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 1927

Shade trees add greatly to the comfort and appearance of the farm home.

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

OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1928

TABLE OF CONTENTS

ILLUSTRATION STATIONS

IN

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

During the past year one hundred and sixty Illustration Stations have been in operation in the Dominion. In addition fifteen new sites have been selected and work will be started on them in the spring of 1928. Eleven of these stations are located in Prince Edward Island, fifteen in Nova Scotia, sixteen in New Brunswick, forty in Quebec, thirteen in Ontario, twelve in Manitoba, twenty-four in Saskatchewan, sixteen in Alberta and thirteen in British Columbia. The yields and cost of growing the different crops on each station, as well as their average over a period of years are summarized for publication and appear in two reports, one dealing with the work in the east, where mixed farming is generally carried on and the other with 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.	J. H. Tremblay, Kapuskasing, Ont.
J. A. Ste. Marie, Ste. Anne de la Pocatière, Que.	W. L. Chauvin, Ottawa, Ont.
C. F. Bailey, Fredericton, N.B.	J. R. Proulx, Ste. Anne de la Pocatiere, Que.
W. S. Blair, Kentville, N.S.	T. G. Hetherington. Fredericton, N.B.
J. A. Clark, Charlottetown, P.E.I.	F. B. Kinsman, Kentville, N.S.
	R. C. Parent, Charlottetown, P.E.I.

ILLUSTRATION STATIONS AS SEED CENTRES

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

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POULTRY IMPROVEMENT, SALE OF BREEDING STOCK AND HATCHING EGGS

Considerable effort is being made on the Illustration Stations and in the districts surrounding them to arouse greater interest in the breeding, feeding and housing of poultry. Each year finds improvements being made by the various operators. During the past year some built new and up-to-date houses, others have remodelled their old ones, making improvements with regard to the lighting, ventilation and general comfort of the houses. In addition, all are endeavouring to improve the egg laying qualities of their flocks by careful breeding and selection and by the introduction of males from high producing females. Such a procedure establishes in the respective districts a centre from which farmers can procure breeding stock and hatching eggs from descendents that have produced over 200 eggs per year. This year 602 cockerels, 682 pullets and 1,528 settings of hatching eggs were sold from these stations.

DAIRY MILK RECORDS, LIVE STOCK IMPROVEMENT

In the provinces of British Columbia, Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island, it may be said that the operators of the Illustration Stations derive their main source of livelihood from the sale of dairy products. It is, therefore, essential that the dairy herds be developed along production lines so that a profitable return may be obtained for the labour expended and food consumed. Economical crop production and the feeding of these crops to good stock, must go hand in hand to make these stations and adjoining farms most profitable; inefficiency along either of these branches of farming renders the other less effective. The use of milk scales and the weighing of each cow's milk has long been advocated, but there are yet too many farms where this practice has not been adopted. On the Illustration Stations the milk production of the herds varies greatly, many have well-bred and good producing herds, selected over a long period of years, others still have that period of development ahead. However, progress is being made and active interest is developing in live stock improvement this year, some for the first time introduced pure-bred blood into their herds; others have been in a position to pass on such stock to the farmers of their districts. The operators of these stations sold for breeding purposes, 266 head of cattle, 106 hogs and 165 sheep during the past year.

PUBLICITY AND MEETINGS

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

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

PRICES CHARGED WHEN MAKING UP PRODUCTION COSTS

In this report will be found the cost of growing each crop on each Station. In determining these costs the calculations have been based on the following charges:—

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

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

40 per cent is charged to the hoed crop.
30 per cent is charged to the 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 is 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 ONTARIO

There are now thirteen Illustration Stations in operation in Ontario. Five of these stations, namely, Bourget, Casselman, Curran, St. Eugène and Russell are located in the eastern part of the province and are supervised by the Supervisor for Western Quebec, the rest of the stations in this province are under the general direction of the Superintendent of the Experimental Station, Kapuskasing and supervised by the Supervisor for Northern Ontario and Northern Quebec, who has his headquarters at that point.

REPORT FOR NORTHERN ONTARIO AND NORTHERN QUEBEC

SUPERVISOR, J. H. TREMBLAY, B.S.A.

This is a new territory covered by a supervisor only since the spring of 1927. The headquarters of the supervisor is at the Dominion Experimental Station, Kapuskasing, Ont.

In northern Ontario, stations are established on Manitoulin Island and in the districts of Nipissing and Cochrane. It also comprises the northern part of Quebec including Chicoutimi, Lake St. John, Charlevoix, Abitibi and Temiskaming counties.

All these sections have been visited during the past season with the object of establishing new Illustration Stations. Eight have been operated during the summer and a report of each will be found following. Five others are at present authorized and operations will begin next spring at Belcourt, Barraute, Ste. Rose de Poularies, La Reine, in Abitibi county, and Murray Bay in Charlevoix county.

The soil of this northern country is mostly all clay with a good supply of plant food, but it requires thorough cultivation for the production of heavy crops.

SEASONAL CONDITIONS

The rainy and cold spring was responsible for the late seeding. Practically no grain was sown before the last days in May. However, the weather conditions during the following months were rather favourable to the growth of most crops. Unfortunately, the continuous rains in the fall caused a severe outbreak of rust in some parts, and also rendered the harvesting and curing very difficult.

A record has been kept of the precipitation which occurred at Genier, Ont., and the operator of the station at Val Gagne, also began recording this on August 1. The precipitation at those two places is shown in the following table, as well as that obtained at the Experimental Station, Kapuskasing:—

MONTHLY PRECIPITATION (Inches)

Month	Genier 1927	Val Gagne 1927	Kapuskasing 1927	Kapuskasing average 10 years
May	2·31	No record	2·61	1·61
June	2·40	No record	1·79	2·02
July	1·66	No record	3·05	3·17
August	5·80	4·02	3·50	2·72
September	3·62	5·29	4·92	3·40

It may be noted in the above table that the rainfall during the months of August and September in particular, was much greater than the average of the last ten years.

LIVE STOCK

Special attention is being given to the improving of the live stock on every Illustration Station. Milk scales have been furnished to several operators to enable them to weigh the milk produced by each cow and then eliminate the poor ones. A monthly report is sent to the Experimental Station at Kapuskasing where they are checked over and filed. This work was started too late in the season to allow for the inclusion of a summary of the annual production this year, but it is hoped that it will be possible to make one for 1928.

Pure-bred Ayrshire bulls are already heading several of the Station herds, and there is no doubt that through careful breeding and more selection, noticeable improvement may be expected in the near future.

CLOVER SEED GROWING

One of the aims is to increase the production of clover seed in this section as it is recognized that the best quality of northern grown seed can be produced. The soil with its high percentage of lime is particularly well adapted to the production of this crop.

In this connection several clover growing competitions will be organized in different sections where Illustration Stations are located in order to induce more farmers to benefit by the production of this advantageous cash crop.

COCHRANE, COCHRANE DISTRICT

Operator, E. D. Carrere

The rotation at this Station is well established and includes 12 acres. The work has been under way for three years and there has been a general increase in the yields from year to year. All the fields are in good condition and will grow almost any crop profitably. However, with better drainage and proper cultivation it should be possible to obtain even better results in the future. Special attention is given to the production of alsike clover seed in this district. Although the yield has been below the average this year on account of the unfavourable weather at harvesting time which caused a considerable loss, yet Mr. Carrere threshed over 1,000 pounds of good quality seed.

The Alaska oats on field B. were sown on May 9, and harvested on September 1, giving a medium yield of good quality grain.

The potatoes did particularly well, as is shown in the following table of the season's work:—

OPERATIONS AT COCHRANE—FOUR-YEAR ROTATION

Field	Crop	Number of years	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Alsike clover seed	1	100 lb.	100 lb.	0 24 per lb.	0 24 per lb.
B	Oats, Alaska	2	34 bush.	32·3 bush.	0 98 per bush.	0 96½ per bush.
C	Potatoes, Irish Cobbler	2	223 bush.	147·5 bush.	0 60 per bush.	0 97½ per bush.
C	Oats and peas	2	2 tons	1·56 tons	17 53 per ton	25 10 per ton
D	Timothy hay	2	2·5 tons	1·5 tons	7 75 per ton	14 48 per ton

Field D was ploughed immediately after the hay was taken off, in preparation for hoed crops in 1928

GENIER, COCHRANE DISTRICT

Operator, Olivier Genier

This Station has been in operation for three years. The rotation is now well established and the fields are in a fairly good condition to grow almost any crop.

The hay on field "A" gave a fairly good yield. Immediately after it was taken off, the land was ploughed in preparation for hoed crops in 1928.

The Irish Cobbler potatoes produced an extremely high yield, but some loss was occasioned by rot as a result of the excessive rain in August and September.

The mixture of 2 bushels of oats and 1 bushel of peas sown on one acre has also given a very good yield.

The Banner oats which were sown on May 17, developed into a nice crop although they did not fully mature. This field was seeded with grass and clovers in the following proportion per acre: timothy 10 pounds, red clover 8 pounds, and alsike clover 2 pounds.

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

OPERATIONS AT GENIER—FOUR-YEAR ROTATION

Field	Crop	Number of years	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy	3	1·15 tons	1·38 tons	15 74 per ton	11 25 per ton
B	Oats and peas	1	3·5 tons	3·5 tons	14 14 per ton	14 14 per ton
B	Potatoes, Irish Cobbler	2	400 bush.	237 bush.	0 37½ per bush.	0 91 per bush.
C	Banner oats	3	50 bush.	33·3 bush.	0 75½ per bush.	1 03 per bush.
D	Clover hay	2	1·3 tons	1·56 tons	16 80 per ton	13 66 per ton

A clover seed growing competition was organized in the Genier section in the spring of 1926.

Twenty-two farmers were each supplied with 10 pounds of red clover seed which was to be sown on one acre of suitable land, using oats or barley as a nurse crop. The catch was in most cases very good and the growth was quite promising in the early spring of 1927. Unfortunately, however, all these fields suffered from a severe infestation of the clover midge just as the seed was forming, which made it advisable to cut and use the crop for hay.

This competition is being conducted again this year, as an equal number of farmers were supplied with seed with which to repeat the experiment, and it is hoped that better success will be obtained.

GORE BAY, MANITOULIN ISLAND

Operator, Ed. Strain

This is the first year of operations at this Station. The crops grown in 1927 were preparatory to a six-year rotation as follows:—

First year—Grain and seeded.
Second year—Clover hay.
Third year—Hoed crops.
Fourth year—Grain and seeded.
Fifth year—Clover hay.
Sixth year—Timothy hay followed by after-harvest cultivation.

Owing to the cold rainy weather in the spring and the lack of drainage, seeding was very late, as the first grain was sown on June 9. The continuous rains which occurred in the latter part of the summer and the early fall caused the grains to rust badly which resulted in a very low yield.

The yield of turnips was also low on account of the land not being thoroughly prepared, and the poor seasonal conditions.

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

OPERATIONS AT GORE BAY—SIX-YEAR ROTATION

Field	Crop	Number of years	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Turnips, Swede	1	12 tons	12 tons	3 62 per ton	3 62 per ton
B	Oats, Banner	1	20 bush.	20 bush.	0 77 per bush.	0 77 per bush.
C	Oats, Banner	1	20 bush.	20 bush.	0 77 per bush.	0 77 per bush.
D	Oats, Banner	1	18 bush.	18 bush.	0 86 per bush.	0 86 per bush.
E	Oats, Alaska	1	25 bush.	25 bush.	0 54 per bush.	0 54 per bush.
F	Barley, O.A.C. 21	1	30 bush.	30 bush.	0 43 per bush.	0 43 per bush.

MINDEMOYA, MANITOULIN ISLAND

Operator, W. A. Hare

The location of this Station is ideal, as it is adjoining the village of Mindemoya and is also on one of the main highways running across the Island where many people pass, who may benefit by the practical farming lessons as demonstrated on this Station.

This is the first year that Illustration Station work has been under way at this place and yet it has been carried out in a most satisfactory manner for which the operator deserves a great deal of credit. Although the yields are not very high, due to uncontrollable factors, much has been done to keep the fields per-

fectly clean all through the summer and had it not been for a very bad attack of rust, the barley and banner oats which were sown on May 21 would certainly have given a much larger yield.

The turnips did exceedingly well considering that it is the first year of the rotation. The Hall's Westbury variety produced 3·5 tons per acre more than the Champion Purple Top.

The rather low yield of corn can be explained by the excessive moisture at the time of seeding which caused poor germination.

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

OPERATIONS AT MINDEMOYA—FOUR-YEAR ROTATION

Field	Crop	Number of years	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Barley, O.A.C. 21	1	27·5 bush.	27·5 bush.	0 75 per bush.	0 75 per bush.
B	Oats, Banner	1	29 bush.	29 bush.	0 74 per bush.	0 74 per bush.
C	Corn	1	8·5 tons	8·5 tons	3 63 per ton	3 63 per ton
C	Turnips, Hall's Westbury	1	19 tons	19 tons	2 22 per ton	2 22 per ton
C	Turnips, Champion Purple Top	1	15·5 tons	15·5 tons	2 72 per ton	2 72 per ton
D	Mixed hay	1	1·3 tons	1·3 tons	9 75 per ton	9 75 per ton

NOELVILLE, NIPISSING DISTRICT

OPERATOR, FRS. ROUSSEL

Illustration Station work was started at this place in the spring of 1927, and the work carried out was preparation to the four-year rotation. As no ploughing had been done the previous fall, two fields only, "A" and "B", have been worked and sown, one with Alaska oats and the other with Banner oats. Both were seeded down and the catch was satisfactory at harvesting time.

The rainy spell which occurred when the grain was about to ripen was responsible for the complete failure of the Banner oats on account of rust. The Alaska oats which were sown on May 21, and harvested Aug. 25, yielded 19 bushels per acre.

Unfortunately, the operator of this Station has suffered a breakdown in health, and has decided to discontinue the work.

SPRING BAY, MANITOULIN ISLAND

OPERATOR, WM. MCCOLEMAN

Operations began at this Station in the spring of 1927, under very unfavourable conditions. The land is somewhat low and had not been properly drained and prepared for the growing of a satisfactory grain crop, as some of it was not ploughed until just previous to seeding. The heavy rains during the spring prevented any seeding being done until June 6, which is really too late for profitable returns under ordinary conditions, and the unusually wet weather in the latter part of the season caused the grain to rust very badly.

The mixed hay on fields "A" and "B", which are higher than the others, produced an average yield, and there is no doubt but that the yields will increase considerably as the soil is given better drainage and more thorough cultivation.

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

OPERATIONS AT SPRING BAY—SIX-YEAR ROTATION

Field	Crop	Number of years	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Mixed hay	1	1·25 tons	1·25 tons	9 44 per ton	9 44 per ton
B	Mixed hay	1	1·5 tons	1·5 tons	7 87 per ton	7 87 per ton
C & D	Oats, Banner		Failure.			
E	Oats, Alaska	1	17 bush.	17 bush.	1 03 per bush.	1 03 per bush.
F	Barley, O.A.C. 21	1	35 bush.	35 bush.	0 45 per bush.	0 45 per bush.

VAL GAGNE, COCHRANE DISTRICT

OPERATOR, H. LABRECHE

This is one of the more advanced settlements in northern Ontario. There is a large area of very rich soil under cultivation. Several of the farmers have large dairy herds and there is also a butter factory in operation.

By reason of the wet weather which continued until late in the spring, no seeding was possible before the last days in May. The growth, however, has been very satisfactory and the early varieties of grains in particular have done very well. The Alaska oats were sown on May 28, and were harvested on September 14.

The different crops grown at this Station have proven very satisfactory, as is illustrated in the following table of the season's work:—

OPERATIONS AT VAL GAGNE—FOUR-YEAR ROTATION

Field	Crop	Number of years	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy hay	3	1·5 tons	1·6 tons	10 21 per ton	8 60 per ton
B	Potatoes	3	273 bush.	207 bush.	0 33 per bush.	0 49 per bush.
B	Turnips	3	18·75 tons	10·9 tons	2 64 per ton	4 49 per ton
C	Oats, Alaska	3	48 bush.	45 bush.	0 55 per bush.	0 65 per bush.
D	Clover hay	2	1·5 tons	2 tons	12 28 per ton	10 04 per ton

Adjoining the regular rotations are fields "E" and "F" which are 1·5 acres each in size. These were in pure alsike clover for seed production. Field "E" was ploughed immediately after the hay had been taken off in 1925 and disked occasionally until the freeze up, while field "F" was ploughed only just before the freeze up. Both fields were in Alaska oats in 1926 and seeded with pure alsike clover at the rate of 6 pounds per acre. In 1926, the Alaska oats on the early ploughed portion yielded 4·5 bushels per acre more than on the late ploughing. The clover seed yield is reported below. The test of early and late ploughing was repeated in 1926 on fields "G" and "H". These were sown with barley in 1927 and seeded with alsike clover to repeat the clover test.

The yields are given in the following table:—

EARLY PLOUGHING AND DISKING VERSUS LATE FALL PLOUGHING

Field	Crop	Treatment	Yield per acre	Cost
				$ cts.
E	Alsike clover	Ploughed early and disked 1925	192 lb.	0 08½ per lb.
F	Alsike clover	Ploughed late in fall 1925	154 lb.	0 09½ per lb.
G	Barley	Ploughed early and disked 1926	41·25 bush.	0 43½ per bush.
H	Barley	Ploughed late in fall 1926	36·75 bush.	0 48½ per bush.

VERNER, NIPISSING DISTRICT

Operator, Andre Beaudry

This is the first year that Illustration Station work has been carried on at this place. The soil is mostly clay, but in some sections it is rather low and needs a lot of surface drainage. The grains in general have suffered a great deal from excessive rainfall.

Field "A" which was in turnips and potatoes was fall ploughed and then ploughed shallow just before sowing. Considering that this is the first year of the rotation, the yields of both crops are quite satisfactory.

The Alaska oats have given a better yield than the Banner this year, due to the fact that they ripened 12 days earlier and thus escaped with less damage from the stem rust which was very severe.

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

OPERATIONS AT VERNER—FOUR-YEAR ROTATION

Field	Crop	Number of years	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Turnips, Danish Queen	1	17·7 tons	17·7 tons	2 28 per ton	2 28 per ton
A	Turnips, Hall's Westbury	1	15·9 tons	15·9 tons	2 51 per ton	2 51 per ton
A	Potatoes	1	190 bush.	190 bush.	0 36 per bush.	0 36 per bush.
B	Barley, O.A.C. 21	1	37 bush.	37 bush.	0 46 per bush.	0 46 per bush.
C	Oats, Banner	1	25 bush.	25 bush.	0 67¼ per bush.	0 67¼ per bush.
D	Oats, Alaska	1	27·5 bush.	27·5 bush.	0 63 per bush.	0 63 per bush.

During the summer, Mr. Beaudry has laid the foundation for a pure-bred Ayrshire herd by purchasing a pure-bred Ayrshire bull, Ottawa Supreme, from the Central Experimental Farm at Ottawa, and a three-year old female of excellent quality from Mr. J. L. Stansell of Straffordville, Ontario.

A very excellent flock of bred-to-lay Barred Plymouth Rock hens is kept at this Station, from which a large number of hatching eggs are sold every year. The best cockerels are also selected and disposed of for breeding purposes.

BOURGET, RUSSELL COUNTY

Operator, Napoleon Martel

Steady progress is being made on this station and yields are on the increase. In addition to the regular rotation work a demonstration was conducted with asbestos waste on barley to observe the effect on crop growth. While the effect was slight it will be necessary to follow it up for a few years to determine if it becomes available later on.

OPERATIONS AT BOURGET—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats, Reg. Banner..... bush.	4	44	57	0 50	0 40
B	Clover hay, 1st cut..... tons	3	1¾	1·58	5 82	6 40
B	Clover seed, 2nd cut..... lb.	3	125	109	0 07	0 08
C	Timothy hay..... tons	4	2½	2·68	6 50	6 15
D	Corn, ensilage..... tons	4	11½	13·67	3 23	2 85
D	Turnips..... tons	4	18⅝	16·55	3 00	3 69

A lime demonstration was also carried out on this station. Part of field "C" received an application of hydrated lime at the rate of two tons per acre, the results were not noticeable, in fact, the yield of clover hay was only 125 pounds per acre greater, when the lime was applied.

CASSELMAN, RUSSELL COUNTY

Operator, Hector Lafleche

Seeding was late in this district, and on the station fields this work was not accomplished until June 9.

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

OPERATIONS AT CASSELMAN—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay, 1st cut..... tons	1	1	.....	5 55	
A	Clover seed, 2nd cut..... lb.	1	156	.....	0 12½	
B	Oat hay..... tons	2	2·10	1·45	18 88	16 92
C	Corn fodder..... tons	3	11½	14·20	2 92	2 48
C	Potatoes..... bush.	3	144	226	0 61	0 42
C	Turnips..... tons	3	24½	22·55	3 03	3 04
D	Timothy hay..... tons	.....	1	.....	9 25	

During the past year this operator had his dairy herd tested and now has it on the accredited herd list. Considerable progress has also been made along poultry lines. Two breeds are kept, namely, White Leghorns and Barred Rocks.

CURRAN, PRESCOTT COUNTY

Operator, Aldège Dupont

Seeding was late at this point resulting in a light crop of oats and the cool weather affected the corn. Hay and turnip crops were well up to the average.

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

OPERATIONS AT CURRAN—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy hay..... tons	4	1⅞	1⅞	7 96	7 64
B	Corn, ensilage..... tons	4	10	11	3 23	3 16
B	Turnips..... tons	3	24	24⅜	1 89	1 81
C	Oats, Banner..... bush.	4	25	41½	0 81	0 52½
D	Clover hay, 1st cut..... tons	4	1¾	1¾	5 72	7 45
D	Clover seed, 2nd cut..... lbs.	4	69	75½	0 11½	0 11½

General view of strawberry and raspberry patch at the Illustration Station at Curran, Ontario.

Ground limestone was applied to field " D " when it was seeded down, and while little effect could be noticed on the growth of red clover, the stand of alfalfa was best on that part where it was applied.

RUSSELL, RUSSELL COUNTY

OPERATOR, J. A. BOYD & SON

This is the second year that this station has been in operation. If all the clover stands come through the winter successfully, the six-year rotation planned for here will be fully established.

OPERATIONS AT RUSSELL—SIX-YEAR ROTATION

Field	Crop		Number of years grown	Yield per acre		Cost	
				1927	Average	1927	Average
						$ cts.	$ cts.
A	Clover hay, 2nd cut	tons	1	3·83	.....	5 42	
B	Clover hay, 1st cut	tons	1	1½	.....	6 93	
B	Clover seed	lb.	1	45	.....	0 24	
C	Clover hay, one cut	tons	1	1½	.....	13 01	
D	Oats, Banner	bush.	2	24	26¾	1 02	0 89
E	Oats, Banner	bush.	2	21	26¾	1 14	0 89
F	Corn fodder	tons	2	5½	9	6 50	4 93

A start was made this year in clover seed growing, the yield, although light, graded No. 1 seed. The clover was threshed with an ordinary thresher and possibly a little early in the fall before the frost had penetrated into the mow. The straw was tough and did not thresh out clean. When red clover is not threshed as it is brought off the field, it will thresh best, if left till the cold winter weather; this is particularly important when a regular clover huller is not used.

ST. EUGENE, PRESCOTT COUNTY

OPERATOR, ALBERT SÉGUIN

This also is a comparatively new station, illustration work being started two years ago. Sow thistles gave considerable trouble and necessitated cutting the oats on field " D " for hay to prevent its ripening and disseminating seeds.

OPERATIONS AT ST. EUGENE—FOUR-YEAR ROTATION

Field	Crop		Number of years grown	Yield per acre		Cost	
				1927	Average	1927	Average
						$ cts.	$ cts.
A	Clover hay, 1st cut	tons	1	1½	.....	6 50	
A	Clover seed, 2nd cut	tons	1	188	.....	0 11½	
B	Clover hay, 1st cut	tons	1	1¼	.....	5 85	
B	Clover seed, 2nd cut	lb.	1	133	.....	0 13	
C	Corn, ensilage	tons	2	5	9	6 98	5 06
C	Turnips	tons	1	14·45	.....	5 05	
D	Oat hay	tons	1	2	.....	12 41	

This is the first year that red clover seed was grown. A very satisfactory yield of 133 pounds per acre was obtained, costing thirteen cents per pound. It would appear that greater attention could advantageously be given this crop by adjoining farmers in the district.

REPORT OF THE ILLUSTRATION STATIONS IN WESTERN QUEBEC

W. L. Chauvin, Supervisor

During the past season the work on the western Quebec Illustration Stations has made steady progress. The late wet spring delayed seeding of grain considerably and in some cases it was not possible to seed until June 3. Changeable weather throughout the summer season made weeds difficult to control and haying and harvesting operations more than usually laborious. Crop yields were well up to the average, with the exception of corn.

Twenty Illustration Stations were in operation in western Quebec in 1927. In addition the supervisor for this district was responsible for the work on four stations in eastern Ontario.

STANDING OF OPERATORS IN LOCAL FAIRS AND COMPETITIONS

A number of the Illustration Station operators are actively interested in promoting the agricultural interest of their community and are standing behind their local fairs. The following table indicates somewhat the success they have had in exhibiting their crops and stock as well as the class of crops they produce.

Station	Number of 1st prizes	Number of 2nd prizes	Number of 3rd prizes	Number of other prizes
Aubrey	1	2		
L'Assomption	2	2	2	3
Papineauville	6			
Ste. Brigide	11	8	1	
St. Casimir	4	1	2	
St. Clet	7	5	2	1
St. Etienne des Gres	2	2		
St. Jerome	2	4	1	3
Ste. Julie	6	2		
St. Leonard	2	3	7	
St. Paul de Joliette	4	2	1	
St. Simon	18	7	4	6
Stanbridge East	2			

MEETINGS AND CONTESTS

In addition to the regular visits of inspection to the stations, the supervisor held thirty-two meetings, the greater number on the station fields. At these the results of the work were outlined, the different crops, varieties and methods of growing them were inspected and explained. He also assisted as judge at five ploughing matches and inspected thirteen new districts. Six alfalfa growing competitions were organized to stimulate interest in the production of this crop.

SALE OF SEED GRAIN, LIVE STOCK AND POULTRY

In the sale of seed grain and breeding stock for the stations, the greatest progress this year was in the sales of live stock. The operators are steadily building up their herds, thus increasing the usefulness of the stations in the district. The sales this year amounted to 3,332 bushels of seed grain, 845 bushels of potatoes and 5,379 pounds of timothy and clover seed. Along poultry lines, 116 Barred Rock cockerels, 174 pullets and 375 settings of hatching eggs were disposed of to people in the district. In live stock 22 bulls, 43 mature cows, 27 heifers, 41 hogs and 22 sheep were sold for breeding purposes.

AUBREY, CHATEAUGUAY COUNTY

OPERATOR, SAMUEL REDDICK

Crop yields were above the average on this station as may be noted by comparing the 1927 with the average yields over a period ranging from five to eight years.

OPERATIONS AT AUBREY—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay, 1st cut..... tons	7	2	1¾	4 83	6 25
A	Clover seed, 2nd cut..... lb.	5	106	105¾	0 09½	0 09¾
B	Timothy hay..... tons	8	2·67	1¾	5 70	7 95
C	Oats, Banner..... bush.	8	61¼	52½	0 40	0 40½
D	Corn, ensilage..... tons	8	16·35	15½	2 07	2 52

An interesting fact in connection with the work at the station is the possibilities of clover seed growing in the district. Five years out of eight the operator has been able to grow clover seed at a cost which makes its production profitable. The 1926 season would have improved the standing of this crop had it not been for the very wet fall, which made it impossible to get the crop stored. It was cut and left on the ground all winter and in the spring gathered up and threshed. Although considerable was lost, over $40 worth of seed was threshed off the five-acre field.

CAMPBELL'S BAY, PONTIAC COUNTY

OPERATOR, W. J. HAYES & SON

Corn and turnips were the two crops strikingly low in yield this year. Turnips were planted after mangels had failed to germinate, accounting somewhat for the low yield. The seven year average yield of corn is 11½ tons costing $3.77 per ton to grow. Longfellow is the principal variety grown, hence the yield here represents a well-matured crop.

OPERATIONS AT CAMPBELL'S BAY—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay, 1st cut..... tons	3	1⅔	1 3/10	8 53	8 38
A	Clover seed, 2nd cut..... lb.	3	148	111	0 06¾	0 07
B	Timothy hay..... tons	5	2⅔	1⅞	6 84	7 58
C	Corn, ensilage..... tons	7	4⅓	11½	9 42	3 77
C	Turnips..... tons	2	8	10	10 46	9 59
D	Oats, Banner..... bush.	7	47	45½	0 53	0 46½

An interesting and useful demonstration conducted at this station in addition to the rotation work was that comparing homegrown red clover with commercial seed. When the field was being seeded down two years ago the mixture used was 8 pounds red clover, 2 pounds of alsike and 10 pounds of timothy. On one plot commercial red clover was used in the mixture; on another homegrown seed was used and seeded at the following rates:—

	Yield of hay
Seeded with a mixture at 20 lb. per acre using commercial red clover seed.....	2,415 lb.
Seeded with a mixture at 10 lb. per acre using homegrown red clover seed.....	2,139 "
Seeded with a mixture at 15 lb. per acre using a homegrown red clover seed...	3,694 "
Seeded with a mixture at 20 lb. per acre using homegrown red clover seed.....	3,694 "

DAVELUYVILLE, ARTHABASKA COUNTY

Operator, Alphonse Poisson

This is the second year that illustration work has been carried on at this place, consequently the first year that a crop of clover hay has been taken. The operator is actively interested in building up his dairy herd and has instituted several improvements.

OPERATIONS AT DAVELUYVILLE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats, Banner..... bush.	2	44	38¾	0 43½	0 48
B	Clover hay..... tons	1	1½	.....	10 82	
C	Clover hay..... tons	1	1½	.....	10 82	
D	Sunflowers, fodder..... tons	1	12½	.....	3 15	
D	Corn, fodder..... tons	2	4½	4½	9 60	9 71
D	Turnips..... tons	2	16	14⅞	3 36	3 53

KAZABAZUA, WRIGHT COUNTY

Operator, Ephraim Anderson

In order to properly appreciate the work at this station from a study of the yields, it is necessary to be familiar with the sandy nature of the soil as well as its lack of fertility. Light surface applications of manure on the hoed crops followed with 125 pounds of nitrate of soda on the hay crops have given good crop yields at a profit.

OPERATIONS AT KAZABAZUA—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay, one cut..... tons	1	1¾	.....	11 00	
B	Oats, Banner..... bush.	3	48	49	0 51	0 43
C	Corn, fodder..... tons	3	1	6	21 62	9 15
C	Potatoes..... bush.	3	89	97	0 63¾	0 69
D	Oats, peas..... bush.	3	37	35⅓	0 55	0 49

On an area outside the rotation fields an effort is being made to determine the most economical method of producing crops using manure alone, manure combined with commercial fertilizer and commercial fertilizer alone. The land received the following treatment two years ago when being seeded down. In addition, early this spring just as growth was starting, it was given a dressing of 125 pounds of nitrate of soda per acre. The yields and treatment per acre were as follows:—

	Yield
Manure, 12 tons.....	5,375 lb.
Manure, 6 tons, 750 lb. of commercial fertilizer.....	4,367 "
Commercial fertilizer, 1,500 lb.....	4,232 "
Check plot (no fertilizer).....	2,390 "

LACHUTE, ARGENTEUIL COUNTY

OPERATOR, S. R. SMITH

The season was favourable for crop growth on sandy loam soils such as at this station. Oats were sown on April 21 and corn planted on May 24. The yields and cost of growing the crops on this station and their averages over a period of years were as follows:—

OPERATIONS AT LACHUTE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay, 2 cuts..... tons	2	3¾	3¼	5 69	5 98
B	Oats, Banner..... bush.	8	40	35¾	0 52¾	0 59⅛
C	Corn, ensilage..... tons	8	17¾	14¼	2 06	2 33
D	Timothy hay..... tons	2	1¼	1⅛	9 01	6 86

An interesting demonstration was carried out at this station with nitrate of soda. One hundred pounds per acre was applied to a timothy meadow which had been in hay two years; a part did not receive any. When the nitrate of soda was applied the yield was 2,500 pounds; where no nitrate was used it was 1,718 pounds per acre, or an increase of 782 pounds of hay. This seems a sound practice where a farmer is needing more hay and where his yields are ordinarily somewhat low.

A mixture containing alfalfa was seeded on field "A" in 1926. It made little headway and finally all disappeared.

LAC A LA TORTUE, CHAMPLAIN COUNTY

OPERATOR, JOSEPH DESSUREAULT

Illustration work at this station has been somewhat of a problem as the soil does not respond to fertilizing and soil treatment like other parts where visibly the soil is no better. The following table gives this season yields and cost of production as well as the averages over a period of years:—

OPERATIONS AT LAC-A-LA-TORTUE—FOUR-YEAR ROTATION

Field	Crop		Number of years grown	Yield per acre		Cost	
				1927	Average	1927	Average
						$ cts.	$ cts.
A	Timothy hay	tons	6	¾	¾	12 87	11 85
B	Oats, Banner	bush.	6	21	24½	0 73	0 68
C	Clover hay	tons	6	0·90	¾	12 30	15 57
D	Corn, fodder	tons	8	7	9¼	3 00	2 65
D	Sunflowers, fodder	tons	2	7½	8¾	2 75	2 78
D	Potatoes	bush.	6	120	127	0 36	0 34
D	Turnips	tons	8	16	11¾	2 51	3 15

Turnips, corn and potatoes are the three most productive crops over a period of eight years. The hay crop, particularly the clover, is always very short and has very frequently failed to establish a satisfactory stand. Soil correctives such as lime have failed to produce any beneficial effect on this crop.

L'ANNONCIATION, LABELLE COUNTY

OPERATOR, DIDYME COTE

This is the second year that Illustration Station work has been carried on in this district. Early maturing varieties are of great value here. This season, Alaska oats were sown on May 3 and harvested on August 20; five days later a heavy frost badly damaged crops of later varieties which at that time had not matured.

OPERATIONS AT L'ANNONCIATION—FOUR-YEAR ROTATION

Field	Crop		Number of years grown	Yield per acre		Cost	
				1927	Average	1927	Average
						$ cts.	$ cts.
A	Sunflowers, fodder	tons	1	21½	.....	2 57	
A	Corn, fodder	tons	2	13	9½	3 64	4 29
A	Potatoes	bush.	1	150	.....	0 43	
A	Turnips	tons	2	18¼	13	3 33	5 56
B	Oats, Alaska	bush.	1	21½	.....	0 87	
C	Oats, Alaska	bush.	1	21½	.....	0 87	
D	Mixed hay	tons	1	¾	.....	18 50	

Although corn was damaged by frost on August 25, it gave a good yield. The sandy nature of the soil favoured the early growth this season. Sunflowers were tried out this year with very good success and will continue to be compared with corn and turnips as a succulent crop for this district.

L'ASSOMPTION, L'ASSOMPTION COUNTY

Operator, Hector Papin

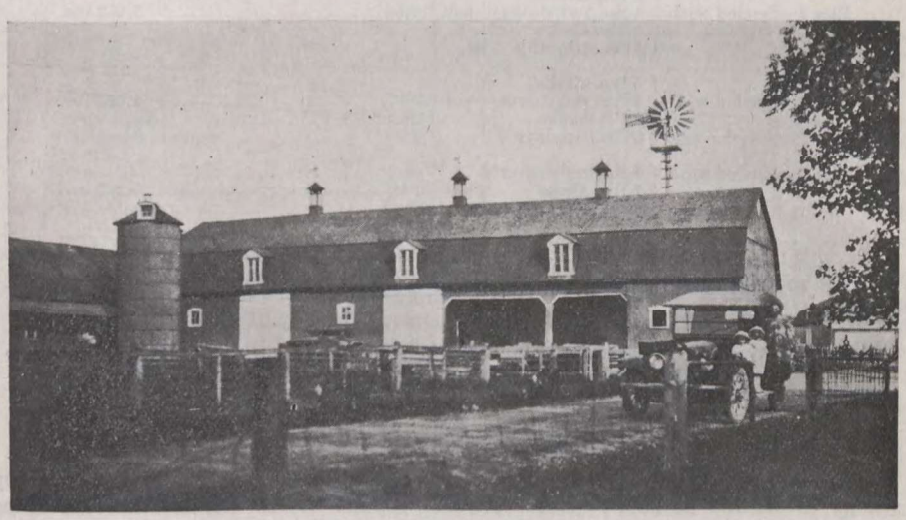
A very unusual spring was experienced at this point. In April indications were for an early seeding and a start was made on field "C" on April 30. Frequent rains prevented further seeding until May 24. The results of the season's work are as follows:—

OPERATIONS AT L'ASSOMPTION—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy hay..... tons	7	2·85	1⅞	6 05	8 00
B	Clover hay..... tons	5	1·55	1⅝	7 77	6 29
C	Oats, Banner..... bush.	8	40	50	0 62	0 48
D	Corn, ensilage..... tons	8	14½	15½	3 64	3 06
D	Turnips..... tons	8	30½	29	2 65	3 45

This was rather an off season for clover at this station. It is customary to cut the first crop of clover early so as to allow the second crop to mature seed. The season was so late that it was not possible to follow the usual procedure. On an average of four years the clover seed crop has yielded 134 pounds per acre and cost 11¼ cents to grow.

When seeding field "C" five pounds of alfalfa were included in the grass and clover mixture. Up to this time the stand obtained does not warrant seeding it alone other than in an experimental way.



Feed barn on the farm of Mr. Hector Papin, operator of the Illustration Station at at L'Assomption.

PAPINEAUVILLE, LABELLE COUNTY

OPERATOR, OVILA CLEMENT

Frost was all out of the ground and ploughing was possible in this district on April 13, however, later wet weather delayed oat seeding until June 2. The clover on field "A" was cut early to give the second crop a chance to mature seed. Wet weather encouraged growth to the extent that the crop did not ripen sufficiently to produce a profitable crop of seed, hence was cut as hay.

OPERATIONS AT PAPINEAUVILLE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover, 2 cuts ..... tons	3	3⅜	2⅜	6 61	6 79
B	Oats, Banner ..... bush.	7	35¼	39½	0 71	0 57
C	Timothy hay ..... tons	5	2½	2½	7 54	6 49
D	Corn, fodder ..... tons	7	16¾	14⅜	3 25	3 45
D	Turnips ..... tons	6	24	28½	3 85	3 09
D	Potatoes ..... bush.	4	150	221¼	0 55	0 40

When field "A" was seeded to grasses and clovers one half of the field was seeded with a mixture containing five pounds of alfalfa, the other half with the standard mixture made up of eight pounds red clover, two pounds of alsike and ten pounds of timothy. A section of the field seeded to alfalfa also received an application of lime. The yields for the two cuts of hay made on June 20, and September 9 were as follows:—

	Yield of clover hay
Plot 1—Seeded with { 5 lbs. alfalfa, 5 lbs. red clover, 2 lbs. alsike, 8 lbs. timothy } and limed	5,072 lbs.
Plot 2—Seeded with { 5 lbs. alfalfa, 5 lbs. red clover, 2 lbs. alsike, 8 lbs. timothy } *not limed*	4,385 lbs.
Plot 3—Seeded with { 8 lbs. red clover, 2 lbs. alsike, 10 lbs. timothy } not limed	3,960 lbs.

It will be noted that the best crop was from the part of the field seeded with the mixture containing alfalfa. This was particularly noticeable on the second cutting.

STE. BRIGIDE, IBERVILLE COUNTY

OPERATOR, ALPHONSE GOINEAU

Careful and timely cultivation combined with a fertile soil makes crop growing profitable at this station. Alfalfa seeded in the regular mixture came along well and gives promise of successfully establishing itself. The following table gives the annual and average yields and costs:—

OPERATIONS AT STE. BRIGIDE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy hay..... tons	6	2⅜	2¼	5 84	6 56
B	Oats, Reg. Banner..... bush.	7	53	56	0 38	0 39
C	Clover hay, 1st cut..... tons	4	1⅜	1⅜	5 39	6 14
C	Clover seed..... lbs.	4	101	104½	0 06½	0 08½
D	Corn, ensilage..... tons	7	16½	14¾	1 82	2 10
D	Turnips..... tons	7	28½	26½	1 41	1 71

The diversity of crops which can be profitably grown here including corn, oats and clover, makes this a desirable dairy district.

An illustration was carried out at this point to determine the effect of lime on crop growth. The field was in clover hay this year containing some alfalfa. The part that received lime gave an increased yield of 567 pounds of hay. Considerable progress is also being made towards building up a productive herd of Ayrshires.

ST. CASIMIR, PORTNEUF COUNTY

Operator, Eloi St. Germain

Although corn was not a generally grown crop in this district, when illustration work started, eight years experience placed it amongst the profitable crops for this district. The average yield was 12¾ tons and the average cost $3.20 per ton.

OPERATIONS AT ST. CASIMIR—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Corn ensilage..... tons	8	11	12¾	3 57	3 20
A	Sunflowers ensilage..... tons	2	21	20	2 19	2 33
B	Pastured.....					
C	Clover hay, 1st cut..... tons	4	1⅞	1¾	6 86	6 79
C	Clover hay ensilage..... tons	1	3	.....	3 22	
D	Oats, Alaska..... bush.	8	44	50½	0 47	0 41

The Alaska oat proved very satisfactory this year in view of the late seeding. This year field "B" was pastured. The mower was run over the field early in July to clip off any weeds present to prevent them from maturing and dropping seed. Early in August it was ploughed and after-harvest cultivation practised to prepare this field for hoed crops next year.

ST. CLET, SOULANGES COUNTY

Operator, Louis Besner

Crop yields at this station were not up to the average, except in the case of turnips; the damp fall favoured this crop. Although they have been grown only for the past three years they have during this time proven a profitable crop.

OPERATIONS AT ST. CLET—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats, Banner..... bush.	8	26	43½	0 83	0 54
B	Potatoes..... bush.	6	75	154½	0 89	0 46
B	Turnips..... tons	3	30	26	2 03	2 32
B	Corn, ensilage..... tons	8	12	12	3 18	3 07
C	Timothy seed..... lb.	6	200	181	0 08½	0 08½
D	Clover hay, 1st cut..... tons	7	1	1	9 20	9 83
D	Clover seed, 2nd cut..... lb.	7	80	117	0 09	0 11

Red clover seed has become quite an extensively grown and dependable crop for this district. It has failed to mature seed but once in eight years. The lowest yield was obtained this year, namely, 80 pounds per acre. This strain is winter-hardy and does equally well when grown elsewhere.

ST. CONSTANT, LAPRAIRIE COUNTY

Operator, Roch Boule

The late, cold spring delayed seeding and retarded growth more at this station than at some others where the soil is lighter. Corn in particular yielded considerably below the average for the past three years.

OPERATIONS AT ST. CONSTANT—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy hay..... tons	5	1½	1½	8 84	11 14
B	Corn, fodder..... tons	6	5½	11½	12 14	4 93
B	Potatoes..... bush.	5	104	148	0 64	0 55
C	Clover hay, 1st cut..... tons	4	1½	1½	8 27	8 84
C	Clover seed, 2nd cut..... lb.	4	120	98	0 10	0 11
D	Oats, Banner..... bush.	7	35	39	0 64	0 62

In addition to the regular rotation work a demonstration was conducted with nitrate of soda on second-year meadow land. An application of 150 pounds of nitrate of soda increased the hay yield 825 pounds per acre. On field "C" another demonstration was carried out with lime, five pounds of alfalfa had been seeded in the regular grass and clover mixture. The application of 2 tons of hydrated lime per acre increased the clover and alfalfa yield 1,031 pounds per acre.

ST. ETIENNE DES GRES, ST. MAURICE COUNTY

Operator, Origene Bournival

The soil at this station is sandy loam, thus benefiting from the more than average rainfall received during the growing season. Hand hoeing of the potato crop is eliminated by harrowing and cross harrowing before and after the plants come above the ground followed by frequent light cultivation and hilling, resulting in a much reduced cost of production.

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

Field	Crop		Number of years grown	Yield per acre		Cost	
				1927	Average	1927	Average
						$ cts.	$ cts.
A	Timothy hay	tons	6	2	1	14 20	10 55
B	Oats, Banner	bush.	7	27⅚	26	0 61	0 52
C	Potatoes	bush.	8	216⅔	198	0 23	0 27
C	Turnips	tons	7	12½	12	3 30	3 55
C	Corn, Canadian	tons	4	7	7	3 20	3 43
C	Corn, Longfellow	tons	7	9	7¾	2 36	3 36
D	Clover hay	tons	5	1	⅞	13 26	13 26

Chemical fertilizers, particularly nitrate of soda and acid phosphate, have a desirable effect in increasing crop growth on this soil. This spring field "C" was divided into five plots and given the following treatment per acre:—

	Yield of clover hay
Plot 1—100 lb. nitrate of soda	2,916 lb.
Plot 2—100 lb. nitrate of soda + 300 lb. acid phosphate	2,846 lb.
Plot 3—Check	1,831 lb.
Plot 4—100 lb. nitrate of soda + 150 lb. acid phosphate	2,365 lb.
Plot 5—100 lb. nitrate of soda + 150 lb. potash + 300 lb. acid phosphate	2,949 lb.

Field "A" was similarly treated in 1925. The effect of nitrate was not carried over into the second year to any noticeable extent, however, the plots that received acid phosphate gave increased yields of 427 and 631 pounds of mixed hay, respectively.

ST. JEROME, TERREBONNE COUNTY

Operator, Wilfrid Guay

Oat sowing was not possible on this station until June 3 about two weeks later than in closely adjoining districts. The clover crop was so rank in growth that it did not mature seed, hence two crops of hay were taken off. The following table gives the annual and average yields and cost of growing the different crops in the rotation:—

OPERATIONS AT ST. JEROME—FOUR-YEAR ROTATION

Field	Crop		Number of years grown	Yield per acre		Cost	
				1927	Average	1927	Average
						$ cts.	$ cts.
A	Oats, Banner	bush.	7	33	33⅓	0 78	0 67
B	Clover, 2 cuts	tons	2	2½	2½	9 15	8 37
C	Potatoes, Green Mountain	bush.	4	80	251	0 92	0 53
C	Potatoes	bush.	2	99	158	0 77	0 57
C	Turnips	tons	7	14⅓	20	4 18	3 00
C	Corn, fodder	tons	7	13½	12¼	3 51	3 49
D	Timothy hay	tons	5	2½	2¼	6 96	7 28

A demonstration with lime was undertaken on field "B". Two tons were applied to the acre when seeded down in 1926. No noticeable effect could be seen from its application, the yield being only increased by 125 pounds per acre.

STE. JULIE, VERCHERES COUNTY

Operator, Henri Delorme

Cold, wet weather retarded the growth of corn to the extent that the crop only yielded 6¾ tons per acre, the lowest yield in eight years.

OPERATIONS AT STE. JULIE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats, Banner..... bush.	8	45	50¾	0 47	0 40
B	Timothy hay..... tons	7	1·45	1⅝	9 55	7 77
B	Timothy seed..... lb.	2	330	299	0 08½	0 08¾
C	Clover hay, 1st cut..... tons	6	¾	1¼	10 85	7 68
C	Clover seed, 2nd cut..... lb.	6	75	84	0 11¾	0 15⅓
D	Corn, ensilage..... tons	8	6¾	13⅓	7 31	2 97

Timothy yielded an excellent crop of seed and although the red clover seed yield is lower than usual, it threshed out well matured, clean sample.

ST. LEONARD D'ASTON, NICOLET COUNTY

Operator, E. Carter

Clover was badly damaged by spring heaving, resulting in a light first cut of clover hay. Rolling, as soon as the land would carry the horses, firmed the soil around the roots and prevented further loss.

OPERATIONS AT ST. LEONARD D'ASTON—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Corn, ensilage..... tons	2	10⅔	13¼	4 56	4 00
A	Turnips..... tons	2	22½	22⅝	2 40	2 07
B	Oats, Banner..... bush.	2	39	33¾	0 52	0 61
C	Timothy hay..... tons	2	¼	1½	18 10	12 70
D	Clover hay, 1st cut..... tons	1	0·49	.....	16 44	
D	Clover seed, 2nd cut..... lb.	2	108⅓	81	0 08½	0 20½

An application of 100 pounds of nitrate of soda per acre to field "C", early in the spring, just as the field started to show natural greening, resulted in an increased yield of 750 pounds of timothy hay.

ST. PAUL DE JOLIETTE, JOLIETTE COUNTY

Operator, Georges E. Bazinet

Considerable progress has been made with illustration work at this station. The soil is a heavy clay and responds to good cultivation. The wet season seriously retarded the corn crop.

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

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts
A	Timothy hay..... tons	3	2⅜	1⅜	7 32	11 10
B	Corn, fodder..... tons	4	4½	12½	8 15	4 16
B	Oats, peas, hay..... tons	4	4½	3⅜	8 25	11 00
C	Clover hay, 1st cut..... tons	3	0·90	¾	10 33	14 46
C	Clover seed..... lb.	1	64	.....	0 12½	
D	Oats, Banner..... bush.	4	40	43½	0 59	0 66

An interesting demonstration was carried out this season to determine the value of lime. Two tons of hydrated lime were applied to field " C ", when being seeded down in 1925. The part that received the lime gave an increased yield of 650 pounds of mixed clover and alfalfa hay. Its effect will be recorded on succeeding crops.

ST. SIMON, BAGOT COUNTY

Operator, Donat Rivard

The type of farming carried on at this station could profitably be imitated. In addition to the economical production of crops suitable for stock feed, considerable success has resulted from the efforts of the operator to built up a good milking strain of Ayrshire cattle. Attention is also given to the planning and care of the garden and to improving the general surroundings with flowers and shrubs.

OPERATIONS AT ST. SIMON—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay, 1st cut..... tons	5	1⅛	1⅛	8 56	8 25
A	Clover seed, 2nd cut..... lb.	5	137½	134	0 07⅜	0 07⅛
B	Corn, ensilage..... tons	7	12½	12⅛	3 10	3 52
B	Turnips..... tons	7	22	23¼	2 51	2 49
C	Timothy hay..... tons	5	1½	1⅛	10 00	9 78
C	Timothy seed..... lb.	2	375	387	0 03¾	0 03½
D	Oats, Reg. Banner..... bush.	7	35	48⅛	0 64	0 45

Hydrated lime applied at the rate of two tons per acre gave an increased return of 800 pounds of mixed clover and alfalfa hay. The application of 100 pounds of nitrate of soda per acre on part of field " C " did not give a profitable return. The general nitrogen content of this soil is such as to make further application ineffective.

STANBRIDGE EAST, MISSISQUOI COUNTY

Operator, B. Moore

Improvements such as fence building have given this station an added appearance. Two four-year rotations are being carried on here to demonstrate the value of under-drainage; one is tile-drained, the other surface-drained by

water furrows, as would be done under good farm practice. The comparative yields and cost of production is as follows:

OPERATIONS AT STANBRIDGE EAST—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
	Tile-drained land				$ cts.	$ cts.
A	Oats, Banner..... bush.	8	36½	43½	0 60	0 47
B	Corn, fodder..... tons	7	15½	13½	1 87	2 76
B	Turnips..... tons	8	18	18½	2 27	3 35
C	Timothy hay..... tons	8	1·15	1⅞	14 53	7 34
D	Clover hay..... tons	8	2¼	2⅜	8 31	7 06
	Surface-drained land					
E	Clover hay..... tons	8	2	2	8 65	7 46
F	Timothy hay..... tons	8	1·05	1⅛	13 12	8 94
G	Corn, fodder..... tons	7	11¾	9⅛	2 75	4 86
G	Turnips..... tons	1	17½	.....	4 82	
H	Oats, Banner..... bush.	8	36	35¼	0 60	0 53

REPORT OF THE ILLUSTRATION STATIONS FOR EASTERN QUEBEC

J. R. Proulx, B.A., B.S.A., Supervisor

Twenty Stations were in operation this year in Eastern Quebec and four new stations have been located where illustration work will be started in 1928.

The seasonal conditions were variable from one part of the district to the other. The spring opened quite early in the Eastern Townships and the seedings of cereals could generally be done in the first part of May while turnips and corn were generally sown in the last part of May or the first week of June. Cold and rainy days were so frequent in June that the crops were seriously backward for a few weeks especially corn. From July on the temperature was so favourable to the crops that they gained rapidly so as to be very satisfactory at harvest time.

In the part of the district East of Ste. Anne, the seedings were generally done in the first part of June and cereals harvested at the end of August or beginning of September. The Matane district has suffered from a long period of drought which reduced the yield of hay and other crops.

DAIRY HERDS

Milk records are kept on the illustration stations throughout the year with the object of detecting the cows that bring profit or loss to the dairy industry. It is obvious that the economical production of crops would have very little influence upon the financial condition of the farm business unless a similar improvement is made in the quality of the dairy herd.

The average milk production per cow on each station is given in the following table together with the comparative production of the best cow and the poorest one. Only cows that have completed a lactation of at least seven months are included in this table.

MILK PRODUCTION ON THE ILLUSTRATION STATIONS

Stations	Breed	Number of cows kept	Number of cows reported	Average of days in lactation	Average production	Lowest cow production	Highest cow production
					lb.	lb.	lb.
Montmagny	Ayrshire	12	8	305	7,104	4,801	8,141
Plessisville	Grades	16	14	253	6,988	3,977	8,468
St. Michel	Ayrshire	7	5	250	6,388	5,234	7,429
Weedon	Grades	15	11	265	6,265	4,518	7,799
Matane	Grades	9	5	256	5,816	3,678	7,720
Bromptonville	Ayrshire	23	20	277	5,620	2,577	7,689
Black Lake	Grades	22	19	294	5,510	3,719	8,774
Notre-Dame de Ham	Ayrshire	17	15	258	5,216	4,980	6,289
St. Appolinaire	Ayrshire	13	11	267	4,640	3,560	5,280
New Richmond	Grades	10	9	249	4,633	2,965	5,826
St. Maxime de Scott	Grades	10	8	267	4,389	3,662	4,922
St. Alexandre	Grades	12	12	280	4,327	2,896	5,466
Rivière Bleue	Ayrshire	10	10	253	4,288	2,434	5,464
St. Fabien	Grades	18	18	252	4,209	3,262	5,405
Causapscal	Grades	12	10	253	4,050	3,400	4,929
St. Arsène	Grades	5	5	262	3,564	3,227	4,448
Nouvelle	Grades	2	2	217	2,824	2,695	2,954
St. Eleuthère	Grades	20	20	253	2,611	1,306	3,276

The figures as they stand suggest that there is a considerable variability in the milking ability of the cows in the same herd. A tabulated report of each cow's production is forwarded to each operator so that he might dispose judiciously of the low-producing animals and raise heifers from the best cows.

However, culling out the low-producing cows would not bring very rapid improvement unless the future cows are sired by a bull having good producing ancestors.

We endeavour to have the new stations which have not yet secured a good quality bull, make that first step towards a real improvement of their herd.

The common bulls are gradually eliminated and replaced by pure-bred sires from R.O.P. dams.

POULTRY

The operators of the stations are taking a greater interest in the improvement of the farm flock. With this object in view fifteen cockerels from good laying strains were supplied by the Experimental Farms Branch at a reduced price. Mostly all the Stations keep pure-bred Barred Plymouth Rocks of fairly good quality as a result of the work done along this line in the previous years. Settings of hatching eggs are exchanged or sold in the neighbourhood at some of the stations.

FERTILIZERS FOR TURNIPS

Fertilizer tests for Swede turnips were conducted at several Stations. Fields were divided into three blocks of which the two side blocks received a medium application of manure and the following quantities of chemical fertilizers per acre:—

Nitrate of soda	120 lb.
Superphosphate	180 "
Muriate of potash	72 "

The centre block received the same application of manure but no chemical fertilizers. The results are summarized in the following table:—

YIELD PER ACRE AND COST PER TON

Stations	Yield per acre		Cost per ton	
	With fertilizers	Without fertilizers	With fertilizers	Without fertilizers
	tons	tons	$ cts.	$ cts.
St. Alexandre	14·0	12·0	4 94	5 24
Black Lake	30·0	19·8	2 52	3 30
St. Appolinaire	19·5	14·8	2 28	2 65
Bromptonville	33·6	32·0	2 08	2 04
Weedon	19·5	12·5	2 77	3 70
Scott Junction	30·7	21·8	1 92	2 44
Causapscal	19·7	17·3	3 04	3 19
Matane	20·7	16·2	2 95	3 33
Average	23·5	18·3	2 81	3 23

In studying the above table the reader should note that the use of chemical fertilizers has increased the average yield by 5 tons per acre while the average cost was reduced by 42 cents per ton. This means that chemical fertilizer applications were generally profitable on the Stations where this test was conducted. It seems advisable for the farmers of the districts concerned to use chemical fertilizers as a complement to manure for the production of turnips. As a result of such a practice, a larger area of the farm could be fertilized every year which would solve a part of the problem of crop rotation.

Similar tests were also conducted at St. Fabien and Montmagny but the yields of each block were not taken separately.

FERTILIZERS FOR POTATOES

To demonstrate the profits that can be derived from the use of fertilizers for growing potatoes, two different quantities of chemical fertilizers were tried at St. Alexandre and Causapscal in addition to a medium application of farm manure.

Plot No. 1 received 240 pounds of nitrate of soda, 360 pounds of superphosphate, 144 pounds of muriate of potash.

Pot No. 2 did not receive any chemical fertilizers.

Plot No. 3 received 120 pounds of nitrate of soda, 180 pounds of superphosphate and 72 pounds of muriate of potash.

The comparative yield per acre and the cost per bushel are tabulated as follows:—

YIELD AND COST OF PRODUCTION OF POTATOES

Stations	Plot No. 1		Plot No. 2		Plot No. 3	
	Yield	Cost	Yield	Cost	Yield	Cost
	bush	cts.	bush	cts.	bush	cts.
St. Alexandre	237·3	23¼	175	27½	203	25½
Causapscal	288·7	22 3/10	206	25¼	245	24
Average	263	23	190	26½	224	23 7/10

The value of fertilizers applied as well as the charges for handling the increased crop were counted in preparing those costs of production. It should

be noted that in both cases the applications of fertilizers were profitable and potatoes were produced at a lower cost per bushel on the fertilized plots. It will be noted also that potatoes were produced at the lowest cost on plot No. 1 which received the heaviest dose.

Similar tests were conducted at St. Arsene but the results were not very conclusive due to lack of uniformity in the fertility of the land. However, the fertilized plots yielded 375 bushels of certified potatoes as an average while the unfertilized plots yielded 301 bushels.

STATION, BROMPTONVILLE, RICHMOND COUNTY

Operator, Vertume Messier

Success has been achieved this year again with illustration work at this station. Oats were sown May 10 and harvested August 22. Seedings of corn and turnips were completed before the 15th of June. As can be seen by the figures given below, the results of this year are comparable to the average of previous years.

OPERATIONS AT BROMPTONVILLE

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bush.	
			1927	Average	1927	Average
					$ cts.	$ cts.
D	Swede turnips	5	33 tons	32·6 tons	2 08	1 83
D	Corn (Wisconsin No. 7)	5	19·3 tons	17·4 tons	2 36	2 79
C	Oats (Banner)	3	60·2 bush.	62·0 bush.	0 48$\frac{1}{5}$	0 48
B	Clover hay (1st crop)	5	1·7 tons	1·6 tons	6 29	9 13
B	Clover seed (2nd crop)	1	140 lb.	.....	0 13$\frac{7}{10}$	
A	Timothy hay	3	2·5 tons	2·44 tons	6 29	6 34

The application of chemical fertilizers on turnips was not very effective and resulted in an increase of only $1\frac{2}{3}$ tons which was not sufficient to pay for the extra expenses.

A field day on the Illustration Station at Bromptonville.

Nitrate of soda was applied on the poorest part of field " A " and increased the yield so as to make it uniform all over the field.

The second crop on field " B " was harvested for seed which contributed to reduce the cost per ton of clover hay.

This station, owing to the increasing yields of the crops and the neat way they are kept throughout the growing season is becoming a centre of interest in that district. During August a field meeting was held by the officers of the Station which was largely attended by the surrounding farmers and the agricultural representatives of the county.

STATION, WEEDON, WOLFE COUNTY

Operator, E. Joseph Allard

The sandy nature of the soil at this station together with the work necessary to control the weeds make profitable yields a rather difficult proposition. Seedings were done at about the same date as last year, that is, between May 23 and June 3.

The following table shows the yield and cost of growing crops since 1921 as well as the results for this season's operations.

OPERATIONS AT WEEDON

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bush.	
			1927	Average	1927	Average
					$ cts.	$ cts.
D	Swede turnips	7	18·1 tons	20·5 tons	3 00	3 76
D	Corn and sunflowers	3	24 tons	18·3 tons	2 50	3 44
C	Barley	2	46 bush.	36·5 bush.	0 62½	0 89 3/10
B	Clover hay	7	1·54 tons	1·39 tons	11 12	11 62
A	Timothy hay	7	0·75 ton	1·78 tons	16 08	7 89

A test of fertilizers which has already been reported was carried out in the production of turnips and resulted in an increase of 7 tons per acre over the check plot. An equal increase was obtained with 150 pounds of nitrate of soda applied on the sunflower field.

STATION, BLACK LAKE, MEGANTIC COUNTY

Operator, Archilas Dallaire

This is the first year that Illustration Station work was undertaken at this station. Considerable preparatory work has been done to clear the land from stones and despite the poor nature of the soil, the results of this first year are very encouraging. The station begins to draw the attention of the farmers of this district.

The following table shows the yields of the crops per acre and their cost per ton or bushel:—

OPERATIONS AT BLACK LAKE

Fields	Crops	Yield per acre	Cost per ton or bushel
C	Swede turnips	28·7 tons	$2 57
C	O. P. hay	4 tons	8 61
D	O. P. hay	4 tons	7 79
A & B	Oats (Banner)	57·6 bush.	0 34½

An application of 120 pounds nitrate, 180 pounds superphosphate, 72 pounds muriate in addition to farm manure has increased the yield of turnips 10 tons per acre. The comparative yields and costs are given under the heading "Fertilizers for turnips".

STATION, NOTRE DAME DE HAM, WOLFE COUNTY

Operator, Pierre Toupin

This year the crop yields were somewhat higher than the average for the previous years. Oats were sown May 14 and harvested August 2. Corn and sunflowers were sown June 1 and harvested September 10.

In the following table are given the results of this year as well as the average results since the establishment of the station.

OPERATIONS AT NOTRE DAME DE HAM

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
D	Corn and sunflowers	2	20·0 tons	16·0 tons	3 07	3 81
D	Corn (Longfellow)	2	13·2 tons	11·6 tons	4 87	5 15
C	Oats (Banner)	3	48·0 bush.	38·8 bush.	0 48	0 70
B	Clover hay	2	2·8 tons	2·6 tons	6 85	6 39
A	Timothy	1	2·0 tons		6 50	

As a result of proper management of the soil, the numerous weeds that formerly occupied a great part of the fields are gradually being eliminated and replaced by clover and timothy. These crops have given very satisfactory yields this year and were produced at a very reasonable cost.

A new field will be added to the rotation next year so as to make it a five-year rotation which seems more suitable to the farmers of this district.

Nitrate was applied at the rate of 150 pounds per acre for the production of corn and sunflowers. The yield and the cost of production in each case were as follows:—

YIELD AND COST OF PRODUCTION OF CORN AND SUNFLOWERS

Crop	Yield per acre	Cost per ton
		$ cts.
Corn (with nitrate)	14·2	4 75
Corn (without nitrate)	12·1	4 24
Corn and sunflowers (with nitrate)	21·3	3·03
Corn and sunflowers (without nitrate)	18·7	3 10

STATION, LAKE MEGANTIC, FRONTENAC COUNTY

Operator, Alcide Trudel

The number of cows kept on this farm which supplies the milk to the town necessitates a heavy production of bulky feeds. For this reason oats are sown in mixture with peas and harvested mostly as hay. Field A was sown in turnips which yielded 34 tons per acre and cost $1.63 per ton. The yield of O.P. hay on fields B, C, D was 3½ tons and the cost of production $11.28 per ton. This high cost of production can be explained by the fact that the crop was hand mowed.

Alfalfa was tried on a little piece of land adjoining these fields and the stand was quite promising this fall.

The whole farm was entered in the Agricultural Merit competition under the provincial Department of Agriculture and Mr. Trudel was awarded a silver medal.

STATION, PLESSISVILLE, MEGANTIC COUNTY

OPERATOR, EUDORE JUTRAS

This station established in 1920 has made constant progress. The results of operations since the beginning are summarized as follows:—

OPERATIONS AT PLESSISVILLE

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Swede turnips	7	23·3 tons	25·7 tons	2 02	2 19
A	Corn (Wisconsin No. 7)	7	18·0 tons	16·9 tons	2 32	2 42
D	Barley	3	52·0 bush.	48·3 bush.	0 57⅞	0 53 3/15
C	Clover hay	7	1·6 tons	1·8 tons	10 80	9 28
B	Timothy hay	7	2·0 tons	1·7 tons	6 93	7 15

The work was always carried on with excellent judgment at this station and this has much to do with the average results shown in the above table. It is difficult to find a farm where all the operations are performed so methodically and the fields given such care. The farmers of the community have shown an increasing interest in illustration station work and much good has resulted therefrom.

Constant attention has been given to live stock problems on this farm. This year a group of quality heifers was properly developed and are promising for the future.

The culture of small fruits was not neglected and the raspberry plantation is strong and healthy. A new plantation of strawberries was started in the spring and properly looked after during the summer.

Mr. Jutras won the third silver medal in the Agricultural Merit competition, which reflects favourably upon the organization of his farm.

STATION, ST. MAXIME DE SCOTT, DORCHESTER COUNTY

OPERATOR, ELZEAR LACROIX

The sandy soil of this station presents a difficult problem in the production of hay, although turnips, oats, and other crops gave profitable yields. The fertilizing elements of the soil seem to become exhausted very rapidly, and the yields of hay since the establishment of this farm are far from being satisfactory.

The following table shows the results obtained with each crop since the beginning of the operations:—

OPERATIONS AT ST. MAXIME DE SCOTT

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Swede turnips tons	4	28·5	24·4	2 02	3 12
A	Peas bush.	1	30	.....	1 33	
D	Oats, Banner bush.	4	50·2	37·4	0 46 2/15	0 66⅔
C	Clover hay tons	3	1	1	16 16	16 87
B	Timothy hay tons	1	½	.....	26 60	

Peas which were tried this year for the first time have given good profits. This crop valued at $3 per bushel would leave a profit of $50 per acre.

The whole farm was entered in the Agricultural Merit competition and was awarded a silver medal.

A meeting was held on this farm and over fifty farmers were present. Lectures were given by officials of the provincial and federal Departments of Agriculture, which were followed by a visit to the fields.

STATION, ST. APPOLINAIRE, LOTHBINIERE COUNTY

Operator, Joseph Côté

This farm is situated on low land which makes early seeding very difficult. However, every effort has been made to drain the land in order that seeding may be carried out early in June. The results obtained this year and in previous years are shown in the following table:—

OPERATIONS AT ST. APPOLINAIRE

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Swede turnips	3	19·0 tons	16·2 tons	2 29	3 58
A	O. P. hay	2	3·2 tons	2·6 tons	6 00	10 76
A	Potatoes	1	120·0 bush.		0 50	
D	Oats (Banner)	3	38·0 bush.	41·0 bush.	0 61½	0 60¾
C	Clover hay	2	2·0 tons	1·44 tons	8 39	10 43
B	Timothy	2	0·96 tons	1·15 tons	12 41	10 04

In connection with the average cost of production it should be noted that this was increased considerably as a result of the run down condition of the soil necessitating much preparatory work in the first year of operation. However, yields are gradually increasing and it is expected that they will be all satisfactory by the time the first cycle of rotation will be completed.

A test of fertilizers for turnips was conducted at this station and has been previously reported.

A strawberry plot of a quarter acre which had been planted last year under the direction of the supervisor gave returns valued at $200. A new plantation was started last spring.

Special attention was given to the raising of a group of calves sired by a bull of quality.

STATION, ST. MICHEL, BELLECHASSE COUNTY

Operator, Fortunat Morrisset

Seeding at this station was delayed until June 13 owing to the wetness of the land. Oats and hay gave satisfactory yields but turnips were damaged by hail in July and afterwards were flooded. Half of the field had to be ploughed again and was a complete loss. The yield and cost given below for turnips applies only to the part of the field that could be saved.

OPERATIONS AT ST. MICHEL

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Swede turnips	4	13·6 tons	12·2 tons	3 05	4 63
A	O. P. hay	3	3·0 tons	2·8 tons	9 32	11 25
C	Oats (Banner)	4	43·0 bush.	40·4 bush.	0 39	0 52¾
D	Clover hay	4	1·73 tons	1·64 tons	8 04	10 04
B	Timothy hay	3	2·0 tons	2·25 tons	9 32	7 08

STATION, MONTMAGNY

OPERATOR, G. F. FOURNIER

Seeding was carried out between June 4 and June 11 at this station and exceptionally good yields were obtained with turnips and clover hay as is shown by the following table:—

OPERATIONS AT MONTMAGNY

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
					$ cts.	$ cts.
D	Swede turnips	6	39·0 tons	28·8 tons	2 15	2 10
D	Corn and sunflowers	4	14·0 tons	17·4 tons	3 30	2 66
C	Barley	2	32·5 bush.	32·3 bush.	0 76	0 75½
B	Clover hay (2 crops)	5	4·18 tons	2·66 tons	5 16	7 74
A	Timothy hay	6	1·93 tons	1·81 tons	7 10	7 12

Chemical fertilizers were used for growing turnips but failed to give a noticeable increase in the yield. Lime applied in 1926 on field B increased the yield of clover hay in a very satisfactory way. The limed plot produced 2·84 tons per acre while the unlimed plot yielded only 1·92 tons per acre. This result is for the first cutting only, the yields of the second crop have not been measured separately.

An Ayrshire bull calf has been bought to replace the old one. He is from a high record dam and a grandson of Briery Lass, former world champion. Special attention has been given to the raising of calves and great progress should be noticed in the course of the coming season.

Mr. Fournier has now a pure-bred Ayrshire herd of fairly good quality. At the local county fair the herd was shown and several prizes were obtained including a silver medal for the best herd.

STATION, ST. ALEXANDRE, KAMOURASKA COUNTY

OPERATOR, ALPHONSE OUELLET

This is the second year of operation at this station which includes 8 acres of clay loam on which a four-year rotation will be soon fully established, and 8 acres of sandy soil where a three-year rotation will be followed for growing potatoes.

As a result of the drainage work on the lower part of this station, it was possible to seed the oats and oat hay early in June thereby ensuring profitable yields from these crops. The results of this season's operations follow:—

OPERATIONS AT ST. ALEXANDRE

Field	Crop	Yield per acre	Cost per ton or bushel
			$ cts.
C	Swede turnips	14·0 tons	4 94
C	O. P. hay	4·29 tons	9 55
D	O. P. hay	2·75 tons	8 52
A & B	Oats (Banner)	36·0 bush.	0 42⅞

The apparently abnormal cost per ton of O.P. hay on field C was caused by the higher fertilizing charges.

The sandy part of this station was sown in wheat and potatoes. The wheat yielded 14·2 bushels per acre and potatoes 246 bushels. Two different quantities of a fertilizer mixture were applied on the potato field, a report of which has already been given.

With the object in view of improving the quality of the herd, a young Ayrshire bull calf was bought last spring from a reputable herd.

STATION, ST. ELEUTHERE, KAMOURASKA COUNTY

Operator, Germain Morin

This station is in operation for the first year and the condition of the land last spring did not permit seeding before late in June. This, together with the run down condition of the soil, explains the low yield per acre of the crops. New ditches will be dug so as to allow earlier seeding.

The results of this year's operations are summarized as follows:—

OPERATIONS AT ST. ELEUTHERE

Fields	Crop	Yield per acre	Cost per ton or bushel
			$ cts.
D	Swede turnips	7·2 tons	13 32
D	Potatoes	126·5 bush.	0 76
B & C	Oats (Alaska)	23·0 bush.	0 67½
A	O. P. hay	1·6 ton	14 15

It may be of interest to the reader to know that the cost of the crops at this station was considerably raised by the fact that two men have been used for ploughing, cultivating, etc. No doubt these conditions will be improved in the future by the adoption of better methods.

STATION, RIVIERE-BLEUE, TEMISCOUATA COUNTY

Operator, Joseph Bélanger

This station being in operation for the first year, the activities of the past season may be considered as preliminary work. Fields A and B were sown to oats and peas mixture, of which a part was fed green to dairy cows as a supplement to pasture, the balance being allowed to ripen for grain. The grain yielded 40 bushels per acre, and cost 61 7/10 cent per bushel. Oats were harvested for hay, owing to the numerous weeds, especially mustard, that grew up on fields C and D. The yield per acre was 2 tons of oat hay and the cost per ton $9.01.

These fields are also infested by couch grass, which is a hindrance in getting a good stand of clover. No doubt proper methods of culture and the use of good quality seed will overcome this difficulty.

STATION, ST. ARSENE, TEMISCOUATA COUNTY

Operator, Antonio Cayouette

The soil of this station is specially adapted to the production of potatoes. A three-year rotation is therefore being established with that purpose in view. The succession of the crops in the fields will be as follows:—

First year: Potatoes.
Second year: Cereals.
Third year: Clover hay.

The second crop of clover will be ploughed under in the fall to increase the organic content of the soil.

The results for this first year's operations follow:—

OPERATIONS AT ST. ARSENE

Field	Crop	Yield per acre	Cost per ton or bushel
			$ cts.
B	Potatoes (G.M.)	354·0 bush.	0 17½
C	Oats (Banner)	34·0 bush.	0 35½
A	Wheat (Huron)	6·6 bush.	1 93

Potatoes grown on field B have given a very creditable yield and were accepted as certified potatoes. Exhibits sent to the Royal were awarded a first and a second prize. The wheat crop was a failure on this poor sandy, soil and that crop will be transferred next year to another part of the farm where the land is heavier.

STATION, ST. FABIEN, RIMOUSKI COUNTY

Operator, Joseph Albert

This is the first year that a six-year rotation has been followed on this station. Owing to the nature of the land and to seasonal conditions, the seedings could not be made before June 13. Some progress has been made in the way of clearing fields of stone-piles. This work will be continued next year.

The following summary gives the results for this year and the average results from the beginning of the operations:—

OPERATIONS AT ST. FABIEN

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Sunflowers	5	13·0 tons	17·0 tons	3 18	3 20
A	Swede turnips	6	16·0 tons	15·4 tons	4 59	4 39
A	O. P. hay	1	1·8 tons	.....	11 73	
F	Oats (Banner)	6	57·1 bush.	56·6 bush.	0 41½	0 39$\frac{5}{10}$
E	Clover hay	6	1·7 tons	1·5 tons	11 12	11 57
D	Timothy hay	5	1·7 tons	1·5 tons	8 00	10 15
C	Timothy (or pasture)	.....	1·3 tons	.....	9 45	
B	O. P. hay	.....	2·6 tons	.....	7 67	

This six-year rotation provides for a great quantity of hay and roughages for feeding live stock. This will no doubt facilitate the improvement along that line.

Oats have been the most successful crop on this station and yielded over 57 bushels per acre on an average for six years. The other crops have given only medium yields, but still above the average for the district.

STATION, MATANE

Operator, Michel Philibert

The various crops were seeded between June 2 and 15. The period of drought which followed reduced the yield of the hay crop and delayed the development of the turnips. The yield and cost of production were as follows:—

OPERATIONS AT MATANE

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
					$ cts.	$ cts.
B	Turnips	6	19·5 tons	16·0 tons	3 04	3 68
A	Oats (Banner)	6	34·1 bush.	55·5 bush.	0 57 1/10	0 44 3/4
C & D	Clover and timothy mixed	5	1·0 tons	1·46 tons	15 91	11 79

Chemical fertilizers applied to turnips produced an increase of 4½ tons per acre. This test is reported in a preceding page.

STATION, CAUSAPSCAL, MATAPEDIA COUNTY

Operator, Joseph Valois

Although this station has been in operation for only two years, it has already made good progress. The two varieties of oats reported below were sown May 23. Alaska was harvested August 29 and Banner September 8.

The following table shows the results of this years operations:—

OPERATIONS AT CAUSAPSCAL

Field	Crop	Yield per acre	Cost per ton or bushel
			$ cts.
D	Swede turnips	19·68 tons	3 04
D	Potatoes	209·0 bush.	0 25
C	Oats (Banner)	39·3 bush.	0 51 3/10
B	Oats (Alaska)	38·5 bush.	0 52 3/10
A	Clover hay	1·7 tons	6 53

The results of fertilizer tests for potatoes and turnips are given in previous tables.

In order to improve the quality of the herd an advanced registry bull was bought and properly developed during the past season.

STATION, NOUVELLE, BONAVENTURE COUNTY

Operator, Leon Lavoie

This is also the first year that this station has been in operation. The soil varies from a sandy loam to a clay loam. The yields of O.P. hay and oats were satisfactory and gave profitable returns but the turnip crop was badly damaged by green aphids and had to be reseeded. This explains the high cost of that crop.

The yield of crops per acre and their cost per ton or bushel will be found in the following table:—

OPERATIONS AT NOUVELLE

Field	Crop	Yield per acre	Cost per ton or bushel
			$ cts.
C	Swede turnips	14·4 tons	5 26
D	O. P. hay	2·35 tons	9 88
A & B	Oats (Banner)	60·0 bush.	0 82 1/10

Lime was applied on a part of field B for the production of hay. The comparative yields will be reported next year.

STATION, ST-ALPHONSE DE CAPLAN, BONAVENTURE COUNTY

OPERATOR, ISIDORE ST-ONGE

This newly established station is situated on a very poor soil. Much work has been necessary to straighten the fences and provide for the surface drainage of the fields.

A preliminary test of fertilizers was conducted with the object in view of finding out which is the element most needed by the soil. The addition of phosphate alone did not show any increase in the yield while other fertilizers, especially nitrates, produced a substantial increase. This would indicate that nitrogen is the element most required. However, other fertilizers are also beneficial owing to the general lack of fertility. The best results were obtained with a combination of farm manure and marl.

The O.P. hay yielded a ton per acre. Oats were poor and harvested for hay.

STATION, NEW RICHMOND, BONAVENTURE COUNTY

OPERATOR, JOHN B. CYR

Seedings were done between May 19 and June 8. Grain was harvested in the beginning of August. The results of this year's activities compare well with those of the previous years, which were very satisfactory.

OPERATIONS AT NEW RICHMOND

Field	Crop	Number of years grown	Yield per acre		Cost per ton or bushel	
			1927	Average	1927	Average
					$ cts.	$ cts.
D	Swede turnips	6	23·7 tons	26·5 tons	2 41	2 43
D	Potatoes (G.M.)	3	260·0 bush.	266·0 bush.	0 22	0 28½
D	Potatoes (I.C.)	6	240·0 bush.	255·0* bush.	0 24$\frac{5}{7}$	0 25$\frac{5}{7}$
D	Corn (Longfellow)	6	16·0 tons	15·6 tons	3 25	3 49
C	Oats (Banner)	6	43·7 bush.	66·8 bush.	0 54	0 33½
B	Clover hay	7	1·65 tons	1·69 tons	10 15	9 57
A	Timothy hay	7	1·68 tons	1·88 tons	9 95	8 44

*Average for all other varieties.

The Green Mountain potatoes were accepted as certified potatoes and will be offered for sale in the district.

It will be seen from the above figures that this station which has been in operation for many years has given very good average yields per acre, this being due to good methods of culture. These have a far-reaching effect in this district and are a credit to the operator of the station.

In view of determining the benefits of lime for growing hay, a demonstration has been under way since 1924. The yield per acre of each plot since that work was started will be found in the following table:—

RESULTS OF LIMING EXPERIMENT

Year	Field	Crop	Yield per acre	
			Limed plot	Unlimed plot
			lb.	lb.
1925	D	Clover hay (1st crop)	3,200	1,600
1926	D	Timothy hay	4,000	2,000
1926	A	Clover hay	8,000	4,000
1927	A	Timothy hay	3,900	2,240
Average		Clover and timothy hay	4,773	2,460

The above table shows clearly that applications of lime are beneficial to the soil which is of a sandy nature. The lime can be supplied in the form of marl which is abundant in this district. This substance, analyzed by the Division of Chemistry, was found to contain 93 per cent of calcium carbonate. Therefore it is intended to use marl instead of lime in the future tests.

AVERAGE YIELD AND COST OF CROPS

The accompanying table was computed from the present report for the purpose of showing average yield and cost of the crops grown on the Illustration Stations of Eastern Quebec in 1927.

AVERAGE YIELD AND COST OF CROPS ON EASTERN QUEBEC ILLUSTRATION STATIONS

Crops	Number of stations	Average yield	Average cost
			$ cts.
Swede turnips	15	23·0 tons	2 94 per ton
Corn	4	16·6 tons	3 20 per ton
Corn and sunflowers mixed	4	17·7 tons	3 01 per ton
Potatoes	4	233·0 bush.	0 29 per bush.
Oat and pea hay	7	3·1 tons	9 05 per ton
Peas	1	30·0 bush.	1 33 per bush.
Barley	3	43·5 bush.	0 65 per bush.
Oats	12	47·0 bush.	0 46 per bush.
Clover	10	2·0 tons	8 44 per ton
Timothy	8	1·8 ton	8 30 per ton

In this summary the reader's attention is called to the fact that the yields per acre are above the average for ordinary farms. This was obtained by the use of good quality seeds, proper treatment of the soil and better methods of culture. The crops were also generally produced at a reasonable cost considering that the results of some newly established stations are included in this summary.

REPORT OF THE ILLUSTRATION STATIONS FOR NEW BRUNSWICK

T. G. Hetherington, B.S.A., Supervisor

SEASONAL CONDITIONS

The growing season of 1927 was very similar to that of the previous year, in that the rainfall was excessive. Lack of sunshine further aggravated the situation by prolonging cropping, haying and harvesting operations. The late summer months were particularly damp and hot, thus providing conditions favourable for the heavy attack of late blight in potatoes, which was general in the province and caused an immense loss.

The New Brunswick Stations were injured or benefited by the heavy rainfall according to the type of soils. Low lying, heavy clay or clay loams such as found at Petersville, Salisbury, West Bathurst, Sussex, Harvey, Adamsville, Siegas and Rexton suffered generally or in individual low lying fields throughout the season. Such stations as Jacquet River, Riordon and Lower Derby suffered at times but never for long periods. Natural surface drainage, assisted by a certain amount of soil absorption, helped these stations. At Baker Brook, Grand Falls, Perth, Tracey and St. Isidore, with soils varying from light sandy loams to gravelly loams, heavy rainfall did not prove a hardship. Conditions, however, at all stations were such that it was often difficult to perform seasonal work effectively.

The fall months continued wet but farmers were able to work on the land up until November 19—an unusually late date for this province and, as a result, fall preparation work is well in hand.

FIELD MEETINGS—PUBLICITY—CONTESTS

In July, farmers' meetings were held at Siegas, Grand Falls, Riordon and Derby Junction, the attendance varying from twenty to one hundred. As usual, demonstrations of a practical nature such as a comparison of limed and unlimed plots, the use of basic slag, nitrate of soda, acid phosphate on turnips, northern-grown clover seed, etc., created the greatest interest. A fertilizer mixing demonstration was given at Petersville in the spring. Winter meetings were held at Nelson, Quarryville, Millerton and Whitneyville. These districts surround the Derby Junction station operated by W. R. Taylor.

Two turnip growing competitions were conducted during the year, viz., at Derby Junction and Petersville, with thirteen members in each Club. The contestants were all agreed that the variety known as Hall's Westbury produced the smoothest and most attractive turnip, as well as giving a good yield, thus making it desirable either as a table or stock turnip.

In a "Know Your Province" series of articles published in a leading daily paper, more than passing attention was given to the value of several of the Illustration Stations to the respective communities in which they were situated. Especial emphasis was placed on the value of the Riordon station to the farmers in Gloucester county, particularly those living in the Caraquet peninsula.

On all stations, where clear cut practical demonstrations were conducted, painted sign boards with suitable legends informed the public as to the nature of the work under way.

At the request of the Provincial Department of Agriculture, assisted in the judging of live stock at various fairs including St. Stephen, Chatham, Keswick, St. Hilaire and Bellefleur.

ECONOMIC CONDITIONS

It is doubtful if the New Brunswick farmer is as prosperous as was the case a year ago. Potato yields and prices are always a good index to the financial condition of the farmer, as it is the one and only cash crop of any significance on at least half of the farms in the province. A year ago, table potatoes were being readily absorbed at $2.75 per barrel as compared with a price ranging from $1.00 to $1.75 per barrel this year. The fact that a much lower yield was secured made the situation more unsatisfactory. It is worthy of note, however, that those farmers producing certified seed potatoes were amply repaid, receiving from $3 to $4.50 a barrel.

Seasonal conditions were favourable to the dairy farmer, pastures were excellent throughout the season and stock went into the barns in good condition. Dairymen were likewise favoured with an exceptionally good crop of turnips. Grain crops on the whole were not equal to those of the previous year, with the exception of buckwheat.

Notwithstanding unfavourable conditions, the operators of the Illustration Stations are forging ahead, in many cases extending their operations, improving buildings and increasing storage accommodations, and a few are making excellent progress with their livestock.

ADAMSVILLE, KENT COUNTY

OPERATOR, JOSEPH CORMIER

Excellent progress was made by the operator in his first year of Illustration Station work. The crop of hay in field "A" was only average, owing to the fact that it has been in sod for several years. The potatoes on field "B" developed particularly well and promised a very high yield. The operator, however, did

not possess spraying machinery and late blight practically ruined the crop. One half of this field was dug on September 8 and the crop placed in storage. The remainder of the crop was dug the first week in October. The early harvested potatoes were a total loss owing to the fact that they were immature when dug. The skin was tender and peeled in the digging process and these wounds coming in contact with the tops became infected and although sound when stored, they rotted in ten days and were hauled to the dump. The late harvested potatoes did not rot after going into storage.

The crop of oats on field "C" and the crop of oats, peas and vetches on field "D" were both good for this locality. An old meadow at this station was treated with an application of nitrate of soda which resulted in an average increase in yield of almost one ton of hay per acre.

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

OPERATIONS AT ADAMSVILLE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Mixed hay	1	1·0 ton	1·0 ton	7 24 per ton	7 24 per ton
B	Potatoes (Green Mount'n)	1	110·0 bush.	110·0 bush	0 59 per bush.	0 59 per bush.
C	Oats (Victory)	1	32·5 bush.	32·5 bush.	0 79 per bush.	0 79 per bush.
D	Oats, peas, vetches	1	2·0 tons	2·0 tons	12 08 per ton	12 08 per ton

BAKER BROOK, MADAWASKA COUNTY

Operator, Felix Daigle

Field "A" at this station was in turnips and oats, peas and vetches. Potatoes were not planted in the hoed crop, owing to the fact that the field was limed quite heavily in 1925 and therefore there was likelihood of the potatoes developing scab. The crop of oats, peas and vetches at this station, as well as at many other stations, grew very heavy and lodged badly, which made harvesting difficult. Several fields had to be hand mown and this added very materially to the cost of production. Turnips were an excellent stand and yielded the heaviest crop yet harvested at this station. Some nitrated plots on fields "B" and "C" showed up very well. Field "D" was seeded down, one acre receiving a dressing of three tons of ground limestone.

The station crops, workmanship and various demonstrations made an excellent showing again this year.

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

OPERATIONS AT BAKER BROOK—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats, peas, vetches	1	3·2 tons	3·2 tons	8 01 per ton	8 01 per ton
A	Turnips (Hall's Westbury)	3	25·2 tons	22·7 tons	2 82 per ton	3 11 per ton
B	Timothy	2	1·7 tons	1·2 tons	9 26 per ton	11 95 per ton
C	Clover	2	1·8 tons	1·8 tons	8 15 per ton	8 41 per ton
D	Oats (Banner)	4	38·5 bush.	42·5 bush.	0 58 per bush.	0 45 per bush

GRAND FALLS, VICTORIA COUNTY

OPERATOR, GABE MORIN

Some excellent practical demonstrations were conducted here this year. Field "B" was limed in 1925 and in 1926 a heavy crop of clover hay was taken from the field. In 1927, the field again yielded a very heavy crop and fully eighty per cent of the crop was composed of red clover, while field "C" alongside of it, and in first year hay, but unlimed, did not show any red clover but instead presented a thick short stand of alsike and a scattering growth of short timothy. One acre on field "C" was treated to an application of 150 pounds of nitrate of soda. This application practically doubled the hay crop; it doubled the height of the alsike but its most noticeable effect was on the stand of timothy. The timothy was very rank and moderately thick, while on the adjoining area that did not receive nitrate, the crop was short and thin.

Cropping work was very well done at this station. The good workmanship, combined with the hay, grain and root crops and the lime and fertilizer demonstrations, made this an interesting station for the farmers in the vicinity, when the field meeting was held in July. An additional attractive feature was a well kept farm garden and extensive flower beds.

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

OPERATIONS AT GRAND FALLS—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats (Banner)	5	57·0 bush.	61·8 bush.	0 36 per bush.	0 39 per bush
B	Timothy	3	2·4 tons	1·7 tons	5 27 per ton	8 80 per ton
C	Clover	2	1·9 tons	2·3 tons	5 99 per ton	5 83 per ton
D	Potatoes (Green Mountains)	5	233 bush.	287·0 bush.	0 23 per bush.	0 18 per bush.
D	Turnips (Hall's Westbury)	4	23·8 tons	19·0 tons	1 96 per ton	2 40 per ton

HARVEY STATION, YORK COUNTY

OPERATOR, C. MELVIN GRIEVES

This is the first year that this station has been in operation and notwithstanding the fact that seasonal conditions were decidedly unfavourable, creditable crops of turnips, oats, green feed and clover hay were harvested.

One acre in each of the fields "A" and "C" was limed at the rate of three tons per acre. Field "A" was sown to oats, peas and vetches and will be in hoed crop next year. Ground limestone appreciably encouraged pea and vetch growth on this field.

Progress has been made in clearing the rock pile at the front of the field.

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

OPERATIONS AT HARVEY—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats, peas and vetches	1	2·1 tons	2·1 tons	16 63 per ton	16 63 per ton
B	Potatoes (Green Mountains)	1	178 bush.	178 bush.	0 38 per bush.	0 38 per bush.
B	Turnips (Hall's Westbury)	1	24 tons	24 tons	2 72 per ton	2 72 per ton
C	Oats (Victory)	1	32 bush.	32 bush.	0 66 per bush.	0 66 per bush.
D	Clover	1	2 tons	2 tons	5 37 per ton	5 37 per ton

JACQUET RIVER, RESTIGOUCHE COUNTY

OPERATOR, ALEXANDER TURVEY

This is the second year that Illustration Station work has been conducted at this station. In the first year, a great deal of effort was expended in overcoming couch grass and again this year, considerable extra labour was required to control it and thus crop costs are very high.

Two one acre plots in fields " C " and " D " were limed at the rate of three tons per acre. An acre plot adjoining each was left as a check to note the effect of lime on this type of soil. A very carefully conducted demonstration comparing manure alone and in combination with chemicals was carried out on one acre of turnips in field " B " and provided an instructive object lesson on the value of supplementing barnyard manure with artificial fertilizer.

The workmanship at this station was very creditable and as the rotation becomes established crop costs will diminish gradually.

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

OPERATIONS AT JACQUET RIVER—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats, peas, vetches	2	1·5 tons	2 tons	14 11 per ton	10 58 per ton
B	Potatoes (Green Mountains)	1	275 bush.	275 bush.	0 23 per bush.	0 23 per bush.
B	Turnips (Hall's Westbury)	2	20·6 tons	19 tons	4 16 per ton	3 97 per ton
C	Oats (Victory)	2	16 bush.	15·5 bush.	1 73 per bush.	1 27 per bush.
D	Oats (Victory)	2	16 bush.	15·5 bush.	1 73 per bush.	1 27 per bush.

LOWER DERBY, NORTHUMBERLAND COUNTY

OPERATOR, W. R. TAYLOR

This marks the seventh year that illustration work has been conducted on this farm. The work here, year after year, has been consistently good and has provided a forceful object lesson for a wide area of the advantages, in the form of increased yields, resulting from an intensive and intelligent cultivation of the soil. In a partial survey of the community surrounding this station, it was found that almost forty farmers were practising after harvest cultivation.

This year field " D " was sown to registered White Russian wheat and seeded down. This will provide an additional cash crop as the grain will be sold for seed. Turnip yields are usually good at this station. The three year average yield has been slightly over 25 tons per acre. The operator finds turnips a very profitable crop for his dairy cattle and has a ready outlet for any surplus he may have for table use in the nearby towns. Next year, the turnip acreage will be increased by fifty per cent. Potatoes did not yield as well as in former years, owing to blight and scab. Scab was very prevalent on heavier land and scarcely noticeable on the light sandy loam. A heavy application of ground limestone some years ago is responsible for the scab. This year's yield of potatoes was 231 bushels per acre as compared with a three year average of 293 bushels.

The fourth annual field day held at this station in July was well attended by representative farmers from all parts of the county.

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

OPERATIONS AT LOWER DERBY—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover	7	2·5 tons	2·03 tons	9 24 per ton	8 83 per ton
B	Timothy	7	2·66 tons	2·06 tons	7 93 per ton	6 84 per ton
C	Turnips (Hall's Westbury)	7	27·6 tons	20·5 tons	2 90 per ton	4 40 per ton
C	Corn (Longfellow)	5	12·6 tons	13·6 tons	7 32 per ton	5 31 per ton
C	Potatoes (Green Mountains)	7	231 bush.	267 bush.	0 51 per bush.	0 37 per bush.
D	Wheat (White Russian)	1	22 bush.	22 bush.	1 38 per bush.	1 38 per bush.

PERTH, VICTORIA COUNTY

OPERATOR, R. J. McCREA

The four-year rotation of crops was very satisfactorily demonstrated at this station. Crops on the whole were good. A yield of over 29 tons of turnips was harvested this year and was the highest yield yet obtained on any New Brunswick station.

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

OPERATIONS AT PERTH—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover	5	1·6 tons	1·8 tons	11 94 per ton	8 98 per ton
B	Potatoes (Green Mountains)	7	178·0 bush.	235·0 bush.	0 28 per bush.	0 25 per bush.
B	Turnips (Hall's Westbury)	5	29·8 tons	16·5 tons	1 83 per ton	4 26 per ton
B	Oats, peas, vetches	1	3·2 tons	2·3 tons	8 23 per ton	8 23 per ton
C	Timothy	5	2·2 tons	1·5 tons	9 06 per ton	8 27 per ton
D	Oats (Victory)	3	44·6 bush.	39·1 bush.	0 45 per bush.	0 48 per bush.

PETERSVILLE, QUEENS COUNTY

OPERATOR, JAMES BUTLER

Initial operations were instituted at this station in the fall of 1926. The land selected was a very old, worn-out sod that was badly water-logged. Nevertheless such land is typical of the district. The location of this farm—immediately facing the parish church—is a very desirable feature and was partly responsible for its selection.

Narrow lands with deep dead furrows helped to carry off the rush of spring water. Intermittent rains hindered cultural operations in the spring and made seeding very late.

One-half of field "A" was limed at the rate of three tons per acre and this treatment proved beneficial to the clover, as well as to the grain crop. The clover stand, both on limed and unlimed ground was far superior to any in the community and could be credited to three causes, viz., (1) ample seed, (2) preparation of a good seed bed, (3) the use of northern grown seed. Fields "B" and "C" were planted to potatoes and turnips. A comparison of 20 tons of barn-

yard manure versus 1,500 pounds of a 5-8-7 commercial fertilizer on the potato crop emphasized the fact that manure from straw and poor, hay-fed cattle, not receiving any concentrates, is of little value.

Field " D " was sown to oats, peas and vetches, and received a dressing of 600 pounds of a 4-8-4 fertilizer. An excellent crop of feed was grown on this field. The tonnage per acre would equal the yield of hay secured from at least five acres of the average hay land in this district.

Field " E " was ploughed in the fall of 1926 and in the spring of 1927, it was well worked and sown to buckwheat. No fertilizer or manure was applied and the yield obtained was 4 bushels per acre. The yield serves to illustrate the run down condition of the farms in the Petersville district.

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

OPERATIONS AT PETERSVILLE—FOUR YEAR-ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats (Victory)	1	25·0 bush.	25·0 bush.	1 00 per bush.	1 00 per bush.
B	Potatoes (Green Mountains)	1	104·0 bush.	104·0 bush.	0 75 per bush.	0 75 per bush.
C	Turnips (Hall's Westbury)	1	7·5 tons	7·5 tons	8 64 per ton	8 64 per ton
D	Oats, peas, and vetches	1	2·5 tons	2·5 tons	11 93 per ton	11 93 per ton
E	Buckwheat	1	4·0 bush.	4·0 bush.	4 07 per bush.	4 07 per bush.

REXTON, KENT COUNTY

OPERATOR, J. G. DICKINSON

Crop rotation work was conducted here similar to that of previous years. The heavy rainfall was a serious handicap to almost all of the crops grown on the station and as a result, all yields are lighter than usual. This is particularly true in the case of wheat on Field " C ".

Soil cultivation is apparently well conducted here, but crop yields are low. A good average dressing of manure is applied on the hoe crop but apparently is not effective, which would seem to indicate that the soil is lacking in some one or more of the elements necessary for plant growth. In all probability acid phosphate would render a good account of itself on this soil. Nitrogen is apparently present in sufficient quantity as an application of nitrate of soda on the hay land had scarcely any appreciable effect. It is hoped that some fertilizer tests can be conducted here next year.

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

OPERATIONS AT REXTON—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy	6	2·2 tons	1·7 tons	5 68 per ton	7 71 per ton
B	Clover	6	2·5 tons	1·7 tons	6 02 per ton	7 33 per ton
C	Wheat (Huron)	7	10·0 bush.	17·6 bush.	2 27 per bush.	1 12 per bush.
D	Potatoes (Green Mountains)	8	141·0 bush.	211·0 bush.	0 53 per bush.	0 40 per bush.
D	Turnips (Hall's Westbury)	7	18·0 tons	13·9 tons	2 96 per ton	6 11 per ton

RIORDON, GLOUCESTER COUNTY

OPERATOR, THOMAS W. RIORDON

Illustration work has been in progress here for four years. Annual field meetings have been held in July of 1925, 1926 and 1927 with an average attendance of over one hundred farmers. The extent of this station's influence is widening each year, owing to striking demonstrations showing the effect of ground limestone on the clover crop; the effect of nitrate of soda on hay land, the value of good seed and more particularly, the importance of intensive cultivation. Observation of these features has almost revolutionized farm practice in one community twenty miles distant from the Riordon station. Since the first field meeting in July, 1925, this community has imported fourteen carloads of ground limestone, besides many carloads of fertilizer. It was formerly necessary to import up to thirty carloads of baled hay each winter but this year sees the community self-supporting in this respect and sees as well, an improvement in other crops such as oats and potatoes.

The area formerly devoted to hoed crops on this farm has been trebled in the last two years. This season saw an increase of ten acres in the potato acreage alone.

The purchase of a power sprayer by the operator and its frequent use throughout the season completely controlled blight and as a result the operator secured a yield of 322 bushels of potatoes per acre and was one of the few potato growers in Gloucester county that did not suffer a heavy loss. The sprayer easily paid for itself the first year.

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

OPERATIONS AT RIORDON—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats (Banner)	4	66 bush.	50 bus.	0 50 per bush.	0 56 per bush.
B	Potatoes (Green Mountains)	4	322 bush.	271 bush.	0 22 per bush.	0 25 per bush.
B	Turnips (Hall's Westbury)	4	25·5 tons	15·4 tons	4 01 per ton	5 27 per ton
B	Oats, peas, vetches	1	4·5 tons	4·5 tons	8 55 per ton	8 55 per ton
C	Timothy	2	2·5 tons	2·2 tons	7 85 per ton	7 92 per ton
D	Clover	3	2·0 tons	2·4 tons	10 50 per ton	8 04 per ton

SIEGAS, MADAWASKA COUNTY

OPERATOR, PHILIAS RUEST

This station has made marked progress during the two years that it has been in operation. Crop work on the different areas was very satisfactorily conducted.

In 1926, field "A" was treated with an application of 500 pounds of basic slag per acre and seeded with a standard grass seed mixture using oats as a nurse crop. This field developed a first class stand of clover in 1927, whereas a check plot adjoining, seeded in the same way, gave a growth of weeds, chiefly daisies and couch grass. The clover crop was harvested early in July and a second crop almost equal to the first developed. This demonstration conveyed three worth while messages to the farmers in the Siegas district, viz., (1) the value of basic slag, (2) the value of northern grown clover seed, (3) the benefits of early haymaking from both a quality and quantity standpoint. The

farmers were quick to grasp the importance of this demonstration and the operator of the station had many inquiries concerning it.

Good progress is being made in live stock improvement. A begininng has been made in keeping milk records. A good foundation in pure-bred Yorkshire swine has been laid and similar progress is evident in poultry and sheep.

A farmers' meeting was held at this station in July and each feature of the work was carefully explained. One of the fruits of the meeting was a decision on the part of a group to be more discriminating in their seed purchases and henceforth particular emphasis will be placed on securing northern grown clover seed.

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	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover	1	1·7 tons	1·7 tons	7 16 per ton	7 16 per ton
B	Oats (Victory)	2	39·0 bush.	43·0 bush.	0 69 per bush.	0·49 per bush.
C	Potatoes (Green Mountains)	2	138·0 bush.	189·0 bush.	0 38 per bush.	0 33 per bush.
C	Turnips (Hall's Westbury)	1	25·3 tons	25·3 tons	2 25 per ton	2 25 per ton
D	Oats, peas, vetches	1	3·2 tons	3·2 tons	8 72 per ton	8 72 per ton

ST. ISIDORE, GLOUCESTER COUNTY

Operator, Peter Robichaud

Preparatory work was undertaken on this land in the spring of 1927. The soil is light and sandy and suffers in periods of light rainfall. Soil fertility in this district is practically exhausted, the restoration of which will require years of well directed effort. The district has derived a great deal of benefit from the Riordon station, which is located in the same county. During the last two or three years, a good number of carloads of lime have been brought into the district, but as the district is about ten miles from a railway siding, the cost of lime is quite heavy. It is possible that basic slag could be applied as a soil corrective more economically. It is planned to compare basic slag and lime on the St. Isidore station next year.

Field "A" will be in timothy hay next year. Fields "B", "C", and "D" were ploughed in August and surface worked and ploughed again in the late fall and will be in ideal condition for cropping next year. Only one field "C" was cropped this year. It was sown to oats, peas and vetches to supplement the light hay crop, for which the district is noted.

Yields of crops and costs will be reported for this station next year.

SUSSEX, KINGS COUNTY

Operator, Matthew Robinson

To date operations at this station have been largely of a preparatory nature. The full four year crop rotation will be illustrated next year. Considerable progress has been made in all branches since the station was established. Possibly the most gratifying feature, in the way of an improvement this year, was the purchase of a high class pure-bred Holstein sire. The production of milk and the feeding of hogs are the two major activities carried on and hence the use of a sire with high producing ancestry is of pre-eminent importance.

This spring, field "D" was seeded down with oats as a nurse crop. One acre received a dressing of three tons of ground limestone. The clover on both limed and unlimed areas developed very well. It is possible that the limed area will show a better stand next year, although it is generally assumed that the Kennebecasis valley is fairly rich in lime.

Hoed crops, such as turnips and potatoes, were not as good as last year, owing to the fact that they were grown on very low ground and with this year's excessive rainfall, the turnips were flooded several times.

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

OPERATIONS AT SUSSEX—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Mixed hay	1	2·4 tons	2·4 tons	6 39 per ton	6 39 per ton
B	Mixed hay	1	2·4 tons	2·4 tons	6 39 per ton	6 39 per ton
C	Potatoes (Green Mountains)	2	192·0 bush.	233·0 bush.	0 42 per bush.	0 35 per bush.
C	Turnips (Hall's Westbury)	2	11·4 tons	12·2 tons	5 38 per ton	4 39 per ton
D	Oats (Victory)	2	50·0 bush.	43·3 bush.	0 36 per bush.	0 42 per bush.

TRACEY STATION, SUNBURY COUNTY

OPERATOR, JOHN PHILLIPS

Seasonal conditions were ideal for this type of soil and as a result, very heavy crops developed. This condition, combined with good workmanship, made this a very attractive station during the summer. Late blight practically ruined the potato crop on field "D". Spraying or dusting would have saved this field, however, the operator is already prepared to combat blight next year. Heavy winds and rains flattened part of the oats on field "B", nevertheless, a crop of 130 bushels was taken from this three acre field.

A fairly large acreage of turnips is grown in the Tracey district, and this year a careful test of three methods of fertilizing was conducted on the acre of turnips in field "D". The field was divided into three equal parts. Lot 1 was manured at the rate of 20 tons per acre; Lot 2 was manured at the same rate and also received acid phosphate at the rate of 600 pounds per acre; Lot 3 received manure and acid phosphate, similar to lot 2 and in addition received nitrate of soda at the rate of 200 pounds per acre. The yields secured were 19·3 tons, 22·5 tons and 25·6 tons per acre respectively. Increases comparable with the above were secured at other stations in favour of the use of acid phosphate and nitrate of soda as supplements to the application of barnyard manure.

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

OPERATIONS AT TRACEY—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy	3	2·5 tons	2·48 tons	7 27 per ton	5 83 per ton
B	Oats (Banner)	4	43·0 bush.	50·0 bush.	0 64 per bush.	0 48 per bush.
C	Clover	4	3·2 tons	2·9 tons	6 68 per ton	5 76 per ton
D	Turnips (Lot 1) (Hall's Westbury)	4	19·3 tons	16·06 tons	2 60 per ton	5 90 per ton
	Turnips (Lot 2)	.....	22·5 tons	.....	2 49 per ton	
	Turnips (Lot 3)	.....	25·6 tons	.....	2 45 per ton	
D	Potatoes (Green Mountains)	4	107·0 bush.	229·0 bush.	0 61 per bush.	0 41 per bush.

NEW STATIONS

In addition to the stations previously mentioned, preparatory work was undertaken on the farm of Corey Lewis at Salisbury in Westmorland county and also on the farm of W. D. G. Doucet at Beresford, in Gloucester county. Very good progress was made at the Beresford Station but unfavourable weather hindered operations at Salisbury. Crop yields and costs will be reported for these stations next year.

TURNIP-GROWING ON THE ILLUSTRATION STATIONS

The turnip crop is an important one in New Brunswick providing as it does the most dependable succulent for winter feeding that we can grow. The Illustration Station operators have become very proficient in their management of this crop. This year, ten operators growing one acre or more averaged over 24 tons per acre.

One of the main obstacles in turnip growing is difficulty in obtaining a stand —often the first seeding does not develop, especially in dry seasons. The success of the operators is accounted for in several ways. Thorough preparation of the seed bed, including compacting after planting, has helped to assure a stand. Improved methods of fertilizing have also assisted in getting a stand and have also been responsible for greatly increased yields as the following table indicates:

YIELD PER ACRE OF TURNIPS

Treatment per acre	Yield at Lower Derby	Yield at Jacquet River	Yield at Tracey	Average
	tons	tons	tons	tons
(1) 20 tons manure	21·9	19·8	19·3	20·3
(2) 20 tons manure, 600 lb. acid phosphate	25·5	23·1	22·5	23·7
(3) 20 tons manure, 600 lb. acid phosphate, 200 lb. nitrate of soda	32·7	33·0	25·6	30·4

Treatment 2 gave an average yield of 23·7 tons per acre or 3·4 tons more than treatment 1. This increase in yield cost $1.76 per ton. Treatment 3 gave an average yield of 30·4 tons per acre or 10·1 tons more than treatment 2. This increase in yield cost $1.18 per ton.

It will be noted from the above table that the addition of nitrate of soda was instrumental in materially increasing the yield in lot 3. In the fields represented above, nitrate stimulated growth in the early stages and thus the plants did not receive any set back from the time they broke ground until they were firmly rooted.

The following table illustrates the great variation in cost per ton in turnip production, as found on ten Illustration Stations. In turnip production, as in all other crops, many factors influence the cost of production per unit. Other things being equal, high yields are as a rule associated with low unit costs of production. It will be noted in the table that cost of man labour and horse labour have been included.

YIELD AND COST OF PRODUCTION OF TURNIPS

Station	Yield	Cost per ton	Cost of man labour per acre	Cost of horse labour per acre
	tons	$ cts.	$ cts.	$ cts.
1	29·8	1 83	23 00	9 00
2	27·6	2 90	42 00	10 50
3	25·5	4 01	65 60	12 40
4	25·3	2 25	34 00	6 65
5	25·2	2 82	35 60	7 20
6	24·0	2 72	31 20	8 70
7	23·8	1 96	20 20	5 20
8	22·4	2 51	18 60	7 80
9	20·6	4 16	47 80	11 50
10	18·0	2 96	23 80	8 60

In the foregoing table, it will be noted that cost per ton was highest at No. 3 station and No. 9 station. It will also be noticed that the man labour used at these two stations is almost double of that used on the average at the other stations. These two cases are typical examples of too much dependence on hand labour, e.g., hand hoeing several times when even more effective work could have been accomplished with the cultivator. Next to high yields, no other factor has a more important bearing on cost of production than efficient use of machinery. At stations Nos. 1, 7, and 8, hand labour has been reduced to a minimum and consequently cost per ton is low. It might be added that the high man labour cost at station No. 9 was partly expended in controlling couch grass, which illustrates another important factor in crop production that affects both yields and costs, viz., thorough preparation of the ground.

REPORT OF THE ILLUSTRATION STATIONS FOR NOVA SCOTIA

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

The spring of 1927 opened with promising indications for the early sowing of grain and other farm crops. Because of backward weather due to cold northeast winds these operations were hampered considerably, yet the sowing of grain was possible fully one week earlier than in 1926.

The early growth of grains was slow, due to the cool weather and the soil not warming up quickly. There was sufficient rainfall at most of the Stations to bring the crops along rapidly, though in a few instances they suffered for want of rain during the latter part of June and early July. After the 14th of July more rain fell than was needed. Wet weather continued throughout the summer, making haying a very slow operation. On August 24 a severe rain and wind storm did a great deal of damage to grain and potatoes. The grain in many sections had either to be mowed by hand or cut by means of a mowing machine, which added to the cost as well as lessened the yield. Potatoes died rapidly, due to a severe attack of late blight which caused much loss from rot. Turnips in sections where the soil is a light loam, or on exceptionally well-drained areas, gave good yields, but on the whole were much below the average. Considerable rot was noticed. The hay crop, however, gave a good average yield, and the season was very favourable to the growth of the young clover plants except where the grain was so badly lodged that the growing plants were smothered outright.

Because of the wet autumn not as much of the heavier land was ploughed, and in many sections it was impossible to plough out surface drains.

A record of the rainfall at Heatherton for the years 1926 and 1927 is given, and also, for the purpose of comparison, that at the Experimental Station, Kentville, for these years.

RAINFALL DURING THE SUMMER MONTHS

	Heatherton		Kentville	
	1927	1926	1927	1926
	in.	in.	in.	in.
May	2·68	3·34	3·73	3·75
June	3·21	3·34	1·27	3·33
July	3·38	1·35	5·58	2·98
August	6·30	1·37	9·39	1·85
September	2·74	1·58	2·07	1·00
October	4·62	5·13	5·23	4·63
Total	22·93	16·11	27·27	17·54
Average	3·82	2·68	4·54	2·92

NEW STATIONS

A new station was established at Barra Glen, Victoria county, on the farm of S. R. McNeil. The soil is a heavy loam, without sufficient drainage and is representative of a large area of land in this section. At this Station Victory oats were sown and a fair yield was obtained. The turnip crop was very poor.

LIVE STOCK

The live stock situation at the Illustration Stations remains much the same as at last season. The operators are gradually weeding out the poorer milkers and slowly getting in sires from high-producing strains. The improvement is slow, however, as the operators, while realizing that they have not as high producers in their herds as they should have, find the shortage of money the main difficulty in the way of getting better sires. The Musquodoboit operator purchased from the Experimental Farm, Nappan, a Guernsey bull which is a valuable asset to his herd.

More succulent feed is being produced at the stations to tide over the cows during July and August, also more grain is being produced to help out on the mill feed bill. Newport station raises one-half the amount of grain that is required to feed eighteen milk cows.

POULTRY

The progress along this line has been good, but considerable work is yet necessary in order to have ideal housing conditions for the flocks. Many have added more windows to their poultry houses. The flocks are being improved, and early hatching, together with a suitable feeding ration for the chickens, is producing pullets that come into laying early when eggs are at the highest price. Many eggs have been sold for hatching, and the best cockerels are disposed of as breeders.

TURNIP COMPETITIONS

Turnip competitions were held this year at Mabou, Newport, South Brookfield and Christmas Island. One of the objects of these competitions is to encourage farmers to grow more succulent crops for their stock, particularly turnips, which because of climatic conditions do well. The variety Hall's Westbury has proved to be particularly suitable and was used in the competitions. The average yield of the thirty-five competitors entered was 17·9 tons per acre, as compared with 24·5 in 1925 and 17 tons in 1926. Excessive rainfalls during the summer materially reduced this year's yields, particularly on the heavier soils.

FERTILIZER WORK ON PASTURE LAND

In 1924 tests were undertaken at the Stations to show the value of improving pastures by a surface application of limestone, slag and acid phosphate. A uniform pasture area was selected at each Station typical of the average pasture soil in the district. One-quarter acre was used for this demonstration, being divided into five one-twentieth-acre plots. These received the following treatment per acre, which was given as soon as vegetation started in the spring:—

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

In the spring of 1925 two extra plots were added to this pasture demonstration, one receiving 1,000 pounds of Sydney slag, the other 1,000 pounds of Belgian slag. One-half of each area was ploughed and the slag harrowed into the soil, after which grass and clover seed was sown and followed by a light harrow.

These areas were well fenced in the spring of 1925 in order to obtain the green weight of the herbage. During the summer of 1924 the cattle were allowed to graze over these plots, and it was very noticeable that they kept grazing continually over the treated areas in preference to the untreated area. It will be seen from a study of the table that a three-year average shows very little difference in the yields of plots 2 and 3. Plots 1, 2, 3 and 4 have given an average yield of nearly double the yield of 1927. This may be expected as the fertilizers contained in the surface application have practically spent themselves. Comparing plots 6 and 7, and 8 and 9 it will be seen that the plots left in sod gave the greater green weight; these also gave a more continuous pasture throughout the season. It will be noticed that the Belgian slag has given considerably more green feed than has the Sydney slag.

Other demonstrations with pasture area improvements were started on a more extensive scale in the spring of 1927. Those plots which received lime and phosphoric acid in any form contained during the month of August an abundance of young clover plants coming up through the old sod, and in many cases where moss was in the old sod, young clover plants could be seen pushing themselves through.

GREEN WEIGHT OF GRASS ON PASTURE AREAS, 1925, 1926 AND 1927

—	Plot 1 Lime		Plot 2 Lime and slag		Plot 3 Lime and acid phosphate		Plot 4 Slag		Plot 5 No fertilizer	
	Average, 1925-27	1927	Average, 1925-27	1927	Average, 1925-27	1927	Average, 1925-27	1927	Average, 1925-27	1927
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Newport	1,153·3	660	5,663·3	2,430·0	5,556·6	2,890·0	4,161·3	1,624·0	840·0	760·0
Middle River	1,168·3	945	1,538·6	1,136·0	1,783·3	1,440·0	1,175·0	960·0	758·3	695·0
Christmas Island	707·5	.....	951·5	.....	1,019·5	.....	508·5	.....	136·0	.....
New Glasgow	3,210·0	1,120	3,490·0	1,600·0	3,133·3	1,200·0	2,606·6	860·0	1,823·3	780·0
Heatherton	935·0	985	2,163·3	1,630·0	2,688·3	2,135·0	1,806·6	1,340·0	554·3	523·0
Kennetcook	2,433·3	1,720	3,400·3	2,341·0	3,302·0	2,006·0	3,103·3	1,930·0	1,611·6	1,435·0
Middle Musquodoboit	360·0	400	960·0	800·0	1,380·0	1,100·0	1,080,0	1,000·0	310·0	280·0
N. E. Margaree	2,921·6	1,420	4,413·3	1,700·0	4,668·3	1,660·0	3,750·0	1,520·0	2,603·3	970·0
Sydney	2,094·6	934	2,030·0	1,240·0	1,825·0	1,375·0	2,015·0	1,005·0	1,688·3	635·0
Tatamagouche	.....	600	.....	720·0	.....	560·0	.....	600·0	.....	400·0
Average	1,664·8	976	2,735·6	1,510·8	2,817·4	1,596·2	2,245·1	1,204·3	1,147·2	719·8

GREEN WEIGHT OF GRASS ON PASTURE AREAS, 1925, 1926 AND 1927—*Concluded*

—	Plot 6 Belgian slag, ploughed		Plot 7 Belgian slag, sod		Plot 8 Sydney slag, ploughed		Plot 9 Sydney slag, sod	
	1926	1927	1926	1927	1926	1927	1926	1927
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Newport	6,000·0	5,480·0	12,600·0	7,460·0	6,720·0	3,780·0	4,360·0	2,960·0
Middle River	3,240·0	2,630·0	3,500·0	2,705·0	2,780·0	2,100·0	2,480·0	2,003·0
Christmas Island	3,539·0	6,800·0	2,450·0	5,440·0	1,633·0	6,800·0	1,905·0	4,080·0
New Glasgow	3,740·0	1,400·0	6,420·0	1,340·0	4,100·0	1,060·0	2,680·0	1,200·0
Heatherton	4,060·0	2,340·0	4,420·0	2,660·0	2,500·0	1,600·0	2,980·0	1,695·0
Kennetcook	.....	.....	5,760·0	4,135·0	5,360·0	3,640·0	.....	.....
Middle Musquodoboit	.....	1,100·0	.....	1,000·0	.....	840·0	.....	900·0
N. E. Margaree	.....	.....	.....	.....	.....	.....	.....	.....
Sydney	4,720·0	2,060·0	2,600·0	1,925·0	3,360·0	1,430·0	2,720·0	1,165·0
Tatamagouche	.....	.....	.....	660·0	.....	.....	.....	.....
Average	4,216·5	3,115·7	5,392·8	3,036·1	3,779·0	2,656·2	2,854·1	2,000·4

HAY YIELDS ON LIMED AND UNLIMED AREAS

The purpose of the demonstration with limestone at the various stations was to determine the value of this material in promoting a uniform clover crop. Limestone has been applied at the rate of two tons per acre on areas sown with grain and seeded. The land where limestone has been used has generally been on the regular rotation area where a hoed crop has been raised. This hoed crop had received from fifteen to twenty tons of stable manure per acre. The area without limestone received this same treatment and all areas were in a fair state of fertility. It has been found that lime does not always give the same results at the different stations. At Middle River and Margaree the increase has been marked, while at Newport the response has been slight though all the stations have benefited to some extent. During the growing season as well as when the grass was cut, it could be plainly seen that the areas receiving limestone contained a very much stronger and more uniform growth of clover. It was also noticeable that where limestone was applied the young clover plants formed a much stronger and deeper root system, while on the areas not treated the plants did not have the same vigorous growth and were often thrown out by the action of the frost in early spring.

The table below shows the results of four successive years' work with limestone at the various stations. It will be seen that if hay is valued at $13 per ton, the limed area has on the average yielded a profit of $5.46 per acre over the unlimed area in the four years' test, and that for the present year there is a profit of $3.38 per acre. The smaller gain of this year probably indicates that the effect of the limestone is decreasing since some of it is removed year by year from the soil. Another important feature, even if the hay increase had not been so great, is that of the increased value of the clover, as the timothy and clover cut contained often times more clover where lime was applied than did the first clover cut on the unlimed area.

HAY YIELDS ON LIMED AND UNLIMED AREAS

Station	Average yields, 1924, 1925, 1926, 1927		Average yields, 1927	
	Limed	Unlimed	Limed	Unlimed
	tons	tons	tons	tons
Sydney	2·51	2·26	2·05	1·95
Christmas Island	2·45	1·56	1·78	1·41
Middle River	2·09	1·41	1·97	1·35
N. E. Margaree	3·14	2·56	3·10	2·42
Heatherton	2·01	1·53	1·65	1·42
Tatamagouche	2·26	2·00	2·21	2·16
Middle Musquodoboit	3·06	2·63	2·65	2·47
Newport	3·08	2·92	2·31	2·10
Kennetcook	1·97	1·68	1·80	1·60
New Glasgow	2·05	1·81	1·56	1·47
Mabou	.....	.....	2·16	2·01
Average	2·46	2·04	2·11	1·85
Average gain over unlimed areas	0·42	.....	0·26	

EFFECT ON SUCCEEDING CROPS OF MANURE AND COMMERCIAL FERTILIZERS APPLIED TO POTATOES (BEGUN 1924)

This demonstration was started in 1924 on all the Illustration Stations to show the comparative value of commercial fertilizers used alone and in conjunction with stable manure.

These tests were conducted on four one-eighth acre plots on soil typical of that found in the various districts. Irish Cobbler potatoes were planted in 1924. Both manure and fertilizer at the rates given in the following table were broadcast and harrowed in. These plots were ploughed late in the fall of 1924 and sown the following spring with Banner oats and grass seed. The plots were left in hay two years.

The table shows the four crops removed following the applications made in 1924. A survey of the table will show that 10 tons of stable manure and 750 pounds of 4-8-4 fertilizer have given the highest yields throughout the period, commercial fertilizer alone the next largest, and manure the next. This test would seem to show that by using a smaller amount of stable manure than is usually done, in conjunction with some commercial fertilizer, larger crops will result and the manure saved may be used for other crops, thus building up larger areas on the farm.

EFFECT ON SUCCEEDING CROPS OF MANURE AND COMMERCIAL FERTILIZERS APPLIED TO POTATOES

(Begun, 1924)

Station	Manure, 20 tons				Manure, 10 tons; 4-8-4 fertilizer, 750 pounds				4-8-4 fertilizer, 1,500 pounds				No fertilizer			
	Potatoes, 1924	Grain, 1925	Clover, 1926	Timothy and clover, 1927	Potatoes, 1924	Grain, 1925	Clover, 1926	Timothy and clover, 1927	Potatoes, 1924	Grain, 1925	Clover, 1926	Timothy and clover, 1927	Potatoes, 1924	Grain, 1925	Clover, 1926	Timothy and clover, 1927
	bush.	bush.	ton	ton	bush.	bush.	ton	ton	bush.	bush.	ton	ton	bush.	bush.	ton	ton
Sydney	164·0	45·0	1·60	1·25	232·0	51·0	1·60	1·31	120·0	40·0	1·50	1·20	63·0	19·0	1·30	1·02
Christmas Island	64·0	40·0	0·80	1·05	96·0	48·0	1·00	1·23	84·0	50·0	0·98	1·12	48·0	26·0	0·40	0·47
Middle River	222·0	38·0	1·61	1·35	268·0	39·8	1·42	1·37	255·0	41·2	1·30	1·32	78·0	30·6	0·50	0·48
N. E. Margaree	300·0	40·0	1·40	0·90	316·0	47·3	1·70	1·41	243·0	46·6	1·60	1·17	75·0	37·0	0·80	0·68
Heatherton	226·0	50·5	1·60	1·16	257·0	58·7	1·90	1·22	255·0	60·4	1·04	1·15	143·5	32·9	0·96	0·66
New Glasgow	236·0	48·0	0·90	1·22	309·0	54·3	1·71	1·81	284·0	56·1	1·53	1·30	198·0	29·0	1·20	1·01
Tatamagouche	200·0	38·5	1·09	0·91	212·0	40·3	1·58	1·10	218·0	30·4	1·81	1·22	100·0	20·1	0·90	0·94
Middle Musquodoboit	179·5	30·6	0·08	3·20	233·0	30·3	1·49	3·30	261·0	40·4	1·64	3·12	89·5	26·7	0·76	1·50
Kennetcook	160·0	52·0	1·21	2·40	192·5	60·0	1·48	2·44	200·0	55·3	1·44	2·36	145·0	41·1	0·99	2·20
Belliveau Cove	116·2	23·0	0·42	.....	117·2	25·1	0·49	.....	114·0	21·0	1·12	.....	43·0	15·0	0·30	.....
Newport	186·5	20·7	1·98	1·49	220·0	24·9	1·84	1·20	255·0	22·1	1·04	1·25	76·0	14·0	1·04	0·90
Average	186·7	38·8	1·10	1·49	223·0	43·6	1·47	1·64	208·1	42·1	1·36	1·52	114·5	26·5	0·83	0·99

EFFECT ON SUCCEEDING CROPS OF MANURE AND COMMERCIAL FERTILIZER APPLIED TO POTATOES (BEGUN 1925)

A test similar to the previous one was begun in 1925, and has to date given corresponding results. It should be borne in mind that in these tests a great many types of soil throughout Nova Scotia, varying from a sandy loam to a heavy clay, are represented, and yet the results are very similar. This test is important because farmers do not produce root crops to any great extent, and when asked why almost invariably reply "because of shortage of farmyard manure." The results in the following table would show that the quantity of manure used per acre in the past is not needed, provided some commercial fertilizer is used with the manure. The greatest yields were obtained from the manure and commercial fertilizer plot, and the next best from the commercial fertilizer alone, and the next from the manure alone.

EFFECT ON SUCCEEDING CROPS OF MANURE AND COMMERCIAL FERTILIZER APPLIED TO POTATOES

(Begun, 1925)

Station	Yield per acre											
	Manure, 20 tons			Manure, 10 tons; 4-8-4 fertilizer, 750 pounds			4-8-4 fertilizer, 1,500 pounds			No fertilizer		
	Potatoes, 1925	Oats, 1926	Clover hay, 1927	Potatoes, 1925	Oats, 1926	Clover hay, 1927	Potatoes, 1925	Oats, 1926	Clover hay, 1927	Potatoes, 1925	Oats, 1926	Clover hay, 1927
	bush.	bush.	ton	bush.	bush.	ton	bush.	bush.	ton	bush.	bush.	ton
Sydney	207·0	38·4	1·81	235·5	39·0	1·85	276·0	37·0	1·63	62·0	62·0	1·01
Christmas Island	80·0	27·0	1·00	96·0	29·2	1·32	100·0	31·0	1·05	53·0	16·0	0·57
Middle River	270·0	*	1·34	290·0	.....	1·52	282·0	.....	1·48	53·0	.....	0·84
N. E. Margaree	385·0	41·0	2·10	412·5	47·4	2·26	375·0	45·0	2·34	118·2	23·0	1·11
Heatherton	138·6	32·0	0·98	221·3	39·6	1·47	195·8	42·0	1·90	134·2	19·0	0·79
New Glasgow	259·9	37·0	1·13	356·4	34·3	1·89	372·0	38·2	1·62	140·8	21·0	0·92
Middle Musquodoboit	168·7	*	1·58	132·4	.....	1·99	140·0	.....	1·81	63·0	.....	1·12
Kennetcook	203·5	32·0	1·21	305·7	36·0	1·46	236·5	39·1	1·29	99·0	18·0	0·93
Newport	232·0	46·0	1·31	247·0	44·0	1·27	288·0	41·0	1·30	32·5	25·0	1·04
Tatamagouche	198·0	29·0	1·17	209·0	31·0	1·23	171·5	28·6	1·29	88·0	18·0	0·97
Belliveau Cove	158·0	.....	.....	148·1	.....	.....	157·4	.....	.....	73·6		
Average	209·2	35·3	1·36	241·3	37·6	1·63	235·8	37·7	1·57	83·4	25·2	0·93

* Frosted.

COMPARISON OF COMMERCIAL FERTILIZER AND FARMYARD MANURE FOR POTATOES, 1926

A demonstration similar to that carried on previously, was undertaken in 1926 to show the comparative value of a complete commercial fertilizer, used alone and in combination with farm yard manure. Four one-eighth-acre plots were treated as shown in the table following. The manure was scattered broadcast and ploughed under; the commercial fertilizer was applied broadcast and harrowed in. The table shows the yield of potatoes in 1926, and of oats in 1927. It will be seen that 10 tons of manure and 750 pounds of 4-8-4 fertilizer per acre have given the largest yields, and the commercial fertilizer alone the next largest. The increased potato crop, valued at 50 cents per bushel, has alone more than paid for the fertilizeres used on the first three plots. Two crops of hay will be removed from each plot before the test is completed.

It would appear from these tests that manure and commercial fertilizer are in most cases used more economically together than separately. The land on which these tests are being conducted is typical of two-thirds of the tillage land in Nova Scotia, soil that has not been receiving any commercial fertilizers and only occasionally an application of manure.

COMPARISON OF COMMERCIAL FERTILIZER AND FARMYARD MANURE FOR POTATOES, 1926

Station	Yields per acre							
	Manure, 20 tons		Manure, 10 tons; 4-8-4 fertilizer, 750 pounds		4-8-4 fertilizer 1,500 pounds		No fertilizer	
	Potatoes, 1926	Oats, 1927	Potatoes, 1926	Oats, 1927	Potatoes, 1926	Oats, 1927	Potatoes, 1926	Oats, 1927
	bush.	bush.	bush.	bush.	bush.	bush.	bush.	bush.
New Glasgow	162·0	34·1	238·0	35·0	240·0	37·8	79·0	17·0
N. E. Margaree	253·0	41·0	263·0	45·6	246·0	42·0	80·0	23·6
Middle River	210·0	23·4	230·0	27·0	205·0	25·2	60·0	14·8
Kennetcook	100·0	15·2	128·0	19·5	125·5	18·0	55·0	11·0
Newport	176·8	25·0	215·2	29·8	232·0	23·4	62·0	19·6
Christmas Island	96·0	17·4	124·0	23·0	84·0	20·2	64·0	0·9
Tatamagouche	154·0	16·1	220·0	19·0	198·0	19·0	110·0	11·1
South Brookfield	226·5	.....	260·0	.....	230·0	.....	104·0	
Heatherton	86·6	18·4	45·3	23·0	48·0	21·6	43·4	12·2
Middle Musquodoboit	140·0	.....	152·5	.....	168·0	.....	104·8	
Sydney	185·0	14·0	225·3	19·2	241·0	18·8	104·2	12·0
Mabou	552·6	19·9	783·8	24·6	769·0	28·5	333·8	13·4
Belliveau Cove	198·0	.....	220·0	.....	285·8	.....	132·0	
Average	195·4	22·4	238·9	26·5	236·3	25·4	102·5	13·6

NITROGENOUS FERTILIZERS ON MEADOW LAND

The table following gives the average of four years' work on ten of the Illustration Stations with sulphate of ammonia and nitrate of soda used as top-dressings on grass land. These applications were made when vegetation started in May, 1924, on land in only a fair state of fertility.

The land selected for this work at each station was typical of the surrounding district. In most cases the applications were made on land low in fertility and in no case on clover sod, as a clover sod usually has considerable available nitrogen. In most cases these applications were made on acid soils and it is apparent that these soils have responded to the sulphate of ammonia applications

equally as well as to the nitrate of soda applications. Nitrate of soda was applied at the rate of 150 pounds, and sulphate of ammonia at the rate of 115 pounds per acre, each plot thus receiving the same amount of nitrogen.

It may be seen from the results that there has been an average increase over the unfertilized area of 1,167·6 pounds of cured hay per acre in favour of the sulphate of ammonia and 1,127·4 pounds in favour of the nitrate of soda application. Valuing hay at $13 per ton, and charging $3 per cwt. for the fertilizers used, these applications show a profit over the cost of fertilizer of $2.83 per acre in favour of the nitrate of soda and $4.14 per acre in favour of the sulphate of ammonia.

HAY YIELDS WHEN NITRATE OF SODA OR SULPHATE OF AMMONIA WAS APPLIED TO SOD LANDS

Station	Average yield per acre, four years, 1924-1927			Yield per acre, 1927		
	Nitrate of soda	Sulphate of ammonia	Unfertilized	Nitrate of soda	Sulphate of ammonia	Unfertilized
	lb.	lb.	lb.	lb.	lb.	lb.
Sydney	5,170·0	4,937·5	3,877·5	5,400·0	5,480·0	4,280·0
Christmas Island	3,943·7	4,225·0	3,890·0	2,840·0	4,220·0	3,000·0
Middle River	5,224·7	4,785·0	4,258·0	5,200·0	4,940·0	4,500·0
N. E. Margaree	6,957·5	7,039·2	5,400·0	7,400·0	7,800·0	3,700·0
Heatherton	4,134·5	4,368·7	3,120·0	4,560·0	5,600·0	2,400·0
New Glasgow	5,070·7	5,228·0	3,899·0	5,140·0	6,260·0	4,500·0
Tatamagouche	4,658·7	4,705·0	3,165·0	3,800·0	3,480·0	2,965·0
Middle Musquodoboit	5,285·0	5,585·0	4,075·7	5,840·0	6,400·0	4,000·0
Kennetcook	3,496·2	3,479·7	2,361·2	2,555·0	2,640·0	2,480·0
Newport	4,685·0	4,675·0	3,305·2	4,440·0	4,480·0	3,320·0
Average	4,862·6	4,902·8	3,735·2	4,717·5	5,130·0	3,514·5

INFLUENCE OF BELGIAN SLAG VS. SYDNEY SLAG WITH AND WITHOUT MALAGASH SALT, ON OATS, CLOVER AND TIMOTHY HAY

Tests were undertaken at all the stations in 1925 with Belgian and Sydney slags, used alone and in combination with Malagash salt. A uniform area of one-half acre was selected for this test. The land was ploughed in the fall of 1924 and disked the following spring. The fertilizers were sown broadcast and harrowed in before the oats and grass seed were sown. Malagash salt was applied crosswise on one-half of each plot.

The table below shows, for ten of the stations, the yield of oats for 1925, clover hay for 1926 and timothy and clover hay for 1927. Malagash salt seems on the average to have had a beneficial effect when used in conjunction with slag. When used alone the Belgian slag gave an average of ·58 tons more hay per acre, counting both crops, than did the Sydney slag, and ·66 tons more when used with Malagash salt.

INFLUENCE OF BELGIAN SLAG VS. SYDNEY SLAG, WITH AND WITHOUT MALAGASH SALT, ON OATS AND CLOVER AND TIMOTHY HAY

Station	Yield per acre					
	Oats, 1925	Clover hay, 1926	Timothy hay, 1927	Oats, 1925	Clover hay, 1926	Timothy hay, 1927
	bush.	ton	ton	bush.	ton	ton
	Belgian slag, 1,000 pounds; Malagash salt, 400 pounds			Belgian slag, 1,000 pounds		
Sydney	48·1	2·38	1·12	48·3	2·38	1·12
Christmas Island	40·2	2·47	1·71	40·2	2·46	1·75
N. E. Margaree	60·0	1·46	1·10	58·8	1·33	1·21
Middle River	.....	1·26	1·48	.....	1·20	1·50
Heatherton	48·0	0·58	0·89	54·0	0·63	0·88
New Glasgow	31·7	0·86	1·80	42·3	0·85	1·82
Tatamagouche	36·3	3·12	1·50	35·0	2·34	1·30
Middle Musquodoboit	53·7	1·63	1·75	48·2	1·49	1·75
Kennetcook	47·0	1·90	1·41	46·1	1·96	1·40
Newport	48·2	1·98	1·61	50·5	1·92	1·06
Average	45·9	1·76	1·44	47·0	1·66	1·38
	Sydney slag, 1,000 pounds; Malagash salt, 400 pounds			Sydney slag, 1,000 pounds		
Sydney	47·0	2·31	1·13	46·3	2·38	1·12
Christmas Island	40·8	2·20	1·15	40·2	2·30	1·20
N. E. Margaree	57·0	1·20	0·65	56·6	1·01	0·99
Middle River	.....	1·16	1·15	.....	1·13	1·12
Heatherton	58·0	0·44	0·71	46·0	0·48	0·72
New Glasgow	38·7	0·55	1·35	44·7	0·77	1·33
Tatamagouche	30·0	2·50	1·20	28·2	1·44	1·00
Middle Musquodoboit	49·5	1·45	1·60	39·7	1·39	1·60
Kennetcook	45·5	1·56	1·34	44·1	1·44	1·35
Newport	45·8	0·76	1·02	41·0	0·88	0·99
Average	45·8	1·41	1·13	43·0	1·32	1·14
	Malagash salt, 400 pounds			Not fertilized		
Sydney	32·0	2·20	0·88	31·2	2·26	0·88
Christmas Island	34·0	0·14	0·99	33·0	1·46	1·03
N. E. Margaree	50·0	0·66	0·68	47·0	0·73	1·25
Middle River	.....	0·83	0·60	.....	0·83	0·57
Heatherton	28·0	0·17	0·60	34·0	0·17	0·61
New Glasgow	35·2	0·39	0·99	37·6	0·48	1·00
Tatamagouche	19·8	0·73	0·53	18·0	0·80	0·50
Middle Musquodoboit	34·2	0·78	1·00	25·2	0·64	1·00
Kennetcook	41·1	0·98	1·00	40·3	0·87	1·05
Newport	41·0	0·57	0·55	36·1	0·41	0·58
Average	35·0	0·74	0·78	33·6	0·86	0·85

LIMESTONE, ACID PHOSPHATE AND SLAGS USED WITH AND WITHOUT SULPHATE OF AMMONIA WHEN SEEDING DOWN (BEGUN 1926)

In the spring of 1926 tests were undertaken at all the stations to show the comparative value of limestone, acid phosphate, and Sydney and Belgian slags used with and without sulphate of ammonia on land sown to grain and seeded down. A uniform area of one and one-half acres was used at each station. This area was divided into six one-quarter acre plots, which were treated per acre as follows:—

Plot 1. Limestone, 2 tons.
Plot 2. Limestone, 2 tons; acid phosphate, 800 pounds.
Plot 3. Acid phosphate, 800 pounds.
Plot 4. Sydney slag, 800 pounds.
Plot 5. Belgian slag, 800 pounds.
Plot 6. Not fertilized.

In addition one-half of each plot received sulphate of ammonia at the rate of 115 pounds per acre. The land was well prepared, and the different materials were applied and harrowed in before seeding. Oats and 8 pounds of timothy, 5 pounds of red clover, and 5 pounds of alsike clover per acre were sown. An increased growth of the grain plants was noticed on all areas that had received sulphate of ammonia and an average yield of nearly nine bushels per acre more was obtained from the areas so treated over the areas treated in the same way but to which no nitrogenous fertilizers were applied.

This year the largest yields were obtained from the plots receiving limestone and acid phosphate, while the next best were from the plots treated with Belgian slag. Not a great deal of difference could be noticed between the two slag plots, but the table shows the average yield of the Belgian slag plot was ·33 tons more than that of the Sydney slag plot where both plots received sulphate of ammonia, and ·43 tons more where no sulphate of ammonia was used. The sulphate of ammonia alone (plot 6) gave an increase in the clover hay yield over the untreated area of ·1 ton. Perhaps the most striking demonstration as to the value of the different fertilizers occurred at Heatherton where the soil evidently responds readily to phosphoric acid applications. So much difference in the growth of the grass on the various plots was noticeable at the time of the Field meeting that there could be no doubt as to what fertilizers to use to promote an exceptionally good crop of hay.

LIMESTONE, ACID PHOSPHATE AND SLAG WITH AND WITHOUT SULPHATE OF AMMONIA, APPLIED WHEN SEEDING DOWN

Station	Limestone		Limestone and acid phosphate		Acid phosphate		Sydney slag		Belgian slag		Not fertilized	
	Grain, 1926	Hay, 1927	Grain, 1926	Hay, 1927	Grain, 1926	Hay, 1927	Grain, 1926	Hay, 1927	Grain, 1926	Hay, 1927	Grain, 1926	Hay, 1927
	bush.	ton	bush.	ton	bush.	ton	bush.	ton	bush.	ton	bush.	ton
Treated with Sulphate of Ammonia												
Sydney	30·0	1·34	43·6	1·68	41·0	1·52	36·0	1·51	39·0	2·07	24·8	0·68
Christmas Island	26·1	1·60	52·5	2·05	48·3	2·35	20·4	1·96	27·0	2·32	12·5	1·50
Middle River	37·0	1·05	63·3	2·50	53·3	2·15	46·5	2·00	52·7	2·25	23·4	0·60
N. E. Margaree	48·0	2·37	66·0	2·59	60·0	2·31	61·0	2·75	45·2	2·75	16·4	1·47
Mabou	25·0	2·05	20·1	3·18	18·5	2·40	28·1	1·76	36·4	2·30	16·4	1·21
Heatherton	34·1	1·22	59·6	2·83	59·4	1·44	37·8	1·28	46·0	1·72	22·0	0·40
New Glasgow	60·8	1·48	60·7	1·51	60·5	1·81	60·9	1·26	55·2	1·43	50·1	1·26
Tatamagouche	27·1	2·60	45·0	2·64	43·6	1·51	32·0	1·51	40·6	1·75	22·0	1·00
Middle Musquodoboit	24·0	.....	40·6	3·42	41·0	2·25	28·6	1·80	34·4	2·11	19·6	0·87
Kennetcook	44·1	1·80	54·1	2·88	50·8	2·84	47·1	2·28	48·5	2·72	32·0	1·55
Newport	24·0	1·32	24·6	1·31	24·8	1·30	28·5	1·04	28·5	1·38	28·7	0·75
Belliveau Cove	16·4	.....	25·0	.....	24·6	.....	19·0	.....	21·0	.....	14·6	.....
Average	33·0	1·68	46·3	2·42	43·8	1·99	37·2	1·74	39·5	2·07	23·5	1·03
Not treated with Sulphate of of Ammonia												
Sydney	23·4	1·30	38·0	1·64	36·2	1·52	26·1	1·36	29·8	2·00	14·0	0·49
Christmas Island	20·1	1·72	47·0	1·83	44·1	2·32	19·3	1·97	23·0	2·72	9·2	1·48
Middle River	23·4	1·00	50·0	2·39	45·4	2·09	36·6	1·99	40·0	2·25	16·9	0·34
N. E. Margaree	44·0	2·34	62·1	2·60	57·6	2·23	50·2	2·72	47·6	2·74	15·5	1·40
Mabou	20·1	2·00	29·4	3·00	28·3	2·24	22·0	1·80	26·4	2·24	13·2	1·16
Heatherton	18·2	1·23	32·3	2·80	29·8	1·40	21·4	1·24	27·0	1·74	14·0	0·32
New Glasgow	40·0	1·46	48·1	1·50	45·1	1·81	42·3	1·25	44·4	1·38	28·1	1·24
Tatamagouche	22·5	2·56	37·0	2·63	34·2	1·52	27·0	1·50	29·4	1·77	17·0	0·99
Middle Musquodoboit	20·0	.....	26·1	3·40	25·0	2·19	22·4	1·74	24·0	2·65	15·9	0·72
Kennetcook	29·1	1·68	39·9	2·76	38·4	2·68	35·4	2·16	38·1	2·68	24·0	1·48
Newport	15·5	1·32	17·0	1·30	17·3	1·27	17·7	1·04	17·7	1·41	13·4	0·67
Belliveau Cove	12·0	.....	18·1	.....	18·6	.....	15·0	.....	16·9	.....	9·0	.....
Average	24·0	1·66	37·1	2·35	35·0	1·94	27·9	1·71	30·4	2·14	15·8	0·93

LIMESTONE, ACID PHOSPHATE, BELGIAN SLAG AND SYDNEY SLAG USED WITH AND WITHOUT SULPHATE OF AMMONIA WHEN SEEDING DOWN (BEGUN, 1927)

In order to obtain further data as to the value of these fertilizers when seeding down another test, exactly similar to the preceding, was begun this year. This season's results are given below. It will be noticed that sulphate of ammonia used alone (plot 4) showed a gain of 2·5 bushels over the unfertilized plot. It will also be seen that all plots receiving the nitrogenous fertilizer gave better yields than the corresponding plots that had not received the fertilizer. The plot treated with limestone and acid phosphate gave the largest average yield, with the acid phosphate plot second. Belgian slag gave a slightly better average yield than Sydney slag. Some of the plots, particularly No. 2, lodged in many sections, and this may have decreased the yields somewhat. All the fertilized plots showed fair stands of clover, that on the limestone and acid phosphate plot being somewhat the best, with very little difference noticeable between the Belgian and Sydney slag plots.

LIMESTONE, ACID PHOSPHATE, AND BELGIAN AND SYDNEY SLAGS, WITH AND WITHOUT SULPHATE OF AMMONIA, APPLIED WHEN SEEDING DOWN

Station	Average Yield per acre, 1927					
	Limestone	Limestone and acid phosphate	Acid phosphate	Not fertilized	Sydney slag	Belgian slag
	bush.	bush.	bush.	bush.	bush.	bush.
Treated with sulphate of ammonia.						
Sydney	18·2	27·4	23·0	17·9	21·1	20·0
Christmas Island	24·4	28·2	30·2	23·7	34·1	35·3
Barra Glen	26·1	28·0	26·4	21·0	20·4	19·6
N.E. Margaree	68·1	86·4	77·6	29·4	82·3	77·6
Mabou	26·0	29·3	28·4	20·0	27·9	31·0
Heatherton	15·5	18·8	19·9	11·3	12·2	15·3
New Glasgow	28·8	31·3	30·9	28·8	30·0	30·4
Tatamagouche	21·3	29·0	23·0	17·4	24·2	31·6
Middle Musquodoboit	.....	.....	50·1	32·0	44·2	46·1
Kennetcook	29·0	38·3	39·1	26·0	38·0	35·2
Newport	28·0	38·4	38·0	23·2	32·8	40·8
Average	28·5	35·5	35·1	22·8	33·4	34·8
Not treated with sulphate of ammonia.						
Sydney	12·6	18·8	11·5	11·2	16·4	15·5
Christmas Island	22·2	26·4	30·0	23·2	34·5	34·7
Barra Glen	21·5	25·1	21·6	19·7	18·8	17·4
N.E. Margaree	62·8	71·3	68·1	25·3	53·0	66·0
Mabou	21·0	25·2	24·1	16·0	23·9	25·4
Heatherton	12·2	15·3	12·2	8·5	9·9	12·7
New Glasgow	27·6	30·0	32·4	29·9	28·8	32·4
Tatamagouche	15·6	23·8	18·7	11·7	19·0	26·1
Middle Musquodoboit	.....	.....	40·5	25·0	37·5	38·0
Kennetcook	26·8	34·8	34·4	35·3	36·7	29·0
Newport	26·1	36·9	35·5	17·1	28·7	30·1
Average	24·8	30·8	29·9	20·3	27·9	29·8

CHRISTMAS ISLAND, CAPE BRETON COUNTY

OPERATOR, J. A. MCNEIL

Seeding operations began June 4, the usual time in this section. The spring weather remained cold and dry for a considerable period, which prevented the crops from making rapid growth. Usually, however, the rain in spring puddles the heavy soil at this Station, preventing cultivation and allowing the crop to be at the mercy of the weed growth.

Improvement at this Station, however, has been marked. A little commercial fertilizer hastens the crops more than is generally believed. It was, before commercial fertilizer was used, a difficult thing to get clover to live until fall. The fertilizer seems to stimulate the growth and a fairly good root system is established, so that when the grain is removed the young plants make rapid growth. The hoed crop did not give a large yield, due to the continuous rainy weather, yet the yields have steadily increased from year to year. Oats yielded 38 bushels per acre, a crop that seemed impossible before the use of commercial fertilizer was begun. The hay yield has probably increased the most. The timothy yield this year was 1·55 tons while the clover hay yield was 2·30 tons per acre.

The operator took several first and second prizes at the county fair with vegetables, poultry, etc., this season. He is also finding a good market locally for raspberries and strawberries. It was previously thought these crops could not be raised successfully in this section.

OPERATIONS AT CHRISTMAS ISLAND—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats and seeded ... bush.	6	38·0	36·2	1 27	0 89
B	Potatoes ... bush.	6	190·0	123·0	0 76	0 71
B	Turnips ... bush.	6	310·0	378·0	0 27	0 23
C	Timothy ... tons	4	1·55	1·2	12 19	12 14
D	Clover ... tons	5	2·30	1·78	8 33	9 05

HEATHERTON, ANTIGONISH COUNTY

OPERATOR, D. W. GRANT

Seeding was earlier at this Station than usual due to the comparatively dry spring. All crops promised to give a bumper yield but the rainy weather setting in early in July caused severe lodging in the grain crop, which, although good, was below the yield of previous years. The root crops, particularly turnips, suffered also, as the wet weather continued until the harvesting of these crops. On this peculiar type of soil a few hours' rain makes cultivating impossible for two or three days. The hay crop, however, which in the past, chiefly because of the throwing out of the young clover plants, has been the most difficult crop to secure large yields from, this season surpassed any yield previously obtained from the rotation area. Lime with a little acid phosphate has evidently been the cause of increased growth, and the consequent holding of the clover plants in the soil.

OPERATIONS AT HEATHERTON—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts
A	Timothy hay ... tons	5	2·40	1·89	7 97	8 65
B	Turnips ... bush.	6	490	557·0	0 11	0 13
C	Oats and seeded ... bush.	6	40·4	51·7	0 46	0 47
D	Clover hay ... tons	5	2·30	2·28	8 62	8 56

FERTILIZERS ON UNPRODUCTIVE LAND

A uniform area of three acres on field "E" at Heatherton was used to determine the most profitable way to fertilize unproductive land. This land is a poor soil of clay loam character. The area was in pasture previous to 1922, when it was ploughed and seeded with oats. The crop was a failure, the soil apparently not having enough plant food in it to produce a crop. The area was fertilized in various ways in the spring of 1923. The results of this test demonstrated very clearly the lack of phosphorus in the soil.

This area was ploughed in the fall of 1925. The following spring before seeding it received an application of 10 tons of manure per acre across one-half of each section. The other sections were fertilized as shown in the table. The soil was well cultivated and seeded to oats with timothy and clover.

The yield of the 1926 oat crop showed clearly that phosphoric acid was again the limiting factor in producing large yields from this area. A survey of the yields shows that where acid phosphate was used on any of the plots the grain produced not only paid for the fertilizer but gave a profit besides. This season (1927) the largest profit has also been where acid phosphate was used alone, or in combination with marl or marl and manure, as in plots 3 and 9.

This was a very striking demonstration during the first of July just before the plots were cut. Many farmers have studied these plots carefully, and are now supplementing their farm manure with materials carrying phosphoric acid.

FERTILIZERS ON UNPRODUCTIVE LAND

Plot	How fertilized per acre	Yield of oats, 1926	Yield of clover hay, 1927	Total value of produce	Cost of fertilizer	Profit or loss (−) above cost of fertilizer
		bush.	tons	$ cts.	$ cts.	$ cts.
1	Marl, 3 tons	22·6	1·04	28·21	6 00	22 21
2	Marl, 3 tons; Sydney slag, 1,000 lb.	25·4	1·34	33 93	16 00	17 93
3	Marl, 3 tons; acid phosphate, 1,000 lb.	36·9	2·58	57 52	16 00	41 52
4	Acid phosphate, 1,000 lb.	39·0	1·06	39 13	10 00	29 13
5	Not fertilized	7·0	0·16	6 63		
6	Manure, 10 tons	17·7	0·78	21 64	20 00	1 64
7	Marl, 3 tons; manure, 10 tons	32·9	1·98	47 12	26 00	21 12
8	Marl, 3 tons; Sydney slag, 1,000 lb.	24·4	1·34	33 28	16 00	17 28
9	Manure, 10 tons; acid phosphate, 1,000 lb.; marl, 3 tons	57·4	4·32	93 47	36 00	57 47
10	Manure, 10 tons; acid phosphate, 1,000 lb.	41·1	3·58	73 25	30 00	43 25
11	Manure, 20 tons	22·5	0·88	26 05	40 00	−13 95

KENNETCOOK, HANTS COUNTY

OPERATOR, WILLARD ETTINGER

Operations at this Station began this season on June 4, being twenty-two days earlier than last season. Due to its nature it is often very late before it is possible to work the soil. All crops gave large yields, except the grain. This was no fault of the operator. The field looked very promising until the heavy storm in August when the grain area lodged badly before the grain was in the dough stage, and consequently the yield was materially affected, being only 21 bushels per acre. The potato crop was exceptionally good, yielding 248 bushels per acre. These, however, rotted badly in storage aided by the type of soil and the very heavy rains. The timothy hay crop was good, giving a yield of 2·88 tons, and the clover hay 2·05 tons per acre. This soil responds well to a light application of acid phosphate made to the hoed crop, this apparently hastening the maturity of this crop and of the grain the following season.

OPERATIONS AT KENNETCOOK—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy hay..... tons	4	2·88	2·02	6 30	7 34
B	Oats and seeded..... bush.	6	21·0	40·7	1 11	0 72
C	Clover hay..... tons	4	2·05	1·88	8 85	8 84
D	Potatoes..... bush.	4	248·0	191·7	0 40	0 38

MIDDLE MUSQUODOBOIT, HALIFAX COUNTY

OPERATOR, R. B. McCURDY

Seeding at this Station was possible June 4, this being eleven days earlier than usual. The time of seeding the grain crop is very important, as the operator, although obtaining only 36 bushels per acre this year, has been in the past getting only 24 bushels and often having the grain destroyed by frost. Such was the case in 1926. With a heavy type of soil, the operator cannot obtain better results until the soil is properly drained. Field "B" turnip crop, gave only a fair yield, due to very wet weather which drowned the crop in some sections of the field. Hay at this station is not a hard crop to produce satisfactorily. The timothy on field "C" gave 2·05 tons of cured hay, while the clover hay gave a yield of 1·5 tons per acre. It appears at this station, as well as at a few other stations with similar soil, that the clover plants do not get properly rooted nor make sufficient growth the first season, when sown with grain, to produce a large yield of clover hay. This is apparently the reason for the yield of clover not being as large as expected.

OPERATIONS AT MIDDLE MUSQUODOBOIT—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats..... bush.	4	36·0	34·5	0 76	0 78
B	Turnips..... bush.	5	562·0	752·2	0 09	0 08
C	Timothy hay..... tons	5	2·05	2·13	8 60	6 76
D	Clover hay..... tons	4	1·50	2·70	12 32	6 91

MIDDLE RIVER, VICTORIA COUNTY

OPERATOR, FORBES MACDONALD

Spring operations were not possible at this Station until May 31. This was five days earlier than in 1926. It is very important in this section of the province to get grain sown as early as possible on account of several frosts in early fall. The Alaska oats which was sown first at this Station in 1926 has become very popular on account of its ripening ten days earlier than the Banner or Victory. This year the farmers who sowed Alaska oats in this district were the only people who had any oats ripen. This variety means a great deal to the people in sections where there is danger of early frosts.

The potato crop gave a good yield at this Station, 261 bushels per acre. Alaska oats gave 27 bushels. This low yield was due to a severe storm August

24, which lodged heavy grain in nearly every section of the province. The hay crop was exceptionally good this season, clover hay giving a yield of 2·50 tons and timothy hay 2·24 tons per acre.

OPERATIONS AT MIDDLE RIVER—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay..... tons	5	2·50	2·40	7 60	7 78
B	Oats..... bush.	5	27·0	42·2	0 80	0 66
C	Timothy hay..... tons	5	2·24	2·29	8 46	6 95
D	Potatoes..... bush.	6	261·0	237·5	0 40	0 40

MABOU, INVERNESS COUNTY

OPERATOR, EDWARD HAWLEY

Seeding operations commenced at this Station May 26. All crops did well and produced good yields, except oats. This area was very uniform and promised a large yield but was lodged by a heavy storm. The turnip crop was good, giving 800 bushels per acre. The clover hay crop produced 2·1 tons per acre.

This station was started in 1926 and considerable work was begun outside the regular rotation. In addition to carrying on the season's work satisfactorily the operator was successful in obtaining several prizes at the Inverness show with grains, cattle and vegetables.

OPERATIONS AT MABOU—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per Unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats and seeded..... bush.	2	30·0	36·5	1 09	0 87
B	Turnips..... bush.	2	800·0	780·0	0 09	0 08
C	Clover hay..... tons	1	2·1	.....	6 17	
D	Clover hay..... tons	1	2·1	.....	6 17	

NEWPORT, HANTS COUNTY

OPERATOR, CHAS ZWICKER

Seeding was possible at this Station fourteen days earlier than in 1926. Usually the type of soil here does not permit of such early seeding. It looked as if the crops would surpass the usual good ones of previous years, but the severe rainstorms lessened the yields of both the grain and the turnip crops. The hay crop was good, but not as heavy as usual. The operator was fortunate again at the fall fair in winning prizes on roots and grain. He has made a great market for his seed oats, and apparently finds time to carry out his farm operations at the proper time, as this station always looks at its best.

OPERATIONS AT NEWPORT—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Oats and seeded..... bush.	4	48·0	54·0	0 41	0 49
B	Clover hay..... tons	4	2·14	2·71	7 07	6 55
C	Timothy hay..... tons	5	1·81	2·11	6 01	6 17
D	Turnips..... bush.	5	613·0	842·0	0 11	0 08

NEW GLASGOW, PICTOU COUNTY

Operator, Geo. P. Fraser

Seeding was commenced at this Station June 3, this being nine days earlier than in 1926. This area was underdrained in 1926, and the soil conditions apparently have been greatly improved. The grain yield was below the average, due to wet weather when the grain was fit to cut. Considerable loss was due to crinkling, which prevented the binder from picking the grain up. The hay yields were fairly good, being 1·89 tons on field "A" and 1·88 tons per acre on field "C." The potato crop was exceptionally good, yielding 1,052 bushels from four acres, while the turnip crop gave 533 bushels per acre. The operator usually raises ten acres of hoed crop at this Station. He has had splendid success with alfalfa. One and one-quarter acres were sown in the spring of 1926 with the Ontario variegated variety, and this season he had from two cuttings 7·25 tons of cured alfalfa. The third crop was fifteen inches high in October. When it is generally realized that 2,400 pounds of well cured alfalfa hay contain as much feeding value as 2,000 pounds of bran more farmers will raise alfalfa. At present several have small areas fitted for seeding in 1928. The operator was successful in obtaining several first prizes at the Pictou fair in September with horses, cattle and hogs.

OPERATIONS AT NEW GLASGOW—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per Unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy hay..... tons	5	1·89	1·54	10 25	7 77
B	Oats..... bush.	6	32·7	41·7	0 85	0 64
C	Clover hay..... tons	5	1·88	1·76	10 60	8 89
D	Turnips..... bush.	6	533·0	604·0	0 10	0 08
D	Potatoes..... bush.	5	263·0	224·0	0 51	0 37

NORTH EAST MARGAREE, INVERNESS COUNTY

Operator, Tom E. Ross

Seeding was possible at this Station fourteen days earlier than in 1926. After seeding was finished the weather remained cold and dry until the first of June. All crops, however, did exceptionally well and did not get such a setback when the heavy rains started in July. The nature of this soil, a gravelly loam, permitted of good drainage, so that no root crops were drowned out, as happened at some stations. The operator takes great pains to keep all crops looking as well as possible and on account of its location and the crops pro-

duced, no other station has as many visitors as has Margaree. The timothy hay yield was exceptionally good this year, being 3·40 tons, while the clover crop was 2·67 tons per acre. The second crop of clover comes along very quickly at this Station and makes a beautiful sight. This second growth is usually cropped by a flock of lambs which are afterwards exhibited, and the operator has never failed to obtain with them the first prize at the county fair, as well as getting a fancy price for the flock. The hoed crop was also good this year giving 933 bushels of turnips per acre. Oats yielded 56 bushels per acre.

OPERATIONS AT N.E. MARGAREE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per Unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay..... tons	6	2·67	3·18	7 61	5 61
B	Turnips..... bush.	6	933·0	977·0	0 08	0 08
B	Potatoes..... bush.	6	421·0	402·3	0 32	0 26
C	Timothy hay..... tons	5	3·40	3·19	6 66	5 44
D	Oats..... bush.	6	56·0	53·7	0 49	0 53

FERTILIZER DEMONSTRATIONS ON UNPRODUCTIVE PASTURE LANDS

In 1923 a test was started to find out how unproductive pasture areas could be brought into grain and hay production most economically. The results from this test were interesting (see p. 58, 1925 report) and good crops were produced. In the fall of 1925 this land was ploughed and plots 1, 2, 3, and half of plot 4 were used for further demonstrations, making seven one-half acre plots. Plot 1 had been limed in 1923, plot 2 treated with slag, plot 3 was the check plot, and plot 4 had been manured. This manuring would in part account for the good yield on the unfertilized plot in 1926. In the spring of 1926 the different fertilizers shown below were sown broadcast and harrowed in before seeding with oats and grass seed (10 pounds of timothy and 5 pounds each of alsike and common red clovers per acre).

It will be noticed from the table that the largest yields of oats and clover hay have been produced by the application of limestone and acid phosphate, and that the slag plot has given the next best profit over the two-year period.

FERTILIZER DEMONSTRATIONS ON UNPRODUCTIVE PASTURE LANDS AT NORTH-EAST MARGAREE

Plot	How fertilized per acre in 1926	Yield per acre		Total value of produce	Cost of fertilizer	Profit over cost of fertilizer
		Oats 1926	Clover hay, 1927			
		bush.	tons	$ cts.	$ cts.	$ cts.
1a	Ground limestone, 2 tons.....	4[illegible]·0	1·25	42 90	8 00	34 90
1b	Ground limestone, 2 tons; acid phosphate, 1,000 lb.....	6[illegible]·3	2·0[illegible]	6[illegible] 9[illegible]	18 00	47 97
2a	Sydney slag, 1,000 lb.....	[illegible]2·1	1·40	[illegible]2 06	[illegible]0 00	42 06
2b	Acid phosphate, 1,000 lb.....	[illegible]3·2	[illegible]·02	47 84	[illegible]0 00	37 84
3a	Manure, 16 tons.....	48·0	0·04	43 42	32 00	11 42
3b	Manure, 16 tons, ground limestone, 2 tons..	48·0	[illegible]·0[illegible]	44 8[illegible]	40 00	4 85
4a	Not fertilized.....	40·0	0·62	34 06		

SYDNEY RIVER, CAPE BRETON COUNTY

Operator, Melvin Moreshead

Seeding was possible May 18 at this station. The nature of the soil makes it possible for the operator to work much earlier than at most sections of Cape Breton. The hay crop and the potatoes gave exceptionally good yields, the clover hay, it will be noted, giving 2·61 tons and the timothy hay 2·14 tons per acre. These yields have usually been reversed at most of the stations this year. The heavy clover yield here is probably due to the early sowing of the grain, allowing the clover roots to become more deeply rooted and matured, whereas at stations on heavy soil where in some cases seeding is not possible before the middle of June a smaller crop of clover is obtained. The potato crop was as usual good, giving a yield of 245 bushels per acre. The oat crop, although sown early, received a setback on account of the dry weather that persisted until nearly the middle of July and did not make the necessary growth for a bumper yield.

The operator was again successful in receiving many prizes at the Sydney fair in September, with cattle, vegetables, grains and apples.

OPERATIONS AT SYDNEY RIVER—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Clover hay..... tons	6	2·61	2·61	7 28	6 70
B	Potatoes..... bush.	4	245·0	242·5	0 31	0 32
C	Oats and seeded..... bush.	6	36·0	40·4	0 77	0 65
D	Timothy hay..... tons	6	2·14	3·09	7 25	6 08

SOUTH BROOKFIELD, QUEENS COUNTY

Operator, Robert Smith

Seeding at this Station was possible May 7. All crops were sown or planted correspondingly early, and splendid growth was made before the heavy rains came. The crops gave good yields, except the grain, the yield of which was reduced greatly because of lodging.

The operator exhibited live stock, fruit and vegetables at the County exhibition, obtaining many prizes.

OPERATIONS AT SOUTH BROOKFIELD—FOUR-YEAR ROTATION

Field	Crop	Yield per acre	Actual Cost
			$ cts.
A	Oats and seeded..... bush.	42·0	1 20
B	Turnips..... bush.	805·0	0 08
C & D	Clover hay..... tons	2·61	7 69

TATAMAGOUCHE, COLCHESTER COUNTY

OPERATOR, G. B. CLARK

Seeding at this Station was earlier by six days than in 1926. Dry weather was continuous until July, with the exception of a few scattered showers. The hay and grain suffered most from this. In July the lower blades of the grain were turning yellow and the crop began to head out very early, with consequent short heads and a crop of only 34 bushels per acre. The operator's usual yield is 50 bushels or more. The hay crop, both clover and timothy, fell somewhat short of the usual yields, yet was much better than any in the district. The clover cut gave 1·75 tons, while the timothy gave 2 tons per acre. Both potatoes and turnips gave better crops than was at first anticipated. The potato yield was 200 bushels, and the turnip 750 bushels per acre.

OPERATIONS AT TATAMAGOUCHE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Potatoes..... bush.	4	200·0	214·0	0 84	0 50
A	Turnips..... bush.	5	750·0	785·2	0 09	0 08
B	Clover hay..... tons	5	1·75	2·48	8 80	7 71
C	Timothy hay..... tons	6	2·0	2·22	7 65	6 47
D	Oats..... bush.	5	34·0	43·8	0 58	0 49

FERTILIZERS FOR SEEDING DOWN WITH OATS

In order to test acid phosphate and Sydney slag for hay production on land low in fertility several plots were taken at Tatamagouche representing large areas in that district. The soil was ploughed in the fall of 1924. In the spring a good seed bed was established. The fertilizers were sown broadcast and harrowed in, after which oats were sown and seeded with clover and timothy.

The following table shows the kind and amount of fertilizers used. The clover catch was generally good in 1925, except on the check plot. The table gives the yields for three years following this application. It will be noted that the largest yield of oats in 1925 was on plot 1 (acid phosphate, 500 pounds), and the next on plot 3, also fertilized with acid phosphate. It would appear that the phosphoric acid in the acid phosphate was more readily available than that in the slag. The hay yields in 1926 and 1927 were greatest where slag was applied. All the fertilized plots gave a good profit for the period over the unfertilized plot, in addition to paying for the fertilizer used. The greatest profit on this soil was from the smaller acid phosphate application.

In calculating the profit from the different plots, oats have been valued at 60 cents per bushel, clover hay at $10 and timothy hay at $13 per ton.

ACID PHOSPHATE AND SLAG FOR HAY PRODUCTION AT TATAMAGOUCHE

Plot	How fertilized per acre	Yield per acre			Total value of produce	Cost of fertilizer	Profit over plot not fertilized
		Oats, 1925	Clover hay, 1926	Timothy and clover hay, 1927			
		bush.	ton	ton	$ cts.	$ cts.	$ cts.
1	Acid phosphate, 500 lb.....	51·1	0·90	0·64	47 98	5 00	14 44
2	Sydney slag, 750 lb.....	40·5	1·38	0·80	48 50	7 50	12 46
3	Acid phosphate, 250 lb.....	46·5	1·22	0·70	49 20	2 50	18 16
4	Sydney slag, 500 lb.....	35·9	1·72	0·74	48 36	5 00	14 82
5	Sydney slag, 250 lb.....	33·3	1·52	0·60	42 98	2 50	11 94
6	Not fertilized.....	29·9	0·54	0·40	28 54		

REPORT OF THE ILLUSTRATION STATIONS FOR PRINCE EDWARD ISLAND

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

THE STATIONS

There are at present eleven Illustration Stations in Prince Edward Island, situated at the following places: Palmer Road, Glenwood, West Devon, Richmond, Rose Valley, Rustico, St. Peters, Red Point, Montague, Wood Islands and Iona. Three of these stations, namely, Palmer Road, Red Point and Wood Islands, are carrying on operations for the first time this year, and the station at Glenwood was started in the fall of 1927.

PURPOSE

These stations serve as the connecting link between the Charlottetown Experimental Station and the farmer.

At these stations crops and methods which have proven superior to others are tried out and demonstrated. Also encouragement is given to live stock, poultry and to the beautification of the home.

This report gives the details of the work as carried on at ten of the above-mentioned stations, during the season of 1927.

SUMMARY

1. Good work has been done on the eleven Illustration Stations in Prince Edward Island during the past year.

2. Live stock and poultry show steady improvement.

3. Late spring frosts injured the clover but crops in general made a good early growth. Heavy rains in August caused considerable lodging of grain, thus reducing the yield. The fall was very mild and fall work well completed.

4. Yields of potatoes, turnips, corn and sunflowers were higher in 1927 than the average of the past three years, while yields of clover and grain were lower.

5. The variety of oats known as Alaska proved very successful in the Palmer Road district, as it was well matured before rust appeared.

6. The use of nitrate of soda on timothy hay proved profitable.

7. The results obtained at ten stations this year indicated that chemical-fertilizer can be applied to potatoes, corn, sunflowers and turnips with considerable profit.

SOIL ANALYSIS AND LIME REQUIREMENTS

Samples of soil have been procured from each of the eleven Illustration Stations at some time since they have been started and chemical analyses carried out by the Chemistry Division at Ottawa.

The following table gives the chemical reaction of the soil, the per cent of lime and the lime requirements for the various samples analyzed.

LIME REQUIREMENTS

Locality	Soil	Reaction	Per cent Lime (CaO) in soil	Lime requirements lb. per acre	
				Quick-lime	Ground limestone
Palmer Road, Prince Co.	Surface	Distinctly acid	·092	2,304	4,116
	Subsoil	" "	·057	2,304	4,116
Glenwood, Prince Co.	Surface	Slightly acid	·284	900	1,600
	Subsoil	Distinctly acid	·099	3,600	6,420
West Devon, Prince Co.	Surface	Distinctly acid	·168	2,160	3,855
	Subsoil	" "	·073	2,520	4,495
Richmond, Prince Co.	Surface	Very slightly acid	·419	256	454
	Subsoil	Slightly acid	·266	516	915
Rose Valley, Queens Co.	Surface	Distinctly acid	·135	1,800	3,200
	Subsoil	" "	·063	2,970	5,300
Rustico, Queens Co.	Surface	Slightly acid	·281	756	1,344
	Subsoil	Distinctly acid	·116	2,556	4,564
Wood Islands, Queens Co.	Surface	Distinctly acid	·028	2,052	3,658
	Subsoil	" "	·028	2,556	4,564
Iona, Queens Co.	Surface	Slightly acid	·044	1,285	2,200
	Subsoil	" "	·044	1,019	1,819
St. Peters, Kings Co.	Surface	Slightly acid	·158	965	1,702
	Subsoil	" "	·087	1,080	1,925
Red Point, Kings Co.	Surface	Distinctly acid	·078	2,304	4,116
	Subsoil	" "	·043	2,304	4,116
Montague, Kings Co.	Surface	Slightly acid	·123	1,542	2,750
	Subsoil	Distinctly acid	·064	1,927	3,435

From the data in the above table one will note that most of the soils are low in lime; in a few cases, however, the percentage of this element in the soil approaches a point where applications of lime may not be necessary. On some stations, notably at Glenwood and at Rustico, the subsoil differs a great deal from the surface soil in lime requirement and it would appear that where potatoes are troubled with scab, the turning up of a few inches of the decidedly. acid subsoil might help control it.

More complete analyses of the above soils are available at Charlottetown.

SEASONAL NOTES

January, 1927, was unusually mild, the mean temperature being 7·7 degrees above a nineteen year average at the Charlottetown Station. The remainder of the winter and during the month of April average weather conditions prevailed. May was cool due to the presence of heavy ice in the gulf of St. Lawrence to the north of the "Island", delaying seeding and retarding the growth of the trees, which did not appear green until June 1. Spring work on the land commenced in some sections on May 10, and seeding became general May 24. A few districts report first seeding as late as June 7 and June 8. The cereals germinated well and made vigorous growth during June and July. There were four periods of heavy rain in August which lodged much of the oats. Rust followed and did much injury in several localities. The district about Palmer Road and Waterford, Prince county, had the most severe attack observed. Alaska oats was the only variety in that neighbourhood that was filled before the attack and that matured good seed oats. The harvest weather of September and early October was favourable and most of the grain was saved.

In October and November the rainfall was very heavy. The autumn season was very open and fall work was well completed before the "freeze up", which occurred on December 2, 1927.

PRECIPITATION AT THE ILLUSTRATION STATIONS IN PRINCE EDWARD ISLAND FOR THE SEASON 1927

Month	Palmer Road.	West Devon	Richmond	Rose Valley	Rustico	St. Peters	Red Point	Montague	Wood Islands	Iona	Charlottetown	Charlottetown 27-year average
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	.....	4·25	.....	.....	.....	3·68	.....	.....	.....	2·57	4·22	3,65
February	.....	1·98	.....	2·02	.....	1·91	.....	.....	.....	2·9[illegible]	3·51	3·03
March	.....	2·00	.....	2·50	.....	2·09	.....	.....	.....	2·08	4·25	3·52
April	1·99	3·32	1·85	3·13	.....	2·0[illegible]	.....	.....	.....	2·97	2·45	3·03
May	2·88	4·02	2·61	3·41	3·47	2·99	.....	3·47	.....	2·05	3·13	2·62
June	3·36	3·29	3·59	2·19	2·19	1·70	.....	2·1[illegible]	.....	1·82	1·56	2·80
July	4·86	4·9[illegible]	3·31	5·33	5·53	3·48	2·97	3·13	2·94	2·90	3·37	2·83
August	8·67	8·70	7·8[illegible]	7·33	7·92	4·44	5·92	6·63	5·55	6·60	6·97	3·24
September	3·21	2·98	1·6[illegible]	4·58	3·58	2·31	1·9[illegible]	2·28	1·80	1·90	2·75	3·65
October	6·14	5·63	5·28	5·70	5·58	7·42	8·33	7·75	6·94	7·13	6·57	4·10
November	3·24	3·06	3·50	5·00	.....	7·07	7·29	7·90	6·9[illegible]	5·96	6·71	3·90
December	4·92	4·57	6·34	3·80	.....	2·13	.....	.....	4·95	4·06	6·12	4·82
	9 mo.		9 mo.	11 mo.	6 mo.		5 mo.	7 mo.	6 mo.			
Total	39·27	48·76	35·98	44·99	28·3	41·3	26·5	33·3	29·1	43·0	49·8	41·2

THE CROP ROTATION USED AND CROPS GROWN

On all stations a four-year crop rotation is used; this consists of: 1st year, hoed crop; 2nd year, grain and seeded down; 3rd year, clover, and 4th year, timothy hay. 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 crossed ploughed in late fall. About 15 tons of barnyard manure per acre is applied either before the summer ploughing or the next spring, but for potatoes, preferably before the summer ploughing. In addition to the manure, chemical fertilizer, usually about 1,000 pounds, is also added. This is broadcast either by hand or by one of several mechanical means. The land is thoroughly worked in the spring. The corn and sunflowers are sown with the drill seeder, or dropped by hand and covered with a horse hoe. When the corn first appears it is harrowed with the spike harrow. This is repeated in a few days. Later it is kept thoroughly cultivated, care being taken that the cultivator does not go too deeply or too close to the plants and thus injure the feeding roots. Very little hand hoeing or weeding is necessary. Corn gave high yields and matured well on all stations this year and any corn not fed to the cattle was stooked and dried as corn stover for later feeding. The sunflowers supplied early succulent feed and the yields were particularly heavy, averaging on five stations 22·6 tons. The variety of corn used was Longfellow, and of sunflowers, Russian Giant.

The preparation for turnips is much the same as for corn. The variety, Charlottetown Bangholm Selected is particularly recommended where club root is prevalent.

The general practice of growing the potato crop is as follows: Certified seed is always used. This is treated with mercury bichloride solution before cutting. The land is marked, the sets dropped by hand from eight to ten inches apart and then covered with a horse hoe. Much more uniform stands

are obtained by this method than with the planter and large areas can be planted with little trouble. About twenty bushels of sets are used per acre. As soon as the plants begin to appear the scuffler is used. They are then covered with a horse hoe. In about a week's time they are again scuffled and covered. During the remainder of the season whenever weeds appear or a crust is formed after a rain, the scuffler and horse hoe are used to loosen the soil and to add clay to the drill. The last horse hoeing is done when the tops are so large as to make it difficult to get through, and an extra large hill is made at this time. Spraying is commenced as soon as the tops are six inches high and four or five sprayings of Bordeaux are given during the season. By the above method an average yield of 330 bushels per acre of marketable potatoes was obtained on nine stations during 1927. The Irish Cobbler is the most popular variety. The grain crop follows the roots and consists of either wheat (Huron or White Fife), barley (Charlottetown 80), or oats (Banner or Alaska). All of the seed supplied the operators for the first year was registered 1st generation grain. The grass mixture used is as follows: Timothy 10 pounds, red clover 5 pounds, alfalfa 5 pounds and alsike 2 pounds per acre. As yet alfalfa has not done as well as expected but seems to be getting better established each year. The clover receives no treatment whatever, but on the timothy hay, as soon as growth begins in the spring, 100 pounds of nitrate of soda per acre is sown. A table in another part of the report gives the comparative yields.

OBTAINING YIELDS AND COSTS

The yields of hay are obtained by cutting several areas of a definite size at various places throughout the fields, weighing when green and taking a sample for dry matter determination. The yields of hay are figured on a 12 per cent moisture basis, the standard for hay.

Definite areas of turnips, corn and sunflowers are harvested when they have reached their most useful stage. Dry matter samples are also taken from these. The potatoes are graded into marketable and unmarketable. The yields of grain for the most part are taken at threshing time. When there are small check plots, however, small areas are cut and the grain threshed in a small thresher at Charlottetown.

The cost of production for the several crops is calculated from the actual cost of supplies and wages in each district.

LIVE STOCK

The quality of the live stock on a number of the Illustration Stations is very good, but on others is quite ordinary. In order that the operator may have an idea how much his cows are producing he is weighing his milk periodically, three are weighing it daily. Tests for butter fat are made from time to time by the supervisor.

POULTRY

Poultry on the Illustration Stations shows steady improvement. Two operators, namely Clifford McEwan and John L. Clark, had pens in the Prince Edward Island 1926-27 Egg Laying Contest.

Good type cockerels from bred-to-lay hens were loaned to nine of the operators in the fall of 1927 for use during 1928.

PALMER ROAD, NORTH PRINCE COUNTY

OPERATOR, SYLVEN PETERS

This is one of the new stations started in the spring of 1927. The situation is excellent as it occupies a corner at the union of two public roads and is right at the parish church, hall and school.

The operator has done most careful work.

OPERATIONS AT PALMER ROAD—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre, 1927	Cost per unit, 1927
				$ cts.
A	Mixed grain ..... bush.	1	12·5	1 97
A	Turnips ..... tons	1	25·7	1 75
A	Corn ..... tons	1	19·0	1 79
A	Sunflowers ..... tons	1	27·2	1 23
B & C	Alaska oats ..... bush.	1	31·4	0 73
B & C	Huron wheat ..... bush.	1	9·5	2 04
D	Charlottetown 80 barley ..... bush.	1	18·7	0 97

High yields of corn, sunflowers and turnips were obtained and these at a comparatively low cost per ton. The corn was fairly mature when harvested being in the early dough stage. The yield of Alaska oats was much higher than the average for the district.

WEST DEVON, WEST PRINCE COUNTY

OPERATOR, CEPHAS GRIGG

Excellent work was carried on at West Devon this year and the yields obtained were in the main higher than the average of previous years. Work on the land began May 10, potatoes were planted May 27, but grain was not sown until June 8.

OPERATIONS AT WEST DEVON—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Potatoes ..... bush.	5	420·0	313·6	0 17	0 26
A	Turnips ..... tons	5	17·6	19·4	3 61	2 94
A	Corn ..... tons	4	15·9	12·3	2 82	3 80
A	Sunflowers ..... tons	4	21·2	19·2	2 08	2 66
B	Timothy ..... tons	3	2·3	2·3	8 28	7 73
C	Clover ..... tons	4	1·0	2·1	18 58	10 49
D	Alaska oats ..... bush.	2	26·7	32·9	0 98	0 89

The operator at West Devon has his fields particularly well marked and has kept his station in a more attractive manner than in previous years. A large and useful garden was another feature of this station. During the past year the operator sold to his neighbours 625 bushels of potatoes for seed.

RICHMOND, CENTRAL PRINCE COUNTY

OPERATOR, THOMAS NOONAN

This is the fourth year that work has been carried on at this station. The season was very late and no work was done on the land until May 23. Grain was seeded May 31 and potatoes, turnips and corn planted June 16, 22 and 23, respectively.

OPERATIONS AT RICHMOND—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy ..... tons	1	1·8	1·8	12 57	12 57
B	Clover ..... tons	3	2·2	1·9	9 37	10 14
C	Huron wheat ..... bush.	3	17·7	20·8	2 30	1 81
D	Cobbler potatoes ..... bush.	4	178·3	239·6	0 41	0 39
D	Turnips ..... tons	4	10·9	18·7	7 37	4 32
D	Corn ..... tons	4	15·5	17·1	3 42	3 81
D	Sunflowers ..... tons	3	17·6	19·2	2 94	3 08

Excellent yields of timothy and clover were obtained this year on this station, but owing to the late date of planting the root crop was below average. The potatoes at this station received no barnyard manure.

Seed of both clover and timothy were saved this year.

During the past year the operator sold 100 bushels of Banner oats, 200 bushels of Irish Cobblers for seed, besides 25 settings of eggs for hatching.

ROSE VALLEY, WEST QUEENS COUNTY

OPERATOR, MALCOLM MCKENZIE

This station is making steady progress. Spring work did not commence until May 24, and while the potatoes were planted on June 4, the corn and sunflowers were not planted until June 17. Late spring frosts somewhat injured the clover.

OPERATIONS AT ROSE VALLEY—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Potatoes ..... bush.	5	406·0	305·2	0 17	0 24
A	Turnips ..... tons	5	17·3	17·7	3 00	3 00
A	Corn ..... tons	5	12·5	18·5	3 48	2 68
A	Sunflowers ..... tons	4	24·2	21·2	1 78	2 31
B	Timothy ..... tons	3	1·8	1·6	9 86	10 00
C	Clover ..... tons	4	1·3	2·0	17 81	11 01
D	Wheat ..... bush.	5	13·7	16·0	2 63	1 90

A particularly fine crop of certified Cobbler potatoes was grown at Rose Valley this year. High yields of turnips, sunflowers and timothy were also obtained. Sufficient timothy seed for next year's sowing was saved.

During the past year the operator has sold to his neighbours 15 bushels of Banner oats, 150 bushels of potatoes and 25 pounds of timothy seed besides 35 settings of eggs for hatching.

RUSTICO, NORTH QUEENS COUNTY

OPERATOR, JOHN L. CLARK

Land was first worked on May 16. Wheat was seeded May 24 and potatoes and turnips planted June 8.

OPERAT ONS AT RUSTICO—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Timothy..... tons	2	1·65	1·9	9 64	8 50
B	Clover..... tons	3	2·0	2·2	9 73	7 92
C	Wheat..... bush.	3	19·0	23·9	1 51	1 28
D	Turnips..... tons	4	17·4	20·7	2 73	2 57
D	Potatoes..... bush.	2	498	389	0 17	0 20

Yields from all crops were good in 1927. Cutworms injured the turnips, making a second sowing necessary, but still a heavy crop was harvested.

The herd of pure-bred Holstein cows at this station are producing exceptionally well. During the year a new bull was purchased, while four heifers were sold.

ST. PETERS, EAST KINGS COUNTY

OPERATOR, CLIFFORD McEWEN

Excellent yields were obtained from all crops on this station with the exception of clover hay. Three-quarters of an acre of timothy were saved for seed, and yielded 370 pounds of clean seed of good quality.

OPERATIONS AT ST. PEPERS—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Potatoes..... bush.	5	471	341·5	0·17	0 23
A	Corn..... tons	5	19·2	13·7	2 22	4 18
A	Sunflowers..... tons	4	33·5	26·6	1 25	2 52
B	Timothy..... tons	3	1·9	1·8	10 69	9 19
C	Clover..... tons	4	1·1	2·2	21 15	1' 31
D	Banner oats..... bush.	3	46·0	54·8	0 75	0 50

Mr. McEwen had the third highest pen in the 1926-27 P.E. Island Egg Laying Contest, six hens from the pen of ten birds laid over 200 eggs. A new henhouse was also built during this year. Every year the operator at this station raises a number of very high quality Clydesdale foals. During the past year the operator has sold for seed 24 bushels of White Fife wheat, 150 bushels of Banner oats, 40 bushels of Charlettetown No. 80 barley, 20 pounds of Red Clover seed and 200 bushels of certified Irish Cobbler potatoes, besides 30 settings of eggs for hatching.

RED POINT, EAST KINGS COUNTY

OPERATOR, NELSON R. STEWART

The soil on this station and in the surrounding district is of the sandy loam type and varies in fertility from medium to below medium. This is the first year that the station has been operating and good work has been done. Only two fields were in crop this season, the other two being in pasture.

OPERATIONS AT RED POINT—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre, 1927	Cost per unit, 1927
				$ cts.
A	Potatoes..... bush.	1	381	0 22
A	Turnips..... tons	1	14·0	3 65
A	Corn..... tons	1	9·5	5 41
A	Sunflowers..... tons	1	21·3	2 39
B	Alaska oats..... bush.	1	29·4	0 69

Four hundred and fifty pounds of a 4-6-6 chemical fertilizer per acre was applied for oats and the yield obtained was 29·4 bushels. On a portion of the field receiving no fertilizer the yield was only 18·6 bushels.

MONTAGUE, WEST KINGS COUNTY

OPERATOR, FRED MCINTYRE

The year 1927 proved a successful one for this station. Crops in general were sown early and good yields were obtained. Clover, however, was poor. Corn furnished plenty of green feed over a period of two months. Including the two acres on the Illustration Station, eighteen acres of certified Cobbler potatoes were grown in 1927.

OPERATIONS AT MONTAGUE—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Potatoes..... bush.	5	369·0	371·7	0 16	0 21
A	Turnips..... tons	5	31·2	29·8	1 75	1 89
A	Corn..... tons	5	16·4	18·0	2 91	3 05
A	Sunflowers..... tons	5	23·2	20·0	2 03	2 66
B	Timothy..... tons	2	1·6	2·4	10 35	7 35
C	Clover..... tons	3	1·3	1·8	11 00	12 87
D	Banner oats..... bush.	5	36·5	42·6	1 01	0 56

During the past year twenty-four farmers procured seed from this station and including foreign sales 5,800 bushels of potatoes and 45 bushels of Banner oats were sold. Fifteen settings of eggs for hatching were also sold.

WOOD ISLANDS, SOUTH QUEENS COUNTY

OPERATOR, ALEXANDER MATHESON

This is the first year for operations at this station and some outstanding results were observed. The soil on the station and in the surrounding districts is a very light sandy loam. Vegetation is scanty. Average yields of potatoes, turnips, corn, sunflowers and grain were obtained. The potatoes passed inspection and were certified.

OPERATIONS AT WOOD ISLANDS—FOUR-YEAR ROTATION

Field	Crop	Number of years grown	Yield per acre		Cost per unit
			1927	Average	1927
					$ cts.
A	Potatoes..... bush.	1	322·0	.....	0 30
A	Turnips..... tons	1	14·3	.....	3 42
A	Corn..... tons	1	10·0	.....	5 01
A	Sunflowers..... tons	1	19·9	.....	2 49
B	Mixed grain..... bush.	1	22·0	.....	1 03
C	Mixed grain..... bush.	1	22·0	.....	1 03
D	Banner oats..... bush.	1	31·3	.....	0 69

All crops responded most remarkably to the beneficial effect of chemical fertilizer. Potatoes grown with 975 pounds of a 5-6-9 chemical fertilizer per acre gave a yield of 222 bushels marketable, and 100 bushels unmarketable, while with no fertilizer the yield of potatoes was 13 bushels marketable and 125 bushels unmarketable. Five hundred and fifty-five pounds of chemical fertilizer per acre increased the yield of Banner oats by twenty bushels.

IONA, SOUTHERN QUEENS COUNTY

OPERATOR, JAS. E. DALY

Excellent yields of all root crops were obtained at this station in 1927. Hay crops, however, were very low.

OPERATIONS AT IONA—FOUR-YEAR ROTATION

Field	Crops	Number of years grown	Yield per acre		Cost per unit	
			1927	Average	1927	Average
					$ cts.	$ cts.
A	Potatoes..... bush.	5	381·0	289·6	0 22	0 26
A	Turnips..... tons	5	19·8	20·0	2 24	2 32
A	Corn..... tons	5	18·0	10·8	2 56	5 40
A	Sunflowers..... tons	5	15·0	11·9	3 04	3 98
B	Timothy..... tons	2	0·8	0·7	18 78	17 69
C	Clover..... tons	4	0·3	0·6	43 77	25 82
D	Banner oats..... bush.	1	23·0	23·0	1 19	1 19

Green Mountain potatoes are grown, and besides the two acres on the station the operator had six acres on another part of his farm. In an adjoining field the beneficial effect of burnt lime and manure was shown.

Live stock and poultry show steady improvement.

The operator weighs milk from his cows daily.

During the past year the operator has sold 6 bushels of Charlottetown No. 80 barley and 249 bushels of potatoes for seed, besides five cockerels and 31 settings of eggs.

Alfalfa growing shows promise in the Iona district and at the Field Day plans were made to have eight neighbouring farmers add seven pounds of alfalfa seed to their regular grass mixture for 1928.

THE EFFECT OF NITRATE OF SODA ON TIMOTHY HAY

On six Illustration Stations, nitrate of soda was applied to the old meadows in the spring.

The following table gives the average results obtained. Only 80 per cent of the cost of the soda was charged against the hay as it is estimated that 20 per cent of its value is carried to another year. The cost of application is also included.

RESULTS OF APPLYING NITRATE OF SODA TO OLD MEADOWS

Place	Pounds used per acre	80 per cent of cost of fertilizer	Yields in tons per acre		Increase in tons per acre due to fertilizer
			With fertilizer	Without fertilizer	
		$ cts.			
West Devon	150	4 20	2·29	1·05	1·24
Richmond	125	3 12	1·80	1·28	0·52
Rose Valley	100	2 70	1·84	0·63	1·21
Rustico	138	3 70	1·65	0·98	0·67
Montague	100	2 88	1·60	0·69	0·91
Iona	100	2 80	0·76	0·24	0·50
Average	119	3 23	1·66	0·81	0·84

From the above it will be seen that from an average outlay of $3.23 for nitrate of soda an average increase of over 1,600 pounds of timothy hay per acre was obtained. This increase might have been greater had the fertilizer been available at an earlier date in the spring.

TURNIP GROWING EXPERIMENT ON THE ILLUSTRATION STATIONS

The growing of Swede turnips is increasing in importance in P. E. Island. They are proving invaluable as a succulent winter feed for cattle. Below are given the results of growing turnips with and without fertilizer in addition to barnyard manure at the rate of about 15 tons per acre.

FERTILIZER EXPERIMENTS WITH TURNIPS

Place	Pounds of fertilizer per acre			55 per cent of total cost of fertilizer	Yield in tons		Increase in tons due to fertilizer
	Nitrate of soda	Superphosphate	Potash		With fertilizer	Without fertilizer	
Palmer Road	240	676	76	8·61	25·7		
West Devon	226	676	76	8·61	17·6	11·6	6·0
Richmond	226	676	76	8·44	10·9		
Rose Valley	200	675	75	8·06	17·3	11·1	6·2
Rustico	225	750	100	9·20	17·4	15·5	1·9
Red Point	296	900	100	11·25	14·0	9·9	4·1
Montague	200	620	96	7·79	31·2	21·0	10·2
Wood Islands	180	450	150	7·46	14·3	3·3	11·0
Iona	225	675	75	8·86	19·8	9·5	10·3
Average	224	654	92	8·70	18·7	11·7*	7·0*

* Average of 7 stations.

From the above table it will be seen that from an average outlay of $8.70 an increase of seven tons of turnips was obtained. The poorer the soil the more marked the difference.

GROWING SUNFLOWERS ON THE ILLUSTRATION STATIONS

Sunflowers supply abundant succulent feed in late summer when the pastures are bare and before the corn crop is at its best. Many of the best feeders do not like this crop as it is difficult to get well fed cattle to eat it up clean, however it is cheaply grown, and if not too old will be eaten up readily when pastures are short. It is grown the same as is corn and about 15 pounds of seed are required per acre. Below is a table giving the yields obtained with the use of fertilizer and without fertilizer.

SUNFLOWER GROWING EXPERIMENT

Place	Pounds of fertilizer per acre				55 per cent of total cost of fertilizer	Yield in tons per acre		Increase per acre due to fertilizer
	Nitrate of soda	Sulphate of ammonia	Superphosphate	Potash		With fertilizer	Without fertilizer	
								tons
Palmer Road	180	.....	452	152	7·33	27·2		
West Devon	180	.....	450	150	7·55	21·2	7·5	13·7
Richmond	180	.....	452	152	7·05	17·6		
Rose Valley	120	.....	450	150	6·26	24·2	11·5	12·7
St. Peters	180	.....	450	150	7·48	33·5	21·2	12·3
Red Point	360	.....	900	300	14·26	21·3	13·3	8·0
Montague	180	.....	450	150	7·45	23·2	21·2	2·0
Wood Islands	180	.....	450	150	7·46	19·9	10·0	9·9
Iona	.....	444	666	311	14·80	15·0	6·0	9·0
Average (9)	173	49	524	185	8·85	22·6	13·0*	9·6*

* Average of 7.

From the above it will be seen that from an average extra outlay of $8.85 for fertilizer an increase of over nine and one-half tons was obtained per acre.

GROWING CORN WITH AND WITHOUT COMMERCIAL FERTILIZER

Corn is a crop which produces a large amount of succulent feed per acre, for late summer and fall feeding. Many farmers who grow this crop for the first time express surprise at the great amount of feed obtained even on a small area. On the Illustration Stations in addition to using barnyard manure at the rate of about 15 tons per acre, commercial fertilizer is also applied to the corn crop. A check, without fertilizer, is always left for comparison. Below are given the results obtained for 1927.

CORN GROWING EXPERIMENT

Place	Pounds of fertilizer per acre				55 per cent of total cost of fertilizer	Yield in tons per acre		Increase due to fertilizer tons per acre
	Nitrate of soda	Sulphate of ammonia	Superphosphate	Potash		With fertilizer	Without fertilizer	
Palmer Road	180	.....	452	152	7·33	19·0		
West Devon	180	.....	450	150	7·55	15·9	12·0	3·9
Richmond	180	.....	452	152	7·05	15·5	9·5	6·0
Rose Valley	120	.....	450	150	6·26	12·5	8·5	4·0
St. Peters	180	.....	450	150	7·48	19·0	14·0	5·0
Red Point	360	.....	900	300	14·26	9·5	5·9	3·6
Montague	180	.....	450	150	7·45	16·4	12·6	3·8
Wood Islands	180	.....	450	150	7·46	10·0	5·9	4·1
Iona	.....	444	666	311	14·80	18·0	7·5	10·5
Average (9)	173	49	524	185	8·85	15·1	9·5*	5·1*

* Average of 8.

From the above it will appear that from an average extra outlay of $8.85 for fertilizer an increase of over five tons of corn per acre can be expected.

POTATO GROWING WITH AND WITHOUT FERTILIZER

In P.E. Island, where potato growing is of such importance commercially, and where large quantities of fertilizer are used, it would appear very important to have some exact figures on yields and costs. At the Illustration Stations for the past few years potatoes have been grown both with and without fertilizer. In practically every case a limited amount of stable manure was used in addition to the chemical fertilizer. Below are given the results on nine stations for the year 1927. Only 55 per cent of the cost of fertilizer is charged against the potato crop, as it is estimated that the remaining 45 per cent remains in the soil for the use of succeeding crops.

THE EFFECT OF COMMERCIAL FERTILIZER ON THE GROWTH OF POTATOES

Place	Pounds of fertilizer per acre				55 per cent of cost of fertilizer	Yield in bushels per acre		Increase of marketable potatoes due to fertilizer
	Nitrate of soda	Sulphate of ammonia	Superphosphate	Potash		With fertilizer	Without fertilizer	
								bush.
West Devon	.....	300	450	225	10·70	M. 400* Un. 20	250 24	150
Richmond	.....	300	450	225	10·11	M. 145 Un. 33	121 31	24
Rose Valley	.....	300	450	225	9·93	M. 373 Un. 33	108 71	265
Rustico	.....	400	450	300	12·81	M. 373 Un. 125	271 85	102
St. Peters	.....	300	487	262	10·77	M. 452 Un. 19	387 8	65
Red Point	100	300	600	300	13·48	M. 329 Un. 52	204 46	125
Montague	.....	150	450	200	7·35	M. 346 Un. 23	296 33	50
W. Islands	.....	300	450	225	10·07	M. 222 Un. 100	13 125	209
Iona	.....	444	666	311	14·80	M. 327 Un. 54	104 117	223
Average (9)	9	310	495	253	11·11	M. 330 Un. 51	M. 195 Un. 60	M. 135

* M = Marketable. Un = Unmarketable.

From the above table it will be noted that for an average extra outlay of $11.11 for fertilizer, an increase of 135 bushels of marketable potatoes was obtained.

OPERATOR'S CONFERENCE

Realizing that the operators are a great power for improvement in their respective neighbourhoods, the Division of Illustration Stations in Prince Edward Island has organized for the past few years a unique trip. This trip consisted in taking each operator for a tour of inspection to each of the Illustration Stations. In this way the operators were able to see what the others were doing and were able to exchange ideas one with the other. This year the operators were accompanied by their wives.

MEETINGS

The superintendent held agricultural meetings in halls and school-houses to discuss with the farmers of the different districts Illustration Station work and farm problems during the months of March and April, 1927. The meetings at Rose Valley, Rustico, Iona, Richmond, West Devon, Mount Carmel, Elmsdale, O'Leary, Palmer Road, St. Peters, Red Point, Montague and Wood Islands were well attended and interesting discussions followed the lectures at each place. The very stormy weather prevented some from attending and for this reason the meeting at Glenwood had to be cancelled. During the summer and autumn similar meetings were held at Glenwood, De Sable and Long River.

FIELD DAYS

Field days were held during the growing season at eight of the Illustration Stations and were well attended. These are proving more popular each year and furnish an excellent means of demonstrating the work done on the station and discussing various farm problems. At a number of the field days officials from the provincial Department of Agriculture and from the Laboratory of Plant Pathology assisted in the discussions.

EXHIBITIONS

At the Provincial Exhibition held at Charlottetown a portion of the Experimental Farm Booth was devoted to the work carried on at the Illustration Stations.