 | 0·55 | 0·97 | 1·02 |
| St. Victor | 1·76 | 1·66 | 1·43 | 1·18 | 1·78 | 1·65 |
| Wottonville | 1·62 | 1·52 | 0·93 | 0·97 | 1·68 | 1·54 |
| Average yield | 1·45 | 1·38 | 0·89 | 0·88 | 1·47 | 1·43 |

This table shows that over a three-year period, plots fertilized with nitrate of soda give an average increased yield over the unfertilized plots of 0·5 tons per acre. Plots receiving sulphate of ammonia give an average increased yield of 0·55 ton per acre over the unfertilized plots.

## ST. CAMILLE, BELLECHASSE COUNTY

OPERATOR, POLYDORE LABBE

Light, sandy soil of only medium fertility on this station is quite the characteristic of most farms in this district. As farmyard manure is not available in as large quantities as one might desire, it is hoped, that with a happy combination of chemical fertilizers and what manure is produced, coupled

with a rotational cropping system, fertility may be restored to farms of this type.

The table which follows gives the fertilizer treatments followed, the yields per acre and a two-year average on most of the crops grown for a second year.

OPERATIONS AT ST. CAMILLE—FOUR-YEAR ROTATION

| Field | Crop | Fertilizer treatment and rate of application per acre | Yield per acre, 1930 | Average for 2 years |
|---|---|---|---|---|
| A | O.P.V. hay | 20 tons manure ... tons | 3·12 | 3·14 |
| | | 10 tons manure and 500 pounds of 3-9-6 fertilizer ... tons | 4·21 | 3·80 |
| | | 1,000 pounds of 3-9-6 fertilizer ... tons | 4·68 | 3·36 |
| | | Check, not fertilized ... tons | 0·81 | 0·80 |
| | Potatoes, Green Mts. | 20 tons manure ... bush. | 164·00 | 154·50 |
| | | 10 tons manure and 500 pounds of 3-9-6 fertilizer ... bush. | 166·00 | 163·00 |
| | | 1,000 pounds 3-9-6 fertilizer ... bush. | 210·00 | 195·00 |
| | | Check, not fertilized ... bush. | 71·00 | 67·50 |
| | Turnips | 20 tons manure ... tons | 11·55 | 9·18 |
| | | 10 tons manure and 500 pounds of 3-9-6 fertilizer ... tons | 12·92 | 10·57 |
| | | 1,000 pounds of 3-9-6 fertilizer ... tons | 14·13 | 11·46 |
| | | Check, not fertilized ... tons | 5·12 | 3·57 |
| B | Old meadows | 150 pounds nitrate of soda ... tons | 1·00 | 1·42 |
| | | Check, not fertilized ... tons | 0·62 | 0·86 |
| | | 115 pounds sulphate of ammonia ... tons | 0·87 | 1·18 |
| C | Banner oats | 20 tons manure 1929 ... bush. | 22·00 | ..... |
| | | 10 tons manure and 500 pounds of 3-9-6 fertilizer ... bush. | 33·00 | ..... |
| | | 1,000 pounds of 3-9-6 fertilizer ... bush. | 34·00 | ..... |
| | | Check, not fertilized ... bush. | 16·00 | ..... |
| D | Clover hay | 2 tons lime 1929, 150 pounds nitrate 1930 ... tons | 2·08 | ..... |
| | | Check ... tons | 0·87 | ..... |
| | | 400 pounds superphosphate 1929, 115 pounds sulphate of ammonia 1930 ... tons | 1·31 | ..... |

## ST. CYR, RICHMOND COUNTY

### OPERATOR, STEPHEN SMITH

This Illustration Station has been operated only two years, but results are encouraging. Although sowing was done a few days earlier than last year, the yields on certain crops are somewhat lower. Too much rain as in most cases this year has lowered the yields and quality of many crops. Oats, however, show an increased yield over last year.

The following table indicates the different manure and chemical fertilizer treatments, rates of application and yields obtained, as well as a two-year average.

OPERATIONS AT ST. CYR—FOUR-YEAR ROTATION

| Field | Crop | Fertilizer treatment and rate of application per acre | Yield per acre, 1930 | Average for 2 years |
|---|---|---|---|---|
| A | Banner oats | 400 pounds superphosphate....bush. | 34·25 | 32·57 |
| | | Check, not fertilized....bush. | 30·40 | 25·55 |
| B | Clover hay | 2 tons lime 1929....tons | 1·85 | ..... |
| | | 2 tons lime 1930....tons | 1·43 | ..... |
| | | Check not fertilized....tons | 1·06 | ..... |
| C | Timothy hay | 150 pounds nitrate of soda....tons | 1·08 | 1·31 |
| | | Check, not fertilized....tons | 0·62 | 0·87 |
| | | 115 pounds sulphate of ammonia....tons | 1·20 | 1·59 |
| D | Corn | 20 tons manure....tons | 13·69 | 13·19 |
| | | 10 tons manure and 500 pounds of a 3–9–6 fertilizer....tons | 14·41 | 14·76 |
| | | 1,000 pounds of a 3–9–6 fertilizer....tons | 12·64 | 14·02 |
| | | Check, not fertilized....tons | 6·21 | 5·07 |
| | Potatoes | 20 tons manure....bush. | 116·00 | ..... |
| | | 10 tons manure and 500 pounds of a 3–9–6 fertilizer....bush. | 120·00 | ..... |
| | | 1,000 pounds of a 3–9–6 fertilizer....bush. | 125·00 | ..... |
| | | Check, not fertilized....bush. | 42·00 | ..... |

## ST. EVARISTE, FRONTENAC COUNTY

### OPERATOR, CHARLES VEILLEUX

In spite of a late wet spring, which delayed seeding considerably, crops on this station all show a slight increase in yield over previous year. Turnips, which were sown on June 13, a week later than last year, and receiving an application of 1,000 pounds of 3-9-6 fertilizer show an increase in yield over 1929 of 14·5 tons per acre.

The oats, peas and vetch hay and turnip crops were very outstanding on this station this year. Here again, we observe that crops which follow those grown where an application of farmyard manure and chemical fertilizer were made give higher yields.

OPERATIONS AT ST. EVARISTE—FOUR-YEAR ROTATION

| Field | Crop | Fertilizer treatment and rate of application per acre | Yields per acre, 1930 | Average yield for 3 years |
|---|---|---|---|---|
| A | Clover hay | 20 tons manure (1928)....tons | 1·89 | ..... |
| | | 10 tons manure and 500 pounds of a 3–9–6 fertilizer....tons | 2·12 | ..... |
| | | 1,000 pounds of 3–9–6 fertilizer....tons | 2·04 | ..... |
| | | Check, not fertilized....tons | 1·06 | ..... |
| B | Timothy hay | 1½ tons lime (1928), 150 pounds nitrate 1930...tons | 2·25 | 1·98 |
| | | Check, not fertilized....tons | 1·18 | 1·07 |
| | | 400 pounds superphosphate (1928), 115 pounds sulphate of ammonia 1930....tons | 2·30 | 2·10 |
| C | Turnips | 20 tons manure....tons | 22·55 | 18·36 |
| | | 10 tons manure and 500 pounds 3–9–6 fertilizer.tons | 26·95 | 23·10 |
| | | 1,000 pounds of 3–9–6 fertilizer....tons | 30·05 | 20·65 |
| | | Check, not fertilized....tons | 9·40 | 8·96 |
| | O.P.V. hay | 20 tons manure....tons | 2·81 | 3·36 |
| | | 10 tons manure and 500 pounds 3–9–6 fertilizer.tons | 4·28 | 3·92 |
| | | 1,000 pounds of 3–9–6 fertilizer....tons | 4·42 | 4·41 |
| | | Check, not fertilized....tons | 1·21 | 1·42 |
| D | Banner oats | 20 tons manure (1929)....bush. | 41·00 | *43·50 |
| | | 10 tons manure and 500 pounds of 3–9–6 fertilizer....bush. | 48·60 | *43·55 |
| | | 1,000 pounds of 3–9–6 fertilizer....bush. | 36·40 | *36·80 |
| | | Check, not fertilized....bush. | 27·30 | *27·75 |

*Average for two years.

Banner oats grown where 10 tons of manure and 500 pounds of a 3-9-6 fertilizer were applied on turnips 1929 gave an increase of 12·2 bushels per acre over the plot which received 1,000 pounds of a 3-9-6 fertilizer only. Very encouraging results have also been obtained with poultry on this station. Considerable repairs have been done to the farm buildings and a new poultry house has been built.

## STE. JULIE, MEGANTIC COUNTY

### Operator, Achille Vachon

Higher yields than previous years on certain crops grown on this station are undoubtedly due to earlier seeding, better condition and preparation of the soil. This operator obtained the highest potato yield of all fertilizer Illustration Stations in Central Quebec, with an application of 1,000 pounds of a 3-9-6 fertilizer. This year's yield was 636 bushels per acre of clean sound Green Mountain potatoes, remarkably uniform in size. A three-year average, as one can see by the table which follows, also gives first place to fertilizer used alone.

Operations at Ste. Julie—Four-Year Rotation

| Field | Crop | Fertilizer treatment and rate of application per acre | Yield per acre, 1930 | Average yield for 3 years |
|---|---|---|---|---|
| A | Banner oats | 20 tons manure (1929) bush. | 47·06 | *46·78 |
| | | 10 tons manure and 500 pounds 3-9-6 fertilizer bush | 52·82 | *56·06 |
| | | 1,000 pounds of 3-9-6 fertilizer bush. | 52·94 | *48·22 |
| | | Check, not fertilized bush. | 17·65 | *18·32 |
| B | O.P.V. hay | 20 tons manure tons | 1·20 | 1·86 |
| | | 10 tons manure and 500 pounds of 3-9-6 fertilizer tons | 1·30 | 2·01 |
| | | 1,000 pounds of 3-9-6 fertilizer tons | 1·10 | 1·61 |
| | | Check, not fertilized tons | 0·60 | 0·63 |
| | Potatoes, Green Mountain | 20 tons manure bush. | 451·00 | 313·10 |
| | | 10 tons manure and 500 pounds 3-9-6 fertilizer bush. | 539·00 | 358·46 |
| | | 1,000 pounds of 3-9-6 fertilizer bush. | 636·00 | 386·66 |
| | | Check, not fertilized bush. | 104·00 | 100·73 |
| | Corn, Longfellow | 20 tons manure tons | 14·57 | 13·09 |
| | | 10 tons manure and 500 pounds of 3-9-6 fertilizer tons | 19·74 | 16·77 |
| | | 1,000 pounds 3-9-6 fertilizer tons | 16·23 | 12·33 |
| | | Check, not fertilized tons | 8·85 | 5·26 |
| C | Timothy hay | 150 pounds nitrate of soda tons | 1·00 | ..... |
| | | Check, not fertilized tons | 0·58 | ..... |
| | | 115 pounds sulphate of ammonia tons | 0·97 | ..... |
| D | Clover hay | 20 tons manure (1928) tons | 1·81 | ..... |
| | | 10 tons manure and 500 pounds of 3-9-6 fertilizer tons | 1·94 | ..... |
| | | 1,000 fertilizer 3-9-6 fertilizer tons | 1·31 | |
| | | Check, not fertilized tons | 0·50 | |

*Average for two years.

Here again, we see that oats grown on a field where farmyard manure and fertilizer were applied the previous year, give yields considerably higher than those obtained where either farmyard manure or fertilizer were used alone.

Continual progress is being made on this station. A lawn is in the making, several shrubs have been planted all of which help to beautify the home surroundings. Tidiness is the keynote on this station.

25230—4½

## ST. VICTOR, BEAUCE COUNTY

OPERATOR, JOSEPH BERNARD

Early seeding on this station this year failed to give the results hoped for. This is due to a large extent to the extremely wet spell which followed seeding time. Germination was slow and poor. The soil was oversaturated and cold and drainage was not sufficient to carry away excess water.

These fields are at the foot of a hill and a great deal of seepage has to be taken care of. In normal years, the soil which is quite fertile produces heavy crops, but when conditions such as those which existed this season prevail, yields are somewhat lighter.

OPERATIONS AT ST. VICTOR—FOUR-YEAR ROTATION

| Field | Crop | Fertilizer treatment and rate of application per acre | Yield per acre, 1930 | Average yield for 3 years |
|---|---|---|---|---|
| A | Clover hay | 20 tons manure (1929) tons | 1·76 | ..... |
| | | 10 tons manure and 500 pounds 3–9–6 fertilizer (1928) tons | 2·40 | ..... |
| | | 1,000 pounds 3–9–6 fertilizer (1928) tons | 2·25 | ..... |
| | | Check, not fertilized tons | 1·10 | ..... |
| B | Banner oats | 20 tons manure (1929) bush. | 31·00 | *40·20 |
| | | 10 tons manure and 500 pounds 3–9–6 fertilizer (1929) bush. | 42·00 | *51·00 |
| | | 1,000 pounds 3–9–6 fertilizer (1929) bush. | 25·60 | *36·10 |
| | | Check not fertilized bush. | 17·40 | *16·47 |
| C | Timothy hay | 1½ lime (1928), 150 pounds nitrate of soda (1930) tons | 1·76 | 1·66 |
| | | Check, not fertilized tons | 1·43 | 1·18 |
| | | 400 pounds superphosphate (1928), 115 pounds sulphate of ammonia (1930) tons | 1·78 | 1·65 |
| D | Turnips | 20 tons manure tons | 19·99 | 22·46 |
| | | 10 tons manure and 500 pounds 3–9–6 fertilizer. tons | 25·65 | 27·34 |
| | | 1,000 pounds of 3–9–6 fertilizer tons | 26·96 | 26·70 |
| | | Check, not fertilized tons | 9·20 | 15·97 |
| | O.P.V. hay | 20 tons manure tons | 1·42 | 3·10 |
| | | 10 tons manure and 500 pounds 3–9–6 fertilizer. tons | 2·06 | 3·52 |
| | | 1,000 pounds 3–9–6 fertilizer tons | 1·87 | 3·44 |
| | | Check, not fertilized tons | 0·93 | 2·44 |

*Average for 2 years.

The difference in yields of oats grown, where farmyard manure and chemical fertilizer were applied versus fertilizer or manure used alone, is perhaps more striking on this station than on any of the other fertilizer stations. An increase in yield of 16·4 bushels per acre, due to a combination of farmyard manure and chemical fertilizer is well worth noting.

## WOTTONVILLE, WOLFE COUNTY

OPERATOR, JOSEPH GENDRON

Extremely wet weather coupled with a soil lacking in fertility and drainage are responsible for low yields obtained on this station this year. Clover hay, however, gave a fair yield and while there is little difference between the plots receiving lime and superphosphate in 1929 there is a tremendous difference when compared with the check plot where no fertilizers were applied.

OPERATIONS AT WOTTONVILLE—FOUR-YEAR ROTATION

| Field | Crop | Fertilizer treatment and rate of application per acre | Yield per acre, 1930 | Average yield for 2 years |
|---|---|---|---|---|
| A | Banner oats | 20 tons manure (1929) bush. | 16·00 | |
| | | 10 tons manure and 500 pounds 3-9-6 fertilizer (1929) bush. | 17·20 | |
| | | 1,000 pounds 3-9-6 fertilizer bush. | 14·80 | |
| | | Check, not fertilized bush. | 11·60 | |
| B | Clover hay | 2 tons lime (1929) tons | 1·87 | |
| | | Check, not fertilized tons | 0·78 | |
| | | 400 pounds superphosphate (1929) tons | 1·81 | |
| C | Timothy hay | 150 pounds nitrate of soda tons | 1·62 | 1·52 |
| | | Check, not fertilized tons | 0·93 | 0·96 |
| | | 115 pounds sulphate of ammonia tons | 1·68 | 1·59 |
| D | Potatoes, Irish Cobbler | 20 tons manure bush. | 26·70 | 153·45 |
| | | 10 tons manure and 500 pounds 3-9-6 fertilizer bush. | 32·30 | 120·15 |
| | | 1,000 pounds 3-9-6- fertilizer bush. | 65·00 | 120·70 |
| | | Check, not fertilized bush. | 12·00 | 61·25 |
| | Turnips | 20 tons manure tons | 5·20 | 10·32 |
| | | 10 tons manure and 500 pounds 3-9-6 fertilizer tons | 6·20 | 9·92 |
| | | 1,000 pounds 3-9-6 fertilizer tons | 11·20 | 10·66 |
| | | Check, not fertilized tons | 1·20 | 1·35 |
| | O.P.V. hay | 20 tons manure tons | 1·86 | 2·15 |
| | | 10 tons manure and 500 pounds 3-9-6 fertilizer tons | 1·92 | 2·40 |
| | | 1,000 pounds 3-9-6 fertilizer tons | 1·80 | 2·58 |
| | | Check, not fertilized tons | 0·91 | 0·98 |

NITROPHOSKA NO. 1 VERSUS COMMERCIAL FERTILIZER ON TURNIPS

This test has been carried on for two years and most interesting results have been obtained. Yields this year are somewhat lower than they were in 1929 due to extreme weather conditions in the spring and fall of the year.

While an increased average yield of 12·56 tons per acre was credited to nitrophoska No. 1 over the check plot in 1929 and a 6·35 ton per acre over the commercial fertilizer for the same year, average yields on ten stations in 1930 give an increased average yield of 5·92 tons per acre to nitrophoska No. 1, over the check plot and 7·49 tons per acre for commercial fertilizer over the check plot. It will be noted that the highest average yields have been obtained this year with the standard chemical fertilizer rather than with nitrophoska No. 1, as in 1929.

COMPARISON OF NITROPHOSKA AND A 5-10-5 FERTILIZER ON TURNIPS

| Stations | Manure and nitrophoska* | | | | Manure alone 10 tons | | | | Manure and fertilizer† | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Yield per acre | | Cost per unit | | Yield per acre | | Cost per unit | | Yield per acre | | Cost per unit | |
| | 1929 | 1930 | 1929 | 1930 | 1929 | 1930 | 1929 | 1930 | 1929 | 1930 | 1929 | 1930 |
| | tons | tons | $ | $ | tons | tons | $ | $ | tons | tons | $ | $ |
| Black Lake | 38·00 | 29·10 | 2 10 | 2 65 | 22·80 | 18·40 | 3 11 | 4 00 | ..... | 26·60 | ..... | 3 10 |
| Bromptonville | 41·25 | 10·50 | 1 63 | 5 03 | 15·00 | 8·25 | 4 15 | 6 41 | 33·75 | 11·25 | 2 00 | 4 70 |
| Lake Megantic | ..... | 17·93 | ..... | 4 01 | ..... | 14·68 | ..... | 4 57 | ..... | 17·96 | ..... | 3 86 |
| Notre Dame de Ham | ..... | 9·00 | ..... | 5 09 | ..... | 5·00 | ..... | 7 83 | ..... | 10·00 | ..... | 4 39 |
| Plessisville | 20·94 | 21·46 | 2 44 | 2 10 | 16·02 | 14·60 | 2 60 | 2 71 | 20·77 | 22·71 | 2 29 | 1 98 |
| Scott‡ | 28·00 | 21·60 | 2 00 | 2 50 | 15·00 | 7·04 | 3 73 | 7 31 | 26·00 | 18·20 | 2 16 | 2 97 |
| St. Apollinaire‡ | ..... | 11·70 | ..... | 3 36 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| South Roxton | 25·64 | 22·00 | 1 89 | 2 98 | 15·00 | 12·10 | 2 85 | 4 82 | 24·38 | 20·60 | 2 00 | 2 94 |
| Valley Junction‡ | 21·70 | 21·42 | 4 13 | 3 97 | 13·70 | 22·55 | 4 82 | 3 52 | 16·30 | 28·98 | 4 05 | 2 94 |
| Weedon | 26·40 | 20·40 | 1 73 | 3 00 | 16·50 | 10·60 | 2 42 | 5 25 | 36·30 | 24·30 | 1 36 | 2 51 |
| Average seven stations 1929 | 28·85 | ..... | 2 27 | ..... | 16·29 | ..... | 3 38 | ..... | 22·50 | ..... | 1 98 | ..... |
| Average ten stations 1930 | ..... | 18·56 | ..... | 3 47 | ..... | 12·58 | ..... | 5 16 | ..... | 20·07 | ..... | 3 27 |

* 178 pounds of nitrophoska per acre.
† 534 pounds of a 5-01-5 fertilizer per acre.
‡ The fertilizer used on these stations was different from the one used on the other stations, but the rate of application was made such as to make it comparable, this also applied to nitrophoska.

# REPORT OF THE ILLUSTRATION STATIONS FOR EASTERN QUEBEC

*R. Caron, B.S.A., Supervisor*

## SEASONAL CONDITIONS

Spring opened in early May and kept favourable for farm work up to the middle of June. Such weather enabled farmers to prepare a good seedbed and complete seeding rather earlier than usual. On the other hand, farmers who deferred ploughing until spring had difficulty finishing seeding because of the extremely rainy weather which prevailed from the middle of June to October. Crops however reached maturity.

The wet, summer weather was very favourable to plant growth, on well drained soil. Crops were fairly satisfactory in Eastern Quebec, especially clover hay and pastures. Unfortunately the quality of the clover and grain crop was very much damaged by rain during haying and harvesting. The turnip crop also suffered because of excessive soil moisture on low land. The potato crop was affected to a great extent by disease, especially late blight, which in some cases destroyed sixty per cent of the crop. Spraying was rendered less effective on account of frequent rain. Favourable weather was experienced for the completing of farm operations from the middle of October until the end of November. Operations such as ploughing, digging, drainage, etc., could be properly done before winter set in.

## GENERAL CONDITIONS

Twenty-two stations were in operation during the past season in the Eastern Quebec district, with a total area of 227 acres of land under demonstration work. Three new stations were established during the fall of 1929. Three of the Eastern Township stations were transferred for supervision purposes to headquarters at Ottawa, while four north of the St. Lawrence were annexed to the Eastern Quebec district, making a total of twenty-two stations.

## LIVE STOCK IMPROVEMENT

Live stock improvement on the Illustration Stations in Eastern Quebec has been carried on during the past season on the same basis as in the past, that is, the maintenance of purebred sires of quality, the keeping of milk production records, the elimination of the low producer and the production of suitable winter feed such as turnips, oats, peas and vetch, as well as clover and alfalfa hay.

The following table gives the number of purebred bulls which are used on the Illustration Stations, also their name, breed and registration number:—

PUREBRED BULLS ON ILLUSTRATION STATIONS IN EASTERN QUEBEC

| Stations | Name of the bull | Registration number | Breed |
|---|---|---|---|
| St. Hilarion | Ottawa Supreme 58 | 132751 | Ayrshire |
| St. Pierre I.O | Colin | 138657 | Ayrshire |
| St. Valier | Sostène | 87588 | Ayrshire |
| Montmagny | Ste. Anne Supreme | 110817 | Ayrshire |
| St. Jean Port Joli | King of Port Joli | 110533 | Ayrshire |
| L'Islet | Gaillard du Village | 10672 | Canadian |
| Ste. Helene | Aguillon | 10677 | Canadian |
| Riviere Bleue | Ste. Anne Supreme 26 | 132918 | Ayrshire |
| St. Alexandre | Ste. Anne Lord Kyle 42 | 139008 | Ayrshire |
| St. Arsene | Burn Hill Foch | 132687 | Ayrshire |
| St. Fabien | Alcide | 122837 | Ayrshire |
| Sayabec | Ste. Anne Lord Kyle 39 | 139755 | Ayrshire |
| Causapscal | Ste. Anne Lord Kyle 43 | 140776 | Ayrshire |

It will be observed that thirteen stations out of twenty-two have purebred bulls at the head of their herds. However, some of those who are not keeping purebred sires on their own farm, make use of those owned by neighbours. Seven new bulls were introduced on the Illustration Stations in this district of supervision during the year 1930. Of that number three operators purchased a purebred bull for the first time. The following table summarizes the milk production of the herds as named:—

MILK AND BUTTERFAT PRODUCTION ON EASTERN QUEBEC ILLUSTRATION STATIONS

| Stations | Number of cows | Breed | Average days of lactation | | Average production | | | | Lowest cow's production | | | | Highest cow's production | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1929 | | 1930 | | 1929 | | 1930 | | 1929 | | 1930 | |
| | | | 1929 | 1930 | Fat | Milk | Fat | Milk | Fat | Milk | Fat | Milk | Fat | Milk | Fat | Milk |
| | | | | | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. |
| Murray Bay | 11 | Grade | ..... | 272 | ..... | ..... | ..... | 6,032 | ..... | ..... | ..... | 5,133 | ..... | ..... | ..... | 6,350 |
| St-Pierre I.O | 13 | Grade | 210 | 268 | 129 | 3,291 | 190 | 5,055 | 72·3 | 2,287 | 123 | 3,052 | 186 | 4,044 | 255 | 6,242 |
| St-Valier | 10 | Ayrshire grade | ..... | 236 | ..... | 4,562 | 185 | 4,002 | ..... | 2,147 | 176 | 3,940 | ..... | 6,987 | 209 | 4,206 |
| Montmagny | 9 | Ayrshire | ..... | 288 | ..... | ..... | ..... | 6,436 | ..... | ..... | ..... | 4,676 | ..... | ..... | ..... | 10,273 |
| L'Islet | 11 | Canadian | ..... | 256 | ..... | ..... | 268 | 6,138 | ..... | ..... | 149 | 3,218 | ..... | ..... | 326 | 7,510 |
| Ste-Hélène | 9 | Canadian Gr | ..... | 256 | ..... | ..... | 159 | 4,134 | ..... | ..... | 164 | 2,814 | ..... | ..... | 202 | 5,385 |
| Rivière Bleue | 9 | Ayrshire | 240 | 307 | ..... | 3,777 | ..... | 5,633 | ..... | 2,290 | ..... | 3,928 | ..... | 6,455 | ..... | 6,575 |
| St-Eleuthère | 13 | Grade | 263 | 244 | ..... | 4,094 | 122 | 4,016 | ..... | 3,076 | 101 | 3,365 | ..... | 4,754 | 162 | 4,070 |
| St-Alexandre | 12 | Ayrshire grade | 233 | 315 | 223 | 5,545 | 294 | 6,099 | 172 | 3,823 | 262 | 4,922 | 289 | 6,141 | 491 | 7,302 |
| St-Arsène | 7 | Ayrshire grade | 274 | 273 | 176 | 4,596 | 188 | 4,805 | 142 | 3,975 | 119 | 3,195 | 173 | 5,304 | 350 | 8,978 |
| St-Fabien | 17 | Ayrshire grade | 230 | 252 | 119 | 3,112 | 189 | 4,444 | 107 | 2,875 | 150 | 3,073 | 169 | 4,256 | 260 | 5,655 |
| Sayabec | 8 | Grade | ..... | 268 | ..... | ..... | 153 | 3,997 | ..... | ..... | 116 | 2,522 | ..... | ..... | 175 | 5,163 |
| Causapscal | 13 | Ayrshire grade | 288 | 250 | 203 | 5,146 | 200 | 4,995 | 170 | 4,326 | 144 | 3,304 | 259 | 6,325 | 253 | 6,408 |
| Nouvelle | 4 | Grade | 248 | 209 | 126 | 3,427 | 111 | 2,752 | 93 | 2,670 | 106 | 3,228 | 182 | 4,495 | 133 | 3,276 |
| New Richmond | 6 | Grade | 175 | 243 | ..... | 3,583 | 181 | 5,176 | ..... | 3,300 | 154 | 4,478 | ..... | 4,500 | 203 | 5,666 |
| St. Alphonse de Cap | 8 | Grade | 208 | 239 | 191 | 4,590 | 242 | 5,617 | 155 | 3,276 | 183 | 5,060 | 223 | 5,517 | 286 | 5,572 |

### SHEEP RAISING

This branch of farming is constantly developing on the Illustration Stations in this district of supervision. Twenty stations out of twenty-two are raising sheep. The majority are keeping grade ewes, while eighteen are keeping purebred rams. The average number of ewes per station for the past season was 11·4. There is no doubt but that this number could be advantageously increased.

### IMPROVEMENT OF POULTRY

The majority of the stations are now keeping purebred Barred Plymouth Rock poultry developed from high producing strains. In addition to general care and feeding given these flocks, twelve station operators purchased cockerels from high producing flocks during the fall of 1930. Some of the others procured hatching eggs or one-day old chicks from the Experimental Station at Ste. Anne de la Pocatiere. This branch of farming is making steady improvement every year on the stations and the number of birds kept is steadily increasing. The average number of birds per flock on all stations is 33·5.

### SEED PRODUCTION AND DISTRIBUTION

As the success of producing crops depends to quite an extent on the quality of seed used, also the adaptation of the right variety for the locality in respect to climate and soil, a good deal of attention has been given to this matter during the past season. It is a well known fact that the Lower St. Lawrence district has a rather short growing season, for that reason the farming population of this district suffers more or less heavy loss each year due to cereal crops, especially oats, not ripening early enough to be stored before heavy fall rains begin. In order to meet this condition in a practical way, the introduction, multiplication and distribution of Alaska oats is being developed on stations where such conditions exist. Eleven stations out of the twenty-two have grown Alaska oats for seed purposes during the past season, with satisfactory results.

## SACRE COEUR, SAGUENAY COUNTY

### OPERATOR, JOHNNY TREMBLAY

This station was established in the fall of 1929. It is situated about twelve miles from Tadoussac on the Saguenay river. A four-year rotation system was established during the summer of 1930. The soil is sandy and very low in fertility. It is however, representative of the district. Some very good preparatory work was done during the fall of 1930 on field "A" in order to destroy couch grass.

At this time the herd on this new station is composed of three head of grade cows and two heifers. The major problems to consider on this station are the organization and improvement of the herd in order to create a source of revenue for the operator, and also to improve the fertility of this sandy soil which is deficient in organic matter. Seeding operations were not possible until the beginning of June.

The following table gives the yields and cost of growing the different crops for the past year:—

OPERATIONS AT SACRE COEUR—FOUR-YEAR ROTATION

| Field | Crop | Yield per acre | Cost per unit | Cost per acre | Labour hours | |
|---|---|---|---|---|---|---|
| | | | | | Men | Horses |
| | | | $ | $ | | |
| B | Turnips.....tons | 8·6 | 5 85 | 50 31 | 177 | 98 |
| D | Alaska oats.....bush. | 20·0 | 0 70 | 16 45 | 17 | 22 |
| C | Clover hay.....tons | 0·5 | 14 00 | 7 00 | 9 | 6 |
| A | Timothy hay.....tons | 0·5 | 15 00 | 7 50 | 8 | 8 |

The high producing cost which appears in the above table is due especially to low yields and to high labour charges partly on account of this station being established in the late fall and essential cultural operations were not possible in the case of the hoed crop.

## MURRAY BAY, CHARLEVOIX COUNTY

OPERATOR, ELIE VILLENEUVE

Seeding operations were not possible until the first part of June on this station. Turnips were sown the fifth, yielding 18·6 tons per acre. They were planted in drills thirty inches apart and fertilized with a light application of manure in addition to 200 pounds of nitrophoska per acre. Clover and alfalfa hay gave good returns, proving a useful demonstration which was the source of considerable interest in the district.

The following table gives the yields and cost of producing the different crops:—

OPERATIONS AT MURRAY BAY—FOUR-YEAR ROTATION

| Field | Crop | Yield per acre | Cost per unit | Cost per acre | Labour hours | |
|---|---|---|---|---|---|---|
| | | | | | Men | Horses |
| | | | $ | $ | | |
| B | Turnips.....tons | 18·6 | 3 27 | 60 82 | 146 | 120 |
| B | Potatoes.....bush. | 180·0 | 0 39 | 70 20 | 154 | 111 |
| A | Barley.....bush. | 43·0 | 0 45 | 19 35 | 24 | 21 |
| D | Clover and alfalfa (2 cuts).....tons | 4·03 | 5 73 | 23 09 | 19 | 14 |
| C | Timothy.....tons | 2·5 | 4 35 | 10 86 | 10 | 9 |

Considering the high yield the production cost for clover hay may seem high. This resulted from the wet weather prevalent during haying which necessitated the expenditure of more hand labour than would have been the case under normal weather conditions.

## ST. HILARION, CHARLEVOIX COUNTY

OPERATOR, ADJUTOR GILBERT

This station has been operating for the past three years which explains to a certain extent the low yield from timothy as this field has not been reached in the development of rotation work under way. The soil in this district is quite unfertile but responds to fertilizer very well. On the other hand such application to be most economical should be light and more frequently applied because of this prevalent soil type.

Considerable permanent improvement was made during the spring and summer by clearing stones from fields "A" and "D". Seeding operations began on May 13, although turnips were not sown until June 4. No doubt, the yield would have been heavier if seeding had been done earlier and correspondingly, production costs would have been reduced. Charges other than labour remain about the same with low or heavy yield.

In order to initiate herd improvement on this station a good pure bred Ayrshire bull was introduced in the fall. This action should prove of great profit to the operator and district.

The following table gives the yields and cost of producing the different crops:—

OPERATIONS AT ST. HILARION—FOUR-YEAR ROTATION

| Field | Crop | Yield per acre | Cost per unit | Cost per acre | Labour hours | |
|---|---|---|---|---|---|---|
| | | | | | Men | Horses |
| | | | $ | $ | | |
| D | Turnips.....tons | 18·0 | 3 27 | 58 86 | 136 | 127 |
| D | Oats, peas and vetch hay.....tons | 3·0 | 9 16 | 27 49 | 14 | 17 |
| A | Alaska oats.....bush. | 38·0 | 0 54 | 20 52 | 17 | 21 |
| B | Clover hay.....tons | 0·9 | 16 00 | 14 40 | 7 | 6 |
| C | Timothy hay.....tons | 0·7 | 11 97 | 8 38 | 7 | 6 |

## ST. TITES DES CAPS, MONTMORENCY COUNTY

OPERATOR, WILFRID RENAUD

This station has been in operation for two years, having been transferred last spring from the Northern Quebec district to the Eastern Quebec district of supervision with headquarters at Ste. Anne de la Pocatière. A great deal of improvement is still necessary on this station. The most important factors that we have to deal with are the drainage of fields "A" and "B" and the destruction of weeds, especially couch grass which infests each field. The soil of this district is very sandy and correspondingly low in fertility.

Keeping hoed crop clean of weeds during the growing period has been a real problem and has necessitated an excessive expenditure of hand labour. Better soil preparation in the fall of 1929 would have lowered hand labour and would also have decreased the production cost considerably. Oats on field "A" were a failure on account of the unfertile soil and excess soil moisture.

The following table gives the yields and cost of producing the different crops:—

OPERATIONS AT ST. TITES DES CAPS—FOUR-YEAR ROTATION

| Field | Crop | Yield per acre | Cost per unit | Cost per acre | Labour hours | |
|---|---|---|---|---|---|---|
| | | | | | Men | Horses |
| | | | $ | $ | | |
| C | Turnips.....tons | 15·0 | 4 31 | 64 55 | 285 | 85 |
| C | Potatoes.....bush. | 144·0 | 0 50 | 72 00 | 260 | 110 |
| D | Oats, peas and vetch hay.....tons | 2·0 | 8 30 | 16 00 | 30 | 25 |
| A | Alaska oats.....bush. | 15·0 | 0 74 | 11 00 | 20 | 27 |
| B | Alaska oats.....bush. | 30·0 | 0 42 | 12 00 | 22 | 27 |

## ST. PIERRE I.O., MONTMORENCY COUNTY

OPERATOR, ADELARD ROUSSEAU

Oat seeding was carried out on this station the middle of May, turnips being sown on May 14. Crops in general, particularly turnips and potatoes, were below the average this season. However, the 40 bushel yield of oats per acre was produced quite economically and created considerable local interest during the summer. Although the hay crop was rather light, the demonstration carried on with nitrogenous fertilizers on clover, as top dressing, proved very interesting and effective. An application of 115 pounds of sulphate of ammonia per acre doubled the yield and reduced the production cost from $13.33 to $8.26 per ton. Needed improvement was made during the summer by the transfer of the old raspberry plantation from the centre of the Illustration Station to a new and permanent location.

The introduction of a typey pure bred bull on this station during the past summer will bring about needed improvement in the herd. This is the first pure bred bull to be owned on this farm.

The following table gives the yields and cost of growing the different crops for the past year as well as their average since the work was established:—

OPERATIONS AT ST. PIERRE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| C | Turnips.....tons | 3 | 16·0 | 24·0 | 3 68 | 2 53 |
| C | Potatoes.....bush. | 3 | 126·0 | 218·0 | 0 55 | 0 40 |
| C | Oats, peas and vetch hay.....tons | 3 | 3·0 | 4·1 | 9 28 | 7 11 |
| D | Banner oats.....bush. | 3 | 40·0 | 27·0 | 0 55 | 0 64 |
| A | Clover hay.....tons | 2 | 1·5 | 1·5 | 10 79 | 7 15 |
| B | Clover hay.....tons | 1 | 1·0 | ..... | 13 53 | ..... |

The yield of 126 bushels for potatoes may appear low. It should be mentioned that these are all marketable potatoes, the small being used as stock feed.

## ST. VALIER, BELLECHASSE COUNTY

OPERATOR, ELZEAR AUBE

One of the main problems of the farmer in this district is to maintain a steady milk production the whole year around. Whole milk is produced for sale at Quebec city. Consequently the farms should be organized to produce the most necessary crops for the economical winter feeding of dairy cattle. The four-year rotation system which is established on this station has responded very favourably to the need of this district. In spite of the care given to hoed crop by the operator during the summer, the yield was low and production cost high. This failure is primarily due to excess rain and the lack of drainage.

The most important work undertaken at this station during the past summer was that of drainage of soil, especially on the back field. This demonstration will certainly be of much profit in the neighbourhood of the Illustration Station, for the district as a whole suffers frequent loss of crops from excessive soil moisture.

The following table gives the yields and cost of growing the different crops for the past year as well as their average since the work was established:—

OPERATIONS AT ST. VALIER—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| B | Turnips.....tons | 2 | 11·3 | 24·5 | 5 37 | 3 20 |
| A | Oats, No. 1.....bush. | 2 | 50·0 | 35·8 | 0 47 | 0 62 |
| A | Oats, No. 2.....bush. | 1 | 25·0 | 25·0 | 0 80 | 0 80 |
| D | Clover hay limed 1½ tons.....tons | 1 | 1·6 | 1·6 | 10 00 | 10 00 |
| D | Clover hay (check no lime).....tons | 1 | 0·8 | 0·8 | 15 90 | 15 90 |
| C | Clover hay limed 1½ tons.....tons | 1 | 2·0 | 2·0 | 8 65 | 8 65 |

It will be noted that oats on Field "A" No. 1, produced double that of Field "A" No. 2. This difference is accounted for by the fact that Field No. 1 produced a hoed crop, while the previous crop on Field No. 2 was peas. Although one must take into consideration the residual effect of the fertilizer on Field No.

1, there is no doubt that hoed crops are of great importance in preparing the land for succeeding crops. It is also important to mention that Field No. 1 was clean, while No. 2 was badly infested with weeds especially sow thistle.

## MONTMAGNY, MONTMAGNY COUNTY

OPERATOR, G. FORTUNAT FOURNIER

This station is showing steady progress every year. Results were very encouraging in all branches during the past season. Despite the excessive rainfall during the summer, crops did not suffer the same as at some other stations, because of the underdrainage. Interesting work was carried on during the summer with lime and nitrogenous fertilizer on clover hay. The herd improvement at this station is showing good progress. Oat seeding operations were possible on May 14, while turnips were not sown until June 24.

A four-year rotation system is established on the whole of Mr. Fournier's farm. The following table gives the yields and cost of growing the different crops for the past year as well as their average since the work was established:—

OPERATIONS AT MONTMAGNY—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| C | Turnips.....tons | 9 | 24·3 | 24·7 | 2 61 | 2 14 |
| C | Oats, peas and vetch hay.....tons | 2 | 3·5 | 3·1 | 7 00 | 8 25 |
| B | Oats, Banner.....bush. | 8 | 58·0 | 58·7 | 0 40 | 0 44 |
| A | Clover hay.....tons | 8 | 2·41 | 2·5 | 8 09 | 8 58 |
| D | Timothy hay.....tons | 1 | 2·8 | ..... | 5 00 | ..... |

The above table shows that average yields were obtained in 1930, and demonstrates that even during excessively rainy years, well drained soils give high yields.

The following table gives the results of a demonstration carried on during the summer with ground limestone and nitrogenous fertilizers on clover hay. The limestone in this experiment was applied to the previous crop in 1929.

EFFECT OF GROUND LIMESTONE ON CLOVER HAY

| Field | Crop | Fertilizer | Yield per acre | Cost per ton |
|---|---|---|---|---|
| | | | tons | $ |
| A | Clover hay..... | Limestone 1½ tons per acre..... | 2½ | 6 80 |
| A | Clover hay..... | Check..... | 2 | 8 02 |
| A | Clover hay..... | 115 pounds Ammonium sulphate per acre..... | 2¼ | 8 08 |

One and one-half tons of ground limestone has increased the yield of clover hay one-half ton per acre, while 115 pounds of ammonium sulphate without limestone has increased the yield only one-quarter of a ton per acre.

## L'ISLET, L'ISLET COUNTY

OPERATOR, JOS. C. LEMIEUX

On this new station the soil is heavy and low. While the upper part of the field gave high yields, the crop on the lower portion was practically nil. Drainage work has been undertaken however and these fields no doubt will be in better shape next spring. On Field "A" there was a worth while demonstration with a mixture of clover and alfalfa for hay.

Grain was seeded on May 17 while turnips were not sown until July 3. This no doubt was responsible for the low yield of this crop.

The following table gives the yields and cost of growing the different crops:—

OPERATIONS AT L'ISLET—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | Cost per unit |
|---|---|---|---|---|
| | | | | $ |
| C | Turnips.....tons | 1 | 9 | 6 35 |
| C | Potatoes.....bush. | 1 | 130 | 0 59 |
| C | Oats, peas and vetch hay.....tons | 1 | 2 | 14 83 |
| B | Wheat, Marquis.....bush. | 1 | 20 | 1 30 |
| A | Alfalfa and clover hay.....tons | 1 | 2 | 8 55 |
| D | Timothy.....tons | 1 | 2 | 6 00 |

## ST. JEAN PORT JOLI, L'ISLET COUNTY

OPERATOR, FRS. THADDEE CARON

This is the third year that this station has been in operation and much valuable work has been carried on with fertilizers in order to determine their value for increased production. Cultural work in 1930 was the same as in former years. Wheat was sown at the rate of 2 bushels per acre and seeded with the following grass mixture, timothy 8 pounds, red clover 5, alsike 5, and alfalfa 2. Results of two years' operations and effects of the various fertilizers are given in the tables below:—

OPERATIONS AT ST. JEAN PORT JOLI—FOUR-YEAR ROTATION

| Field | Crop | Fertilizer treatment per acre | Yield per acre | |
|---|---|---|---|---|
| | | | 1929 | 1930 |
| B | Turnip..... | 10 tons manure, 200 pounds nitrophoska.....tons | 15·8 | 9·9 |
| B | Turnip..... | 10 tons manure.....tons | 13·1 | 7·3 |
| B | Turnip..... | 10 tons manure, 750 pounds of 4–8–4.....tons | 15·0 | 9·6 |
| B | Oats, peas and vetch..... | 10 tons manure, 200 pounds nitrophoska.....tons | 2·86 | 2·71 |
| B | Oats, peas and vetch..... | 10 tons manure (check).....tons | 2·35 | 1·92 |
| B | Oats, peas and vetch..... | 10 tons manure, 750 pounds of 4–8–4.....tons | 2·62 | 2·94 |
| C | Wheat..... | 10 tons manure, 500 pounds of 3–9–6.....bush. | 34·0 | 36·6 |
| C | Wheat..... | 20 tons manure.....bush. | 29·5 | 30·0 |
| C | Wheat..... | 1,000 pounds of 3–9–6.....bush. | 34·0 | 40·0 |
| C | Wheat..... | No manure or fertilizer.....bush. | 21·7 | 18·0 |
| Back Field | Wheat..... | 1 ton of limestone, 730 pounds of 4–10 2.....bush. | ..... | 33·0 |
| " | Wheat..... | 30 tons manure, 1 ton limestone.....bush. | ..... | 40·0 |

OPERATIONS AT ST. JEAN PORT JOLI

| Field | Crop | Fertilizer treatment per acre | Yield per acre |
|---|---|---|---|
| | | | tons |
| D | Clover hay..... | 115 pounds sulphate of ammonia..... | 1·7 |
| D | Clover hay..... | No fertilizer..... | 1·5 |
| D | Clover hay..... | 20 tons of manure..... | 1·66 |
| D | Clover hay..... | 10 tons manure, 500 pounds of 3–9–6 fertilizer mixture..... | 1·88 |
| D | Clover hay..... | 1,000 pounds of 3–9–6 fertilizer mixture..... | 1·80 |
| A | Timothy hay..... | 400 pounds of superphosphate..... | 2·20 |
| A | Timothy hay..... | Check, no lime, no fertlizer..... | 1·60 |
| A | Timothy hay..... | 1½ tons ground limestone..... | 1·40 |

In the production of wheat the tables show that 1,000 pounds of a 3-9-6 fertilizer mixture gave better results than either 20 tons manure or 10 tons manure and 500 pounds fertilizer combined. On timothy, 400 pounds superphosphate gave an appreciable increase over the check and limestone plots. Due to excessive rain turnip yields were low, but here again commercial fertilizer was applied to advantage.

Special improvement work at this station included the building of a manure shed with concrete foundation and also a cement cellar for the storage of turnips.

## STE. HELENE, KAMOURASKA COUNTY

OPERATOR, XAVIER PICARD

The station at Ste. Helene was established three years ago especially for fertilizer demonstrations, but during the summer of 1930, it was changed to a regular Illustration Station with a four-year rotation. All crops on this station yielded heavily. The operator was careful at all times to have station work properly done.

The following table gives in detail the yields and effect of commercial fertilizer on the various crops treated:—

OPERATIONS AT STE. HELENE—FOUR-YEAR ROTATION

| Field | Crop | Fertilizer treatment | Number of years grown | Yield per acre | |
|---|---|---|---|---|---|
| | | | | 1930 | Average |
| A | Clover hay | 115 pounds sulphate of ammonia tons | 1 | 2·5 | 2·5 |
| A | Clover hay | Check tons | 1 | 1·7 | 1·7 |
| B | Turnips | 10 tons manure, 200 pounds nitrophoska. tons | 3 | 25·78 | 24·25 |
| B | Turnips | 10 tons manure tons | 3 | 16·55 | 22·40 |
| B | Turnips | 10 tons manure, 750 pounds 4–8–4 mixture tons | 3 | 27·87 | 25·90 |
| B | Potatoes | 10 tons manure, 200 pounds nitrophoska bush. | 3 | 360·0 | 256·0 |
| B | Potatoes | 10 tons manure bush. | 3 | 232·0 | 290·0 |
| B | Potatoes | 10 tons manure, 750 pounds 4–8–4 mixture bush. | 3 | 273·0 | 276·0 |
| C | Oats, Alaska | 10 tons manure, 500 pounds 3–9–6 mixture bush. | 1 | 42·3 | 42·3 |
| C | Oats, Alaska | Check bush. | 1 | 26·0 | 26·0 |
| C | Oats, Alaska | 1,000 pounds 3–9–6 mixture bush. | 1 | 40·0 | 40·0 |
| D | Timothy hay | 300 pounds ground limestone tons | 1 | 2·0 | 2·0 |
| D | Timothy hay | Check tons | 1 | 1·5 | 1·5 |

From the above it will be noted that on all crops the effect of commercial fertilizer was very marked.

Special improvement work carried on by the operator during the year was the fencing of the station, and draining, either by tile or by open ditches.

## RIVIERE BLEUE, TEMISCOUATA COUNTY

OPERATOR, JOSEPH BELANGER

Operations at this station were very successful during the past year. Yields were high and there were interesting demonstrations on each of the four fields in the rotation. The turnip crop grown with and without commercial fertilizer attracted much attention. This was also true of the alfalfa in the clover field, a crop which shows possibilities and one which will be further tested.

Alaska oats, an early maturing variety, was sown on Field "D" and seeded with the following grass mixture per acre, timothy 8 pounds, red clover 5, alsike 5, and alfalfa 2.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT RIVIERE BLEUE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| C | Turnips.....tons | 3 | 25·0 | 17·1 | 2 66 | 4 61 |
| D | Oats, Alaska.....bush. | 4 | 48·0 | 40·3 | 0 46 | 0 55 |
| A | Alfalfa and clover hay.....tons | 2 | 2·2 | 2·8 | 6 50 | 5 58 |
| B | Timothy hay.....tons | 1 | 1·7 | 1·7 | 5 52 | 5 52 |

It will be noted from the above table that average yields were obtained and the cost of production in all cases was reasonably low.

During the past year a young pure bred Ayrshire bull was purchased and a new piggery built. Considerable advancement is planned in the raising of hogs in order that the dairy by-products may be utilized to the best advantage.

On the back fields of this farm a three-year potato rotation has been established. Here the soil is sandy and should be very suitable for this crop.

## ST. ELEUTHERE, KAMOURASKA COUNTY

### OPERATOR, GERMAIN MORIN

The soil on this station is a heavy loam. With the heavy rains of the past season, crop growth especially roots was very poor. Seeding of grain was possible June 13 and turnips sown June 16, but both crops were retarded by rains which followed. Oats, peas and vetches sown in combination at the following rates, oats 2 bushels, peas ¾ bushel, and vetches ¼ bushel, gave a yield of three tons hay per acre and thus demonstrated the value of this mixture.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT ST. ELEUTHERE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| C | Turnips.....tons | 2 | 10·7 | 9·6 | 5 59 | 8 96 |
| C | Oats, peas and vetch hay.....tons | 3 | 1·9 | 1·5 | 12 40 | 15 00 |
| B | Oats, Alaska.....bush. | 3 | 17·0 | 27·5 | 1 22 | 0 77 |
| A | Clover hay.....tons | 2 | 2·5 | 1·7 | 7 22 | 13 24 |
| D | Timothy.....tons | 1 | 2·5 | 1·7 | 5 18 | 5 12 |

The above table shows that turnip growing has never been successful at this station and will therefore be discontinued. The effect of commercial fertilizer on both the turnips and the oats, peas and vetch mixture was very pronounced and the increased yield more than sufficient to pay for the cost of fertilizer applied.

## ST. ALEXANDRE, KAMOURASKA COUNTY

### OPERATOR, ALPHONSE OUELLET

Beside the four-year rotation which is established in the lower part of this station, there is a three-year rotation system established on the upper part. The aim of the first system is to supply live stock with abundant, succulent feed, while the second one was established with the aim of promoting potato growing.

This system has given such satisfactory results during the past few years, that the operator decided last summer to establish it on the back fields of his farm and now has twelve acres under this scheme. This system is also creating much interest among the neighbouring farmers and many of them are following the plan.

Yields obtained under both rotations are given in the table below:—

OPERATIONS AT ST. ALEXANDRE

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| | *Four-year Rotation—* | | | | | |
| A | Oats, Alaska.....bush. | 4 | 31·0 | ..... | 0 62 | ..... |
| B | Turnips.....tons | 4 | 11·3 | 20·1 | 5 79 | 3 95 |
| B | Oats, peas and vetch hay.....tons | 4 | 3·3 | 2·95 | 8 00 | 10 03 |
| C | Timothy hay.....tons | 2 | 3·5 | 2·5 | 3 57 | 5 93 |
| D | Clover hay.....tons | 3 | 3·25 | 3·8 | 4 56 | 5 26 |
| | *Three-year Rotation—* | | | | | |
| E | Oats, Alaska.....bush. | 4 | 61·0 | 46·9 | 0 32 | 0 45 |
| F | Potatoes.....bush. | 4 | 473·0 | 320·0 | 0 18 | 0 23 |
| G | Clover hay.....tons | 3 | 3·0 | 2·85 | 4 84 | 7 42 |

By referring to the table above it will be noted that the turnip crop was very poor but excessive moisture, rather than poor cultivation and fertilization, was responsible for this condition. On the other hand the yield of potatoes was exceptionally high.

Live stock purchased during the year for improvement work included a purebred bull and a purebred Yorkshire sow.

## ST. ARSENE, TEMISCOUATA COUNTY

OPERATOR, ANTONIO CAYOUETTE

As a considerable portion of the soil in the vicinity of this station is of a sandy nature and suitable for the growing of potatoes, a three-year rotation has been established in order to promote potato growing among the farming population of this district.

The results of this year's operations were satisfactory. Spraying during the summer in order to prevent disease, was very successful, the crop being kept green until late in the fall and no loss was suffered from rot. For spraying, the standard 4-4-40 mixture was used as this has been found to give best results. In the preparation of this mixture four pounds of bluestone are first dissolved in four gallons of water. This is best accomplished by suspending the bag containing the bluestone in the water, allowing only the lower portion of the bag to touch the water. If the bluestone is put into the bottom of a basket, it is very difficult to get it all dissolved within a reasonable length of time. The four pounds of burnt lime is next carefully slaked and mixed with four gallons of water. In finally making up the spray mixture 32 gallons of water should first be put in the sprayer barrel, then the bluestone and lime added separately, and thoroughly mixed as added. Under no consideration should the two concentrated mixtures be put together.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT ST. ARSENE—THREE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Potatoes.....bush. | 4 | 247·0 | 345·0 | 0 23 | 0 17 |
| B | Banner oats.....bush. | 4 | 50·0 | 42·0 | 0 40 | 0 47 |
| C | Clover hay.....tons | 1 | 2·9 | 2·3 | 6 46 | 5 78 |

The operator of this station has been giving a good deal of attention to his live stock for the past few years and during the summer of 1930, purchased a young purebred Ayrshire bull. A new cement floor, ventilators and more windows in his cow stable, have also done much to improve his cow barn.

## ST. FABIEN, RIMOUSKI COUNTY

OPERATOR, LOUIS ALBERT

A six-year rotation system is established on this station. The crop sequence is as follows:—

1st year—Oats, peas and vetches
2nd year—Hoed crop (turnips, potatoes)
3rd year—Oats
4th year—Clover hay
5th year—Mixed hay
6th year—Hay or pasture

Seeding operations were possible at the beginning of June and turnips were sown June 7. Despite these early seeding dates heavy rains during the summer retarded growth to such an extent that yield of hoed crops was lower than average. Oats at 2 bushels per acre, peas at three quarters of a bushel and vetches at one quarter of a bushel, when sown in combination gave a satisfactory yield, as also did both the timothy and clover.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT ST. FABIEN—SIX-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| E | Oats, peas and vetches.....tons | 4 | 2·9 | 2·7 | 9 00 | 8 55 |
| D | Turnips.....tons | 9 | 11·6 | 19·7 | 4 42 | 3 17 |
| D | Potatoes.....bush. | 7 | 150·0 | 184·0 | 0 35 | 0 27 |
| C | Oats, Banner.....bush. | 9 | 32·5 | 37·0 | 0 84 | 0 64 |
| B | Clover hay.....tons | 9 | 2·5 | 1·75 | 4 53 | 9 21 |
| F & G | Timothy hay.....tons | 8 | 2·0 | 1·75 | 5 88 | 7 00 |

It will be noted from the above table that the producing cost per ton of turnips is higher than usual. This shows that it is largely the yield which determines the cost of production.

Improvement work on the station included the drainage of Fields C and D, and during the year a new poultry house was also constructed, making it possible to more conveniently handle this important branch of farming.

## SAYABEC, MATAPEDIA COUNTY

OPERATOR, JOSEPH PIERRE BELANGER

This is the first year that this station has been operated. Twelve acres have been divided into a four-year rotation and while the soil is fertile, it is very heavy and hard to cultivate thus necessitating considerable cultural work. Low yields of root crops in 1930 were partly due to the fact that the fields on which they were grown had no summer or fall preparation. The sod was not fully rotted and cultural operations were therefore difficult, making it almost impossible to prepare a fine seed bed.

The following table gives the yields and cost of growing the different crops:—

OPERATIONS AT SAYABEC—FOUR-YEAR ROTATION

| Field | Crop | Yield per acre | Cost per unit | Cost per acre | Labour hours | |
|---|---|---|---|---|---|---|
| | | | | | Men | Horses |
| | | | $ | $ | | |
| A | Turnips.....tons | 12·1 | 4 63 | 55 92 | 222 | 105 |
| A | Oats, peas and vetches.....bush. | 40·0 | 0 65 | 26 00 | 18 | 29 |
| B | Potatoes.....bush. | 126·4 | 0 45 | 50 56 | 176 | 67 |
| C | Alaska oats.....bush. | 45·0 | 0 55 | 24 75 | 24 | 30 |
| D | Timothy hay.....tons | 1·75 | 7 59 | 13 35 | 10 | 12 |

At the present time the herd at this station lacks production but the operator realizing its importance, has purchased a young purebred bull of high standing and is keeping milk production records from each individual cow. He has also improved his buildings and is planning to build a new barn in 1931.

## CAUSAPSCAL, MATAPEDIA COUNTY

OPERATOR, JOS. VALOIS

The year's work at Causapscal has been very successful and yields of all crops with the exception of potatoes were high. A bad infestation of late blight did much to reduce the yield of potatoes of marketable quality. Seeding was very early and the operator was able to keep his crop clean throughout the growing season. He has also done much, by careful cultivation, to improve the physical condition of the soil on the station.

A demonstration carried on during the summer with nitrogenous fertilizers applied to the clover meadow, was very interesting. Results of this test will be found in another portion of the report where it is treated collectively with results from other stations.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT CAUSAPSCAL—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| C | Turnips.....tons | 3 | 20·0 | 14·2 | 2 36 | 2 98 |
| C | Potatoes.....bush. | 3 | 143·0 | 263·5 | 0 34 | 0 19 |
| B | Oats, Alaska.....bush. | 4 | 40·0 | 40·7 | 0 50 | 0 44 |
| A | Clover hay.....tons | 3 | 1·9 | 1·95 | 7 92 | 6 66 |
| D | Timothy hay.....tons | 2 | 2·0 | 2·00 | 7 05 | 7 31 |

The above table shows that yields of all crops with the exception of potatoes were high. In the case of this crop forty per cent was rotten and was not considered in the yield. This fact is also responsible for the above average cost of production per bushel.

Improvement work with live stock included the purchase of a young pure-bred Ayrshire bull to replace the old one. A cement manure shed was also constructed in order that barnyard manure may be saved without undue leaching.

## NOUVELLE, BONAVENTURE COUNTY

OPERATOR, LEON LAVOIE

This station was successfully operated during the past summer and high yields obtained on Fields "A" and "B" with turnips, oats, peas and vetch, and Alaska oats. The demonstration with these crops has created considerable interest in this district. A great deal of cultivation was necessary to keep Field "B" clean as it was quite badly infested with couch grass, and for this reason considerable work has been done preparing Field "C" for the 1931 hoed crop.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT NOUVELLE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| B | Turnips.....tons | 4 | 24·6 | 21·5 | 2 27 | 3 47 |
| B | Oats, peas and vetch hay.....tons | 4 | 3·1 | 2·9 | 11 30 | 9 68 |
| A | Oats, Alaska.....bush. | 4 | 49·0 | 49·1 | 0 45 | 0 38 |
| D | Clover hay.....tons | 1 | 1·0 | 1·0 | 12 86 | 12 86 |
| C | Timothy hay.....tons | 1 | 0·87 | 0·87 | 14 12 | 14 12 |

It will be noted that clover and timothy yields were fairly low. This was due to the poor condition of the soil but it was seen that the timothy and turnips responded remarkably to the application of commercial fertilizer.

As the farm owned by Mr. Lavoie is small, intensive cultivation is practised to increase the revenue and in this connection sweet corn, cabbages, carrots, beets and beans were grown in quantities for sale. The growing of sweet corn and cabbage seems to be the most profitable. One of the main problems at this station will be the improvement of the dairy herd. At present there are only four cows of very common breeding.

## NEW RICHMOND, BONAVENTURE COUNTY

OPERATOR, HECTOR CYR

Seeding was exceptionally early at New Richmond and it was possible to sow turnips on May 20. All crops grew vigorously throughout the summer but a severe attack of late blight on potatoes caused at least a seventy per cent loss of this crop. The most interesting demonstration for the year was with clover and alfalfa hay on Field "A" and clearly demonstrated that alfalfa might be expected to do well in the district.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT NEW RICHMOND—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| C | Turnips.....tons | 9 | 24·5 | 23·8 | 2 12 | 2 53 |
| C | Potatoes.....bush. | 6 | 163·0 | 282·0 | 0 30 | 0 21 |
| B | Oats, Banner.....bush. | 9 | 50·0 | 66·5 | 0 49 | 0 35 |
| A | Clover and alfalfa.....tons | 10 | 3·25 | 2·0 | 5 53 | 8 58 |
| D | Timothy hay.....tons | 13 | 3·0 | 2·0 | 5 10 | 7 56 |

Improvement work for the year included the draining of back fields. Definite improvement work is also being planned with live stock, as the production of the herd at present is low.

## ST. ALPHONSE DE CAPLAN, BONAVENTURE COUNTY

OPERATOR, ISIDORE ST. ONGE

Weather conditions were such as to allow an ideal seed bed to be prepared at an early date, but persistent rains during the summer practically ruined all crops with the exception of timothy and clover. In order to provide somewhat better drainage in the future, the direction of ploughing has been changed from North and South to East and West and tile drainage undertaken. Alaska oats were sown at the rate of three bushels per acre and seeded to the following grass mixture: timothy 8 pounds, red clover 5, alsike 5, and alfalfa 2. The oats, peas and vetch were made up as follows: oats 2 bushels, peas $\frac{3}{4}$ of a bushel and vetch $\frac{1}{4}$ of a bushel.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT ST. ALPHONSE DE CAPLAN—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| B | Turnips.....tons | 3 | 8·6 | 14·3 | 6 30 | 3 62 |
| C | Oats, Alaska.....bush. | 3 | 15·0 | 25·0 | 1 56 | 0 80 |
| C & B | Oats, peas and vetch hay.....tons | 2 | 2·0 | 1·60 | 14 32 | 12 00 |
| D | Clover hay, 6 tons marl per acre..tons | 1 | 2·0 | 2·0 | 8 80 | 8 80 |
| D | Clover check.....tons | 2 | 1·0 | 1·10 | 10 30 | 9 20 |
| A | Timothy hay.....tons | 1 | 1·25 | 1·25 | 8 00 | 8 00 |

During the past few years "lake mud" has been tested on the Illustration Station fields. This amendment seems to be very beneficial in promoting the growth of clover as the above table shows. Commercial fertilizer was also used to advantage on both turnips and clover hay.

## STE. ANNE DES MONTS, GASPE COUNTY

OPERATOR, OCTAVE DESCHENES

This station was established in the fall of 1929 and a twenty acre field was divided into a four-year rotation, as follows: hoed crop (potatoes, turnips), oats, peas and vetch, grain, clover and timothy. The topography of this station is rather hilly, but some low parts on all fields will need draining. This work has been commenced on Fields "C" and "D". Turnips and potatoes were sown on

ordinary ploughing as no fall work was done the previous year. This of course necessitated considerable more hand labour than would have been the case if the soil had been properly prepared.

The following table gives the yields and cost of growing the different crops:—

OPERATIONS AT STE. ANNE DES MONTS—FOUR-YEAR ROTATION

| Field | Crops | Number of years grown | Yield per acre | Cost per unit |
|---|---|---|---|---|
| | | | 1930 | 1930 |
| | | | | $ |
| A | Turnips.....tons | 1 | 13·0 | 4 41 |
| A | Potatoes.....bush. | 1 | 210·0 | 0 32 |
| A & C | Oats, peas and vetch hay.....tons | 1 | 2·0 | 8 10 |
| B & D | Oats, Alaska.....bush. | 1 | 30·0 | 0 47 |

The herd is above average. Milk production is fairly constant throughout the year and the milk is retailed by the operator in the town of Ste. Anne des Monts. A much needed cellar was dug during the fall for the storage of turnips and potatoes.

## MATANE, MATANE COUNTY

OPERATOR, MICHEL PHILIBERT

This is the tenth year that Illustration Station work has been carried on at Matane and although considerable progress has been made during that time in improving the fertility of the soil on the station, and on the farm in general, there is yet need for considerable drainage work and for increasing the production of the herd.

The excellent field of Banner oats on "D" yielding 61 bushels per acre, showed the value of good seed and careful preparation of the soil. The clover and alfalfa on Field "C" gave two and one-half tons of excellent quality hay. On this field the following grass mixture was used in 1929: timothy 8 pounds, red clover 5, alsike 5 and alfalfa 2.

The effect of commercial fertilizer on turnips and nitrogenous fertilizer on clover hay was very pronounced. On turnips the average increase per acre due to the fertilizer was five and one-half tons, while 115 pounds of sulphate of ammonia was responsible for an increase of one ton clover hay per acre.

The following table gives the yields and cost of growing the different crops for the past year as well as their average, since the work was established:—

OPERATIONS AT MATANE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips.....tons | 9 | 16·0 | 19·3 | 4 10 | 3 21 |
| A | Potatoes.....bush. | 6 | 143·3 | 197·6 | 0 40 | 0 30 |
| D | Oats, Banner.....bush. | 9 | 61·0 | 53·8 | 0 34 | 0 46 |
| C | Clover hay.....tons | 8 | 2·5 | 1·5 | 6 70 | 10 22 |
| B | Timothy hay.....tons | 8 | 2·0 | 1·65 | 7 15 | 9 72 |

## COMPARATIVE MANURE AND FERTILIZER DEMONSTRATIONS ON SWEDES

On twenty stations in 1930 an interesting demonstration was conducted with fertilizers on the turnip crop. Plots were measured and the following three treatments given per acre: No. 1, ten tons manure and 200 pounds nitrophoska, a concentrated fertilizer with an analysis of 15-30-15. No. 2, ten tons manure, check plot. No. 3, ten tons manure and 750 pounds of a 4-8-4 fertilizer mixture. In this experiment 200 pounds of nitrophoska with the high analysis given above, contains the same amount of plant food as 750 pounds of a 4-8-4 mixture, and in arriving at the cost price per unit, nitrophoska was charged at $96 per ton and the 4-8-4 fertilizer at $40 per ton, these being the prices paid for these two fertilizers. Below are the results of the demonstrations:—

RESULTS OF MANURE AND FERTILIZER DEMONSTRATIONS

| Stations | 10 tons of manure per acre and 200 pounds of nitrophoska | | | | 10 tons of manure per acre—check | | | | 10 tons of manure per acre and 750 pounds of 4-8-4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Yield | Cost per ton | Hours | | Yield | Cost per ton | Hours | | Yield | Cost per ton | Hours | |
| | | | Men | Horses | | | Men | Horses | | | Men | Horses |
| | tons | $ | | | tons | $ | | | tons | $ | | |
| Sacre-Coeur | 10 | 5 00 | 190 | 100 | 6 | 7 06 | 177 | 95 | 10 | 5 50 | 190 | 109 |
| Murray Bay | 21 | 2 94 | 145 | 124 | 13 | 4 19 | 143 | 112 | 22 | 3 08 | 150 | 126 |
| St-Hilarion | 20 | 3 00 | 138 | 128 | 15 | 3 57 | 133 | 126 | 19 | 3 25 | 136 | 126 |
| St-Tites des Caps | 17 | 3 58 | 280 | 86 | 11 | 5 15 | 275 | 83 | 17 | 3 84 | 290 | 86 |
| St. Pierre, I.O | 18 | 3 33 | 209 | 85 | 13 | 4 11 | 192 | 80 | 17 | 3 69 | 209 | 86 |
| St-Valier | 13 | 4 60 | 153 | 118 | 8 | 6 61 | 147 | 114 | 13 | 4 92 | 153 | 118 |
| Montmagny | 29 | 2 00 | 150 | 103 | 18 | 3 07 | 140 | 98 | 26 | 2 59 | 145 | 101 |
| L'Islet | 10 | 5 46 | 149 | 134 | 7 | 7 30 | 139 | 120 | 10 | 6 30 | 149 | 134 |
| Ste-Helene | 25·7 | 2 34 | 163 | 100 | 16 | 3 98 | 150 | 96 | 27·8 | 2 34 | 170 | 100 |
| Rivière Bleue | 27·2 | 2 10 | 168 | 88 | 22·5 | 2 62 | 160 | 80 | 25·8 | 2 60 | 163 | 84 |
| St-Eleuthère | 12·3 | 4 73 | 170 | 88 | 7 | 7 23 | 150 | 84 | 13 | 4 83 | 170 | 89 |
| St-Alexandre | 13 | 5 11 | 179 | 126 | 9 | 6 55 | 170 | 115 | 12 | 5 71 | 170 | 115 |
| St-Fabien | 13 | 3 95 | 120 | 107 | 10 | 4 66 | 109 | 96 | 12 | 4 66 | 120 | 107 |
| Sayabec | 13·4 | 4 12 | 224 | 106 | 10 | 5 27 | 220 | 103 | 13 | 4 51 | 224 | 106 |
| Causapscal | 23·4 | 2 00 | 106 | 110 | 15·6 | 2 71 | 100 | 107 | 21·2 | 2 37 | 102 | 104 |
| Nouvelle | 28 | 1 94 | 124 | 107 | 18 | 2 67 | 120 | 106 | 28 | 2 14 | 124 | 107 |
| New Richmond | 29 | 1 72 | 124 | 98 | 15·7 | 2 73 | 120 | 95 | 29 | 1 92 | 124 | 98 |
| St. Alphonse de Caplan | 10 | 5 41 | 160 | 115 | 6 | 7 55 | 140 | 110 | 10 | 5 91 | 160 | 115 |
| Ste. Anne des Monts | 15 | 4 21 | 228 | 88 | 10 | 5 81 | 215 | 85 | 14 | 5 00 | 220 | 88 |
| Matane | 18 | 3 54 | 184 | 94 | 12 | 4 86 | 177 | 90 | 17 | 3 91 | 184 | 92 |
| Average | 18·3 | 3 55 | 168·2 | 105 | 12·1 | 4 89 | 159 | 99·7 | 17·8 | 3 96 | 168 | 104 |

The above table shows that with skilled labour, fertile soil and sufficient fertilizer, it is possible to produce swede turnips at the very low price of $1.72 per ton, while on the other hand if for various reasons the yield is very low, the producing cost can reach the excessively high price of $7 per ton or more. It also shows that the two chief factors which contribute to the increase or decrease of the cost of production, are yield and labour. Where a yield of 7 tons only is obtained, the cost is more than seven dollars per ton, while with a yield of 29 tons, the cost is as low as $1.72 per ton. The table shows that there is a variation in manual labour from 100 to 290 hours, and this contributes much to the cost of production. Thorough preparation of the soil before planting would no doubt lessen the amount of manual labour required.

In this experiment the producing power of the two fertilizers is practically the same, but a slightly less cost per acre application of nitrophoska, allows turnips to be produced forty-one cents per ton cheaper than with the regular chemicals, and one dollar and thirty-four cents cheaper per ton than with manure alone. The average cost of $4.89 per ton in the case with manure alone, is unquestionably too high and shows that the fertility of the soil is of first importance in the production of a cheap crop.

AN EXPERIMENT SHOWING THE VALUE OF A NITROGENOUS FERTILIZER APPLIED AS A TOP DRESSING TO CLOVER MEADOWS IN EARLY SPRING AND ON DIFFERENT TYPES OF SOIL

| Station | Soil composition | Yield per acre | | |
|---|---|---|---|---|
| | | With fertilizers | Without fertilizer | Difference per acre due to fertilizers |
| | | tons | tons | tons |
| Murray Bay | Loamy | 3·00 | 2·75 | 0·25 |
| St. Pierre, I.O. | Medium | 2·00 | 1·00 | 1·00 |
| Montmagny | Loamy | 2·25 | 2·00 | 0·25 |
| St. Jean Port Joli | Loamy | 2·00 | 2·00 | ..... |
| Ste. Helene | Gravelly | 2·25 | 1·50 | 0·75 |
| St. Fabien | Loamy | 2·50 | 2·25 | 0·25 |
| Sayabec | Loamy | 2·00 | 1·50 | 0·50 |
| Causapscal | Gravelly | 2·00 | 1·25 | 0·75 |
| Nouvelle | Medium | 1·50 | 0·50 | 1·00 |
| St. Alphonse de Caplan | Medium | 1·50 | 1·00 | 0·50 |
| Matane | Sandy | 2·50 | 1·50 | 1·00 |
| Average | ..... | 2·13 | 1·57 | 0·56 |

According to the above table, sulphate of ammonia applied at the rate of 115 pounds per acre as top dressing on clover meadows in early spring, has increased the yield on the average by 0·56 ton per acre. It is especially interesting to note that nitrogenous fertilizers seem to be far more effective on light soil than on loamy, and under such conditions their application are found to be very profitable.

### SUMMARY

The following table gives a summary of yields, costs of production, lowest and highest yields, and lowest and highest costs of producing farm crops on the Eastern Quebec Illustration Stations for 1930:—

AVERAGE YIELDS AND COSTS EASTERN QUEBEC STATIONS—1930

| Crop | Number of stations | Average yield per acre | Average cost per unit | Lowest yield per acre | Highest yield per acre | Lowest cost per unit | Highest cost per unit |
|---|---|---|---|---|---|---|---|
| | | | $ | | | $ | $ |
| Turnips.....tons | 20 | 16·0 | 4 13 | 6·0 | 29·0 | 1 72 | 7 05 |
| Potatoes.....bush. | 12 | 186·2 | 0 38 | 130·0 | 473·0 | 0 18 | 0 59 |
| Oats, peas, vetches.....tons | 10 | 2·6 | 10 06 | 2·0 | 3·5 | 7 00 | 14 32 |
| Oats.....bush. | 18 | 39·4 | 0 51 | 15·0 | 61·0 | 0 34 | 1 56 |
| Clover and alfalfa hay...tons | 17 | 2·12 | 8 70 | 0·5 | 4·3 | 4 53 | 16 00 |
| Timothy hay.....tons | 15 | 1·87 | 7 40 | 0·5 | 3·1 | 3 57 | 15 00 |

## REPORT OF THE ILLUSTRATION STATIONS FOR NEW BRUNSWICK

*Thos. G. Hetherington, B.S.A., Supervisor*

### SEASONAL CONDITIONS

The winter of 1929-30 was characterized by an even temperature and moderate snowfall. The spring opened up almost three weeks earlier than usual and with ideal farming weather prevailing during seeding—cropping operations were completed two weeks earlier than normal. The fact that the previous fall had been very favourable to preparatory work, likewise facilitated spring work. Midsummer and fall weather conditions varied in different parts of the province. The northern counties including Restigouche, Gloucester, Madawaska, Victoria, Carleton and Northumberland counties, had an excessive

rainfall with resultant damage to crops. Cloud bursts were particularly harmful to grain crops. The southern section of the province enjoyed more favourable weather—rainfall was just sufficient to produce maximum growth conditions. The late fall, over the province generally, was dry and to some extent ploughing was retarded. Late blight in potatoes was very difficult to control this year and the loss from rot was very heavy in the northern part of the province.

### PUBLICITY AND SERVICE

Consistent yearly performance on the Illustration Stations and evidence of progress on the farm proper and about the farmstead, is the most effective example to the community. This year, station work on the whole was again maintained at a high standard. The older stations are rendering valuable service to their communities in many ways and from year to year the best of the newer stations graduate into this category. Operators are sponsoring conservative co-operative schemes for district welfare, such as seed purchases, ground limestone, etc. This year, through the activities of the operators, over 3 tons of Northern Grown Clover Seed was imported into the province for the use of operators and neighbours.

The size of the farms, generally speaking, precludes the possibility of the individual farmer purchasing a full complement of machinery. Operators are realizing the importance of more efficient machinery. It is an economic necessity that several farmers join together, and in this respect, there are several examples of operators joining with farmers in the purchase of reapers, disk drills, potato planters, diggers, sprayers, etc.

Due to local conditions not being favourable, summer field meetings were dispensed with this year. These will be resumed next year and advantage will be taken of the opportunity to co-operate with other organizations that have expressed a wish to do so.

### YIELDS AND COSTS

More than ever the matter of higher yields economically secured must engage the attention of the farmer. It is one means at his disposal to offset the price depression on farm products. The following table serves to emphasize the great disparity in yields obtained on the different Illustration Stations.

YIELDS AND COSTS ON THE NEW BRUNSWICK ILLUSTRATION STATIONS

| Eight Highest Yields | | | | Eight Lowest Yields | | | |
|---|---|---|---|---|---|---|---|
| Station | Acre yield | Acre cost | Bushel cost | Station | Acre yield | Acre cost | Bushel cost |
| | bush. | $ | cents | | bush. | $ | cents |
| Riordon | 90·8 | 23 60 | 26 | Sussex | 50·6 | 21 25 | 42 |
| Salisbury | 86·4 | 24 19 | 28 | Beresford | 42·0 | 22 26 | 53 |
| Grand Falls | 72·0 | 23 04 | 32 | St. Isidore | 42·0 | 21 84 | 52 |
| Tracey | 65·0 | 28 60 | 44 | Jacquet River | 35·0 | 26 60 | 76 |
| Harvey | 62·7 | 26 96 | 43 | Siegas | 34·5 | 26 22 | 76 |
| Pomeroy | 62·0 | 26 04 | 42 | Petersville | 30·0 | 15 30 | 51 |
| Derby | 60·0 | 26 40 | 44 | Black River | 30·0 | 20 40 | 68 |
| Buctouche | 56·0 | 25 76 | 46 | Baker Brook | 20·5 | 15 78 | 77 |
| Averages | 69·3 | 25 57 | 38 | | 35·9 | 21 20 | 62 |

The principal factors that influence yields may be summarized as follows:—

(1) *Farming Technique.*—This covers the various operations involved in soil preparation, planting and harvesting. In general, the high yielding stations greatly surpass the low yielding stations in thoroughness of preparation. Judgment and attention to details, such as careful seeding and other factors that individually may not have much influence but when totalled have a marked effect on yields.

(2) *Quality of Seed and Variety.*—It is noteworthy that the high yielding stations with one exception used high grade Victory oats, one operator using Banner. In all cases grain was carefully cleaned and none but plump seed used. The low yielding stations used a poorer grade of seed and in some localities due to climatic conditions, the lower yielding Alaska variety was used.

(3) *Soil and Soil Fertility.*—The high yielding stations in general use lime more generally, and hence, plough under a heavier sod—the physical condition of the soil is also better due to the use of lime. In general, at these stations the purchase of chemical fertilizers is an established practice which does not hold to nearly the same extent on the low yielding stations. The soil on the low yielding stations is generally poorer and lighter. The expenditure of a few dollars per acre for fertilizers is warranted on these stations. At a few stations where the soil is distinctly sandy, deeper seeding is warranted especially on the coastal regions where drying winds are harmful.

(4) *Weather Conditions.*—Lodging of grain due to heavy rainfall or cloud burst, causes the greatest loss. Spring rains often result in late seeding on heavy land. This can be partly overcome by opening up water courses in the fall. As previously noted, deeper seeding on light soils will partly offset drought conditions. The incorporation of humus in these light soils will increase their water holding capacity.

## TURNIP YIELDS AND COMPARATIVE COSTS

The following table contains a statement of turnip yields and costs on the New Brunswick Illustration Stations. It has always been contended, and rightly so, that root crops were expensive to grow particularly as regards labour. In the Maritime Provinces we have no other alternative but to grow roots; our only recourse is to grow them cheaper if possible. A study of the table indicates that labour charges accounts for 62·8 per cent of the total cost of raising roots. All other charges including rent, manure or fertilizer, use of machinery and seed, amount to 37·2 per cent of the total. It will be noted that the labour charge at Pomeroy amounts to $56.30 per acre while at Grand Falls the labour charge per acre amounts to $26.20. This would suggest that economies could be made in labour costs. Horse labour is depended on more at the Grand Falls station, whereas at the Pomeroy station hand labour predominates. In studying the labour charges at the various stations, very great variations in the amount of hand labour at time of singling were noted. A couchy field which had not been cultivated often enough after planting and before singling, requires at least three times the labour to single as would be the case with a field where couch grass control was good. Further, couchy ground may require a second hand hoeing. In any case, cultivation is more difficult and not as efficient as it is on clean ground. Thorough preparation of the ground before planting is the first requisite in lowering labour charges, the second is frequent and close cultivation before singling and the third is prompt attention to singling while the plants are small. Finally, moderate to light seeding will effect a very considerable saving in labour at singling time.

YIELDS AND COSTS OF PRODUCTION OF TURNIPS

| Station | Yield per acre | Total cost acre | Total labour charges per acre | All charges per ton | Labour charges per ton | Other charges per ton |
|---|---|---|---|---|---|---|
| | tons | $ | $ | $ | $ | $ |
| Pomeroy | 31·3 | 82 31 | 56 30 | 2 63 | 1 79 | 0 84 |
| Riordon | 20·4 | 80 96 | 54 20 | 3 96 | 2 65 | 1 31 |
| Derby | 27·3 | 78 59 | 50 70 | 2 87 | 1 85 | 1 02 |
| Black River | 25·6 | 77 21 | 50 70 | 3 01 | 1 98 | 1 03 |
| Whitneyville | 21·6 | 77 12 | 50 70 | 3 57 | 2 34 | 1 23 |
| Siegas | 23·3 | 75 96 | 50 00 | 3 26 | 2 14 | 1 12 |
| Tracey | 23·4 | 83 01 | 49 10 | 3 54 | 2 09 | 1 45 |
| Jacquet River | 14·1 | 71 91 | 48 40 | 5 10 | 3 43 | 1 67 |
| Harvey | 23·5 | 72 36 | 45 85 | 3 07 | 1 95 | 1 12 |
| St. Isidore | 20·3 | 68 16 | 45 65 | 3 36 | 2 24 | 1 12 |
| Baker Brook | 29·8 | 64 21 | 41 70 | 2 15 | 1 39 | 0 76 |
| Salisbury | 19·0 | 69 08 | 40 79 | 3 63 | 2 14 | 1 49 |
| Buctouche | 19·8 | 66 21 | 39 20 | 3 34 | 1 98 | 1 36 |
| Beresford | 21·3 | 56 21 | 34 20 | 2 63 | 1 60 | 1 03 |
| St. Charles | 12·7 | 50 96 | 29 30 | 4 01 | 2 30 | 1 71 |
| Grand Falls | 17·25 | 51 16 | 26 20 | 2 96 | 1 51 | 1 45 |
| Averages | 21·9 | 70 33 | 44 56 | 3 31 | 2 08 | 1 23 |

Total charges—100 per cent.

Labour charges—62·8 per cent.

All other charges—37·2 per cent.

It will be noted that high yields such as obtained at Pomeroy and Baker Brook greatly reduced cost per ton.

## MANURE VERSUS MANURE SUPPLEMENTED WITH CHEMICALS FOR TURNIPS

This demonstration or one similar to it has been carried on for some years on the New Brunswick Illustration Stations. Acre plots were divided into five equal sections and manured and fertilized as indicated in the table. The table includes results obtained at 12 stations. These represent a wide range of conditions and fertility and may be regarded as fairly indicative of the value of chemicals as a supplement to manure in turnip production.

RESULTS FROM MANURE ALONE AND MANURE WITH CHEMICAL FERTILIZERS

| How fertilized per acre | Yield per acre | Increase or (—) decrease per acre | Extra acre cost of chemicals per acre | Cost of increase per ton |
|---|---|---|---|---|
| | tons | tons | $ | $ |
| Plot 1— 20 tons manure | 18·4 | ..... | ..... | ..... |
| Plot 2— 20 tons manure, 180 pounds nitrophoska | 23·08 | 4·68 | 8 28 | 1 76 |
| Plot 3— 20 tons manure, 175 pounds nitrate of soda, 335 pounds superphosphate, 50 pounds muriate of potash | 24·1 | 5·7 | 8 87 | 1 55 |
| Plot 4— 20 tons manure, 335 pounds superphosphate | 20·9 | 2·5 | 3 01 | 1 20 |
| Plot 5— 20 tons manure, 175 pounds nitrate of soda, 335 pounds superphosphate | 22·6 | 4·2 | 7 81 | 1 88 |

## HAY LAND DEMONSTRATIONS

The hay land demonstrations conducted during the year fall into three clases, viz.,

(1) Demonstrations with ground limestone.
(2) Demonstrations with nitrogenous fertilizers.
(3) Pasture improvement demonstrations.

### 1. *Ground Limestone on Hay Land—*

Interest in the use of ground limestone is not as active as it was a few years ago, the main reason being that hay crops have generally been better due to more favourable seasons, the use of northern grown clover and a more general use of chemicals. During the past year limed areas have responded better than for some years. The stations listed in the table below have much the same type of soil, viz., heavy clay or heavy gravelly clay and all are inclined to be wet. This is undoubtedly the type of soil that responds best to an application of ground limestone.

RESULTS OF TESTS OF GROUND LIMESTONE FOR HAY LAND

| Station | Treatment per acre | Crop | Yields per acre | Increase or (—) decrease per acre |
|---|---|---|---|---|
| | | | tons | tons |
| Salisbury | 3 tons ground limestone | Clover | 1·74 | 1·09 |
| " | 1 ton " | " | 1·30 | 0·65 |
| " | Check | " | 0·65 | |
| Riordon | 3 tons lime sludge | Timothy | 3·48 | 1·31 |
| " | Check | " | 2·17 | |
| " | 3 tons ground limestone | Clover | 3·7 | 1·91 |
| " | Check | " | 1·79 | |
| Harvey | 3 tons ground limestone | Clover | 2·6 | 1·74 |
| " | Check | " | 0·86 | |
| " | 3 tons ground limestone | Timothy | 2·06 | 1·30 |
| " | Check | " | 0·76 | |
| Petersville | 3 tons limestone | Timothy and Clover. | 2·5 | 1·6 |
| " | Check | | 0·9 | |
| | Average | Increase | | 1·37 |

### 2. *Nitrogenous Fertilizers on Hay Land*

Sulphate of ammonia and nitrate of soda were used in these demonstrations. The materials were applied just before or just as growth started in the spring.

| Station | Treatment per acre | Crop | Yield per acre | Yield on check plot | Increase or (—) decrease per acre | Cost per ton increase |
|---|---|---|---|---|---|---|
| | | | tons | tons | tons | $ |
| Buctouche | 115pounds sulphate of ammonia | Clover | 2·4 | 1·5 | 0·9 | 3 51 |
| St. Charles | " " " | Mixed hay | 2·39 | 1·74 | 0·65 | 4 86 |
| Sussex | " " " | Timothy | 3·26 | 2·8 | 0·46 | 6 87 |
| Riordon | " " " | Timothy | 3·04 | 2·17 | 0·87 | 3 63 |
| St. Stephen | " " " | Mixed hay | 3·26 | 2·3 | 0·96 | 3 29 |
| Siegas | " " " | Timothy | 2·98 | 2·17 | 0·81 | 3 90 |
| St. Isidore | " " " | Clover | 1·52 | 1·08 | 0·44 | 7 18 |
| St. Isidore | 150 pounds nitrate of soda | Timothy | 1·96 | 0·87 | 1·09 | 2 89 |
| Sussex | " " " | Timothy | 3·3 | 2·8 | 0·5 | 6 32 |
| Riordon | " " " | Timothy | 3·04 | 2·17 | 0·87 | 3 63 |
| Derby | " " " | Timothy | 3·7 | 2·4 | 1·3 | 2 43 |
| St. Stephen | " " " | Mixed hay | 2·6 | 1·08 | 1·52 | 2 07 |
| Petersville | " " " | Timothy | 2·6 | 1·0 | 1·6 | 1 97 |

The use of nitrogenous fertilizers for hay land has its best application in the lighter soil areas. In such districts hay is seldom plentiful and in dry seasons it is often necessary to import hay. Buctouche, St. Charles and St. Isidore, are typical light soil districts.

3. *Pasture Improvement Demonstrations—*

Due to the interest in this comparatively new practice, it was considered advisable to conduct some demonstrations in different parts of the province using the methods and chemicals advocated by the Fredericton Experimental Station. One acre of pasture or old meadow intended for pasture was treated in the spring with the following: 100 pounds nitrate of soda, 50 pounds sulphate of ammonia, 350 pounds superphosphate and 100 pounds muriate of potash. The following data on the effectiveness of the treatment were secured by taking the hay yield from fenced in areas of treated and untreated pasture.

| Station | Type of land | Yield per acre on fertilized area | Yield per acre on check plot | Increase or (—)decrease per acre |
|---|---|---|---|---|
| | | tons | tons | tons |
| St. Charles | Very light soil, old meadow | 3·20 | 1·74 | 1·4 |
| Derby | Heavy soil, mossy meadow | 2·17 | 0·76 | 1·41 |
| Tracey | Light soil, old meadow | 2·88 | 1·4 | 1·48 |

In all cases the fertilized area was pasturable a number of days ahead of the unfertilized, the herbage was a richer colour and of course thicker and more luxuriant. The cattle showed a decided preference for grazing on the treated area due probably to the prevalence of clover.

## BAKER BROOK, MADAWASKA COUNTY

OPERATOR, FELIX DAIGLE

Station management during the past season was very similar to that of former years. Workmanship is gradually improving. The six year rotation plan adopted at this station several years ago is proving satisfactory as it fits in with the live stock policy followed on the farm much better than the former four year rotation program.

The question of yields has been a bothersome problem on this farm. Grain yields are not high enough compared with those obtained on similar land at other stations. Thus the average yield of oats at the Grand Falls station over a period of years is 62 bushels per acre while at this station the average is only 37·3 bushels per acre. This disparity in yields must be due to a combination of factors including seed, date of seeding, fertilizing, but probably the most important reason is the difference in farming technique. Yields on the farm proper, especially on the back fields, are not good. The distance of these fields from the building makes the transportation of manure out of the question. It is planned to give attention to this condition next year both on the station and farm proper.

Turnips have consistently given a good average yield at this station but success with mangels is yet to be attained. The swine holdings are sufficiently large to warrant careful attention to any crop that will reduce cost of pork production.

The results of the season's work are as follows:—

OPERATIONS AT BAKER BROOK—SIX-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy (2 cuts) | 5 | 2·8 tons | 1·77 tons | 6 11 per ton | 8 97 per ton |
| B & D | Oats | 7 | 20·5 bush. | 37·3 bush. | 0 77 per bush. | 0 569 per bush. |
| C | Potatoes | 6 | 268·0 bush. | 275·0 bush. | 0 218 per bush. | 0 228 per bush. |
| C | Turnips | 6 | 29·8 tons | 24·3 tons | 2 15 per ton | 2 88 per ton |
| E | Clover (2 cuts) | 5 | 3·25 tons | 2·28 tons | 6 76 per ton | 7 85 per ton |
| F | Mixed hay | 2 | 2·1 tons | 2·19 tons | 9 05 per ton | 7 72 per ton |

## BERESFORD, GLOUCESTER COUNTY

OPERATOR, W. D. G. DOUCET

Satisfactory progress is being made at this station in establishing the rotation. The greater part of the station is low lying ground, and hence, does not permit of early planting. Yields as a rule are not as large as obtained at other stations located on higher ground. Good farm practice is nevertheless making itself felt. Yields are improving and the appearance of the rotation area is outstanding in a district where methods and workmanship are decidedly poor.

The farming area in the immediate vicinity of the station is broken by gullies, low land and bush and does not lend itself to well laid out farms. This has certainly had an effect on the type of farming in the community.

The results of the season's work are as follows:—

OPERATIONS AT BERESFORD—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover | 1 | 1·4 tons | 1·4 tons | 10 97 per ton | 10 97 per ton |
| B | Oats | 3 | 42·0 bush. | 32·6 bush. | 0 53 per bush. | 0 596 per bush. |
| C | Turnips | 3 | 21·3 tons | 18·5 tons | 2 63 per ton | 4 27 per ton |
| C | Oats, peas and vetches | 1 | 2·5 tons | 2·5 tons | 11 41 per ton | 11 41 per ton |
| D | Buckwheat | 1 | 23·5 bush. | 23·5 bush. | 0 64 per bush. | 0 64 per bush. |

## BLACK RIVER BRIDGE, NORTHUMBERLAND COUNTY

OPERATOR, WALTER CAMERON

Preliminary operations were instituted at this station in the spring of this year. It was necessary to conduct all operations on spring ploughed sod. Thus a great deal of labour was required in preparing a seed bed. Turnips, potatoes and oats were grown. Turnips gave a nice yield, potatoes and oats were only average.

The station is well situated to render good demonstrational service to the community. Judging from the attitude of the operator, work will be satisfactorily performed and the station will make for itself a place in the community. More extensive operations will be conducted next year. Three fields of three acres each have been prepared for cropping.

The results of the season's work are as follows:—

OPERATIONS AT BLACK RIVER BRIDGE—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips | 1 | 25·6 tons | 25·6 tons | 3 01 per ton | 3 01 per ton |
| A | Potatoes | 1 | 192·0 bush. | 192·0 bush. | 0 39 per bush. | 0 39 per bush. |
| B | Oats | 1 | 30·0 bush. | 30·0 bush. | 0 68 per bush. | 0 68 per bush. |

## BUCTOUCHE, KENT COUNTY

### OPERATOR, HENRY BERTHE

Seasonal conditions were much more favourable at this station than was the case in 1929 and as a result good average crops were harvested. In some cases, particularly potatoes, the yield was almost double that obtained in 1929.

The soil in the district is light and it can absorb a great deal of moisture without ill effect, conversely, it cannot stand drought periods of any duration. Deep seeding is very important on this type of soil especially with cereals, otherwise, dry weather and drying winds hurt germination and often result in starvation of the plant. Turnips sown at ordinary depth do not germinate well unless packed with the roller. It was necessary to seed turnips the second time. Fortunately, moisture conditions were favourable and a good fair yield resulted.

Sulphate of ammonia on hay land at the rate of 115 pounds per acre proved a popular demonstration in this community where a hay scarcity often exists. Other fertilizer demonstrations with potatoes and turnips were carefully conducted.

The second crop of timothy and clover grown on one acre of Field "D" was threshed for seed and gave a total yield of 138 pounds of timothy, clover and other seeds. Several clover hullers were imported into this and other adjacent localities, from a Quebec firm during the past season.

The results of the season's work are as follows:—

OPERATIONS AT BUCTOUCHE—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats | 3 | 56·0 bush. | 42·8 bush. | 0 46 per bush. | 0 49 per bush. |
| B | Wheat | 1 | 15·25 bush. | 15·25 bush. | 1 90 per bush. | 1 90 per bush. |
| C | Potatoes | 3 | 393·0 bush. | 278·4 bush. | 0 20 per bush. | 0 246 per bush. |
| C | Turnips | 3 | 19·8 tons | 20·6 tons | 3 34 per ton | 3 22 per ton |
| D | Clover | 1 | 1·95 tons | 1·95 tons | 6 85 per ton | 6 85 per ton |

## GRAND FALLS, VICTORIA COUNTY

### OPERATOR, GABE MORIN

The rainfall during the summer at this station and in the community surrounding it was greater than for many years and as a result the potato crop was very hard hit. Rot was abundant and the loss from this source was heavy. This station is noted for high potato yields—the average yield was halved this year.

Other crops gave about normal yields and the eight-year average of good yields at low cost of production was closely approached. If the farmers in this locality propose to continue this method of farming, viz., potatoes, grain and hay, even greater efficiency will be required than at present exists if they expect to survive present day prices. It is regrettable that in a district so well adapted to mixed farming and live stock that so little interest is taken in live stock. In a period of years farmers will find the productive capacity of their land decreased. Already the weed menace is a problem, the humus content of the soil is being depleted and it is increasingly difficult to secure clover stands. It is a matter of regret that an area possessing so many natural advantages and a part at least of its virgin fertility should be farmed in such a way that in one or two decades it will be necessary to depend on applied fertility.

The results of the season's work are as follows:—

Operations at Grand Falls—Four-Year Rotation

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Potatoes | 8 | 168·0 bush. | 275·0 bush. | 0 34 per bush. | 0 20 per bush. |
| A | Turnips | 7 | 17·25 tons | 20·46 tons | 2 96 per ton | 2 41 per ton |
| B | Clover | 5 | 3·5 tons | 2·3 tons | 4 13 per ton | 6 98 per ton |
| C | Oats | 8 | 72·0 bush. | 63·7 bush. | 0 32 per bush | 0 38 per bush. |
| D | Timothy | 6 | 1·9 tons | 1·72 tons | 6 09 per ton | 8 27 per ton |

## HARVEY STATION, YORK COUNTY

Operator, Melvin Grieves

The outstanding demonstrations at this station this year as well as last, were the limed areas and check plots on the clover and timothy fields. These demonstrations have been responsible for an increased use of ground limestone in the Harvey area. The fact that the Harvey district, is not a natural potato growing area and due to the fact that dairying is the main industry, therefore, lime may be used more freely than in almost any other section of the province without the danger of future harmful effect such as would be the case if potatoes were grown on limed ground. The fact that lime has proved itself so effective in promoting clover growth in the locality warrants its more general use by the dairymen.

The commonly recommended rate of applications has been 3 tons per acre. In the Harvey area, even 1 ton per acre is giving good results and this suggests a policy of a light application extended over a greater area. In this way the initial cost per acre would be lower and if necessary after a period of years another light application could be applied.

The soil in the Harvey area is very similar to that at Petersville and Pomeroy Ridge. Thorough cultivation is required for best results, this gravelly clay soil will not respond if cultivation is denied. In time the rotation policy will help to dry out this type of soil which is inclined to be water logged in the spring and fall.

The results of the season's work are as follows:—

OPERATIONS AT HARVEY—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover | 4 | 1·73 tons | 1·92 tons | 8 74 per ton | 7 45 per ton |
| B | Timothy | 2 | 1·41 tons | 1·53 tons | 8 91 per ton | 7 75 per ton |
| C | Potatoes | 4 | 214·0 bush. | 192·0 bush. | 0 35 per bush. | 0 342 per bush. |
| C | Turnips | 3 | 23·5 tons | 23·3 tons | 3 07 per ton | 2 84 per ton |
| D | Oats | 4 | 62·7 bush. | 45·2 bush. | 0 43 per bush. | 0 55 per bush. |

## JACQUET RIVER, RESTIGOUCHE COUNTY

OPERATOR, ALEXANDER TURVEY

Good hay yields were obtained at this station but turnip and oat yields were too low, in other words, cost of production per unit is too high. This condition prevails at one or two other stations and an effort will be made to remedy this condition next year.

Some progress is being made in cultural and planting methods due to the use of more modern machinery. Similarly some progress is being made in live stock.

The results of the season's work are as follows:—

OPERATIONS AT JACQUET RIVER—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover | 4 | 2·7 tons | 2·78 tons | 6 57 per ton | 7 42 per ton |
| B | Timothy | 2 | 2·28 tons | 1·64 tons | 8 05 per ton | 10 56 per ton |
| C | Turnips | 5 | 14·1 tons | 17·5 tons | 5 10 per ton | 4 59 per ton |
| C | Potatoes | 4 | 266·0 bush. | 243·0 bush. | 0 28 per bush. | 0 272 per bush. |
| D | Oats | 5 | 35·0 bush. | 27·3 bush. | 0 76 per bush. | 0 99 per bush. |

## LOWER DERBY, NORTHUMBERLAND COUNTY

OPERATOR, W. R. TAYLOR

This concludes the tenth year of Illustration Station work on this farm. Each year concrete advances have been made in rounding out a well organized farm scheme which the operator has always had definitely as a goal. Beginning with a small clearing of "cropped out" land, the operator has greatly extended his cleared area, he has built up soil fertility, multiplied and improved his live stock holdings, and throughout the process, the farm has been self supporting. At the present time with a reserve of plant food in the soil, with good producing dairy cattle, an outstanding flock of Shropshire sheep, a profit producing herd of swine, a fair sized farm flock of poultry and a line of cash crops, he is in a position to withstand the most severe agricultural depression.

Good average yields were obtained in all sections of the rotation. The roughage crops, such as turnips, corn, mangels, clover, timothy and alfalfa are featured here and fed on the farm. Grain production is somewhat low but the operator is alive to this weakness in his farm policy and is endeavouring to correct it. Alfalfa is giving good satisfaction and has been a reasonably sure crop. Two crops of alfalfa hay were harvested and a third crop was used to finish a group of purebred rams.

The results of the season's work are as follows:—

OPERATIONS AT DERBY—FIVE-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats | 6 | 60·0 bush. | 60·1 bush. | 0 44 per bush. | 0 435 per bush. |
| B | Alfalfa 1st year (2 cuts) | 1 | 3·3 tons | 3·3 tons | 7 89 per ton | 7 89 per ton |
| C | Mixed alfalfa and clover | 1 | 2·8 tons | 2·8 tons | 6 95 per ton | 6 95 per ton |
| D | Timothy (3rd year) | 10 | 2·03 tons | 2·13 tons | 6 73 per ton | 6 73 per ton |
| E | Turnips | 10 | 27·3 tons | 21·5 tons | 2 87 per ton | 4 02 per ton |
| E | Mangels | 5 | 18·0 tons | 20·5 tons | 4 45 per ton | 5 78 per ton |
| E | Potatoes | 10 | 310·0 bush. | 274·0 bush. | 0 265 per bush. | 0 33 per bush. |
| E | Corn | 8 | 15·3 tons | 14·5 tons | 3 42 per ton | 4 60 per ton |

## PETERSVILLE, QUEENS COUNTY

OPERATOR, JAMES BUTLER

The response of the soil to fair treatment at this station and on the farm proper was almost immediate. Concrete evidence of this responsiveness has been forthcoming each succeeding year that the station has been in operation and as a result the people have a more hopeful spirit as regards the crop producing possibilities of their land. Yields have steadily climbed and operations are being conducted on a more extensive scale than heretofore. One of the most hopeful signs to be noted in the community is the fact that the old sod bound, water sodden fields are being broken up. Some of these have been down two and three decades and moss formed the major part of the turf.

Bumper crops cannot be expected where such conditions exist. It was formerly the custom to break such land, take a few crops of buckwheat without manure and depend on a volunteer crop of grass. On one field of similar land ploughed last year in August, rolled and receiving a fair amount of surface working, an extremely good crop of oats was harvested this year and a fine stand of clover and timothy developed. This was secured at an expense of approximately $6 per acre for chemicals. Many other fields are responding similarly in different parts of the community and further progress can be expected. Ground limestone is producing good results in the community but there is always a tendency to look upon lime as a fertilizer rather than as a soil corrective.

Mangels are now firmly established in the community and this is in line with the development of the district as a swine breeding community.

The results of the season's work are as follows:—

OPERATIONS AT PETERSVILLE—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats (Victory) | 2 | 30·0 bush. | 32·5 bush. | 0 518 per bush. | 0 509 per bush. |
| B & C | Timothy and clover | 1 | 2·3 tons | 2·3 tons | 5 13 per ton | 5 13 per ton |
| D | Clover | 3 | 3·2 tons | 2·1 tons | 5 12 per ton | 8 28 per ton |
| E | Potatoes | 4 | 275·0 bush. | 218·0 bush. | 0 25 per bush. | 0 36 per bush. |

## POMEROY RIDGE, CHARLOTTE COUNTY

OPERATOR, BURTON LINTON

Preparatory work in connection with the establishment of the rotation is proceeding very satisfactorily at this station. Fortunately the soil is responding much better than was anticipated. Extremely large yields as measured by local standards were harvested in all sections of the station. Turnips gave an average yield of 31·5 tons per acre which is the record for the year on New Brunswick Illustration Stations and Victory oats gave a yield of 62 bushels per acre. This response of the soil to good treatment is gratifying and encouraging to the operator.

Considerable progress has been made in clearing away rocks and bushes along the front of the station. This work has resulted in an improvement in appearance and when completed will add to the value of the property.

The area of cultivated land on the farms in this county is small, and hence, more intensive methods are required here than is the case in other sections of the province. The area of cultivated land on most of the farms can be extended to a certain extent and pasture land conditions can be improved.

The results of the season's work are as follows:—

OPERATIONS AT POMEROY RIDGE—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats | 2 | 62·0 bush. | 53·5 bush. | 0 42 per bush. | 0 47 per bush. |
| B | Turnips | 2 | 31·3 tons | 25·1 tons | 2 63 per ton | 2 95 per ton |
| B | Potatoes | 2 | 253·0 bush. | 236·0 bush. | 0 26 per bush. | 0 275 per bush. |
| C | Hay (costs not kept) | 1 | 2·06 tons | ..... | ..... | |

## RIORDON, GLOUCESTER COUNTY

OPERATOR, THOS. W. RIORDON

A new high yield standard in all sections of the rotation was established at this station this year and it is doubtful if it can be surpassed in future years. With Victory oats yielding over 90 bushels per acre and with timothy hay, clover hay, oats peas and vetches, all giving similarly high yields the cost per unit is reduced to a point where cost of production is met and a profit assured to the grower.

This station continues to maintain a high standard of demonstrational service to the community and in this respect has been one of the most useful stations in the province. The farm proper is maintained on a high producing basis and conforms more with station practice than is the case at some of the other stations.

The sale of seed grain is a major activity at this station. Farmers have been quick to take advantage of the quality of the seed offered and in this respect the station has had a Maritime wide market.

The results of the season's work are as follows:—

OPERATIONS AT RIORDON—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips | 7 | 20·4 tons | 14·5 tons | 3 96 per ton | 5 47 per ton |
| A | Oats, peas, vetches | 4 | 4·4 tons | 4·08 tons | 9 57 per ton | 9 06 per ton |
| B | Timothy | 5 | 2·9 tons | 2·19 tons | 5 21 per ton | 7 84 per ton |
| C | Clover (2 cuts) | 6 | 4·7 tons | 2·56 tons | 3 74 per ton | 7 93 per ton |
| D | Oats (Victory) | 7 | 90·8 bush. | 55·8 bush. | 0 26 per bush. | 0 48 per bush. |

Green Mountain potatoes and Victory oats on the Illustration Station at Riordon, N.B. The oats yielded 90 bushels per acre in 1930.

Isolated seed potato plot on the Riordon, N.B., Illustration Station.

## SALISBURY, WESTMORLAND COUNTY

OPERATOR, TRUEMAN LEWIS

Seasonal conditions were ideal for the type of soil at this station and as a result exceedingly good crops were produced in all sections of the rotation. During the past two seasons rapid advances have been made and the station is now functioning to good advantage in the community. Late seeding has always been an obstacle to contend with here on the heavy clay soil but the dry spring assisted by opened water courses and regular cultivation has done a great deal toward relieving this situation. Thus, this year crops were in the ground in some cases thirty to forty days earlier than is usual in this district.

A number of useful fertilizer and lime demonstrations on the station and on outside fields have been of great educational value in this district. The value of lime for legumes is now acknowledged and similarly the place of chemicals, such as nitrate of soda and superphosphate in relation to the grain crop and succeeding hay crops is likewise acknowledged. More clover was in evidence on this station than on any other farm in the community. Some of the credit for this must of necessity be given to the northern grown clover seed used in seeding. Cultivation likewise played a part and phosphatic fertilizer from present indications has been of material assistance.

A progressive policy in regard to placing the farm proper on a rotation basis has been worked out and steady advances can be expected. To date the most marked achievement at this station is a better understanding of the value of rotations and the place of chemicals on worn out soils. An increase in yields has already been noted and similarly a great improvement in quality has taken place.

The high cost of production in the case of oats, peas and vetches grown on Field D is explained by the fact that it was treated as a hoe crop and fertilized accordingly.

In the fall of 1928 an old sodless field was ploughed on the main farm and seeded down in 1929 using oats as a nurse crop. The field was used to test the value of chemicals and the following table gives the results of the test on the 1930 hay crop:—

| Crop | How fertilized | Yield per acre |
|---|---|---|
| | | tons |
| Clover | 100 pounds nitrate of soda<br>300 pounds superphosphate. | 1·3 |
| Clover | 300 pounds superphosphate | 0·87 |
| Clover | Check plot | 0·21 |

The results of the season's work are as follows:—

OPERATIONS AT SALISBURY—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy | 1 | 1·8 tons | 1·8 tons | 5 92 per ton | 5 92 per ton |
| B | Clover | 2 | 1·96 tons | 1·89 tons | 7 82 per ton | 7 41 per ton |
| C | Oats | 3 | 86·4 bush. | 44·1 bush. | 0 288 per bush. | 0 749 per bush. |
| D | Oats, peas, vetches | 2 | 3·0 tons | 2·5 tons | 12 15 per ton | 11 72 per ton |
| E | Turnips | 3 | 19·0 tons | 15·3 tons | 3 63 per ton | 3 83 per ton |

## SIEGAS, MADAWASKA COUNTY

OPERATOR, PHILEAS RUEST

This station is situated in the northern section of the province in an area that received a great deal too much moisture at critical stages in the season when it would do most harm. As a result summer cultivation could not be managed as effectively as in previous years. Crop growth was very heavy but quality was below normal.

The station continues to do effective work in regard to popularizing the rotation idea and has had a good influence in the community in introducing and creating an interest in root crops and better seed. It also has been of considerable service from an educational standpoint in connection with chemical fertilizers.

Advances in general farm methods are being made each year. The operator has had particularly good success with poultry and the income from this source is a very considerable one in itself. Plans are in mind to improve the dairy cows. Sheep and swine have already received good attention.

The results of the season's work are as follows:—

OPERATIONS AT SIEGAS—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats | 3 | 34·5 bush. | 38·0 bush. | 0 76 per bush. | 0 63 per bush. |
| B | Turnips | 4 | 23·3 tons | 25·2 tons | 3 26 per ton | 2 66 per ton |
| B | Mangels | 3 | 16·63 tons | 15·27 tons | 4 96 per ton | 4 42 per ton |
| C | Timothy | 3 | 2·57 tons | 2·29 tons | 5 79 per ton | 6 47 per ton |
| D | Clover | 4 | 3·17 tons | 2·13 tons | 4 43 per ton | 7 67 per ton |

## ST. CHARLES, KENT COUNTY

OPERATOR, JOS. L. DAIGLE

The establishment of a rotation at this station is difficult due to the impoverished nature of the soil. It will entail the incorporation of some humus in the soil as well as temporary fertility to promote fair crop growth while the rotation is being established. A start toward a definite rotation was made on Field B this year. The field was seeded to timothy and clovers without a nurse crop. Seasonal conditions were not particularly favorable to the project, nevertheless, a very satisfactory stand of new seeded grass established itself from which it is hoped to secure the necessary humus to begin the process of building up a permanent fertility. Field "C" was hoe cropped this year and the succeeding year will be treated similarly to Field "B" in 1930. On Field "D" buckwheat was ploughed under. This field will be hoe cropped in 1931 using as much barnyard manure as can be spared along with chemical fertilizers. It will be seeded the following year with a nurse crop.

A very satisfactory crop of hay was secured on Field "A" but the hoe crops on Field "C" were light. Workmanship demonstrations and routine work were performed very creditably by the operator. The station's most important function during the next few years is to demonstrate the most practical method of restoring the soil, in the large surrounding area, to a producing condition.

The results of the season's work are as follows:—

OPERATIONS AT ST. CHARLES—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Mixed hay | 1 | 2·2 tons | 2·2 tons | 5 34 per ton | 5 34 per ton |
| B | Seeded without nurse crop | ..... | ..... | ..... | ..... | ..... |
| C | Turnips | 1 | 12·7 tons | 12·7 tons | 4 01 per ton | 4 01 per ton |
| C | Potatoes | 1 | 185·0 bush. | 185·0 bush. | 0 34 per bush. | 0 34 per bush.. |
| D | Buckwheat (ploughed under). | | | | | |

## ST. ISIDORE, GLOUCESTER COUNTY

OPERATOR, PETER ROBICHAUD

The four-year rotation is now established and the station is functioning very satisfactorily. Operations to date have been confined to soil management, better cultural practices, increased variety of crops, and attention to fertility and liming.

Field meeting on the Illustration Station at St. Isidore, N.B.

Seasonal conditions were very favourable and as a result crop yields were better than for many years. Hay, clover, grain, and roots all give good yields and the district will have a surplus of hay at least. The average farm crop of grain is now reaching respectable proportions. Turnips have only been grown for two years. Notwithstanding this fact, high average yields are being secured and the average is increasing.

The entire farm at this station will be on a rotation basis next year. The remaining weakness in the farm management scheme—viz., live stock—must now receive attention. Improvements in the buildings are gradually being made, and a new and larger barn is being planned for the future. Finances do not permit of wholesale improvements, but the operator is progress-minded and a steady rate of progress may be relied on.

The results of the season's work are as follows:—

OPERATIONS AT ST, ISIDORE—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats | 3 | 42·0 bush. | 32·3 bush. | 0 52 per bush. | 0 613 per bush. |
| B | Timothy | 2 | 1·27 tons | 1·52 tons | 9 77 per ton | 8 49 per ton |
| C | Clover | 2 | 1·24 tons | 0·98 tons | 12 44 per ton | 15 12 per ton |
| D | Turnips | 3 | 20·3 tons | 16·3 tons | 3 36 per ton | 4 88 per ton |
| D | Potatoes | 3 | 206·0 bush. | 232·0 bush. | 0 40 per bush. | 0 333 per bush. |
| D | Oats, peas and vetches | 2 | 2·5 tons | 2·0 tons | 11 18 per ton | 12 59 per ton |

## SUSSEX, KINGS COUNTY

OPERATOR, MATTHEW ROBINSON

The six-year rotation being demonstrated here in conjunction with a large dairy herd is proving very satisfactory. It provides two grain crops, three hay crops, and one hoed crop. The hoed crop is the most difficult problem in the rotation. The farm is infested with club root and turnips cannot be grown. This is a serious handicap to successful winter dairying, but the difficulty is gradually being overcome with mangels. This proved a costly crop this year due to low yields, but as the operator becomes more experienced yields will gradually increase, with a corresponding decrease in cost of production.

Improvements in farm management are being made from time to time. The operator plans to place his main farm on a rotation basis during the coming season. Chemical fertilizers will be used to a greater extent than before to build up grain yields. Until the root crop becomes more firmly established, it is planned to continue growing the O.P.V. mixture for winter feeding to partly compensate for the root shortage.

The results of the season's work are as follows:—

OPERATIONS AT SUSSEX—SIX-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats | 5 | 50·6 bush. | 42·7 bush. | 0 42 per bush. | 0 508 per bush. |
| B | Clover | 3 | 1·9 tons | 1·81 tons | 8 03 per ton | 8 82 per ton |
| C | Timothy | 4 | 2·9 tons | 2·57 tons | 4 34 per ton | 6 00 per ton |
| D | Mixed hay | 3 | 2·3 tons | 1·97 tons | 3 72 per ton | 6 51 per ton |
| E | Oats | 5 | 41·0 bush. | 40·7 bush. | 0 43 per bush. | 0 51 per bush. |
| F | Mangels | 1 | 14·5 tons | 14·5 tons | 5 35 per ton | 5 35 per ton |
| F | Potatoes | 5 | 285·0 bush. | 261·0 bush. | 0 34 per bush. | 0 327 per bush. |

## TRACEY, SUNBURY COUNTY

OPERATOR, JOHN PHILLIPS

Each year records advances in farm management and organization at this station. A progressive program embracing improved management and an effort to secure more revenue has been a well defined objective of the operator for a number of years. This objective is becoming nearer a reality with each succeeding year. At the present time both station and farm management is an outstanding example to the community and this, coupled with an energetic program of improvements, has a distinct moral effect in this or any other community in which it is in evidence.

Yields in all sections were higher than have yet been attained. This is one of the stations where mangels are gradually replacing turnips, and the replacement is justified by conditions pertaining at this station in their favour, such as a deep, warm, moderately light soil which allows early planting, and if fertility conditions are satisfactory, yields approach or equal swede turnips. When conditions such as this exist and considering the palatability of mangels, better keeping qualities and all round utility, it is a distinct advantage for a farmer to grow them.

Progress is being made with live stock. Both hogs and cattle are being improved and the operator plans to extend his swine-breeding operations.

The results of the season's work are as follows:—

OPERATIONS AT TRACEY—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover (2 cuts) | 7 | 3·43 tons | 3·04 tons | 4 65 per ton | 5 53 per ton |
| A | Alfalfa (2 cuts) | 1 | 3·48 tons | 3·48 tons | 8 56 per ton | 8 56 per ton |
| B | Mangels | 2 | 23·65 tons | 18·72 tons | 4 10 per ton | 4 31 per ton |
| B | Turnips | 7 | 23·4 tons | 18·08 tons | 3 54 per ton | 4 69 per ton |
| C | Wheat | 2 | 32·0 bush. | 27·0 bush. | 0 90 per bush. | 1 21 per bush. |
| C | Oats | 7 | 65·0 bush. | 52·5 bush. | 0 44 per bush. | 0 447 per bush. |
| D | Timothy | 6 | 2·99 tons | 2·67 tons | 4 65 per ton | 5 61 per ton |

## WHITNEYVILLE, NORTHUMBERLAND COUNTY

OPERATOR, MELVIN STEWART

Reasonable progress was made at this station during the year. Moisture conditions were rather unsatisfactory, several cloud bursts in midsummer flattened the oat crop on Field "B" so badly that it had to be mown for green feed. Each year during the three years that the station has been in operation, a good crop of mangels has been harvested, and this has been responsible for their introduction on many other farms in the community.

The two purebred Yorkshire sows and the purebred boar that were purchased in 1929, proved to be a profitable undertaking. A number of good sales were recorded during the spring and summer and the herd went into winter quarters strengthened by the addition of four more sows saved from spring litters. The old sows were pastured during the summer months and cost of maintenance was very low. During the winter months, mangels help to reduce feed costs. More cows are now required to keep pace with swine development.

This year the potato acreage was increased from 1 acre to 5 acres. This acreage is essential in order to warrant fairly modern machinery. In the purchase of potato machinery the operator joined with neighbors and purchased co-operatively.

The results of the season's work are as follows:—

OPERATIONS AT WHITNEYVILLE—FOUR-YEAR ROTATION

| Field | Crop | Number years grown | Yield per acre | | Cost | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover | 2 | 3·04 tons | 2·35 tons | 5 65 per ton | 7 69 per ton |
| B | Oats (lodged, cut for green feed) | | | | | |
| C | Potatoes | 2 | 161·0 bush. | 207·0 bush. | 0 448 per bush. | 0 34 per bush. |
| C | Turnips | 3 | 21·6 tons | 18·3 tons | 3 57 per ton | 3 42 per ton |
| D | Timothy | 1 | 3·4 tons | 3·4 tons | 4 53 per ton | 4 53 per ton |

# REPORT OF THE ILLUSTRATION STATIONS FOR NOVA SCOTIA

*F. B. Kinsman, B.S.A., Supervisor*

## THE SEASON

The winter of 1929-30 was comparatively mild. The fall of snow was not heavy and with frequent mild weather, the new seeded meadows were bare earlier than usual. It was thought that considerable damage would be done to the clover plants, yet with the exception of the station at Heatherton, all clovers came through in good shape.

Spring weather was very favourable for seeding or planting. Grains were sown on an average of eighteen days earlier than usual. The soil worked up nicely and all crops were sown or planted in a carefully prepared seed bed. At many of the stations the soil is of a heavy clay loam. This type of soil is more difficult to work. Great care has to be exercised in order to work up a proper bed in order to prevent lumping or baking of the soil.

The hay crop gave a good yield considering the fact that only 3·32 inches of rain fell during the growing season of May and June, where the averages for sixteen years during these two months have been 5·43 inches. Due to the fact of dry weather, haying operations were quickly done and all hay stored in splendid condition.

The rainfall during the latter part of July helped the grain situation materially and a splendid crop of bright straw and clean oats was housed. The increased yield of grain will help out the hay shortage.

Because of the fact that potatoes were planted earlier than usual this crop withstood the drought better than was anticipated, consequently a good crop of nice, clean, sound potatoes was harvested.

The turnip crop suffered most. This crop obtains the growth during the cooler months. The stand of turnips was probably the best for years during June and July, but during the month of September, which is a very important month for this crop, only 0·93 inches of rain fell. This is two inches less than the sixteen year average. The crop was very rooty and generally of poor quality except on heavy types of soil. The control of weed growth was a comparatively easy matter on all hoed crops.

Considerable work is being conducted on the stations with the use of commercial fertilizers. The results of this work have meant increased yields, having the tendency for more root and grain crops to be grown at a lower cost per bushel. It is also making more manure available for a larger area on the farms. The use of small applications of commercial fertilizer is also permitting farmers to break up more land.

The operators at all the stations have undertaken bringing the whole farm into a rotation. It is impossible to grow roots on a quarter of the farm in one year. A system is being used to permit a three-year or longer rotation, thereby growing more clover hay and grains on their farms, which will make them independent in a larger measure from buying so much concentrated feed.

RAINFALL, SEASON 1930

| — | Kentville | | Heatherton |
|---|---|---|---|
| | Average previous 16 years | 1930 | 1930 |
| | in. | in. | in. |
| May | 2·50 | 1·61 | 2 92 |
| June | 2·93 | 1·71 | 3·01 |
| July | 2·97 | 3·71 | 4·21 |
| August | 3·30 | 2·07 | 2·26 |
| September | 2·93 | 0·93 | 1·10 |
| October | 4·12 | 3·33 | 8·01 |
| | 18·75 | 13·36 | 21·41 |
| Average | 3·12 | 2·28 | 3·57 |

In figuring production costs in this report, the following charges have been used.

| | |
|---|---|
| Rental of machinery | $ 2 85 per acre |
| Rental of land (based on an average valuation of $40 per acre, at 6 per cent interest) | 2 40 per acre |
| Horse labour | 0 12 per hour |
| Man labour | 0 25 per hour |
| Manure (no charge for spreading on fields) | 2 00 per ton |
| Cost of twine and threshing—prevailing price in district. | |
| Timothy seed | 0 14 per pound |
| Clover (red) | 0 32 per pound |
| Clover (alsike) | 0 26 per pound |
| Mangel seed | 0 40 per pound |
| Turnip seed | 0 40 per pound |

The cost of manure has been distributed over the crops in the rotation in the following proportions:—

40 per cent is charged to the hoed crops
30 per cent is charged to the grain crops
20 per cent is charged to the clover crop
10 per cent is charged to the timothy hay crop

The cost of chemical fertilizers has been charged to the different crops as follows:—

| | |
|---|---|
| First year | 55 per cent |
| Second year | 30 per cent |
| Third year | 10 per cent |
| Fourth year | 5 per cent |

## LIVE STOCK

The live stock at the various stations remains very much the same as last season. Two pure-bred bulls were added. A pure-bred Guernsey at Barra Glen obtained from Nappan, Experimental Farm and a Holstein at Sydney River. The extreme dry season made it difficult to keep the milk flow up, but luckily most of the operators sow early green feed for their cows, when pastures dry up in the latter part of July.

This condition will shortly be largely overcome from results obtained from pasture fertilizer work. A number of the operators have fertilized from four to six acres to have this supply of new pasture ready for 1931 grazing. All the operators who already have not pure-bred herds are working to that objective as rapidly as practical.

FRUIT TREES

The prospects for growing fruit trees successfully do not apply to the Annapolis and Cornwallis Valley alone. One-half an acre of trees were planted at each Illustration Station with the idea of seeing the prospects for proper development of the trees as well as the different varieties planted. The varieties were planted so that when the trees began to bear, the operator could have an early fruit as well as varieties which would mature as the season advanced with their keeping qualities the same way.

The average growth of these trees has been twelve inches. The fertilizer used has been chiefly nitrate of soda applied as soon as trees were leafed out. The trees have been cultivated around each season up to the last of June. This season, at most of the stations saw the trees bearing a few apples. This gave much encouragement to the operators in their new line of work. The prospects for fruit growing look promising in most sections, where these stations are established.

SMALL FRUITS

Strawberries and raspberries are being planted on a fairly large scale on some of the stations. When starting from a small plot, this was thought by some to be almost an impossibility.

Not only are these fruits grown for family use, but for commercial purposes as well. In the eastern part of the province, such small fruit is just beginning to ripen when the main crop of the province has been shipped. This enables the small growers the premium prices for this product which is proving a good money maker on many farms.

COMPARISON OF COMMERCIAL FERTILIZERS AND MANURE FOR TURNIPS 1930

In many sections of the province, when a crop of turnips is grown, manure is the only fertilizer used. To demonstrate the effect of chemical fertilizer when used alone and with manure on the turnip crop tests were conducted in 1929 and again this season on five stations. The rate and method of fertilizing per acre was as follows:—

Plot 1—Manure 20 tons.
Plot 2—Manure 10 tons; nitrophoska 250 pounds.
Plot 3—Manure 10 tons; 5-10-5 fertilizer, 600 pounds.
Plot 4—5-10-5 fertilizer, 1,200 pounds.
Plot 5—Manure 20 tons; 400 pounds superphosphate.
Plot 6—Manure 20 tons; 400 pounds superphosphate, 150 pounds nitrate of soda.
Plot 7—Manure 20 tons; 400 pounds superphosphate, 115 pounds sulphate of ammonia.
Plot 8—Not fertilized.

The land was ploughed in the fall. Manure was applied on different plots and harrowed in after which the fertilizers were sown broadcast and harrowed in lightly. The "Hall's Westbury" variety was sown, seeding being done from June 1 to June 15. The turnips were thinned when the third leaf had appeared. After the thinning operation plots 6 and 7 received at the rate of 150 pounds nitrate of soda and 115 pounds sulphate of ammonia, respectively.

The season was unfavourable for turnips, as the soil was extremely dry throughout the summer and fall. The results, however, show that all fertilized plots gave a much larger yield than plot 1 receiving manure, alone. Plot 6 gave the greatest yield and plot 3 the next highest. When one realizes the cost of fertilizers, as in the case of plot 6, with superphosphate $17 per ton, nitrate of soda $50 per ton and turnips valued at 12 cents per bushel, if this is compared

with plot 1, receiving same amount of manure as plot 6, excepting commercial fertilizer, the nitrate of soda costing $3.75 and superphosphate $3.40, the increased yield of plot 6 over plot 1 being 267·5 bushels, gives a profit from all the applications of fertilizers of $32.10 per acre, because of the increased yield.

COMPARISON OF COMMERCIAL FERTILIZERS AND MANURE FOR TURNIPS 1930

(Yields per acre)

| Plots | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Station | Manure 20 tons per acre | Manure 10 tons, 5-10-5 fertilizer 600 pounds per acre | Manure 10 tons, 200 pounds nitro-phoska per acre | 5-10-5 fertilizer 1,200 pounds per acre | Manure 20 tons, super-phosphate 400 pounds per acre | Manure 20 tons, super-phos-phate 400 pounds, 150 pounds nitrate of soda per acre | Manure 20 tons, 400 pounds super-phos-phate, 115 pounds sulphate of ammonia per acre | Not fertilized |
| | bush. | bush. | bush. | bush. | bush. | bush. | bush. | bush. |
| Christmas Island | 388·8 | 435·6 | 653·4 | 605·0 | 420·0 | 510·2 | 503·1 | 263·0 |
| North East Margaree | 405·6 | 450·0 | 431·0 | 438·6 | 515·2 | 552·0 | 528·3 | 322·0 |
| Knoydart | 545·6 | 739·0 | 862·0 | 598·0 | 642·0 | 704·0 | 651·0 | 431·0 |
| Upper Stewiacke | 387·1 | 774·2 | 820·7 | 700·0 | 960·8 | 1,160·0 | 950·0 | 264·0 |
| Salt Springs | 505·0 | 540·0 | 674·5 | 705·5 | 574·5 | 653·5 | 592·5 | 278·0 |
| | 446·4 | 587·7 | 688·3 | 609·4 | 622·5 | 713·9 | 644·9 | 311·0 |

COMPARISON OF COMMERCIAL FERTILIZERS AND MANURE FOR POTATOES

A test was conducted this year to compare the value of manure and commercial fertilizers used separately and together for potatoes. The fertilizers used and rate of application per acre were as follows:—

Plot 1—Manure 20 tons.
Plot 2—Manure 10 tons, 5-10-5 fertilizer 600 pounds.
Plot 3—Manure 10 tons, nitrophoska 200 pounds.
Plot 4—5-10-5 fertilizer 1,200 pounds.
Plot 5—Manure 20 tons, superphosphate 400 pounds.
Plot 6—Manure 20 tons, superphosphate 400 pounds, 150 pounds nitrate of soda.
Plot 7—Manure 20 tons, superphosphate 400 pounds, 115 pounds sulphate of ammonia.
Plot 8—Not fertilized.

The same procedure with respect to ploughing, applying manure and fertilizers was carried out as in the case of turnips. The nitrogenous fertilizers were applied after the potatoes were up. The Irish Cobbler potato was planted.

All plots gave a good yield of potatoes, all of which were free from rot. It was found that these were of more uniform size with fewer small unmarketable potatoes on the plots receiving commercial fertilizers. It may be seen that at stations where the soil has a tendency to be heavy and probably contains more potash, the yields from plots 6 and 7 are higher than at stations where the soil is of a light loam.

It may be seen that all fertilized plots gave a larger yield than plot 1, which received manure alone. Plot 2, receiving 10 tons manure and 600 pounds of 5-10-5 fertilizer, gave the largest yield, with plot 3 the next greatest. The

greater part of the eastern part of the province does not permit planting potatoes until June. A small application of commercial fertilizer at planting plays an important role in the hastening of the growth of the foliage and tubers.

COMPARISON OF COMMERCIAL FERTILIZERS AND MANURE FOR POTATOES 1930

(Yields per acre)

| Plot | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Station | Manure 20 tons per acre | Manure 10 tons, 5–10–5 fertilizer 600 pounds per acre | Manure 10 tons, 200 pounds nitro-phoska per acre | 5–10–5 fertilizer 1,200 pounds per acre | Manure 20 tons, super-phosphate 400 pounds per acre | Manure 20 tons, super-phos-phate 400 pounds, 150 pounds nitrate of soda per acre | Manure 20 tons, 400 pounds super-phos-phate, 115 pounds sulphate of ammonia per acre | Not fertilized |
| | bush. | bush. | bush. | bush. | bush. | bush. | bush. | bush. |
| Sydney River..... | 256·6 | 273·3 | 187·0 | 271·1 | 249·3 | 304·5 | 274·0 | 182·2 |
| Christmas Island. | 121·0 | 166·2 | 105·5 | 161·3 | 121·0 | 142·1 | 149·2 | 98·5 |
| Barra Glen..... | 104·0 | 184·0 | 140·0 | 152·0 | 136·0 | 151·0 | 149·0 | 74·1 |
| Middle River..... | 280·0 | 304·0 | 320·0 | 264·0 | 298·1 | 302·0 | 296·1 | 159·3 |
| North East Margaree..... | 403·7 | 444·0 | 430·6 | 342·9 | 261·0 | 294·1 | 305·2 | 180·0 |
| Mabou..... | 103·3 | 396·0 | 350·0 | 337·3 | 374·0 | 341·0 | 349·2 | 173·0 |
| Knoydart..... | 154·5 | 228·0 | 154·5 | 228·3 | 221·0 | 218·3 | 221·6 | 154·8 |
| Upper Stewiacke.. | 202·5 | 255·0 | 225·0 | 180·0 | 277·5 | 210·0 | 195·0 | 120·0 |
| Salt Springs..... | 258·0 | 319·0 | 334·0 | 290·0 | 279·0 | 305·0 | 297·0 | 145·0 |
| Kennetcook..... | 210·8 | 247·5 | 229·0 | 183·3 | 173·0 | 198·0 | 192·5 | 110·0 |
| Springfield..... | 243·2 | 275·8 | 333·9 | 308·5 | 225·5 | 312·0 | 304·0 | 157·5 |
| Average..... | 203·4 | 281·1 | 255·4 | 247·1 | 237·7 | 252·5 | 248·5 | 141·3 |

FERTILIZER WORK ON PASTURE LAND

Due to the very dry season, it was impossible to obtain accurate weights from most of the pasture area plots. During early spring the plots started growing quickly, but when the moisture was used up the plots stood still too short to mow in the majority of cases. Notes were taken, however, on all plots which are recorded in table below. The growth was short, but contained an abundance of clover and natural grasses.

There are vast areas of pasture lands, perhaps the oldest in Canada, that have been grazed for years, but previous to being turned out to pasture had most of the fertility removed chiefly in grain crops, consequently what little fertility was left has gone. The only solution in the majority of cases to remedy this is to allow fields to go back to bushes or by applying commercial fertilizer.

The first pasture improvement work conducted on the Illustration Stations was commenced in the spring of 1924 by making a surface application of lime, slag and superphosphate. Representative land was selected and the following fertilizer treatment was given each plot:—

Plot 1—Limestone, 2 tons.
Plot 2—Limestone, 2 tons; slag, 1,000 pounds.
Plot 3—Limestone, 2 tons; superphosphate, 1,000 pounds.
Plot 4—Slag, 1,000 pounds.
Plot 5—Not fertilized.

The cattle were allowed to feed over treated areas the first season, after that the plots were kept fenced until the herbage was cut and weighed usually the middle of July, then the cattle were allowed to graze over areas.

This season's work demonstrates quite clearly that lime and slag or lime and superphosphate is one of the best ways to revive the pasture. A more detailed record may be found in the 1927 report, page 54, where after the test had been running for three years, plot 3 receiving lime and superphosphate gave four times more green herbage than the unfertilized plot.

FERTILIZER WORK ON PASTURE LAND 1930

| Station | Plot 1 | Plot 2 | Plot 3 | Plot 4 | Plot 5 |
|---|---|---|---|---|---|
| | Lime | Lime and slag | Lime and superphosphate | Slag | Not fertilized |
| | lb. | lb. | lb. | lb. | lb. |
| Yield per acre (green)— | | | | | |
| Kennetcook | 400 | 480 | 496 | 420 | 240 |
| Heatherton | 840 | 1,500 | 2,100 | 1,540 | 680 |
| Upper Stewiacke | 2,240 | 1,920 | 2,040 | 1,440 | 320 |
| Heatherton | 2,880 | 2,920 | 5,000 | 2,640 | 840 |
| Clover and grass growth— | | | | | |
| Christmas Island | Weak | Strong | Very strong | Strong | Very weak |
| Barra Glen | Fair | Strong | Strong | Very strong | Very weak |
| Middle River | Fair | Fair | Strong | Strong | Weak |
| North East Margaree | Fair | Strong | Very strong | Very strong | Weak |
| Mabou | Fair | Fair | Strong | Fair | Very weak |
| Knoydart | | Strong | Strong | Strong | Very weak |
| Salt Springs | | Fair | Strong | Strong | Weak |
| Tatamagouche | Weak | Strong | Very strong | Fair | Weak |
| Middle Musquodoboit | Weak | Strong | Very strong | Fair | Weak |
| Newport | Weak | Fair | Strong | Strong | Very weak |
| Springfield | Fair | Strong | Strong | Strong | Fair |

NITROGENOUS FERTILIZERS ON GRASS LAND

The demonstration showing the effect of nitrogenous fertilizers when applied to a two-year sod has been very interesting. The contrast in the colour and height of the grass, particularly in the early growing spring, was the subject of a great deal of comment.

Nitrate of soda at the rate of 150 pounds per acre, sulphate of ammonia at the rate of 115 pounds per acre were applied as soon as vegetation started in May. These two fertilizers have been applied each spring since 1924. In 1929 nitro chalk was added to the demonstration.

It will be observed from the results obtained that this past year's results have not been up to the average of the past seven years, where nitrogenous fertilizers have been applied. It will be also seen that the unfertilized plots during this time have given an average of 411·6 pounds more hay than the 1930 cut. It may be seen that over this period 1924-30 the nitrate of soda plot has given an average of 99·8 pounds more hay than sulphate of ammonia plots, also that sulphate of ammonia has given the more economical gain. The average increased yield from the applications of nitrate of soda was 1,125·1 and from sulphate of ammonia 1,025·3 pounds per acre. Although the fertilizer application did not give as much hay as former years, yet the increased yields over the untreated areas have been more outstanding. The increased yield from nitro chalk was 939·2 pounds, from sulphate of ammonia 1,271·1 pounds, and nitrate of soda 1,188·6 pounds.

| Station | Yield per acre, seven-year average, 1924–1930 | | | Yield per acre, two-year average, 1929–1930 | Yield per acre, 1930 | | | |
|---|---|---|---|---|---|---|---|---|
| | Nitrate of soda | Sulphate of ammonia | Unfertilized | Nitrochalk | Nitrochalk | Nitrate of soda | Sulphate of ammonia | Unfertilized |
| | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. |
| Sydney River | 4,308·8 | 4,278·0 | 3,079·1 | 4,274·5 | 4,720·0 | 4,480·0 | 5,120·0 | 3,440·0 |
| Christmas Island | 4,389·1 | 4,717·0 | 3,632·5 | 4,921·5 | 5,018·0 | 4,979·4 | 5,307·0 | 4,381·1 |
| Barra Glen | ..... | ..... | ..... | ..... | 2,362·0 | 2,603·0 | 2,650·0 | 1,860·0 |
| Middle River | 4,200·8 | 4,203·3 | 3,750·0 | 3,411·0 | 3,032·0 | 3,061·0 | 3,102·5 | 2,915·0 |
| North East Margaree | 7,080·8 | 7,663·8 | 6,849·1 | 6,858·0 | 5,501·0 | 5,003·0 | 4,802·0 | 4,231·0 |
| Heatherton | 4,958·3 | 4,893·0 | 3,390·0 | 4,160·0 | 3,120·1 | 3,600·0 | 4,160·0 | 3,040·1 |
| Knoydart | ..... | ..... | ..... | 3,580·0 | 5,445·2 | 6,352·1 | 5,989·5 | 3,811·5 |
| Salt Springs | ..... | ..... | ..... | ..... | 4,901·0 | 6,534·0 | 5,445·0 | 3,267·0 |
| Tatamagouche | 4,354·5 | 3,927·0 | 3,030·6 | 3,580·0 | 2,680·0 | 3,040·0 | 2,800·0 | 2,000·0 |
| Upper Stewiacke | ..... | ..... | ..... | ..... | 3,841·0 | 3,200·0 | 3,200·0 | 2,560·0 |
| Musquodoboit | 3,632·7 | 4,062·2 | 2,883·6 | ..... | 4,422·0 | 4,515·0 | 4,310·0 | 3,611·0 |
| Kennetcook | 4,421·6 | 3,579·1 | 2,234·0 | 5,038·5 | 5,721·0 | 5,802·0 | 5,961·0 | 4,160·1 |
| Newport | 5,343·8 | 4,467·1 | 3,714·0 | 5,572·0 | 5,544·0 | 5,412·0 | 6,270·7 | 4,686·0 |
| Springfield | ..... | ..... | ..... | ..... | 2,613·0 | 2,118·0 | 1,960·0 | 1,740·0 |
| Mabou | ..... | ..... | ..... | ..... | 3,267·0 | 5,227·2 | 6,098·4 | 2,395·8 |
| | 4,743·2 | 4,643·4 | 3,618·1 | 4,598·4 | 4,145·7 | 4,395·1 | 4,477·6 | 3,206·5 |

## PHOSPHORUS, PHOSPHORUS AND LIME, PHOSPHORUS, LIME AND POTASH IN PROMOTING GRAIN AND CLOVER CROPS

An interesting test was conducted this season outside the regular rotation areas, with superphosphate and slag, then building up the phosphorus with lime, potash and nitrate of soda. It has been well demonstrated the past few years on the Illustration Stations that the average Nova Scotia soil was deficient in phosphoric acid and in many cases lime and on the light types of soil potash. The applications were made as shown in the table below on soils fairly low in fertility on one-eighth-acre plots. The seed bed was well prepared when fertilizers were sown. The applications were made broadcast and harrowed in lightly, after which oats were sown and seeded with a regular grass mixture.

The fertilizer applied and yields obtained are as indicated in the following table:—

RESULTS WITH VARIOUS FERTILIZERS

| Plot | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Station | Super-phosphate 625 pounds, per acre | Slag 625 pounds, per acre | Super-phosphate 625 pounds, lime 2 tons, per acre | Super-phosphate 625 pounds, lime 2 tons, potash 200 pounds, per acre | Super-phosphate 625 pounds, lime 2 tons, potash 200 pounds, nitrate of soda 333 pounds, per acre | Not fertilized |
| | bush. | bush. | bush. | bush. | bush. | bush. |
| Sydney River | 50·3 | 51·9 | 59·5 | 61·0 | 67·6 | 41·2 |
| Christmas Island | 41·1 | 45·8 | 44·7 | 47·0 | *29·4 | 34·1 |
| Barra Glen | 19·1 | 22·6 | 25·5 | 33·7 | 40·0 | 16·2 |
| Middle River | 30·6 | 31·0 | 34·2 | 41·1 | 46·3 | 22·3 |
| North East Margaree | 72·6 | 71·1 | 78·2 | 83·4 | 87·1 | 52·4 |
| Mabou | 45·0 | 57·5 | 64·0 | 70·5 | 76·8 | 35·2 |
| Heatherton | 30·0 | 29·9 | 24·2 | 24·2 | 30·0 | 17·3 |
| Knoydart | 27·2 | 22·3 | 29·6 | 28·8 | 33·4 | 11·1 |
| Salt Springs | 50·5 | 42·1 | 49·3 | 58·1 | 63·3 | 35·6 |
| Tatamagouche | 49·3 | 51·0 | 53·7 | 57·7 | 60·3 | 43·5 |
| Kennetcook | 42·1 | 43·5 | 43·5 | 49·4 | 50·6 | 32·0 |
| Newport | 47·2 | 53·5 | 50·1 | 41·5 | 51·4 | 39·1 |
| Springfield | 48·0 | 38·4 | 51·2 | 60·7 | 54·4 | 36·9 |
| Upper Stewiacke | ..... | ..... | ..... | ..... | ..... | ..... |
| Middle Musquodoboit | ..... | ..... | ..... | ..... | ..... | ..... |
| | 41·3 | 43·0 | 46·7 | 50·5 | 53·1 | 32·0 |

* Plot 5 lodged badly at Christmas Island, consequently did not fill well. There were 520 pounds more sheaves per acre on this plot than plot 4, which gave the largest yield.

COMPARISON OF COMMERCIAL FERTILIZERS AND MANURE ON SUCCEEDING CROPS

Tests were undertaken in the spring of 1929 with manure alone and small applications of manure and substituting small applications of commercial fertilizers.

The soil was fall-ploughed to a depth of six inches. The manure was applied broadcast in the spring. The soil was well worked before planting, after which the commercial fertilizers were applied broadcast and harrowed in lightly.

The potatoes were of the Irish Cobbler variety. The manner in which the plots were fertilized is given in the table following. It will be seen by a survey of the table that plot 1 in 1929 gave the largest yield of potatoes, while plot 3 gave the next and plot 2 the next largest. It was observed that the plots receiving commercial fertilizers produced the most uniform and marketable potatoes. It is quite evident that in sections where planting is late it is of most importance to apply commercial fertilizer.

This year's grain crop was good throughout. If a wet season had occurred considerable lodging would have been anticipated on plots 6 and 7. Plot 7 has given the largest yield of grain, namely, 49 bushels per acre.

COMPARISON OF COMMERCIAL FERTILIZERS AND MANURE ON SUCCEEDING CROPS: FERTILIZER AND MANURE APPLIED TO POTATO CROP 1929
(Yields per acre)

| Plot | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Station | Manure 10 tons, nitrophoska 250 pounds | | Manure 10 tons, 4-8-4 fertilizer 750 pounds | | 4-8-4 fertilizer 1,500 pounds | | Manure 20 tons | | Manure 20 tons, superphosphate 400 pounds | | Manure 20 tons, superphosphate 400 pounds, nitrate of soda 150 pounds | | Manure 20 tons, superphosphate 400 pounds, sulphate of ammonia 115 pounds | |
| | Potatoes | Oats | Potatoes | Oats | Potatoes | Oats | Potatoes | Oats | Potatoes | Oats | Potatoes | Oats | Potatoes | Oats |
| | bush. 1929 | bush. 1930 | bush. 1929 | bush. 1930 | bush. 1929 | bush. 1930 | bush. 1929 | bush. 1930 | bush. 1929 | bush. 1930 | bush. 1929 | bush. 1930 | bush. 1929 | bush. 1930 |
| Sydney River | 393 | 50·5 | 410 | 51·9 | 396 | 59·9 | 335 | 61·3 | 293 | 63·2 | 305 | 71·0 | 300 | 71·6 |
| Barra Glen | 326 | 29·0 | 352 | 40·0 | 308 | 30·1 | 288 | 43·0 | 303 | 33·6 | 287 | lodged badly | 281 | lodged badly |
| Middle River | *275 | 2·92 | 270 | 3·00 | 269 | 2·97 | 275 | 2·91 | 277 | 3·10 | 274 | 3·12 | 279 | 3·10 |
| North East Margaree | 442 | 58·8 | 470 | 66·5 | 376 | 54·7 | 442 | 58·8 | 498 | 70·5 | 406 | lodged badly | 400 | 66·1 |
| Knoydart | 235 | 54·7 | 135 | 44·1 | 191 | 62·3 | 180 | 38·0 | 113 | 57·7 | 143 | 62·3 | 131 | 57·7 |
| Tatamagouche | 252 | 28·0 | 170 | 27·0 | 170 | 25·0 | 151 | 29·0 | 170 | 28·1 | 175 | 27·2 | 171 | 26·1 |
| Salt Springs | 335 | 42·1 | 350 | 44·8 | 363 | 40·1 | 350 | 33·4 | 335 | 36·0 | 340 | 35·2 | 338 | 33·0 |
| Kennetcook | 210 | 38·0 | 201 | 41·1 | 226 | 45·1 | 210 | 34·2 | 217 | 37·8 | 211 | 40·0 | 207 | 37·1 |
| Springfield | 301 | 48·5 | 290 | 37·8 | 392 | 51·2 | 300 | 43·0 | 294 | 46·1 | 297 | 48·2 | 291 | 47·0 |
| | 307·6 | 43·7 | 294·2 | 44·1 | 299 | 46·0 | 281 | 42·5 | 277·1 | 41·6 | 270·8 | 47·3 | 266·3 | 49·0 |

*Grain cut and made into hay.

## BARRA GLEN, VICTORIA COUNTY

OPERATOR, S. R. MCNEIL

Due largely to seeding operations being three weeks earlier than usual, all crops excepting turnips gave a large yield.

The dry season seemed suitable for the proper growth of hay and grain. There are large areas in this district which are cold and wet. By providing surface drains and applying a small amount of commercial fertilizer, increased yields can be realized.

Field A gave a fair yield of hay. The cost, however, is high due to fertilizer applications. This, however, is imperative in order to obtain sufficient clover growth to keep the plants from heaving in early spring. Field B gave a much larger yield of oats than D. Field D was just sown when heavy rains appeared and a slight baking of the soil occurred.

The turnip crop looked exceptionally well during the early growing season, but due to the absence of moisture the crop was small and rooty. Mr. McNeil is making a marked improvement at this station, as well as demonstrating to the district the possibilities of growing satisfactory crops.

The yields obtained and cost of growing the different crops were as follows:—

OPERATIONS AT BARRA GLEN—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1390 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy hay.....tons | 1 | 1·2 | ..... | 15 10 | ..... |
| B & D | Oats.....bush. | 2 | 50·0 | 43·0 | 0 55 | 0 59 |
| C | Potatoes.....bush. | 1 | 206·0 | ..... | 0 45 | ..... |
| C | Turnips.....tons | 3 | 12·5 | 27·8 | 4 80 | 3 47 |

## CHRISTMAS ISLAND, CAPE BRETON COUNTY

OPERATOR, J. A. MCNEIL

A dry season is suited for the best development of satisfactory crops on this heavy soil. In wet seasons it is nearly impossible to grow grain or root crops. All crops gave satisfactory yields. The grain crop threshed 41 bushels per acre. This grain is of splendid quality. The clover catch is the best yet seen at this station. This is no doubt due to the early seeding of the grain crop. The clover and timothy hay gave an exceptionally good yield; this crop was cut and housed in good shape.

The root crop, although not large yet, gave more than an average yield for this district.

It has been well demonstrated at this station that the soil in this and surrounding districts needs phosphorus in some form. Since small applications have been made at this station the yields have in some cases doubled.

OPERATIONS AT CHRISTMAS ISLAND—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Potatoes.....bush. | 9 | 121·0 | 132·0 | 0 61 | 0 69 |
| A | Turnips.....tons | 9 | 17·5 | 10·9 | 3 60 | 7 87 |
| B | Timothy hay.....tons | 7 | 2·19 | 1·43 | 6 72 | 10 38 |
| C | Clover hay.....tons | 8 | 2·06 | 2·04 | 7 08 | 8 32 |
| D | Oats.....bush. | 9 | 41·0 | 37·0 | 0 60 | 0 80 |

## HEATHERTON, ANTIGONISH COUNTY

OPERATOR, D. W. GRANT

Seeding was possible at this station May 20, this being sixteen days earlier than in 1929. Early in the season all crops looked promising. Although the season was dry, occasional showers helped considerably.

Considerable work is being conducted off the regular rotations with fertilizers. The results are outstanding. Phosphoric acid apparently is the determining factor in producing increased yields.

Mr. Grant undertook a pasture fertilizer test last spring, using 700 pounds of 4-8-7 fertilizer per acre on five acres. The results will be interesting to observe during the season of 1931. The operator and family were again successful in taking a number of prizes at the county exhibitions with live stock, vegetables, grains, canning and cooking.

OPERATIONS AT HEATHERTON—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover hay.....tons | 8 | 1·5 | 2·2 | 10 51 | 8 69 |
| B | Timothy hay.....tons | 8 | 1·9 | 1·87 | 7 71 | 8 14 |
| C | Turnips.....tons | 9 | 19·0 | 15·0 | 3 60 | 4 27 |
| D | Wheat.....bush. | 1 | 18·0 | ..... | 1 24 | ..... |

## KENNETCOOK, HANTS COUNTY

OPERATOR, WILLARD ETTINGER

This station continues to show good management. Although the type of soil is a clay loam, which does not permit of early seeding, yet vegetation is very rapid when a small application of commercial fertilizer is used. Yields were not as good as promised, yet with the exception of the turnip crop on field B they closely approached the average. The operator has all available tillable land laid off in rotation. There has been a marked improvement in the quantity of feed produced as well as the quality in the past few years. The operator is getting a nice start towards the establishment of a Guernsey herd.

The yields and cost of growing the different crops are as follows:—

OPERATIONS AT KENNETCOOK—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats.....bush. | 9 | 42·4 | 41·1 | 0 64 | 0 69 |
| B | Potatoes.....bush. | 3 | 211·0 | 179·0 | 0 53 | 0 54 |
| B | Turnips.....tons | 4 | 8·5 | 19·2 | 7 60 | 3 70 |
| C | Clover hay.....tons | 7 | 2·8 | 1·84 | 7 15 | 8 11 |
| D | Timothy hay.....tons | 7 | 2·1 | 2·1 | 7 02 | 7 14 |

## KNOYDART, ANTIGONISH COUNTY

OPERATOR, D. M. MCDONALD

Although this station has only been established, considerable progress has resulted. Turnip growing was at a very low ebb due to the small crop produced as well as the amount of labour used in growing the crop. This trouble was overcome largely from one season's work. It was found that the turnips

were allowed to grow too long before thinning and that manure alone was not sufficient to produce a maximum crop. By applying 400 pounds of superphosphate per acre in conjunction with the manure the yield was economically increased.

The crops this season were very satisfactory, due to the very dry growing period, yet the yield does not represent the stand of the crops before the drought set in.

The cost of growing the different crops this year was as follows:—

OPERATIONS AT KNOYDART—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | Cost per unit |
|---|---|---|---|---|
| | | | | $ |
| A | Potatoes.....bush. | 1 | 228·0 | 0 42 |
| A | Turnips.....tons | 1 | 13·6 | 3 60 |
| B | Oats.....bush. | 1 | 38·0 | 0 54 |
| C | Timothy hay.....tons | 1 | 1·9 | 6 89 |
| D | Timothy.....tons | 1 | 1·9 | 6 89 |

## MABOU, INVERNESS COUNTY

OPERATOR, E. C. HAWLEY

Seeding operations were posible at this station fully two weeks earlier than has been possible for years. Although the season was very dry in this district, yet the crop which suffered most was the hay crop. It has been well demonstrated on this station that marl is of great benefit to the hay crop. This material is available in small quantities, limestone is very plentiful, but it is difficult to get this material crushed. The clover plants have not developed normally due to the dry season, yet there is a good stand of small plants.

OPERATIONS AT MABOU—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips.....tons | 5 | 18·8 | 18·9 | 4 00 | 3 36 |
| B | Timothy hay.....tons | 3 | 1·90 | 1·95 | 7 63 | 7 30 |
| C | Clover hay.....tons | 4 | 1·82 | 2·11 | 7 90 | 6 88 |
| D | Oats.....bush. | 5 | 46·0 | 40·8 | 0 56 | 0 74 |

## MIDDLE MUSQUODOBOIT, HALIFAX COUNTY

OPERATOR, R. B. MCCURDY

Due to the peculiar type of soil in this valley, seeding is not early. The upland soils are of a heavy clay loam, while the intervals are a light loam. The rotation work here is being conducted on the upland soil. The growing of potatoes and turnips has not proven very satisfactory, this soil being too retentive to moisture. On the other hand, hay crops are generally good. A clover catch is always assured. The oat crop on the rotation area rarely exceeds 25 bushels per acre.

The operator is gradually getting back with a good herd of cows to where it was three years ago. Mr. McCurdy is erecting a modern poultry house this spring. The class of poultry reared on this station has a ready market as breeding cockerels, also eggs for hatching.

OPERATIONS AT MIDDLE MUSQUODOBOIT—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats, peas, vetches.....tons | 1 | 10·0 | ..... | 4 41 | ..... |
| B | Timothy hay.....tons | 3 | 2·05 | 1·95 | 7 66 | 7 58 |
| C | Clover hay.....tons | 4 | 1·80 | 2·20 | 8 98 | 7 13 |
| D | Oats.....bush. | 5 | 32·0 | 40·0 | 0 84 | 0 75 |

## MIDDLE RIVER, VICTORIA COUNTY

OPERATOR, FORBES MCDONALD

Seeding was much earlier than usual at this station, consequently fair crops were grown. The yield on field D, although giving only 39 bushels of oats per acre, is considered good in this district. Some seasons, due to July frosts, it is difficult to ripen grains. The hay crop, although good for the season, promised much better earlier in its growing stage. The hoed crop took more time in cultivation to conserve moisture than usual. The operator was chosen as Scotia's banner farmer for this season in his county. This is quite an honour to be bestowed on Mr. McDonald, as the best all-round farmer in his county.

OPERATIONS AT MIDDLE RIVER—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips.....tons | 2 | 18·6 | 17·0 | 3 60 | 4 20 |
| A | Potatoes.....bush. | 7 | 280·0 | 244·0 | 0 32 | 0 39 |
| B | Timothy hay.....tons | 8 | 1·42 | 2·05 | 11 37 | 7 64 |
| C | Clover hay.....tons | 8 | 2·25 | 2·30 | 8 10 | 7 89 |
| D | Oats.....bush. | 7 | 39·0 | 40·0 | 0 78 | 0 69 |

## NEWPORT, HANTS COUNTY

OPERATOR, CHARLES ZWICKER

Seeding operations were much earlier than usual at this station. The soil in this district is quite heavy and seeding does not generally begin until late in May. This season it was possible to sow grain May 8. Turnips were sown May 27.

Early in the growing season crop prospects were more promising than the previous year. Crops grew well, except turnips. This crop received the best of care, but in spite of this the dry weather and aphids ruined the crop to the extent that usual yields were not obtained. This was a banner year for grain at this station. Field B threshed 74 bushels per acre. The operator threshed over 1,000 bushels of Victory oats from his farm. The clover and timothy hay proved only an average crop. Operations at this station have progressed exceptionally well; a well-defined system of rotations has now been extended over the entire farm.

OPERATIONS AT NEWPORT—FOUR-YEAR AVERAGE

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Turnips | 8 | No yield could be obtained due to aphids and dry weather. | | | |
| B | Oats.....bush. | 7 | 74·0 | 54·0 | 0 44 | 0 53 |
| C | Clover hay.....tons | 7 | 2·64 | 2·64 | 6 90 | 6 60 |
| D | Timothy hay.....tons | 8 | 1·40 | 1·96 | 10 13 | 6 86 |

## NORTHEAST MARGAREE, INVERNESS COUNTY

OPERATOR, T. E. ROSS

Seeding operations were possible at this station May 10. All crops gave a good yield except oats. The season was too dry for a large yield from this crop. The type of soil through the Margaree Valley is of a gravelly loam nature. All crops respond to moisture, but continued dryness is a serious handicap. The good crops on other fields can be attributed to the adoption of proper cultural methods.

The operator has his large farm well laid out and follows a general rotation. The nature of all the farm does not permit a four-year rotation, so a three-year rotation is being followed, giving an abundance of clover and oats, which lessens the cost of buying mill feeds. Mr. Ross has always been successful in taking many prizes at exhibitions with his live stock, grain, and vegetables. This season he purchased a valuable Clyde horse, a descendant of Baron's Pride, to improve the breed of horses in this large section.

OPERATIONS AT NORTH EAST MARGAREE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats.....bush. | 9 | 35·0 | 50·0 | 0 93 | 0 60 |
| B | Timothy hay.....tons | 8 | 2·5 | 2·95 | 6 41 | 5 88 |
| C | Clover hay.....tons | 9 | 2·3 | 2·99 | 8 12 | 6 02 |
| D | Potatoes.....bush. | 9 | 367·0 | 400·0 | 0 53 | 0 31 |
| D | Turnips.....tons | 9 | 19·5 | 23·4 | 4 00 | 3 29 |

## SALT SPRINGS, PICTOU COUNTY

OPERATOR, FRED SETCHELL

Seeding was not possible at this station until May 31. Although the station has been conducted two seasons a wonderful change may be noted. The crops on the whole were good. Frequent showers during the late summer were responsible for the splendid grain and root crops.

The operator erected a new barn this season, in which he will house thirty pure-bred Jerseys. More extensive work will be carried on at this station with alfalfa growing. This type of soil apparently is well adapted for this crop.

OPERATIONS AT SALT SPRINGS—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | Cost per unit |
|---|---|---|---|---|
| | | | | $ |
| A | Potatoes.....bush. | 1 | 258·0 | 0 44 |
| A | Turnips.....tons | 1 | 25·2 | 3 20 |
| B | Oats.....bush. | 1 | 61·0 | 0 54 |
| C | Timothy hay.....tons | 1 | 1·13 | 6 92 |
| D | Timothy hay.....tons | 1 | 1·13 | 6 92 |

## SPRINGFIELD, ANNAPOLIS COUNTY

OPERATOR, M. M. GRIMM

Although the soil is rather heavy at this station it holds fertility well. This is characteristic of this section as well as those in Lunenburg county. Commercial fertilizer in small application has hastened the growth of all crops and has proven an economical investment. The operator is always very particular in working and preparing a good seedbed, after which the growing crop receives the proper attention which is essential to produce large crops at the minimum cost.

The yields obtained and cost of growing the different crops are as follows:—

OPERATIONS AT SPRINGFIELD—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A & C | Oats.....bush. | 2 | 51·0 | 54·0 | 0 57 | 0 66 |
| B | Potatoes.....bush. | 2 | 243·0 | 278·0 | 0 42 | 0 40 |
| D | Timothy hay.....tons | 2 | 1·9 | 2·04 | 7 62 | 7 06 |

## SYDNEY RIVER, CAPE BRETON COUNTY

OPERATOR, MELVIN P. MORESHEAD

The type of soil at this station permits early seeding. The crops grew rapidly the first part of the season, but were handicapped the latter part by insufficient moisture. The operator has for this last six years followed a general rotation over his entire farm. This has increased yields to such an extent, as well as lowered the cost of production, that the operator has enlarged his farm by the purchase of one adjoining. The nearness to the Sydney market, as well as the high class produce raised, has made sales possible from the field to the consumer or wholesaler.

Mr. Moreshead has remodelled a large piggery, where he keeps a stock of eighty pigs and disposes of them when weighing 125 to 150 pounds. Dairying has been, and probably is, the main revenue from the farm, where milk is sold at a profitable return. During the past three years the operator has raised eighteen acres of potatoes.

The operator was fortunate again this year in taking many prizes at the Sydney exhibition in live stock, vegetables, grain, and poultry. He was chosen as one of Nova Scotia's banner farmers, which is very creditable.

OPERATIONS AT SYDNEY RIVER—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats.....bush. | 9 | 50·0 | 43·0 | 0 60 | 0 62 |
| B | Timothy hay.....tons | 9 | 1·72 | 2·70 | 11 68 | 7 07 |
| C | Potatoes.....bush. | 6 | 386·0 | 263·0 | 0 39 | 0 35 |
| D | Clover hay.....tons | 9 | 1·78 | 2·54 | 12 40 | 7 16 |

## TATAMAGOUCHE, COLCHESTER COUNTY

OPERATOR, G. B. CLARK

Due to the early spring, seeding and planting were possible early in May, this being three weeks earlier than 1929. In spite of the earliness of the season crops in general did not make steady growth due to the continued lack of moisture throughout the growing season. Grain was the only crop that was up to the average. Fair crops were received from fields E and F. These are fields in a low state of fertility. A three year rotation is conducted on these areas, this type of soil represents large areas in this section and considerable practical information has been gained from the fertilizer demonstrations. It has been found that lime and superphosphate give the greatest return for the money spent. Mr. Clark has practically his whole farm operating under a systematic rotation.

OPERATIONS AT TATAMAGOUCHE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A & E | Timothy hay.....tons | 9 | 1·65 | 2·04 | 8 28 | 7 04 |
| B | Oats.....bush. | 8 | 49·0 | 42·0 | 0 51 | 0 54 |
| C & F | Clover hay.....tons | 8 | 1·45 | 2·36 | 11 03 | 8 01 |
| D | Potatoes.....bush. | 5 | 119·0 | ..... | 0 94 | ..... |
| D | Turnips.....tons | 8 | 9·4 | 19·4 | 6 40 | 3 95 |

## UPPER STEWIACKE, COLCHESTER COUNTY

OPERATOR, HENRY P. COX

This type of soil permits fairly early seeding and planting being of a gravelly loam with the water table near the surface. All crops were sown or planted ten days earlier than usual and with good cultural methods being followed the operator was able to procure satisfactory crops. Barley is a crop that does exceptionally well in this district and a splendid clover crop follows. The yield on field B was 51 bushels per acre. The clover crop was cut and housed in splendid condition giving a yield of 2·5 tons per acre.

Field D has not as yet been brought under the rotation and has been in hay longer than usual. This crop cost $10.40 per ton to produce. The hoed crop was very satisfactory giving 250 bushels potatoes per acre. Mangels is a crop that needs encouraging in this district. There are not many being grown. The soil is suitable for this crop. It is possible to get them sown early, which is important for the successful growing of this crop. Alfalfa has been grown on this station with good results.

OPERATIONS AT UPPER STEWIACKE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre 1930 | Cost per unit 1930 |
|---|---|---|---|---|
| | | | | $ |
| A | Clover hay.....tons | 1 | 2·5 | 7 32 |
| B | Barley.....bush. | 1 | 51·0 | 0 62 |
| C | Potatoes.....bush. | 1 | 250·0 | 0 44 |
| C | Mangels.....tons | 1 | 20·0 | 4 40 |
| D | Timothy hay.....tons | 1 | 1·03 | 10 40 |

## REPORT OF THE ILLUSTRATION STATIONS FOR PRINCE EDWARD ISLAND FOR THE YEAR 1930

*R. C. Parent, M.S.A., Supervisor*

### SUMMARY

(1) There are in Prince Edward Island twelve Dominion Government Illustration Stations.

(2) The past season was ideal for work on the land and very suitable for the growth of all crops with the exception of hay and clover.

(3) The average yields of potatoes, corn and oats for 1930 were well above those of 1929, while the yields of timothy and clover were lower.

(4) As in former years the extra yields obtained by the use of commercial fertilizer on potatoes, turnips, corn and timothy were more than sufficient to pay for the cost of the fertilizer used.

(5) The beneficial effect of ground limestone on clover was very pronounced at Iona, Wood Islands, Montague, Red Point and Rose Valley.

(6) The average yields and costs of production for 1930 are as follows:—

| — | Yield per acre | Cost per unit (housed), field run |
|---|---|---|
| | | $ |
| Potatoes | 334·1 bushels | 0 22 per bushel |
| Turnips | 24·10 tons | 2 17 per ton |
| Corn | 19·13 tons | 2 32 per ton |
| Timothy | 1·28 tons | 12 01 per ton |
| Clover | 1·12 tons | 15 96 per ton |
| Timothy seed | 274·2 pounds | 0 068 per pound |
| Oats | 43·6 bushels | 0 59 per bushel |

(7) In addition to the work on the stations proper, ninety-five plots were employed for various fertilizer demonstrations on outside fields.

(8) During the growing season of 1930, a field day was held on each of the twelve stations, the average attendance being 65 people.

#### SEASON

Weather conditions for 1930 were ideal for early seeding, rapid growth of crops, harvesting of grain and potatoes, as well as for hauling potatoes to market.

April was dry, and while there was an average rainfall for May, ploughing, harrowing, and general farm work progressed so as to allow the average seeding dates as follows: Oats, May 16, potatoes, June 5, turnips and corn June 6, these being about ten days earlier than last year. Extremely dry

weather in June caused a distinct shortage in hay and clover yields, this being more pronounced in the central and eastern sections of the province. Hay making was general July 19, and the crop was harvested rapidly under ideal conditions. Slightly higher temperature and more hours of sunshine during the summer months were conducive to the production of a heavy and mature crop of corn. Grain filled well, and an abundant crop was harvested under perfect weather conditions.

### CROP ROTATION FOLLOWED

The report of the Prince Edward Island Illustration Stations for 1929 gives in detail the crop rotations followed and method of fertilizing each crop. With the following exceptions similar methods were followed during the present year: In 1930, 1,000 pounds of a 3-10-4 fertilizer mixture was used both on the swedes and corn on all stations with the exception of Wood Islands and Iona, where this was replaced by a 3-10-6 mixture. At Wood Islands and Iona, 1,500 pounds of a 4-10-8 mixture was used on potatoes rather than 1,200 pounds of a 4-8-8 mixture on the other stations. Ground limestone at the rate of one ton per acre was applied to the grain and root crops at Iona and Wood Islands.

### COST OF PRODUCTION FACTORS

The operator of an Illustration Station keeps a strict account of all labour, both manual and horse, that he expends on each crop on his station. He also uses for each crop a definite amount of seed and a stipulated amount of barnyard manure and commercial fertilizer. Yields are taken at harvest time, and from the yields and the total expenses the cost of producing a certain crop is calculated.

Because the fertilizing value of barnyard manure and of commercial fertilizer has been found to extend over a period of years, the different crops in a rotation are each charged as follows: In a four-year rotation 40 per cent of the cost of manure is charged to the first crop, 30 per cent to the second crop, 20 per cent to the third, and 10 per cent to the fourth. In a five-year rotation 40 per cent is charged to the first crop, 25 per cent to the second crop, 20 per cent to the third crop, 10 per cent to the fourth, and 5 per cent to the fifth. For the commercial fertilizer 55 per cent of the cost is charged to the first crop, 30 per cent to the second, 10 per cent to the third, and 5 per cent to the fourth. This applies both to a four- and a five-year rotation. In the case of nitrate of soda and sulphate of ammonia when used alone, 80 per cent of the cost is charged to the crop in which it is applied and 20 per cent to the crop which immediately follows. This system of charging a fairly large portion of the cost of manure and fertilizer to the succeeding crops is responsible, to a certain extent, for the very low cost of producing hoed crops and the relatively high cost of producing grain and hay crops.

Below is given a list of the figures used in calculating the costs of producing the various farm crops:—

| | | |
|---|---|---|
| Rent of land and taxes—vary with the district. | | |
| Manual and horse labour—vary with the district. | | |
| Barnyard manure, on the land | per ton | $ 1 50 |
| Nitrate of soda | " | 53 00 |
| Sulphate of ammonia | " | 48 00 |
| Superphosphate | " | 16 25 |
| Muriate of potash | " | 42 50 |
| Ground limestone | " | 6 25 |
| Red clover | per pound | 0 20 |
| Alsike clover | " | 0 20 |
| Timothy | " | 0 13 |
| Corn | " | 0 06 |
| Swede seed | " | 0 65 |
| Wheat | per bushel | 2 50 |
| Oats | " | 1 00 |
| Barley | " | 1 50 |
| Potatoes for seed | " | 1 20 |

In the detailed account of each station, a table gives the yield per acre of each crop for 1930, and the average since the station has been in operation; also the cost per unit, field run and housed.

THE COST OF PRODUCING ONE BUSHEL OF SEED POTATOES ON THE P.E.I. ILLUSTRATION STATIONS FOR 1930

Potato growing being such an important industry in Prince Edward Island, the question of the cost of production of the finished product is of prime importance. The figures below, based on records kept on the Illustration Stations, are given to throw some light on this problem:—

| | | |
|---|---|---|
| | | bushels |
| Yield per acre (field run), average 8 stations | | 334 |
| Culls 30 per cent (estimated) | | 100 |
| Yield seed potatoes | | 234 |
| Cost of rent of land, machinery, labour, seed per acre (average 8 stations) | $ | 71 45 |
| Value of culls at 10 cents per bushel | | 10 00 |
| Difference to be charged against seed potatoes | | 61 45 |
| Cost of rent of land, machinery, labour per bushel | $ | 0 26 |
| Grading " | | 0 06 |
| Bags " | | 0 07 |
| Hauling to market " | | 0 04 |
| Total cost " | $ | 0 43 |

In considering these figures we must remember that they apply only with a yield of 234 bushels of seed potatoes per acre and only for costs of 1930, which are reasonably low, also when only 55 per cent of the fertilizer and 40 per cent of the manure are charged to the potato crop.

LIVE STOCK

Live stock on the Illustration Stations for 1930 showed a steady improvement. Three pure-bred bulls, two pure-bred boars, four pure-bred sows, and two pure-bred rams were purchased to better the present herds on the stations. Two operators have joined cow-testing associations, and all others who keep dairy cattle weigh the milk from their cows regularly. This work, along with more thought in feeding, has brought about a slight increase in total annual production per cow. The pure-bred herd of Holsteins owned by J. L. Clark, Rustico, and entered in the R.O.P., produced as follows:—

Molly C. Posch, 125689, as a seven-year-old in 305 days, 14,751 pounds milk and 500 pounds fat.

Margaret Posch Pontiac, 164033, as a two-year-old in 358 days, 15,460 pounds milk and 535 pounds fat.

Polly Maid Posch, 126674, as a six-year-old in 300 days, 12,940 pounds milk and 418·5 pounds fat.

Fairmaid, 91902, as a ten-year-old in 365 days produced 15,000 pounds milk and 555 pounds fat.

Polly Maid Posch and Fairmaid have recently been sold and their places are being filled by promising two-year-olds.

During the past year two new concrete sheep dipping tanks were constructed: one at St. Peters and one at Red Point. These were made by a group of farmers in each neighbourhood, and supervised by Mr. F. F. Baird, Sheep and Swine Promoter for the province. These tanks have been found very useful, and on November 10 the tank at Red Point was used for the first time, when 101 sheep from eight flocks were dipped at a cost of six cents per sheep.

The quality of poultry on all stations is high. New stock has been introduced into several flocks and several new houses built. A pen from the Illustration Station at Glenwood is entered in the egg-laying contest for the province.

Concrete sheep dipping tank under construction on the Illustration Station at St. Peters, P.E.I.

GARDENS AND HOME IMPROVEMENT

This year more than ever have the operators realized the value of good gardens, and have used vegetables from them to better advantage and more freely. The following factors contributed mainly to superior gardens: (1) The use of ample barnyard manure, (2) thorough cultivation, (3) suitable varieties, as follows:—

Corn: Golden Bantam.
Squash: Green Hubbard.
Pumpkin: Small Sugar.
Cucumber: White Spine.
Carrot: Chantenay.

Parsnip: Hollow Crown.
Cabbage: Copenhagen Market.
Tomato: Earliana.
Beans: Pencil Pod Black Wax.
Peas: Thomas Laxton and Stratagem.

Considerable improvement has been made in the extension and general appearance of flower borders. Much work has also been done in the painting and improving of farm buildings. This work is encouraged, as the illustration Station desires to be not only a balanced but a good appearing farm.

### SALES OF SEED AND OF LIVE STOCK FOR BREEDING PURPOSES

The Illustration Station operators continue to supply good seed and breeding stock to their neighbours and outside buyers.

In 1930 the following quantities of seed and stock for breeding purposes were sold by the operators, in addition to their ordinary sales for the general market.

| | |
|---|---|
| Oats for seed | 956 bushels |
| Wheat for seed | 58 " |
| Barley for seed | 52 " |
| Potatoes for seed, including foreign markets | 8,878 " |
| Timothy for seed, including Bent Grass | 932 pounds |
| Red clover for seed | 150 " |
| Cattle for breeding purposes | 6 |
| Sheep for breeding purposes | 3 |
| Cockerels for breeding purposes | 54 |
| Foxes for breeding purposes | 40 |
| Eggs for hatching | 241 dozen |

The above shows increases in sales of wheat, barley, timothy seed, potatoes and eggs for hatching over the sales of 1929.

## PALMER ROAD, NORTH PRINCE COUNTY

### OPERATOR, SYLVEN PETERS

Yields of all crops at Palmer Road were higher in 1930 than the average of the past four years. Seeding was exceptionally early, oats being sown May 14, and corn and turnips May 30. Unlike certain sections of the province, rain was plentiful and well distributed. Two outstanding features of crops at this station were the large percentage of alfalfa in the clover field and the maturity of the Longfellow corn which ripened sufficiently to be saved for seed.

OPERATIONS AT PALMER ROAD—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy.....tons | 3 | 1·75 | 1·37 | 6 61 | 10 34 |
| B | Clover.....tons | 3 | 1·57 | 1·39 | 7 82 | 8 44 |
| C | Alaska oats.....bush. | 4 | 34·9 | 34·1 | 0 56 | 0 65 |
| D | Corn.....tons | 4 | 18·29 | 17·51 | 1 93 | 2 01 |
| D | Swedes.....tons | 4 | 32·10 | 29·04 | 1 31 | 1 52 |
| D | Mangels.....tons | 1 | 22·33 | 22·33 | 1 88 | 1 88 |

During the past year the operator of this station has remodelled his barn and painted his house, thus adding materially to the general appearance of the farm. The effect of commercial fertilizer on the various root crops, the results of special fertilizer demonstrations at this station as well as at the other stations are dealt with collectively in another part of the report.

## GLENWOOD, WEST PRINCE COUNTY

OPERATOR, ALFRED GORRILL

All crops at Glenwood made satisfactory growth. The yield of potatoes was particularly outstanding, being the highest on all stations. Not only on the station but in the neighbourhood corn did exceedingly well, and about eighteen neighbours grew a satisfactory crop. So heavy was the growth that a large portion of the crop had to be shocked.

OPERATIONS AT GLENWOOD—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover....tons | 3 | 1·63 | 1·41 | 8 03 | 7 18 |
| B | Oats....bush. | 1 | 54·0 | 54·0 | 0 40 | 0 40 |
| C | Corn....tons | 3 | 23·54 | 17·94 | 1 59 | 2 47 |
| C | Swedes....tons | 3 | 28·65 | 24·77 | 1 70 | 1 99 |
| C | Potatoes....bush. | 3 | 493·6 | 350·7 | 0 14 | 0 19 |
| D | Timothy....tons | 3 | 1·25 | 1·37 | 8 73 | 8 10 |
| D | Timothy seed....lb. | 1 | 200·0 | 200·0 | 0 06⅘ | 0 06⅘ |

The Field Day was very largely attended and much enthusiasm was evident. In addition to the potash plots a pasture fertilizer demonstration was conducted, and while no yields were taken, the carrying capacity of the fertilized area was double that of the unfertilized.

Improvement in livestock and poultry is gradual. The operator has joined a local cow-testing association, has purchased a pure-bred Yorkshire boar, and has entered a pen of hens in the Egg Laying Contest for the province.

## WEST DEVON, WEST PRINCE COUNTY

OPERATOR, CEPHAS GRIGG

Oats at West Devon were seeded May 20, potatoes planted May 20, and swedes and corn May 31. Rainfall was sufficient for good growth and excellent yields noted in the table below were obtained. On the timothy field, nitrate of soda, sulphate of ammonia and nitro-chalk were compared and heavy yields secured from all three treatments. The operator at this station has found it an excellent plan to save the fertilized areas of timothy for seed.

OPERATIONS AT WEST DEVON—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy....tons | 6 | 2·20 | 2·14 | 7 20 | 7 84 |
| A | Timothy seed....lb. | 1 | 180·0 | 180·0 | 0 09¼ | 0 09¼ |
| B | Clover....tons | 7 | 1·88 | 1·80 | 8 44 | 11 55 |
| C | Alaska oats....bush. | 4 | 38·0 | 34·5 | 0 56 | 0 73 |
| D | Potatoes....bush. | 8 | 327·0 | 321·3 | 0 20 | 0 23 |
| D | Swedes....tons | 8 | 20·40 | 20·22 | 2 68 | 2 75 |
| D | Corn....tons | 7 | 18·51 | 14·53 | 2 35 | 3 28 |

The field day at West Devon on August 12 was well attended and considered most satisfactory. Demonstrational plots with concentrated fertilizers were an added attraction.

## RICHMOND, CENTRAL PRINCE COUNTY

OPERATOR, THOMAS NOONAN

The station at Richmond experienced a most successful year. Seeding was early and the yields of root crops and grain were above average. The three-acre field of registered Victory oats, one of the few fields of this variety in the province, attracted much attention throughout the growing season, as did the field of corn which produced 18·26 tons of fairly mature fodder.

OPERATIONS AT RICHMOND—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Clover.....tons | 6 | 1·60 | 1·79 | 11 62 | 11 10 |
| B | Victory oats.....bush. | 4 | 61·8 | 44·6 | 0 43 | 0 56 |
| C | Corn.....tons | 7 | 18·26 | 16·88 | 2 89 | 3 55 |
| C | Swedes.....tons | 7 | 22·28 | 20·35 | 2 67 | 3 76 |
| C | Oats (on sod).....bush. | 1 | 61·8 | 61·8 | 0 53 | 0 53 |
| D | Timothy.....tons | 4 | 1·29 | 1·90 | 11 43 | 10 21 |
| D | Timothy seed.....lb. | 1 | 428·0 | 428·0 | 0 04⅛ | 0 04⅛ |

The field day on August 14 was one of the largest and most interesting held to date. Those attending were attracted principally by the Victory oats, alfalfa in the timothy and clover fields, fodder corn and potash plots. A lecture on the Improvement of the Dairy Herd and a poultry culling demonstration added to the value of the program.

## NEW LONDON, NORTHWEST QUEENS COUNTY

OPERATOR, WILLIAM E. JOHNSTONE

During the three years that this station has been in operation, much work has been accomplished in the destruction of couch grass, ball mustard and sow thistle. Field A in oats was ploughed shallow on August 5, 1929, rolled, harrowed on three different dates during summer and fall, and reploughed on October 4. This left many of the couch roots exposed to the frost, and was responsible for much killing. In the spring the harrows piled up so much couch on this field as well as on Fields "B" and "C" that raking was resorted to in order to make a first class job. Seeding was exceptionally early, barley being sown May 13, oats May 17, potatoes planted May 30 and corn and turnips sown June 2.

OPERATIONS AT NEW LONDON—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Oats.....bush. | 3 | 37·6 | 32·3 | 0 47 | 0 56 |
| B | Potatoes.....bush. | 3 | 190·6 | 249·2 | 0 36 | 0 27 |
| B | Swedes.....tons | 3 | 26·96 | 23·39 | 1 79 | 2 15 |
| B | Corn.....tons | 3 | 14·69 | 16·16 | 2 99 | 3 05 |
| C | Barley.....bush. | 3 | 30·0 | 26·2 | 0 76 | 0 87 |
| D | Clover.....tons | 3 | 0·79 | 0·96 | 18 25 | 14 45 |
| E | Timothy.....tons | 3 | 1·07 | 1·23 | 10 97 | 10 72 |

The first field day to be held at this station since operations were started had fifty men in attendance. Much interest was shown in a fertilizer demonstration on swedes and corn, comparing Nitrophoska, a concentrated fertilizer having a high analysis, with various combinations of the regular chemicals.

Yields obtained from the application of the different fertilizer mixtures were as follows:—

NITROPHOSKA AS A FERTILIZER FOR SWEDES AND CORN

| Treatment | Yield per acre | |
|---|---|---|
| | Corn | Swedes |
| | tons | tons |
| 1,000 pounds of a 3-10-4 mixture | 14·69 | 28·34 |
| 1,000 pounds of a 3-10-0 mixture | 9·59 | 24·75 |
| 1,000 pounds of a 0-10-0 mixture | 8·36 | 24·36 |
| 330 pounds 15-30-15 (nitrophoska) | 12·85 | 30·46 |
| 1,000 pounds of a 5-10-5 mixture | 13·87 | 25·89 |

The above results would indicate that nitrophoska in small amounts might be expected to give reasonably good results when applied to either the corn or swede crop.

During the past year the operator at New London has met with excellent results in breeding and showing silver black foxes. Fifteen foxes shown at Charlottetown and Amherst won the following prizes: one grand championship, three reserve grand championships, one championship, one reserve championship, six firsts, five seconds, one fourth, one fifth and two sevenths.

## ROSE VALLEY, WEST QUEENS COUNTY

OPERATOR, MALCOLM MCKENZIE

Winter killing followed by dry weather in June affected the yield of timothy and clover very materially. Yields of oats and root crops, however, were average, and a marked difference was noticed between the fertilized and unfertilized areas. The difference between the limed and unlimed areas on the clover likewise was very noticeable.

OPERATIONS AT ROSE VALLEY—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1390 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy.....tons | 6 | 1·30 | 1·69 | 11 40 | 9 71 |
| B | Clover.....tons | 7 | 1·11 | 1·74 | 14 61 | 13 01 |
| C | Oats.....bush. | 4 | 54·30 | 47·5 | 0 43 | 0 51 |
| D | Potatoes.....bush. | 8 | 296·2 | 319·0 | 0 23 | 0 22 |
| D | Swedes.....tons | 8 | 27·19 | 19·47 | 2 04 | 2 86 |
| D | Corn.....tons | 8 | 23·26 | 18·97 | 1 85 | 2 64 |

The attendance at a field day during the growing season was large, and those present were deeply interested in the following: Fodder corn and methods of growing, demonstrations with concentrated fertilizers, a spray mixing demonstration, the growing of sweet peas, and Charlottetown Supreme No. 18, a pure-bred Ayrshire bull, recently purchased by the operator.

## RUSTICO, NORTH QUEENS COUNTY

OPERATOR, JOHN L. CLARK

Oats and barley at Rustico were seeded May 13, and corn and swedes sown May 30. Grain and root crops yielded heavily, but owing to spring frosts and excessive dry weather in June and July there was a distinct shortage in the hay and clover yields. This shortage was somewhat offset by a fair percentage of alfalfa, which increased the hay value.

OPERATIONS AT RUSTICO—FIVE-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| O | Oats.....bush. | 3 | 50·0 | 53·2 | 0 41 | 0 42 |
| A | Clover.....tons | 6 | 0·93 | 1·85 | 16 43 | 9 84 |
| B | Barley.....bush. | 2 | 56·0 | 43·00 | 0 37 | 0 57 |
| C | Swedes.....tons | 6 | 22·77 | 22·70 | 1 78 | 2 26 |
| D | Timothy.....tons | 5 | 1·33 | 1·81 | 8 80 | 8 53 |

Field day as usual was largely attended. During the past year steady progress has been made in the improvement of the dairy herd. Milk records are higher than in 1929, and the first attempt of the operator in the show ring met with gratifying results, two calves at Amherst winning first and third places in strong classes. Two cows, three heifers, and one bull calf were sold during 1930.

## ST. PETERS, NORTH KINGS COUNTY

OPERATOR, CLIFFORD MCEWEN

Progress during the past year at St. Peters was noted principally in the improvement of live stock and live stock facilities. A pure-bred Shorthorn bull and a pure-bred Oxford ram were purchased by the operator, and assisted by a group of farmers in the district a sheep dipping tank constructed.

OPERATIONS AT ST. PETERS—A FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy.....tons | 6 | 1·40 | 1·83 | 9 66 | 9·08 |
| A | Timothy seed.....lb. | 1 | 288·0 | 288·0 | 0 05⅔ | 0 05⅔ |
| B | Clover.....tons | 7 | 0·97 | 1·77 | 13 22 | 12 59 |
| C | Oats.....bush. | 5 | 66·8 | 58·2 | 0 34 | 0 48 |
| D | Potatoes.....bush. | 8 | 240·40 | 333·4 | 0 30 | 0 23 |
| D | Swedes.....tons | 7 | 23·31 | 24·31 | 1 88 | 2 34 |
| D | Corn.....tons | 8 | 17·92 | 15·40 | 2 12 | 3 40 |

Seeding dates were early, and while the yield of oats and corn were exceptionally good, potatoes and hay crops were only fair.

## RED POINT, EAST KINGS COUNTY

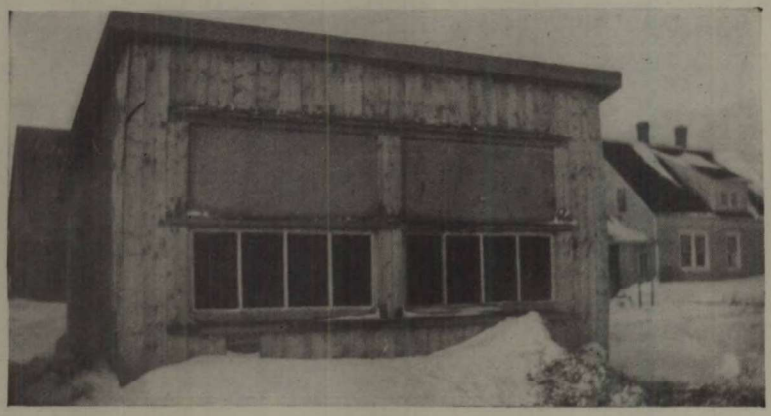
OPERATOR, NELSON R. STEWART

Marked progress was made at Red Point during the past year in many lines. A new brooder house was built and eighty Barred Rock chickens raised. These were kept on fresh land, and removed from infested birds in order to control the ravages of internal parasites. For the control of sheep parasites a concrete dipping tank was constructed by community effort, with the results previously mentioned.

OPERATIONS AT RED POINT—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy.....tons | 1 | 0·87 | 0·87 | 16 35 | 16 35 |
| B | Clover.....tons | 2 | 0·89 | 0·91 | 18 54 | 18 27 |
| C | Wheat.....bush. | 3 | 16·5 | 12·0 | 1 53 | 2 66 |
| D | Potatoes.....bush. | 4 | 424·50 | 395·1 | 0 16 | 0 17 |
| D | Swedes.....tons | 4 | 17·62 | 20·85 | 3 38 | 2 68 |
| D | Corn.....tons | 4 | 17·54 | 13·06 | 2 88 | 3 70 |

Ground limestone on the timothy field was responsible for an increased yield of 0·73 ton per acre. This was mostly clover. The root crops which received commercial fertilizer showed the same marked beneficial results as in previous years. The success of 1929 was fully maintained in the field day of the present year.



New brooder house on the Illustration Station at Red Point, P.E.I.

## MONTAGUE, WEST KINGS COUNTY

OPERATOR, FRED MCINTYRE

This station in 1930, as in former years, was noted for its general neat appearance and thorough cultivation. All root crops yielded heavily and were aided greatly by applications of commercial fertilizer.

OPERATIONS AT MONTAGUE—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy.....tons | 5 | 1·36 | 1·88 | 10 49 | 8 60 |
| B | Clover.....tons | 6 | 1·13 | 1·61 | 14 70 | 13 50 |
| C | Wheat.....bush. | 2 | 18·0 | 17·5 | 1 53 | 1 58 |
| D | Potatoes.....bush. | 8 | 399·80 | 360·6 | 0 18 | 0 21 |
| D | Swedes.....tons | 8 | 24·82 | 28·59 | 2 23 | 1 99 |
| D | Corn.....tons | 8 | 24·93 | 19·05 | 1 81 | 2 76 |

Clover hay on plots where manure was compared with chemical fertilizer on potatoes in 1928 gave yields as follows:—

| | | |
|---|---|---|
| 20 tons manure | 1,872 | pounds per acre |
| 10 tons manure, 750 pounds fertilizer | 1,540 | " " |
| 1,500 pounds fertilizer | 1,008 | " " |

Farmers from long distances attended the field day at Montague, which was the most largely attended during the season.

In connection with the station a very successful "introductory turnip growing competition" was held in the surrounding district during the past year.

## WOOD ISLANDS, SOUTH QUEENS COUNTY

OPERATOR, ALEXANDER MATHESON

The most outstanding demonstration at Wood Islands during the past year was that showing the effect of one ton ground limestone on the newly seeded clover. So valuable is limestone proving for a satisfactory stand of clover that the entire station with the exception of a check plot will be treated within the next few years. It is also interesting to note that on plots where burnt lime and ground limestone were compared no appreciable difference could be noticed.

OPERATIONS AT WOOD ISLANDS—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost per unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy.....tons | 3 | 0·45 | 0·53 | 28 69 | 22 73 |
| B | Clover.....tons | 2 | 0·44 | 0·57 | 33 57 | 29 25 |
| C | Oats.....bush. | 4 | 15·0 | 22·2 | 1 36 | 1 07 |
| D | Potatoes.....bush. | 4 | 309·10 | 283·3 | 0 26 | 0 29 |
| D | Swedes.....tons | 4 | 19·47 | 18·27 | 2 95 | 3 27 |
| D | Corn.....tons | 4 | 14·32 | 11·02 | 2 78 | 4 21 |

Work outside the station included the following two fertilizer demonstrations on the potato crop:—

(1) A comparison of manure and fertilizer.

(2) A comparison of concentrated fertilizer and the regular chemicals.

The growing of tuber unit potatoes also commands a good deal of the attention of the operator, and so carefully are the fields rogued and tubers selected that Mr. Matheson now has one of the finest strains of Green Mountains in the province.

A half-acre field of rape supplied an abundance of succulent feed for a flock of sheep. The land for this crop was prepared, manured and fertilized as for turnips, and the seed sown in drills. This method was considered very satisfactory.

This station featured a fine vegetable garden throughout the season. The field day held August 25 was quite satisfactory to those in charge of the work. Seventy-five people were present on this occasion.

## IONA, SOUTH QUEENS COUNTY

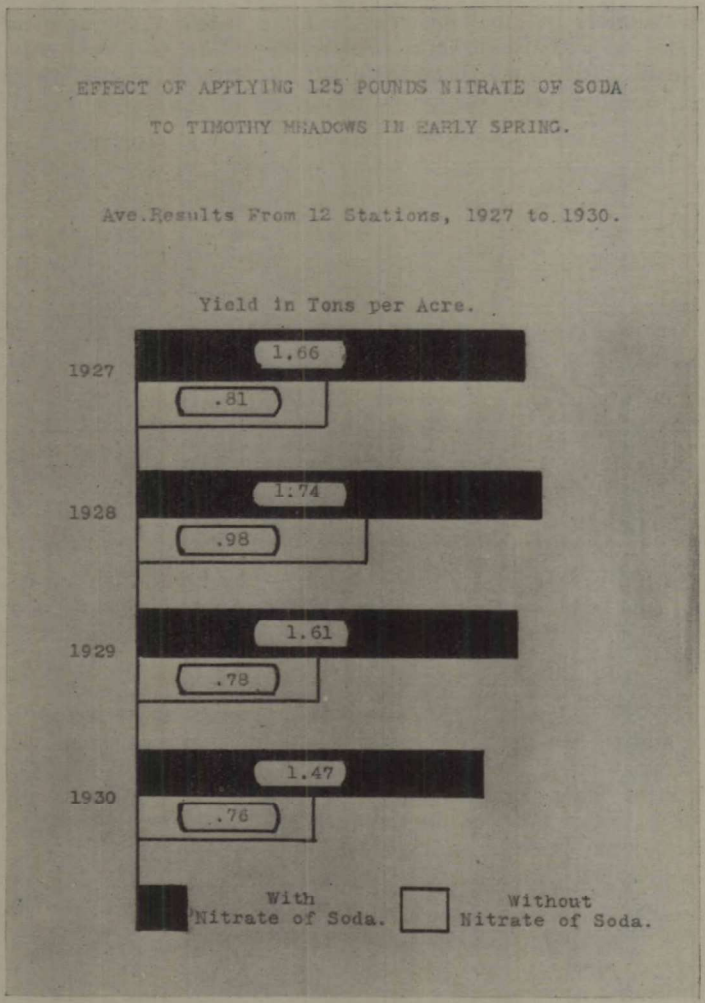
OPERATOR, JAMES E. DALY

This station was visited by the Prince Edward Island Illustration Station operators during their annual conference in July. Much comment was made on the vast improvement which has taken place during the past five years. A special feature was a one-and-one-half-acre field of alfalfa which produced two

fine crops in 1930. On the station the effect of ground limestone on clover was very pronounced, and a great difference seen between the fertilized and unfertilized plots of potatoes and swedes.

OPERATIONS AT IONA—FOUR-YEAR ROTATION

| Field | Crop | Number of years grown | Yield per acre | | Cost of unit | |
|---|---|---|---|---|---|---|
| | | | 1930 | Average | 1930 | Average |
| | | | | | $ | $ |
| A | Timothy.....tons | 5 | 1·04 | 0·94 | 13 80 | 14 58 |
| B | Clover.....tons | 6 | 0·50 | 0·57 | 26 34 | 27 66 |
| C | Oats.....bush. | 2 | 23·1 | 23·0 | 0 94 | 1 07 |
| D] | Potatoes.....bush. | 8 | 325·80 | 282·3 | 0 22 | 0 25 |
| D | Swedes.....tons | 8 | 23·61 | 22·48 | 1 68 | 2 03 |




A satisfactory crop of oats and peas was harvested for winter feeding. This with fodder corn is an asset, as hay in this district is usually scarce.

Fertilizer demonstrations outside the station included the following:—

(1) Varying amounts of potash for the potato crop.
(2) Manure versus fertilizer for potatoes.
(3) Nitrophoska for pasture.
(4) Fertilizers for alfalfa.

Noticeable improvement was made during the past year in buildings and surroundings, including the erection of a new potato storage house.

### NITRATE FERTILIZERS FOR THE HAY CROP

The practice of sowing 125 pounds of nitrate of soda on a timothy meadow early in the spring is one which during the past four years has shown most excellent results. Not only is a heavier and leafier growth obtained, but many weeds seem to be crowded out. The operators who save their own timothy seed find that the fertilized area is much more profitable for this purpose than the unfertilized area. Above is given in diagram the results of four years' work.

### CORN GROWING ON THE ILLUSTRATION STATIONS

The average yield of fodder corn on the stations this year was four tons over that obtained in 1929; furthermore the acreage in corn throughout the province showed an increase of at least 25 per cent. While there may be many factors contributing to this desirable condition, the example set by the stations is perhaps foremost, as it was in the immediate vicinities of the stations that most of the extra corn acreage appeared. For example: approximately eighteen farmers in the vicinity of Glenwood grew corn this year for the first time because they were impressed with the heavy crop on the station in 1929.

Corn is easy to grow and a clean crop to handle. The land is prepared as for turnips, and in 1930 on the stations in addition to manure, 1,000 pounds of a 3-10-4 fertilizer mixture composed of the following: 100 pounds nitrate of soda, 80 pounds sulphate of ammonia, 600 pounds superphosphate and 80 pounds potash were used. This gave the average increase of 4·55 tons per acre as shown in the table below:—

EFFECT OF COMMERCIAL FERTILIZER ON THE GROWTH OF CORN

| Station | Yield per acre | | |
|---|---|---|---|
| | With manure and fertilizer | With manure alone | Increase due to fertilizer |
| | tons | tons | tons |
| Palmer Road | 18·29 | 14·81 | 3·48 |
| Glenwood | 23·54 | 19·03 | 4·51 |
| West Devon | 18·51 | 17·86 | 0·65 |
| Richmond | 18·26 | 14·99 | 3·27 |
| New London | 14·69 | 10·20 | 4·49 |
| Rose Valley | 23·26 | 18·77 | 4·49 |
| St. Peters | 17·92 | 13·86 | 4·06 |
| Red Point | 17·54 | 15·50 | 2·04 |
| Montague | 24·93 | 13·50 | 11·43 |
| Wood Islands | 14·32 | 7·26 | 7·06 |
| Total | 191·26 | 145·78 | 45·48 |
| Average | 19·13 | 14·58 | 4·55 |

So heavy was the growth of corn during the year that when frost came large quantities were left unfed and had to be shocked. This method of curing, if properly done, is satisfactory, as the cows will readily eat the dry stover in

late fall and early winter. Considerable difficulty is often experienced in getting the corn to stand up properly, a difficulty which is greatly relieved by using a horse constructed as follows: Two legs, about three feet in length, are nailed to one end of a 10-foot pole, and through this pole, three feet back from the legs, a hole is bored horizontally, and a stick the size of a broom handle is inserted. This forms four right angles, and it is in these right angles that the first sheaves are stood. Others are piled around, and when a shock of sufficient size is made, it is securely tied about the top with binder twine, a larger rope with a ring being generally used for tightening. The inserted stick is then withdrawn and the horse removed and placed for the next shock.

### SWEDE GROWING ON THE ILLUSTRATION STATIONS

It has been found a good practice on the Illustration Stations to use a medium amount of commercial fertilizer in addition to barnyard manure on the swede crop. One thousand pounds of a fertilizer mixture, the same as was used on corn, gave the results noted below:—

EFFECT OF COMMERCIAL FERTILIZER ON THE GROWTH OF SWEDES

| Station | Yield per acre | | Increase due to commercial fertilizer |
|---|---|---|---|
| | With manure and fertilizer | With manure alone | |
| | tons | tons | tons |
| Palmer Road | 32·10 | 22·33 | 9·77 |
| Glenwood | 28·65 | 20·76 | 7·89 |
| West Devon | 20·40 | 17·00 | 3·40 |
| Richmond | 22·28 | 14·15 | 8·13 |
| New London | 26·96 | 24·00 | 2·96 |
| Rose Valley | 27·19 | 15·94 | 11·25 |
| Rustico | 22·77 | 14·27 | 8·50 |
| St. Peters | 23·31 | 21·83 | 1·48 |
| Red Point | 17·62 | 11·28 | 6·34 |
| Montague | 24·82 | 21·12 | 3·70 |
| Wood Islands | 19·47 | 11·62 | 7·85 |
| Iona | 23·61 | 12·69 | 10·92 |
| Total | 289·18 | 206·99 | 82·19 |
| Average | 24·10 | 17·25 | 6·85 |

In order to encourage the growing of more swede turnips both as a feed for live stock and as a cash crop, two competitions—one at Montague and one at Fairview—were organized in 1930 with thirty-one competitors.

The average yield from both competitions was 22·28 tons per acre. It is interesting to note that in the Fairview competition the average yield this year was two tons more than in 1929, and that there was a decided improvement in the handling of the crop and care of headlands. Other deductions might be summarized as follows:—

(1) Seeding dates ranged from May 20 to June 25, with a few reseedings early in July. May seedings averaged 22·67 tons per acre and June seedings 22·16 tons.

(2) Competitors who used a complete fertilizer mixture in addition to liberal amounts of barnyard manure obtained the heaviest yields.

(3) The disease or condition known as Brown Heart was found in practically all fields, and could not be associated with any particular treatment or variety.

(4) Two varieties—Halls Westbury and Hazards Improved—were used, and Halls Westbury yielded the heavier in both competitions.

## THE INFLUENCE OF EARLY TOPPING ON THE COMPOSITION AND YIELD OF TURNIPS, 1929-30

A practice which is followed by a large number of farmers in the vicinity of Rustico is to commence topping their turnips about the first of October and feed the tops to their cows, while the roots are left in the ground until November 1. It is claimed that the extra yield of tops obtained is more than sufficient to offset any loss in yield of roots. The following experiment was outlined in order to obtain some accurate data on the subject: Two rows of turnips of the same variety and of equal growth were selected. From one the tops were cut on October 2, and weights taken. The roots were left in the ground until November 1. The second row was topped and dug November 1, and weights taken. Analyses were made of roots and tops from both treatments.

Below are given the results for 1930 and also of a similar experiment in 1929:—

THE INFLUENCE OF EARLY TOPPING ON THE COMPOSITION AND YIELD OF TURNIPS—RUSTICO 1929 AND 1930*

| Variety | Date of topping | Roots or leaves | Yield per acre | Dry matter | Sugar | Dry matter per acre | Sugar per acre |
|---|---|---|---|---|---|---|---|
| 1929 | | | lb. | % | % | lb. | lb. |
| Halls Westbury | Oct. 11 | Leaves... | 15,983 | 11·49 | ..... | 1,837 | |
| | | Roots.... | 56,393 | 9·38 | 0·61 | 5,289 | 344 |
| | Oct. 30 | Leaves... | 10,253 | 13·31 | ..... | 1,365 | |
| | | Roots.... | 66,043 | 10·71 | 0·71 | 7,073 | 469 |
| 1930 | | | | | | | |
| Bangholm | Oct. 2 | Leaves... | 8,166 | 13·46 | ..... | 1,099 | |
| | | Roots.... | 34,400 | 13·83 | 1·41 | 4,758 | 485 |
| | Nov. 1 | Leaves... | 3,274 | 20·08 | ..... | 657 | |
| | | Roots.... | 41,720 | 13·68 | 1·31 | 5,685 | 546 |

* Analyses by Dominion Chemist.

The Dominion Chemist in commenting on the above experiment states: "The data show conclusively that early topping is a non-economic practice. The yields per acre of dry matter and sugar from the untopped crop are markedly higher than those from the earlier topped crop."

## FERTILIZER REQUIREMENTS OF THE POTATO CROP

Demonstrations and experiments on the Prince Edward Island Illustration Stations over a number of years have shown conclusively that commercial fertilizer can be used with profit, in the majority of cases, on the potato crop, but that the best results cannot be expected unless one also uses good seed, thoroughly cultivates the soil and provides ample protection against insects and diseases.

An interesting experiment conducted last year at Iona showed very clearly that the potato crop needs a complete fertilizer containing nitrogen, phosphorus and potassium. In 1930, 1,200 pounds of a 4-8-8 mixture were used on all stations with the exception of Wood Islands and Iona. Yields from the fertilized areas and from the check plots are tabulated. Barnyard manure was used on all fields.

EFFECT OF COMMERCIAL FERTILIZER ON THE GROWTH OF POTATOES, 1930

| Station | Yield per acre | | | | |
|---|---|---|---|---|---|
| | Manure and fertilizer | | Manure alone | | Increase due to fertilizer |
| | Marketable* | Unmarketable | Marketable | Unmarketable | Marketable |
| | bush. | bush. | bush. | bush. | bush. |
| Glenwood | 448·7 | 44·9 | 333·3 | 64·1 | 115·4 |
| West Devon | 294·9 | 32·1 | 153·8 | 38·5 | 141·1 |
| Rose Valley | 265·6 | 30·6 | 170·3 | 13·6 | 95·3 |
| New London | 163·4 | 27·2 | 136·2 | 13·6 | 27·2 |
| St. Peters | 169·9 | 70·5 | 115·4 | 64·1 | 54·5 |
| Red Point | 365·5 | 59·0 | 163·4 | 68·1 | 202·1 |
| Montague | 335·8 | 64·0 | 224·0 | 64·0 | 111·8 |
| Wood Islands | 275·5 | 33·6 | 33·6 | 60·5 | 241·9 |
| Iona | 272·1 | 53·7 | 60·5 | 87·4 | 211·6 |
| Total | 2,591·4 | 415·6 | 1,390·5 | 473·9 | 1,200·9 |
| Average | 287·9 | 46·2 | 154·5 | 52·6 | 133·4 |

*"Marketable potatoes" refers to potatoes of marketable size. Bruised and diseased potatoes are not considered.

## CONCENTRATED FERTILIZERS FOR THE POTATO CROP

During the past few years considerable interest has been shown in the use of concentrated fertilizers for the potato crop and for this reason two grades of concentrated fertilizers were compared with mixtures composed of the regular chemicals on four stations in 1930. We have found that the mechanical condition of these fertilizers is good, but results to date indicate that they are not quite the equals of the regular chemicals for the production of potatoes. The table below gives the yield of two grades of concentrated fertilizers when compared with the regular chemicals.

CONCENTRATED FERTILIZERS VS. REGULAR CHEMICALS, 1930

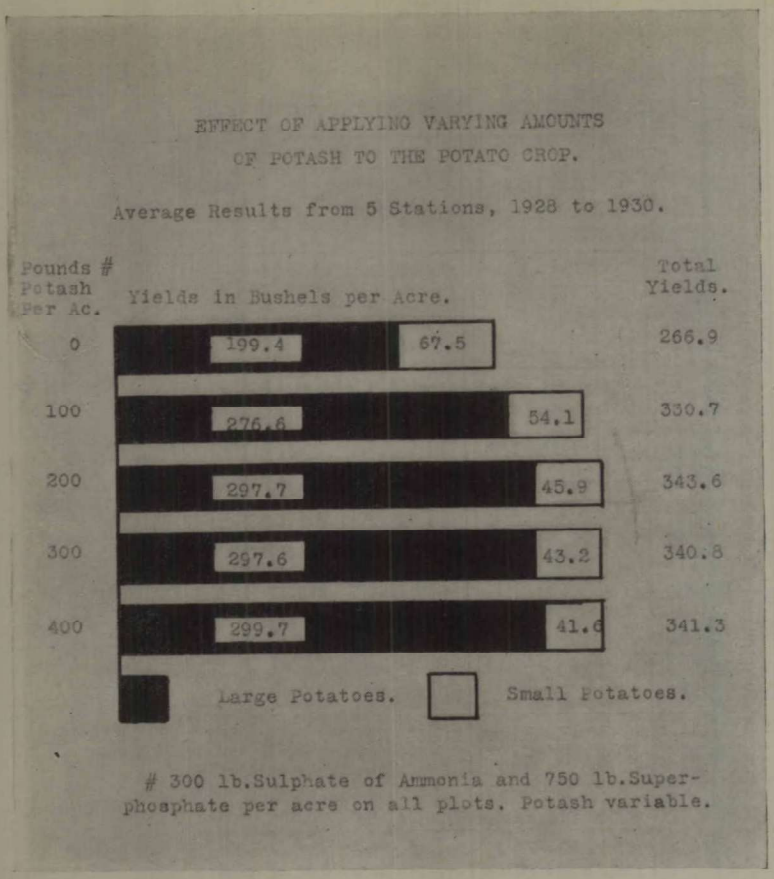
| Station | Yield per acre | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Nitrophoska 500 pounds | | 5–10–5 1,500 pounds | | 8–16–20 750 pounds | | 4–8–10 1,500 pounds | |
| | Marketable | Unmarketable | Marketable | Unmarketable | Marketable | Unmarketable | Marketable | Unmarketable |
| | bush. | bush. | bush. | bush. | bush. | bush. | bush. | bush. |
| Palmer Road | 336·6 | 66·0 | 429·0 | 39·6 | 422·4 | 39·6 | 429·0 | 39·6 |
| West Devon | 198·7 | 57·7 | 198·7 | 44·9 | 128·2 | 57·7 | 166·7 | 32·1 |
| Rose Valley | 275·8 | 44·3 | 286·0 | 57·9 | 221·3 | 95·3 | 354·1 | 34·1 |
| Wood Islands | 302·4 | 77·3 | 339·4 | 47·0 | 285·6 | 90·7 | 336·0 | 70·6 |
| Total | 1,113·5 | 245·3 | 1,253·1 | 189·4 | 1,057·5 | 283·3 | 1,285·8 | 176·4 |
| Average | 278·4 | 61·3 | 313·3 | 47·4 | 264·4 | 70·8 | 321·5 | 44·1 |

## POTASH REQUIREMENTS FOR THE POTATO CROP

The report for 1929 gives in detail the outline of an experiment to determine a satisfactory rate at which to apply muriate of potash to the potato crop. Yields for the past three years would indicate that potash is needed in order to obtain a heavy crop. Large quantities, however, seem to be unnecessary. Below are given in table and in diagram the results of three years' tests:—

EFFECT OF APPLYING VARYING AMOUNTS OF POTASH TO THE POTATO CROP

| Station | Yield per acre | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 300–sulphate of ammonia 750–superphosphate 0–potash | | 300–sulphate of ammonia 750–superphosphate 100–potash | | 300–sulphate of ammonia 750–superphosphate 200–potash | | 300–sulphate of ammonia 750–superphosphate 300–potash | | 300–sulphate of ammonia 750–superphosphate 400–potash | |
| | Marketable | Unmarketable | Marketable | Unmarketable | Marketable | Unmarketable | Marketable | Unmarketable | Marketable | Unmarketable |
| | bush. | bush. | bush. | bush. | bush. | bush. | bush. | bush. | bush. | bush. |
| Richmond | 211·5 | 70·5 | 217·9 | 76·9 | 230·8 | 57·7 | 262·8 | 57·7 | 230·8 | 70·5 |
| Glenwood | 326·9 | 51·3 | 326·9 | 44·9 | 346·1 | 44·9 | 346·1 | 57·7 | 371·8 | 44·9 |
| Red Point | 340·5 | 54·5 | 347·3 | 74·9 | 395·0 | 47·7 | 354·1 | 54·5 | 381·4 | 40·9 |
| St. Peters | 115·4 | 70·5 | 153·8 | 57·7 | 166·7 | 70·5 | 173·1 | 70·5 | 153·8 | 51·3 |
| Iona | 114·2 | 107·5 | 181·4 | 87·4 | 225·1 | 60·5 | 225·1 | 70·6 | 252·0 | 60·5 |
| Total | 1,108·5 | 354·3 | 1,227·3 | 341·8 | 1,363·7 | 281·3 | 1,361·2 | 311·0 | 1,389·8 | 268·1 |
| Average (1930) | 221·7 | 70·9 | 245·5 | 68·4 | 272·7 | 56·3 | 272·2 | 62·2 | 278·0 | 53·6 |
| Average (1928) | 195·5 | 72·7 | 307·7 | 53·0 | 331·5 | 48·7 | 329·7 | 39·5 | 321·5 | 44·4 |
| Average (1929) | 181·1 | 58·8 | 276·7 | 40·9 | 288·9 | 32·7 | 290·9 | 27·9 | 299·5 | 27·9 |
| Total 3 years | 598·3 | 202·4 | 829·9 | 162·3 | 893·1 | 137·7 | 892·8 | 129·6 | 899·0 | 125·9 |
| Average 3 years | 199·4 | 67·5 | 276·6 | 54·1 | 297·7 | 45·9 | 297·6 | 43·2 | 299·7 | 41·6 |




## MANURE VS. COMMERCIAL FERTILIZER FOR POTATOES

On four stations manure alone and fertilizer alone were compared with a combination of both, and the results obtained are given in the table below. Results seem to favour the fertilizer treatment, but in 1929 the plots which received both manure and fertilizer did the best. Both tests, however, indicate that manure alone cannot be expected to give the best results, apparently the plant food is either not sufficient or not as readily available. The effect of the three treatments on the crops which follow will be indicated by referring to results on clover at the Montague Station.

MANURE VS. FERTILIZER EXPERIMENT

| Station | 20 tons manure | | 10 tons manure 750 pounds 4-8-8 fertilizer | | 1,500 pounds fertilizer | |
|---|---|---|---|---|---|---|
| | Yield per acre | | | | | |
| | Marketable | Unmarketable | Marketable | Unmarketable | Marketable | Unmarketable |
| | bush. | bush. | bush. | bush. | bush. | bush. |
| Rose Valley | 177·1 | 20·4 | 292·8 | 51·1 | 367·7 | 34·1 |
| Montague | 180·0 | 72·0 | 236·0 | 64·0 | 288·0 | 64·0 |
| Wood Islands | 268·8 | 63·8 | 356·2 | 60·5 | 282·2 | 63·8 |
| Iona | 198·2 | 63·8 | 208·3 | 80·6 | 315·8 | 70·6 |
| Total | 824·1 | 220·0 | 1·093·3 | 256·2 | 1,253·7 | 232·5 |
| Average | 206·0 | 55·0 | 273·3 | 64·0 | 313·4 | 58·1 |

## FIELD DAYS, MEETINGS AND PRESS ARTICLES

During the months of July and August, 1930, a Field Day was held on each of the twelve Prince Edward Island Illustration Stations with an average attendance of sixty-five people. For interest shown in demonstrations and lectures there was a decided improvement over former years. In addition to an examination of the station fields and fertilizer test plots, of which there were a great number, other features added to the interest of field days. A lamb grading demonstration was put on at two stations, poultry culling at two, spray mixing at three, cattle judging at two, and floral demonstrations at three.

During the past year several radio addresses were given and a number of press articles written on subjects relating to Illustration Station work.

## FARM SURVEYS

In the fall of 1930 a map was made of the main farm owned by the Illustration Station operators, and a financial survey made of the past year's income. This survey shows the comparative revenue obtained from the sales of cash crops and from live stock, and opens up the field as to the line of development which should be undertaken in the future on these farms.