DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

DOMINION EXPERIMENTAL FARMS

EXPERIMENTAL STATION

CHARLOTTETOWN, P.E.I.

REPORT OF THE SUPERINTENDENT

J. A. CLARK, M.S.A.

FOR THE YEAR 1928

Steers fed on the Experimental Station, Charlottetown, P.E.I.

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Ottawa, 1929

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DOMINION EXPERIMENTAL STATION, CHARLOTTETOWN, P.E.I.

REPORT OF THE SUPERINTENDENT, J. A. CLARK, M.S.A.

THE SEASON

A heavy snowfall on December 3, 1927, stopped the plough when autumn work was well completed. The heavy snow storms of the winter were settled by rain and the fields were bare several times each month. On three occasions this exposed the new meadows to below zero temperatures. During the winter and early spring the monthly mean temperatures were above average. The snow and ice went early from the land and rivers. Clover was badly winter-killed, but the grass made strong early growth. Seeding started earlier than for several years, on May 8, and the trees appeared green on May 23. June temperatures were below average. Germination was good, and growth of cereals was vigorous throughout the season. The hay crop thickened up wonderfully following beneficial showers during July. The grain ripened early, and there was very little damage from lodging; yields were good, and the harvest was completed early. The season was favourable for all crops. Roots and corn continued to make strong growth until harvested. The weather was favourable for the early harvesting of potatoes. The autumn was open and mild, so that fall ploughing was well completed when several inches of snow stopped the plough on November 27, 1928. This snow went quickly, and the fields were bare during most of December.

LAND

One hundred and twenty-five and one-half acres of land were leased for a period of five years from Mr. John R. Dinnis. This area adjoins the Experimental Station on the Mount Edward road.

BUILDINGS

A poultry contest house 16 feet by 140 feet was built on high ground north of the orchard. The dairy barn was lost by fire, from an unknown cause, on October 14, 1928.

85487—1½

—	Temperature (° F.)						Precipitation				Sunshine	
	Mean		Maximum		Minimum		Rain	Snow	Total Precipitation		1928	Average 18 years 1911-1928
	1928	Average 20 years	Highest	Mean Maximum	Lowest	Mean Minimum			1928	Average 28 years 1901-28		
							in.	in.	in.	in.	hours	hours
January	19·355	17·378	49	28·548	− 9	10·161	2·04	37·16	5·76	3·72	77·8	92·382
February	17·448	16·451	38	26·276	−10	8·620	0·72	30·74	3·79	3·06	92·6	114·459
March	26,032	26·549	53	32·806	0	19·258	0·88	29·25	3·80	3·53	130·4	135·963
April	38·500	36·662	64	47·367	15	29·633	2·38	1·00	2·48	3·01	193·7	153·872
May	50·113	47·872	71	59·193	32	41·032	2·40	.....	2·40	2·61	187·4	209·612
June	57·317	58·232	81	65·600	40	49·033	2·82	.....	2·82	2·80	228·0	226·960
July	66·806	65·602	81	75·290	47	58·322	3·48	.....	3·48	2·85	272·4	233·393
August	65·532	64·703	90	72·806	50	58·258	3·88	.....	3·88	3·26	181·7	230·030
September	56·583	57·215	74	63·933	38	49·233	4·39	.....	4·39	3·68	189·0	179·599
October	47·532	48·128	70	54·710	25	40·355	2·44	0·50	2·49	4·04	129·2	130·086
November	35·367	35·930	56	41·033	13	29·700	2·56	13·25	3·89	3·90	89·0	76·196
December	30·887	25·304	53	37·290	7	24·484	4·37	8·00	5·17	4·83	88·9	60·752
Totals and averages	42·622	41·669	.....	50·404	.....	34·841	32·36	119·90	44·35	41·29	1,860·1	1,843·30

ANIMAL HUSBANDRY, 1928

DAIRY HERD

The Ayrshire herd at Charlottetown at the close of the year 1928 numbered forty-one animals, headed by Ottawa Supreme 14th, 94146—A.R. No. 76, Class A.A. During the year the herd successfully passed all tuberculin tests, and it has been fully accredited since August 9, 1922, under certificate No. 219. A young bull, Ottawa Supreme 42nd, 113118 was received from Ottawa in November, 1928. He is a nice typey individual and will be bred to some of the young heifers related to the present sire.

DAIRY HERD RECORDS OF PRODUCTION

The following is a tabulated record of all cows having completed a lactation period during the year 1928. In compiling this table the following fixed charges were employed:—

Pasture, per month, per head	$ 1 50
Meal, per ton	45 00
Hay, per ton	11 00
Roots and ensilage, per ton	2 00
Green feed, per ton	4 00

In calculating the value of products, 40 cents per pound has been allowed for butter, and 30 cents per cwt., for skim-milk. Butter production has been figured on the basis of 85 per cent fat content and skim-milk on the basis of cream containing 30 per cent fat.

The labour charges for handling milk, caring for cattle, etc., is not shown. These charges are considered as being offset by the calves dropped and the manure produced; consequently all of these items are omitted.

Name and number of animal	Date of freshening	Number of days in lactation period	Total pounds of milk for period	Daily average yield of milk	Average per cent fat in milk	Pounds butter produced—85 per cent fat	Value of butter at 40 cents per pound	Value of skim-milk at 50 cents per cwt.	Total value of product	Amount meal eaten at $2.25 per cwt.	Amount roots and ensilage at $2 per ton	Amount hay eaten at $11 per ton	Amount green feed at $4 per ton	Months pasture at $1.50 per month	Total cost feed for period	Cost to produce 100 pounds milk	Cost one pound butter, skim-milk neglected	Profit on one pound butter, skim-milk neglected	Profit on cow, labour and calf neglected
			lb.	lb.	%	lb.	$	$	$	lb.	lb.	lb.	lb.	mos.	$	$	cts.	cts.	$
Ravenwood Jessie—94153	26/9/27	337	9,658	28·7	4·41	510	200 40	41 19	241 59	3,876	10,972	2,714	1,305	3·50	120 97	1 25	24·1	15·9	120 62
Fairvue Clarice 85792	10/1/27	320	8,188	25·6	4·83	455	182 00	34 35	216 35	3,022	7,930	2,244	1,400	3·50	96 32	1 18	21·2	18·2	120 03
Daisy of Sunnyslope 72581	16/4/27	369	11,357	30·3	3·33	445	178 00	50 48	228 48	3,672	11,277	2,724	1,400	3·75	117 30	1 03	26·4	13·6	111 18
Ravenwood Lily 77867	31/12/26	426	10,343	24·8	4·20	511	204 40	44 50	248 90	4,285	14,225	3,532	1,400	3·50	138 11	1 34	27·0	13·0	110 79
Ravenwood Jess 89724	13/12/27	324	9,968	30·8	3·69	433	173 20	43 71	216 91	3,533	8,385	2,168	1,360	4·50	109 27	1 10	25·2	14·8	107 64
Ravenwood Helen 83094	9/3/27	329	8,868	27·0	4·06	424	169 60	38 34	207 94	3,277	9,075	2,292	1,400	4·00	104 21	1 18	24·6	15·4	103 73
Ravenwood Buttercup 77482	8/4/27	328	8,639	26·3	4·10	416	166 40	37 28	203 68	3,393	8,985	2,394	1,400	4·50	108 04	1 25	26·0	14·0	95 64
Ravenwood Vera 94154	26/8/27	372	8,981	24·1	3·85	407	162 80	39 14	201 94	4,007	10,970	2,712	1,400	4·25	125 22	1 39	30·8	9·2	76 72
Ravenwood Daisy 82534	26/3/27	366	7,780	21·3	3·91	358	143 20	33 83	177 03	3,459	10,982	2,564	1,400	4·00	111 71	1 44	31·2	8·8	65 32
Ravenwood Snow 91548	28/1/27	369	7,645	20·7	3·80	342	136 80	33 37	170 17	3,401	11,065	2,698	1,400	4·00	111 22	1 45	32·5	7·5	58 95
Ravenwood Nora 89286	2/3/27	364	6,979	19·2	4·34	356	142 40	29 85	172 25	3,580	10,795	2,594	1,400	4·00	114 41	1 64	32·1	7·9	57 84
Buttercup of Glenholm 56491	8/12/26	474	7,194	15·2	3·74	316	126 40	31 47	157 87	3,249	16,577	3,962	1,500	3·75	120 09	1 67	38·0	2·0	37 78
Total for all cows	.....	4,378	105,600	.....	.....	4,964	1,985 60	457 51	2,443 11	42,754	131,238	32,598	16,765	47·25	1,376 87	.....	.....	.....	1,066 24
Average for all cows	.....	365	8,800	24·1	4·00	413½	165 47	38 12	203 59	3,563	10,936	2,716	1,397	3·94	114 74	1 30	27·7	12·3	88 85
Total for 5 best cows	.....	1,776	49,514	.....	.....	2,345	938 00	214 23	1,152 23	18,388	52,789	13,382	6,865	18·75	581 97	.....	.....	.....	570 26
Average for 5 best cows	.....	355	9,903	27·9	4·03	469	187·60	42 85	230 45	3,678	10,558	2,676	1,373	3·75	116 39	1 18	24·8	15·2	114 05

OFFICIAL RECORD OF PERFORMANCE, AYRSHIRE COWS, CHARLOTTETOWN EXPERIMENTAL STATION, JAN. 1, 1928, TO DEC. 31, 1928

Name and number of cow	Age at commencement of test		Number of days in test	Pounds of milk	Pounds of fat	Average per cent fat	Official Record
	years	days	days	lb.	lb.	%	
Daisy of Sunnyslope 72581	7	.....	305	10,323	343	3·32	Vol. 38—No. 2128A.
Ravenwood Snow 91548	2	158	365	7,637	291	3·81	Vol. 38—No. 3441
Ravenwood Jess 89724	3	220	305	9,855	364	3·69	Vol. 39—No. 2411A.
Fairvue Clarice 85792	3	338	305	8,174	394	4·82	Vol. 38—No. 1914A.
Ravenwood Helen 83094	4	42	305	8,828	359	4·07	Vol. 38—No. 2031A.
Ravenwood Buttercup 77482	5	.....	305	8,639	355	4·11	Vol. 38—No. 2129A.
Ravenwood Lily 77867	6	.....	365	10,065	422	4·19	Vol. 38—No. 3402.
Ravenwood Jessie 94153	2	250	337	9,658	426	4·41	Vol. 38—No. 3545
Ravenwood Vera 94151	2	202	365	8,966	345	3·85	Vol. 38—No. 3546
Ravenwood Marion 89489	3	217	365	9,310	364	3·91	Vol. 39—No. 3621

TURNIPS VS. MANGELS AS A SUCCULENT FOR MILCH COWS

An attempt was made to determine, through the medium of milk production, the relative merits of turnips and mangels for the feeding of cows in milk.

Four cows in milk were placed on test. For the first tweny-one days each animal received 50 pounds of turnips per day. During the second twenty-one-day period each animal received 50 pounds of mangels per day, and for the third twenty-one-day period were again shifted back to the turnip ration, receiving 50 pounds each per day. Apart from the variation in roots the animals were fed uniformly. The cattle were weighed at the start, at the finish, and twice during the test. Body weight was not only maintained, but slight increases were made.

The following table gives the record of production and body weight for the different periods:—

TURNIPS VS. MANGELS FOR MILCH COWS

Name of Individual	Pounds of milk produced				Body weight	
	Turnips			Mangels		
	First period	Third period	Average 1st and 3rd periods	Second period	Start of test	Finish of test
	lb.	lb.	lb.	lb.	lb.	lb.
Ravenwood Jess	983·6	832·4	908·0	908·2	1,060	1,060
Ravenwood Marion	884·1	784·0	834·0	873·3	1,110	1,130
Ravenwood Jessie	666·4	660·5	663·4	659·1	1,175	1,185
Ravenwood Vera	518·1	497·1	507·6	516·8	1,120	1,180
Average	763·0	693·5	728·2	739·3	1,116	1,139

It would be unwise to draw conclusions from the results of one year's experiment. From the above data there would appear to be little difference in the feeding value of turnips and mangels. It is necessary, however, to exercise some care in the feeding of turnips, so as to avoid objectionable flavours in the milk. Usually little difficulty is experienced if the feeding of turnips is delayed until after milking is completed.

Further work is to be undertaken in this investigation.

BEEF CATTLE

STEER FEEDING EXPERIMENTS

Twenty steers for experimental feeding were purchased late in the year. Owing to scarcity and the difficulty in obtaining feeders, these steers did not go into the feeding pens until January 1, 1928. The experiment was continued until March 17, a period of only seventy-six days, one of the shortest conducted at this station.

The group was divided into five pens of four steers each, and all horned steers were dehorned before entering the feeding lot.

The work outlined was a continuation of that conducted last season, namely, a comparison of the feeding value of swede turnips and cull potatoes, and also the feeding value of swedes when fed in different amounts. The hay and meal ration was similar for all pens, and was maintained at a uniform rate during the test period.

The average cost of the steers as weighed into the pens, and including the cost of preliminary feeding, was $6.54½ per cwt.

Each steer received 10 pounds of hay and 7·5 pounds of grain per day. The grain mixture was composed of 300 pounds crushed oats, 200 pounds crushed barley, 100 pounds bran, and 150 pounds of oilcake meal. At market prices this meal mixture was valued at $2.37 per cwt.

Pen 1 received swede turnips at the rate of 40 pounds per steer per day, which was reduced at the rate of 1 pound per steer per week until the end of the feeding period.

Pen 2 received swede turnips at a uniform rate of 15 pounds per steer per day during the entire feeding period.

Pen 3 received swede turnips at the rate of 20 pounds per steer per day. This was reduced by ½ pound per steer per week until the end of the feeding period.

Pen 4 received cull potatoes at the rate of 25 pounds per steer per day during the entire feeding period.

Pen 5 was used as a check lot, and received neither swedes nor potatoes.

The following tables give the outline and results of the experiment in detail:—

STEER FEEDING EXPERIMENT—AMOUNT AND VALUE OF FEED

Item	Pen number										Total	
	1		2		3		4		5		Amount	Value
	lb.	$ c.	lb.	$ c.	lb.	$ c.	lb.	$ c.	lb.	$ c.	lb.	$ c.
Swede turnips at $2 per ton	10,660	10 66	4,560	4 56	5,330	5 33	.....	.....	.....	.....	20,550	20 55
Potatoes at $4 per ton	.....	.....	.....	.....	.....	.....	7,600	15 20	.....	.....	7,600	15 20
Mixed hay at $12 per ton	3,040	18 24	3,040	18 24	3,040	18 24	3,040	18 24	3,040	18 24	15,200	91 20
Meal mixture at $2.37 per cwt	2,280	54 03	2,280	54 03	2,280	54 03	2,280	54 03	2,280	54 03	11,400	270 15
Total cost per pen	.....	82 93	.....	76·83	.....	77 60	.....	84 47	.....	72 27	.....	397 10
Average cost per steer	.....	20 73	.....	19 21	.....	19 40	.....	21 87	.....	18 07	.....	19 85

STEER FEEDING EXPERIMENT—COMPARISON OF DIFFERENT PENS

—		Pen No. 1	Pen No. 2	Pen No. 3	Pen No. 4	Pen No. 5	Pen totals and averages
Number of steers in lot		4	4	4	4	4	20
Initial gross weight per pen	lb.	3,270	3,270	3,275	3,230	3,295	16,340
Initial average weight	"	817	817	819	807	824	817
Finished weight per pen	"	4,030	4,020	4,080	4,090	3,790	20,010
Average finished weight per steer	"	1,007	1,005	1,020	1,022	948	1,000
Total gain in 76 days	"	760	750	805	860	495	3,670
Average gain per steer	"	190	188	201	215	124	183
Daily gain per steer	"	2·50	2·47	2·64	2·83	1·63	2·41
Daily gain per pen	"	10·00	9·87	10·59	11·32	6·51	9·66
Value of cattle at beginning of test	$	214 02	214 02	214 35	211 40	215 66	1,069 45
Average value per steer at start	$	53 50	53 50	53 59	52 85	53 91	53 47
Gross cost feed per pen	$	82 93	76 83	77 60	87 47	72 27	397 10
Average cost feed per steer	$	20 73	19 21	19 40	21 87	18 07	19 85
Total cost	$	296 95	290 85	291 95	298 87	287 93	1,466 55
Cost of one pound gain	cts.	10·9	10·2	9·6	10·2	14·6	10·8
Average increase in value per steer	$	60 73	54 00	57 57	66 60	44 03	56 58
Sale price per pen	$	456 93	430 00	444 63	477 79	391 75	2,201 10
Sale price per steer	$	114 23	107 50	111 16	119 45	97 94	110 05
Profit per pen	$	159 98	139 15	152 68	178 92	103 82	734 55
Profit per steer	$	39 99	34 79	38 17	44 73	25 95	36 73

TABLE OF WEIGHTS AND GAINS—STEER FEEDING EXPERIMENT

Pen No.	Steer No.	Weight Jan. 1, 1928	Weight Mar. 17, 1928	Gain	Value at start	Cost of feed	Total cost	Sale price	Profit
		lb.	lb.	lb.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
1	50144	900	1,090	190	58 91	20 74	79 65	122 63	42 98
	64734	810	1,020	210	53 01	20 73	73 74	114 75	41 01
	.....	750	950	200	49 09	20 73	69 82	122 55	52 73
	77,655	810	970	160	53 01	20 73	73 74	97 00	23 26
	Total	3,270	4,030	760	214 02	82 93	296 95	456 93	159 98
	Average	817	1,007	190	53 50	20 73	74 24	114 23	39 99
2	51819	950	1,190	240	62 18	19 20	81 38	133 88	52 50
	86867	670	820	150	43 85	19 21	63 06	82 00	18 94
	77656	905	1,050	145	59 23	19 21	78 44	118 12	39 68
	50634	745	960	215	48 76	19 21	67 97	96 00	28 03
	Total	3,270	4,020	750	214 02	76 83	290 85	430 00	139 15
	Average	817	1,005	188	53 50	19 21	72 71	107 50	34 79
3	.....	975	1,150	175	63 81	19 40	83 21	115 00	31 79
	.....	785	1,000	215	51 38	19 40	70 78	112 50	41 72
	.....	800	1,030	230	52 36	19 40	71 76	115 88	44 12
	.....	715	900	185	46 80	19 40	66 20	101 25	35 05
	Total	3,275	4,080	805	214 35	77 60	291 95	444 63	152 68
	Average	819	1,020	201	53 59	19 40	72 99	111 16	38 17
4	.....	950	1,220	270	62 18	21 86	84 04	137 25	53 21
	86866	700	870	170	45 81	21 87	67 68	97 88	30 20
	65202	820	1,070	250	53 67	21 87	75 54	138 03	62 49
	.....	760	930	170	49 74	21 87	71 61	104 63	33 02
	Total	3,230	4,090	860	211 40	87 47	298 87	477 79	178 92
	Average	807	1,022	215	52 85	21 87	74 72	119 45	44 73
5	.....	880	1,100	220	57 60	18 06	75 66	110 00	34 34
	64273	1 915	1,020	105	59 89	18 07	77 96	114 75	36 79
	86872	850	940	90	55 63	18 07	73 70	94 00	20 30
	.....	650	730	80	42 54	18 07	60 61	73 00	12 39
	Total	3,295	3,790	495	215 66	72 27	287 93	391 75	103 82
	Average	824	948	124	53 91	18 07	71 98	97 94	25 95

DEDUCTIONS

It is felt that the following deductions from the foregoing tables are warranted:—

(*a*) Roots or cull potatoes assist materially in the rapid fattening of short keep steers. Not only is this evident in the increased gains made by those pens receiving roots or potatoes, but it is also evident in the superior quality and higher price paid for these animals.

(*b*) In so far as total gain per pen was concerned, there was little evidence that the heavier feeding of roots proved profitable. Twelve steers receiving roots made an average gain per steer of 193 pounds, whereas those receiving no roots made a gain of only 124 pounds, or an advantage of 69 pounds per steer in favour of feeding roots. Similarly for potatoes, this advantage increased to 77 pounds. The most notable advantage, however, in favour of roots or potatoes was in the quality of steer produced, and the consequent increased price received. In this respect it might be mentioned that at the commencement and at the completion of the experiment the steers were graded into three classes by a qualified man. At the close of the test two steers were listed as "extra choice." One of these was in Pen 1, receiving a heavy feeding of roots, and one in Pen 4, receiving potatoes. Eleven steers graded "choice"; seven of these being found in the pens fed roots, three in the pen receiving potatoes, and only one in the pen not fed roots or potatoes. The balance, seven steers, graded as "medium." One of these was found in Pen 1, two in Pen 2, one in Pen 3, none in Pen 4, and three in Pen 5.

(*c*) The difference in price amounted to $2.90 per cwt. between the lowest and the highest quality steers. The pen receiving potatoes made its excellent showing because of its high quality.

(*d*) Taking into consideration the uniformity in gain, together with the small number of steers employed, it is not safe to conclude that the superior quality found in some of the pens, notably that receiving potatoes, is due alone to the kind or amount of feed consumed. It is safe to conclude, however, that steers receiving roots or potatoes were superior in quality to those fed without these supplements.

(*e*) Small quantities of roots seemed to induce gains equal to those made by animals receiving larger quantities of roots.

(*f*) Cull potatoes, when available in large quantities and at a low price, would seem to possess a very definite value as a feed for short-keep steers. In fact, if we judge from the result of one year's experiment as set forth above, the difference in selling value of $86.04 as between Pen 5, receiving no roots and Pen 4, fed potatoes, has been brought about by the addition of 7,600 pounds of cull potatoes. This would place a feed value of $1.13 per cwt. or about 68 cents per bushel on potatoes. It would be necessary, of course, to support this with further data before making a definite statement on the point.

HORSES

Darling of Tauton, the dam of four of our pure-bred Clydesdales, was sold at the age of 22 years, leaving ten horses at the close of 1928. The horses are classed as follows: Three pure-bred Clydesdale mares, four draught geldings, one grade draught mare, one driving mare and a grade filly. One express mare was hired for part of the season.

HORSE LABOUR

The labour performed during the year by the eleven horses was as follows:

	Hours
Farm work	13,329
Horticulture	330
Roads	159
Hauling manure	1,929
Messenger service and miscellaneous	2,326
Cultural work	240
Total	18,313

The Moline tractor did a large share of the heavy farm work.

SWINE

The Yorkshire sow farrowed in April and again in October with eight and ten pigs respectively. She killed five at farrowing. Seven pigs were sold for breeding stock and eight were marketed during the year. There were two Yorkshire brood sows and six young pigs on hand December 31, 1928.

FIELD HUSBANDRY

THE SEASON

The winter of 1927-28 was mild and open. The heavy snowfall of 139 inches throughout the winter fell in storms that were followed by rain within a week, so that the new meadows were bare most of the time. Sharp cold snaps usually followed the rain, doing much damage to clover. The snow and ice went away early from the fields and rivers. Clover wintered poorly, and very few good fields were seen. The grass started early, grew well, and thickened up during June and July, so that hay crops above average were obtained. Vegetation was earlier than for several years. Cereals germinated well and ripened early. Harvest conditions were good. Corn and roots did particularly well due to favourable weather in the early autumn. The autumn was open and fall work was well completed before the plough was stopped by snow on November 27, 1928.

CROP ROTATIONS

Various types of farm rotations have been in operation at this station for a number of years. These give an opportunity to study the effect on yield of the rotation of crops, permit the computation of cost of production of different crops under the various systems, and serve at all times during the growing season as a practical demonstration to interested and inquiring visitors.

The mangel seed purchased this season germinated very poorly. This is reflected in the low yield obtained from the hoed crop area on rotation "A."

The following is a table of the fixed charges adopted at this station for the year 1928:—

Costs	
Rent of land, per acre	$ 3 00
Manure, per ton (spread)	2 00
Seed oats, per bushel	1 50
Seed barley, per bushel	2 00
Seed wheat, per bushel	3 00
Use of machinery, per acre	2 85
Manual labour, per hour	0 25
Horse labour, per hour	0 10
Tractor labour per hour	0 55
Grass seed	at cost
Seed of mangels, turnips, potatoes, etc	at cost
Twine	at cost
Spray materials	at cost

RETURN VALUES

Oats, per bushel	0 68
Barley, per bushel	0 96
Wheat, per bushel	1 80
Hay, per ton	11 00
Potatoes, per bushel, field run	0 25
Oat straw, per ton	4 00
Barley straw, per ton	4 00
Wheat straw, per ton	2 00

The above values are a fair estimate of prevailing market prices for the commodities mentioned.

ROTATION "A"

(Five years' duration, suitable for dairy farming)

First year—hoed crop.—For several years mangels have been used as the hoed crop on this rotation. Owing to faulty germination the crop in 1928 was very light. Twenty-five tons of manure are applied in preparation for this crop, about half of which is usually applied the previous autumn. The balance is applied in the spring and worked in thoroughly with the cutaway harrow. Forty per cent of the total cost of the manure is charged against the hoed crop.

Second year—grain.—Banner oats has been used for this year of this rotation since 1910. The area is seeded down with 10 pounds of red clover, 2 pounds alsike and 12 pounds timothy per acre. The grain crop is charged with 25 per cent of the cost of manure.

Third year—clover hay.—This crop is charged with 20 per cent of the manure applied.

Fourth year—timothy hay or pasture.—This area is ploughed in August or early September, after the removal of the hay crop, and is topworked during the balance of the season. The hay crop is charged with 10 per cent of the total cost of manure.

Fifth year—grain (barley).—This area is seeded down with 8 pounds red clover and 2 pounds alsike per acre. This serves as a green manure crop for the root crop following.—

SUMMARY ROTATION "A" FIVE YEARS' DURATION

Crop	Yields		Value 1928	Cost of production 1928	Profit 1928
	17-year average	1928			
	lb.	lb.	$	$	$
Mangels—Yellow Intermediate	*39,570	23,060	.....	72 10	.....
Oats—Banner	2,349	2,145	42 90	29 74	19 97
—Straw	2,988	3,405	6 81		
Clover hay	4,969	4,212	23 17	20 65	2 52
Timothy hay	4,643	4,654	25 60	15 56	10 04
Barley—Charlottetown No. 80	2,202	1,215	24 30	22 21	4 79
Straw	2,283	1,350	2 70		

*16 years

ROTATION "B"

(Five years' duration, for the control of daisies and other perennial weeds)

First year—hoed crop.—Received 15 tons manure per acre in the spring. The crop is charged with 40 per cent of the total cost of manure applied.

Second year—grain.—Seeded down with 10 pounds red clover, 2 pounds alsike and 12 pounds timothy per acre. The grain crop is charged with 25 per cent of the manure applied.

Third year—clover hay.—This crop must be cut early to prevent seeding of weeds present. The land is ploughed in autumn after the removal of the clover crop. The clover crop is charged with 20 per cent of the cost of manure.

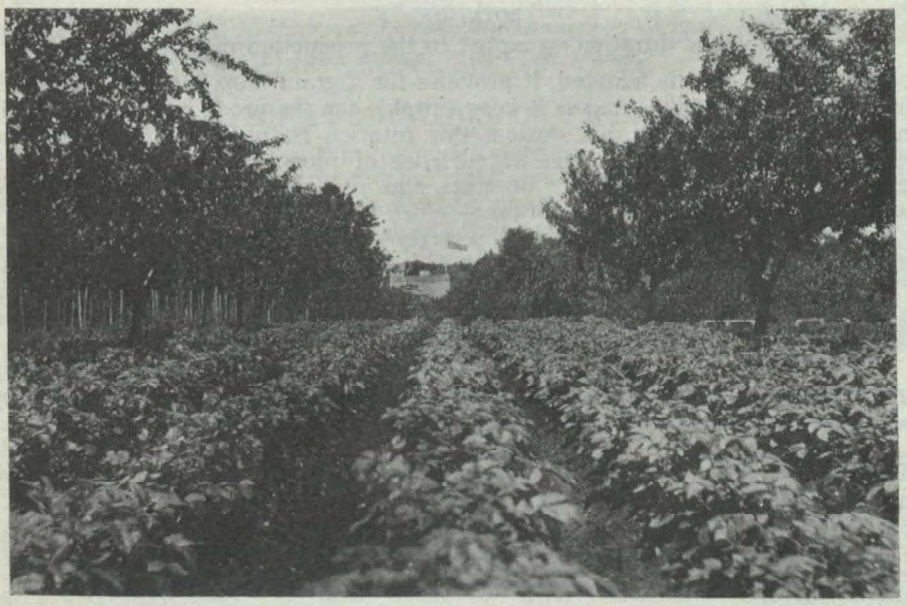
Fourth year—grain.—This area is seeded down with 10 pounds red clover, 2 pounds alsike and 12 pounds timothy per acre. The grain crop is charged with 10 per cent of the cost of manure applied.

Fifth year—clover hay.—This area might be used for pasture if required. If weeds, particularly ox-eye daisies, are present, the crop must be cut early before the seeds begin to drop. Following the harvesting of the hay crop, the land is top dressed with 10 tons manure per acre, and ploughed in preparation for the hoed crop. Five per cent of the cost of manure is charged against the clover crop.

SUMMARY ROTATION "B"—FIVE YEARS' DURATION

Crop	Yields		Value 1928	Cost of production 1928	Profit or (−) loss 1928
	16-year average	1928			
	lb.	lb.	$	$	$
Potatoes	*15,015	13,770	57 37	81 21	−23 84
Wheat—Huron	†1,535	1,358	40 74	31 08	12 04
Straw	2,520	2,382	2 38		
Clover	4,609	5,182	28 50	23 66	4 84
Oats—Banner	2,086	1,717	34 34	25 87	13 06
Straw	2,483	2,293	4 59		
Clover	3,056	2,918	16 05	16 17	−0 12
Totals	.....	.....	183 97	177 99	5 98
Per acre	.....	.....	36 79	35 60	1 19

*Ten-year average. †Fifteen-year average.



Irish Cobblers on July 1, on the Charlottetown Station.

"ROTATION "C"

(Four years' duration, suitable for stock farming)

Under this system of rotation a relatively large part of the cultivated land is under hay and hoed crop. This should make it suitable for live stock farming.

First year—hoed crop.—Ten tons of manure are applied in the spring. Forty per cent of the total amount of manure applied is charged to this crop.

Second year—grain.—Seeded down with 10 pounds of red clover, 2 pounds alsike and 12 pounds timothy per acre. The grain crop is charged with 30 per cent of the manure applied.

Third year—clover hay.—Charged with 20 per cent of the total manure applied.

Fourth year—timothy hay or pasture.—Ten tons of manure per acre are applied early in the autumn, after the removal of the timothy. This is ploughed down in preparation for hoed crop the following season. The hay crop is charged with 10 per cent of the total cost of manure.

SUMMARY ROTATION "C"—FOUR YEARS' DURATION

Crop	Yields		Value 1928	Cost of production 1928	Profit or (−) loss 1928
	Average	1928			
	lb.	lb.	$	$	$
Potatoes	(a) 16,747	14,512	48 38	64 31	−3 84
Wheat, Early Red Fife	(b) 1,719	974	29 21	31 47	1 97
Straw	3,531	4,219	4 23		
Clover hay	(c) 5,666	5,600	30 80	19 12	11 68
Timothy hay	(d) 5,924	5,100	28 05	15 17	12 88
Totals	.....	.....	152 76	130 07	22 69
Per acre	.....	.....	38 19	32 52	5 67

(a) 11-yr. average. (b) 14-year average. (c) 16-year average. (d) 15-year average.

ROTATION "F"

(Four years' duration—adapted to the production of seed grain)

When this plan is adopted, it provides for a grain crop on half of the area under cultivation. This makes it very suitable for the production of seed grain in large quantities. At this station, this rotation is followed in our "test of varieties of cereals" and "test of varieties of roots" work. This makes it impossible to give a summary of costs and production, etc. The following, however, is an outline of the rotation:—

First year—hoed crop.—This crop receives manure in the spring at the rate of 12 tons per acre, and is charged with 36 per cent of the total manure applied.

Second year—grain.—This area is seeded down with 10 pounds of red clover, 2 pounds of alsike and 6 pounds of timothy per acre. The grain crop is charged with 26 per cent of the total manure applied.

Third year—clover hay.—Top dressed after the removal of the clover crop and in preparation for grain, with 8 tons of manure per acre. The clover crop is charged with 16 per cent of the manure applied during the rotation.

Fourth year—grain.—Seeded down with 8 pounds of red clover and 2 pounds of alsike per acre. The grain crop is charged with 22 per cent of the total manure applied.

ROTATION "G"

(Seven years' duration—at one time commonly practised in the province. Frequently referred to as the old "Scotch" or old "P.E.I. Rotation")

First year—oats.—Seeded down with 8 pounds of red clover and 2 pounds of alsike per acre. This crop is charged with 8·57 per cent of the manure applied during the cycle of the rotation. At $2 per ton this amounts to a total of $6.

Second year—hoed crop.—Manure is applied in the spring at the rate of 20 tons per acre. The crop is charged with 27·14 per cent of the total manure applied; at $2 per ton this amounts to $19.

Third year—grain.—Seeded down with 10 pounds of red clover, 2 pounds alsike and 12 pounds of timothy per acre. To the grain crop is charged 16·43

per cent of the total manure applied during the rotation. This amounts to $11.50, with manure charged at $2 per ton spread.

Fourth year—Clover hay.—Charged with 11·43 per cent of the manure applied to the rotation, a total of $8.

Fifth year—timothy hay.—This crop receives a top dressing of manure in August, at the rate of 15 tons per acre. The crop is charged with 5.71 per cent of the total manure applied, or $4.

Sixth year—timothy or pasture.—Charged with 20 per cent of the total manure, or $14.

Seventh year—timothy or pasture.—Charged with 10·71 per cent of the cost of manure, or $7.50.

Manure being applied at two different times during such a long rotation, makes difficult the division of the charges on a percentage basis. The figures given above are sufficiently accurate for field work.

SUMMARY ROTATION "G"—SEVEN YEARS' DURATION

Crop	Yields		Value 1928	Cost of production 1928	Profit 1928
	Average	1928			
	lb.	lb.	$ cts.	$ cts.	$ cts.
Oats—O.A.C. No. 72	(a) 1,805	1,425	28 50	31 62	2 28
Straw	2,398	2,700	5 40		
Turnips	(b) 34,770	34,975	.....	69 57	.....
Wheat—Charlottetown No. 123	(c) 1,517	1,472	44 17	35 52	10 82
Straw	3,190	2,178	2 17		
Clover	(d) 5,508	4,802	26 42	18 87	7 55
Timothy	(e) 5,901	5,654	31 12	14 70	16 42
Timothy	(f) 7,242	7,232	39 77	24 70	15 07
Timothy	(g) 6,074	5,694	31 30	17 97	13 33

(a) 12-year average. (b) 9-year average. (c) 7-year average. (d) 16-year average. (e) (f), and (g) 15-year average.

COST OF PRODUCTION OF FIELD CROPS

The data employed in the following tables are taken from the records kept in connection with our demonstration rotation plots. It must be borne in mind that such figures as are given are to be used with considerable limitation, as fixed charges and conditions of plant growth vary to a very great extent even within comparatively small areas. Cost of labour, soil type, state of soil fertility and climate are all modifying conditions that must be taken into account when applying such information to local conditions.

The charges and return values employed are those listed on a previous page.

COST OF PRODUCING WHEAT AFTER HOED CROP
(Figures based on 1 acre of wheat grown on Rotation "B", 1928)

Item		1928	Average 15 years
		$ cts.	$ cts.
Rent of land		3 00	3 00
Manure		12 50	12 50
Use of machinery		2 85	2 85
Seed, 1½ bushels at $3		5 25	3 62
Twine at 12 cents per pound		0 36	0 39
Manual labour at 25 cents per hour		4 66	4 20
Horse labour at 10 cents per hour		2 46	1 95
Total cost per acre		31 08	28 51
Yield per acre—grain	lb.	1,358	1,535
Yield per acre—straw	lb.	2,382	2,892
Value per acre—grain	$	40 74	46 05
Value per acre—straw	$	2 38	2 52
Total value	$	43 12	48 58
Profit or loss per acre	$	12 04	20 08
Cost per bushel (value of straw considered)	$	1 30	1 06

COST OF PRODUCING OATS AFTER HOED CROP
(Figures based on one acre, Rotation "A", for the year 1928)

Item		1928	Average 17 years
		$ cts.	$ cts.
Rent of land		3 00	3 00
Manure		12 50	12 50
Use of machinery		2 85	2 85
Seed, 2¾ bushels at $1.50 per bushel		4 13	2 83
Twine at 12 cents per pound		0 42	0 41
Manual labour at 25 cents per hour		4 72	4 68
Horse labour at 10 cents per hour		2 12	2 36
Total cost per acre		29 74	28 63
Yield per acre, grain	lb.	2,145	2,349
Yield per acre, straw	lb.	3,405	2,988
Value per acre, grain	$	42 90	46 98
Value per acre, straw	$	6 81	5 97
Total value	$	49 71	52 95
Profit per acre	$	19 97	24 32
Cost per bushel (value of straw considered)	cts.	40·7	36·8

COST OF PRODUCING CLOVER HAY AFTER WHEAT
(Figures based on one acre, Rotation "C", year 1928)

Item		1928	Average 16 years
		$ cts.	$ cts.
Rent of land		3 00	3 00
Manure		8 00	8 00
Use of machinery		2 85	2 85
Grass and clover seed at cost		2 98	2 74
Manual labour at 25 cents per hour		1 73	2 46
Horse labour at 10 cents per hour		0 56	0 60
Total cost per acre		19 12	19 65
Yield per acre	lb.	5,600	5,604
Value per acre	$	30 80	31 17
Profit per acre	$	11 68	11 52
Cost per ton	$	6 83	7 01

COST OF PRODUCING MANGELS AFTER BARLEY
(Figures based on one acre, Rotation "A", for year 1928)

Item		1928	Average 16 years
		$ cts.	$ cts.
Rent of land		3 00	3 00
Share of manure		20 00	20 00
Use of machinery		2 85	2 85
Clover seed (sown with preceding crop for green manure)		3 90	3 31
Seed, at 40 cents per pound		2 80	4 24
Manual labour at 25 cents per hour		31 42	42 79
Horse labour at 10 cents per hour		8 13	5 95
Total cost per acre		72 10	82 14
Yield per acre	lb.	23,060	39,570
Cost of producing one ton	$	6 25	4 15
Cost of producing one bushel	cts.	15·6	10·4

COST OF PRODUCING TURNIPS AFTER OATS
(Figures based on one acre, Rotation "G", for year 1928)

Item	1928	Average 9 years
	$ cts.	$ cts.
Rent of land	3 00	3 00
Share of manure	19 00	19 00
Use of machinery	2 85	2 85
Clover seed (sown with preceding crop for green manure)	3 90	3 53
Seed at $1 per pound	3 00	3 18
Manual labour at 25 cents per hour	29 95	35 07
Horse labour at 10 cents per hour	7 87	7 35
Total cost per acre	69 57	73 98
Yield per acre lb.	34,975	34,737
Cost of producing one ton $	3 98	4 26
Cost of producing one bushel cts.	9·9	10·6

COST OF PRODUCING POTATOES AFTER SOD
(Figures based on one acre, Rotation "C", for year 1928)

Item	1928	Average 10 years
	$ cts.	$ cts.
Rent of land	3 00	3 00
Share of manure	16 00	16 00
Use of machinery	2 85	2 85
Seed at 75 cents per bushel	13 16	20 15
Spray material at cost	3 11	5 99
Manual labour at 25 cents per hour	15 31	21 13
Horse labour at 10 cents per hour	10 88	8 87
Total cost per acre	64 31	77 99
Yield per acre lb.	14,512	17,201
Cost of producing one bushel, field run cts.	26·6	27·2

CULTURAL EXPERIMENTS

The first yields for comparative purposes were taken from this area in 1916. Figures have been collected continuously since that date. The area comprises over 400 plots, each one-fortieth of an acre in size, each separated by a four-foot path or alley way, the ranges of plots being divided by sixteen-foot roadways.

The soil is a rather fine sandy-clay loam, and the whole area is tile-drained to relieve a certain tendency toward heaviness.

RATES OF SEEDING CLOVER AND TIMOTHY

Data collected since 1916 indicate that liberal seeding of clover and alsike, together with timothy at the rate of 10 pounds per acre, ensure heavy crops of hay. Almost consistently during the period mentioned, seedings of 8 pounds of red clover, 1 or 2 pounds of alsike and 10 pounds of timothy per acre have given the highest yields; the omission of either red clover or alsike from the mixture tended to reduce the yields.

METHODS OF APPLYING BARNYARD MANURE

Eight different methods, or periods during the cycle of the rotation at which to apply stable manure, together with a check plot receiving no manure, admit of a rather complete survey of the various practices employed throughout the

province. An outline of the different systems followed is given in the 1927 report, and will not be reported here.

The results are difficult of interpretation, owing to the lack of a common basis of comparison for the different crops. With potatoes at high prices, and grown as a cash crop, any system of manuring favouring the heavy production of this crop will naturally be outstanding.

Where all the manure (20 tons per acre) has been applied in autumn, before or after ploughing timothy sod for the potato crop, when put out in piles in autumn or early winter and spread in spring, or when hauled, and spread immediately, in the spring (over fall-ploughed sod land) the crop of tubers has been heavy.

Half the amount of manure applied for the potato crop and the balance applied as a top dressing after the removal of the clover crop or on the grain crop, has also proven fairly satisfactory. This system gives large yields of hay.

All of the manure applied as a top dressing after the removal of the clover crop has given the poorest returns per cycle of rotation.

All of the manure applied as a top dressing to the grain crop stands fairly well up in the list owing to the large yields of hay obtained, but is not to be recommended as there is a tendency to produce heavy crops of soft, green-strawed grain that rusts and lodges badly.

METHODS OF AFTER-HARVEST CULTIVATION OF ROOT LAND FOR GRAIN

From the data collected there would seem to be nothing gained by ploughing root land in the autumn in preparation for the spring grain crop. No increase in yield could be noted in land ploughed or ribbed over that not so treated. Land ribbed, however, was found to be ready for working several days earlier in spring than land either ploughed or not ploughed.

AUTUMN TREATMENT OF SOD LAND IN PREPARATION FOR GRAIN

Slight gains in yield were noted in the grain crop from topworking after early fall ploughing. Late ploughing, however, was not benefited by topworking. In no case did spring ploughing prove so profitable as autumn ploughing for an oat crop.

EFFECT OF VARIETY OF NURSE CROP ON YIELDS OF HAY

Oats has proven to be a satisfactory nurse crop for a mixture of timothy, red clover and alsike, if it is not sown too thickly. Wheat and barley, on account of the thinner seedings, will usually make a superior nurse crop. Mixtures of oats, peas and vetches have not proven satisfactory, as they usually grow thickly and have a tendency to lodge and mat up on the ground, with the result that much of the young grass crop is smothered out.

SEED-BED PREPARATION

A thoroughly prepared seed-bed for the oat crop has given the best returns with a clover crop.

DEPTHS OF SEEDING CEREALS AND ROOTS

Under favourable conditions either oats or mangels will give very satisfactory returns from shallow plantings. Should a dry, windy spell occur, however, during the germination period, shallow-sown crops suffer to a considerable extent. It is recommended, therefore, that for average conditions oats be seeded at least two or two and one-half inches, and mangels at least one and one-half inch below the surface of the seed beed.

DRY MATTER DETERMINATIONS

For several years past the absolute dry weight has been determined for all hay and forage crops. Yields of all hay crops are adjusted to a uniform content of 12 per cent moisture or 88 per cent dry matter, and are so given in this report.

HORTICULTURE

THE SEASON

The ground was bare at intervals throughout each month, and temperatures were slightly above average during the winter of 1927-28. Growth started in April, and trees appeared green on May 23, a week earlier than for several years. Planting and transplanting were early. No June frost occurred to injure the vegetables or flowers. April, July and September had more than average hours of sunshine. The fruit coloured well. There was an abundance of rain throughout the summer, which gave full crops of vegetables. The autumn was open, and outside work was completed before the snow came.

FRUITS

APPLES

The apple trees in the variety orchard wintered well and made satisfactory growth during the past season. While a number of the newer varieties, and a few of the older varieties, have not been tested sufficiently long to establish their suitability to this province, several may be safetly recommended and included in a list of varieties for the home orchard. The following is a list of desirable varieties from which a choice may be made:—

Summer varieties.—Yellow Transparent, Red Astrachan, Crimson Beauty.

Autumn varieties.—Melba, Duchess.

Late summer and early winter varieties.—Wealthy, Scarlet Pippin, Shiawassee Beauty, Lobo, Alexander, Walter, Baxter, St. Lawrence, Wolf River.

Winter.—Ribston Pippin, Pewaukee, Tolman Sweet, Bethel, Northern Spy.

PEARS

Of the ten varieties of pears under test in the variety orchard, only two, Clapp Favourite and Lucrative, are giving satisfactory results. A number of others, while quite hardy and thrifty, either fail to set fruit, or produce pears of inferior quality.

PLUMS

All varieties of plums wintered well and made good growth. Black knot is being satisfactorily controlled by dormant lime sulphur sprays and the removal of the few knots appearing during the summer. The following is a list of the best varieties for the home or local market: Monarch, Quackenboss, Imperial Gage, Spauling, Yellow Egg.

In sheltered positions and favourable soil Washington and McLaughlin are valuable additions.

SMALL FRUITS

RASPBERRIES

Of the varieties under test Herbert seems to be the least susceptible to mosaic, and during the past season, although practically all the plants showed some infection, a fair crop was obtained. Yields from other varieties were very small.

CURRANTS AND GOOSEBERRIES

In the test of varieties of currants and gooseberries, Topsy, Victoria and Climax continue to be the most promising varieties of black currants; Le Conde, Holland Red and Knight Large the leading varieties of red currents; and Pearl, Downing and Red Jacket the most outstanding gooseberries.

STRAWBERRIES

The strawberry weevil continues to be a serious pest, but during the past season variety plots suffered less damage than in former years, and in some cases fair yields were obtained. Senator Dunlap appears to be the most desirable variety for all purposes.

ORNAMENTALS

TREES AND SHRUBS

Many varieties of trees and shrubs were planted at this station in 1910 with the object of determining their hardiness, longevity and value for ornamental purposes. Many of these proved to be too tender for this province; others presented an attractive appearance for a few years but soon became unsightly; a few, while perfectly hardy and long lived, were never ornamental.

DECIDUOUS TREES

For street planting or for large grounds the American Elm (*Ulmus americana*), the European Linden (*Tilia europaea*) or American Linden (*Tilia americana*), the Red Oak (*Quercus rubra*) and Schwedler Maple (*Acer platanoides Schwedleri*) are most desirable. The last named is a highly ornamental tree but slightly tender, and should therefore be planted only in favourable positions.

Where small ornamental trees are desired, Japanese tree lilac (*Syringa japonica*), Amur maple (*Acer ginnala*), Hyslop crab (*Malus baccata*), Betchel double flowering crab (*Malus ioensis plena*), and Paul double flowering crimson thorn (*Crataegus oxycanthas rosea flore plena Pauli*) will prove satisfactory.

EVERGREENS

Among the most satisfactory ornamental evergreens are the following: Koster blue spruce (*Picca pungens var. Kosteriana*) Swiss stone pine (*Pinus cembra*), pyramidal cedar (*Thuja occidentalis pyramidalis*) and globular cedar (*Thuja occidentalis globosa*).

SHRUBS

The list given below comprises the most satisfactory flowering shrubs chosen with a view of providing bloom throughout the season, and arranged in order of blooming:—

Spirea arguta.
Japanese Barberry (*Berberis Thunbergi*).
Spirea Vanhouttei.
Siberian pea tree (*Caragana arborescens*).
Bush honeysuckle (*Lonicera tatarica var. Grandiflora rubra*).
(*Lonicera Morrowi*).
Lilac (*Syringa vulgaris* var. Mad. Lemoine).
(*Syringa vulgaris* var. Congo).
(*Syringa vulgaris var. rothomagensis*).
Redleaf rose (*Rosa rubrifolia*).
Japanese rose (*Rosa rugosa*).

Mock orange (*Philadelphus coronarius aurea*).
(*Philadelphus Lemoinei* Mont Blanc)
Sorbaria sorbifolia var. aitchesoni.
Hydrangea arborescens grandiflora.
Hydrangea paniculata grandiflora.

HEDGES

For a low-growing deciduous hedge, Japanese barberry (*Berberis Thunbergi*) is most suitable. The American arborvitae (*Thuja occidentalis*) is the best evergreen hedge.

When a tall deciduous hedge is required, the Josika lilac (*Syringa Josikaea*) and Siberian pea tree (*Caragana arborescens*) will give good results.

CLIMBERS

Virginia creeper (*Ampelopsis quinquefolia hirsuta*), Dutchman's pipe (*Aristolochia sipho*), Jackman clematis (*Clematis jackmani*) and American bittersweet (*Celastrus scandens*) are the most satisfactory climbers..

HARDY HERBACEOUS PERENNIALS

A fairly extensive collection of herbaceous perennials has been under test at this station for a number of years, and data regarding their period of bloom, ornamental qualities and hardiness have been compiled. From the information thus obtained it is now possible to make recommendations for guidance in the purchase of planting material. It has been found that nearly all herbaceous perennials winter in better condition if covered in late autumn with three or four inches of straw or leaves.

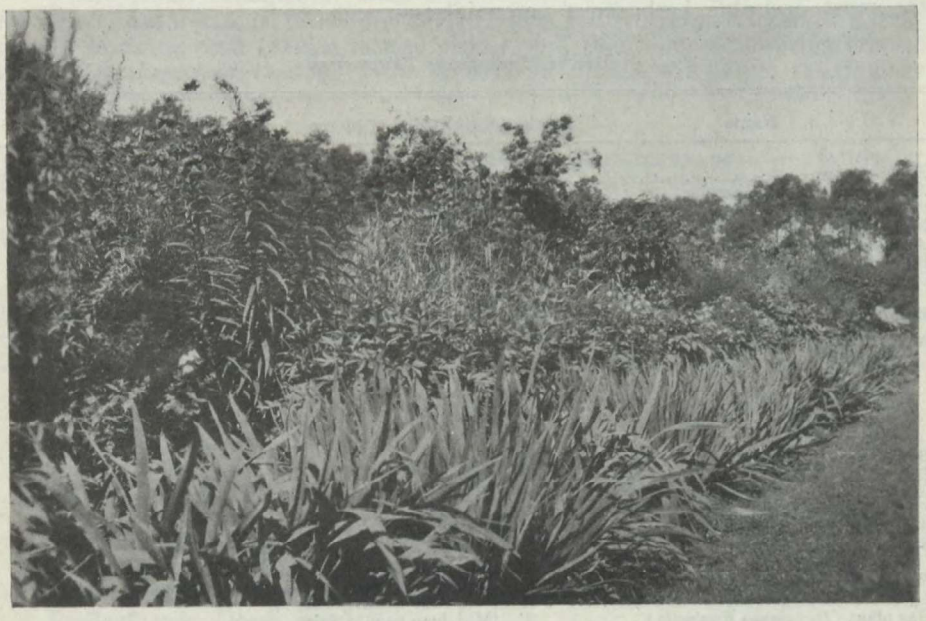
The following table gives the height and period of bloom of a number of the most desirable herbaceous perennials:—

HARDY HERBACEOUS PERENNIALS

Name	Height	Period of bloom	Remarks
Arabis alpina	6″	May	
Alyssum saxatile compactum	6″	May-June	
Polyanthus	8″	Mid May-June	
Forget-me-not (*Myosotis arvensis*)	10″	May-Aug	Does well in partial shade.
Aubretia deltoidea	4″	June-July	
Bleeding heart (*Dicentra spectabilis*)	2′-3′	June-July	Does well in partial shade.
Columbine (*Aquilegia*, long-spurred hybrids)	3′	June-July	
Tall bearded iris	2′-3′	June-early July	
Ambassadeur.			
Afterglow.			
Iris King.			
Crusader.			
Lent A. Williamson.			
Lord of June.			
White Knight.			
Bellflower (*Campanula persicifolia*)	2′-3′	June-July	
Lily of the valley (*Convallaria majalis*)	8″	June	Does well in partial shade.
Iceland poppy (*Papaver nudicaule*)	1′ 3″	June-Sept	
Foxglove (*Digitalis purpurea*)	3′-5′	June-July	Does well in partial shade.
Sweet William (*Dianthus barbatus*)	1′ 6″	Mid June to mid July	Best treated as biennial.
Spiraea aruncus	4′-6′	Mid June to mid July	
Globe flower (*Trollius europaeus*)	2′	Mid June to early July	Does well in partial shade.
Pyrethrum hybridum	3′	Mid June to mid July	
Lupin (*Lupinus polyphyllus* hybrids)	3′-5′	Mid June to early July	
Gas plant (*Dictamnus fraxinella*)	3′	Mid June to mid July	
Alum root (*Heuchera sanguinea*)	1′ 6″	Mid June to August	
Common paeony (*Paeonia officinalis*)	2′	Mid June to early July	
Oriental poppy (*Papaver orientale*)	3′	Late June to mid July	

HARDY HERBACEOUS PERENNIALS—*Concluded*

Name	Height	Period of bloom	Remarks
Chinese paeony *(Paeonia albiflora)* hybrids	3′–4′	Late June to mid July	
Mons. Jules Elie.			
Festiva Maxima.			
Felix Crousse.			
Marie Lemoine.			
Baby's Breath *(Gypsophila paniculata)*	3′	July-August	
Bouncing Bet *(Saponaria officinalis* var. *roseo plena)*	2′ 6″-3′6″	July-Sept	
Lilium superbum	4′–6′	July	
" *candidum*	3′–4′	Mid July	
" *auratum*	2′–4′	Mid Aug. to mid Sept.	
" *tigrinum*	4′	August	
Larkspur (Delphinium hybrids)	3′–5′	Mid July mid Aug	
Monkshood *(Aconitum napellus) (Acon. nap. bicolor)*	3′–4′	Mid July to mid Aug	Does well in partial shade.
Spiraea ulmaria flore pleno	4′	Mid July to mid Aug	
Spiraea venusta	3′–4′	Mid July to mid Aug	
Phlox suffruticosa	2′ 6″	Mid July to Sept	
Miss Lingard.			
Snowdon.			
Phlox paniculata	3′	Late July to late Sept	
Selma.			
Antonin Mercie.			
Elizabeth Campbell.			
Frau Anton Buchner.			
Gruppen Konigen.			
Rynstroom.			
Helianthus hybridus	4′–5′	Late July to late Sept	
Golden glow *(Rudbeckia laciniata)*	5′–6′	Late July to late Sept	
Speedwell *(Veronica spicata)*	3′	Aug. to early Sept	
Asparagus officinalis	3′–4′		Valuable for its foalige.



Part of the perennial flower border on the Charlottetown Station.

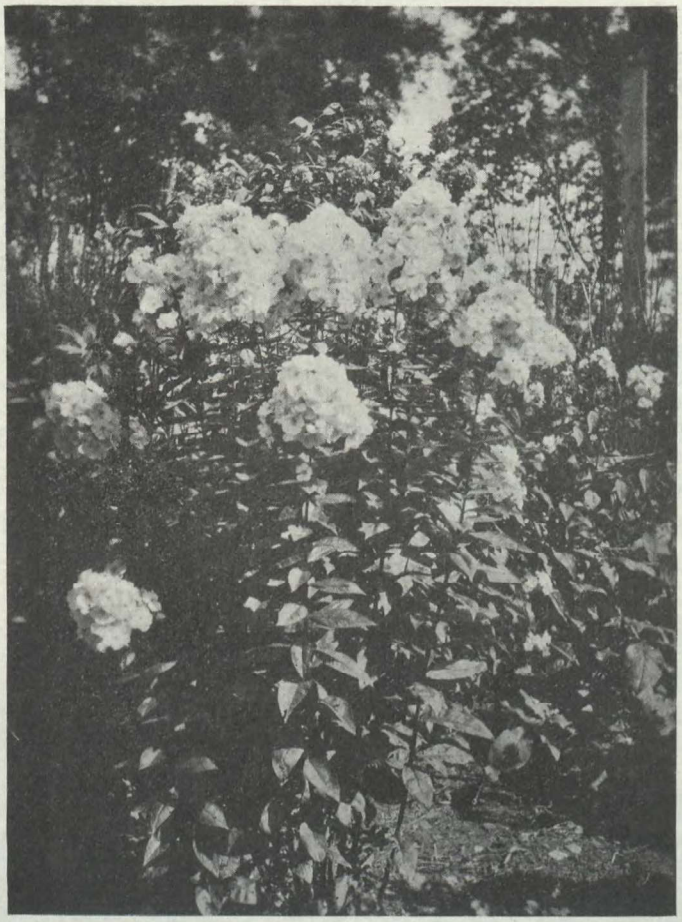
ANNUAL FLOWERS

There are many kinds of annual flowers which have been found to do well in this province. Most of these will bloom from seed sown in open ground in spring, and all of them will bloom much earlier if started in a hotbed, transplanted into flats and set in permanent positions after danger of frost is past.

The following is a list of forty of the best annuals tested at Charlottetown:

- Ageratum
- Sweet Alyssum var. Little Dorrit
- Antirrhinum
- Balsam
- Calendula
- Candytuft
- Celosia plumosa
- Celosia cristata (cockscomb)
- Centaurea cyanus
- Cosmos
- Dimorphotheca aurantiaca
- Eschscholtzia californica
- Gaillardia
- Helichrysum bracteatum
- Ipomoea major (Morning glory)
- Kochia tricophylla
- Sweet pea in variety:
  - Edna May Improved, white
  - Floradale Fairy, cream
  - Honour Bright, cream pink
  - Miss Philadelphia, pink
  - Renown, rose
  - Crimson King, crimson
  - Fordhook Orange, orange
  - Grenadier, scarlet cerise
  - Sky, light blue
  - Floradale purple, purple
  - Black Bess, maroon
  - Senator, bicolour
- Lavatera var. Loveliness
- Linaria
- Lobelia ramosa
- Malope
- Mathiola bicornis
- Mignonette
- Nasturtium
- Nemesia
- Nicotiana affinis hybrids
- Petunia
- Phacelia campanularia
- Phlox Drummondii
- Shirley poppy
- Portulaca
- Rhodanthe
- Ricinus (Castor oil plant)
- Salpiglossis
- Salvia splendens var. Fireball

Schizanthus wisetonensis
Ten weeks stock
Tagetes var. Golden Gem
Verbena hybrida
Zinnia



Perennial phlox on the Charlottetown Station.

BULBS

The following are the best of the many varieties of tulips, narcissi, crocuses, chinodoxas and squills tested at this station since 1912:—

TULIPS

Early Single Tulips.—Keizerskroon, Couleur de Cardinal, Fred Moore, Hobbema, White Hawk, Gold Finch, Vermilion Brilliant, Maes.

Early Double Tulips.—Murillo, Couronne D'or, Imperator Rubrorum, Lucretia.

Cottage Tulips.—Fulgens, La Merveille.

Darwin Tulips.—Europe, Diana, Farncombe Sanders, La Tulipe Noire, Bartigon, Rev. Ewbank, Clara Butt.

Narcissi.—Poeticus grandiflora, Elvira, Emperor, Victoria, Madame Plemp, Madame de Graaff, Horsfieldii, Van Sion.

Crocuses.—Giant Yellow, King of the Whites, Purpurea grandiflora.

Squills.—Scilla sibirica.

Chionodoxas.—Chinonodoxa Luciliae.

VEGETABLES

Previously the results published for the yields of the various vegetables grown at this station were taken from single plots. Feeling that a more accurate measure of yield could be obtained by taking the average of several plots, we have this season grown all of the vegetables on duplicate plots. The figures given in the following tables are the mean yield from two plots.

BEANS.

Variety Tests.—Fourteen varieties were sown in duplicate on June 13, 1928. Each plot occupied 15 feet of drill 30 inches wide, and the plants were spaced approximately 2 inches apart in the row. The yields reported are in pounds, per plot, and per acre, of green beans. Beans harvested at that state of maturity suffered very little from anthracnose, those left to ripen were quite heavily infected.

BEANS—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Yield per plot	Yield per acre
		lb.	lb.
1	Yellow Pod Bountiful (Schell)	13·7	15,972
2	Masterpiece (James)	13·6	15,827
3	Kentucky Wonder Wax (Will)	11·7	13,648
4	Golden Cluster (Dreer)	11·5	13,358
5	Inter Challenge Black Wax (C.E.F. Gen. Run)	10·2	11,906
6	Princess Artois (O. 925)	9·9	11,470
7	Round Pod Kidney Wax (McDonald)	9·6	11,180
8	Pencil Pod Black Wax (C.E.F. Gen. Run)	9·0	10,454
9	Stringless Green Pod (McDonald)	7·5	8,712
10	Improved Golden Wax (McDonald)	7·1	8,276
11	Round Pod Kidney Wax (C.E.F.)	6·4	7,405
12	Stringless Green Pod (O. 11402)	6·1	7,114
13	Plentiful French (O. 9351)	5·9	6,842
14	Burpee Stringless Green Pod (Graham)	4·6	5,327

Round Pod Kidney Wax is an attractive looking yellow bean, a fair to good yielder, and holds its quality well throughout the season. Recommended.

Stringless Green Pod is recommended as a green variety.

BEETS.

Variety Tests.—Eleven varieties were seeded on May 11, 1928. Each variety was planted in duplicate and the yields given in the table below are the average number of bunches of five marketable beets from one row fifteen feet long and thirty inches wide.

BEETS—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Date ready for use	Yield per plot	Yield per acre
			bunches	bunches
1	Early Flat Egyptian (Moore)	August 17	29½	34,267
2	Crimson Globe (Graham)	" 18	29	33,686
3	Early Wonder (Burpee)	" 19	28	32,525
4	Detroit Dark Red (Moore)	" 17	28	32,524
5	Detroit Dark Red (Graham)	" 17	27	31,363
6	Early Wonder (Ewing)	" 23	27	31,363
7	Detroit Dark Red (O. 10467-8)	" 17	24¾	28,750
8	Black Red Ball (Burpee)	" 23	22¾	26,426
9	Detroit Dark Red (McDonald)	" 21	20	23,232
10	Egyptian (James)	" 17	19½	22,361
11	Black Red Ball (O. 8694)	" 23	3½	*4,060

*Very poor germination.

For fair yield and high quality we recommend Detroit Dark Red and Early Wonder.

BRUSSELS SPROUTS.

Out of ten varieties and strains planted, Amager Market was the only one that headed up satisfactorily.

CABBAGE—TEST OF VARIETIES.

Fourteen varieties were planted on May 5, 1928, and transplanted to the open on June 23, 1928. All varieties were planted in duplicate.

CABBAGE—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Yield per acre
		lb.
1	Danish Roundhead (Dupuy & Ferguson)	60,633
2	Extra Amager Danish Ballhead (O. 8620)	59,588
3	Midseason Market (Harris)	43,907
4	Haco (Red) (Dupuy & Ferguson)	43,384
5	Copenhagen Market (Strandholm)	42,339
6	Copenhagen Market (James)	40,248
7	Golden Acre (Harris)	39,202
8	Golden Acre (Dreer)	36,589
9	Early Summer (Bruce)	36,066
10	Copenhagen Market (Graham)	35,282
11	Chester Savoy (Steele Briggs)	33,975
12	Early Jersey Wakefield (McDonald)	32,930
13	Charleston Wakefield (Stokes)	32,407
14	Best of All Savoy (Sutton)	30,839

Golden Acre is recommended as an early variety, Copenhagen Market for mid-season (will keep until about January 1), and Danish Ballhead as the most satisfacory standard variety for late season and for storing.

CARROTS—TEST OF VARIETIES.

Five varieties were seeded May 31, 1928. The crop is reported in "bunches of five" marketable roots.

CARROTS—RESULTS OF TESTS OF VARIETIES

Seeding	Variety and source of seed	Yield per plot 15 by 2½ feet			Yield per acre		
		Marketable	Unmarketable	Total yield	Marketable	Unmarketable	Total yield
		bunches	bunches	bunches	bunches	bunches	bunches
1	Chantenay (O-8932)	21¼	3½	24¾	24,684	4,065	28,749
2	Short Horn (James)	17½	2	19½	20,328	2,323	22,651
3	Select Chantenay (McDonald)	14¾	2½	17¼	17,133	2,904	20,037
4	Chantenay (Graham)	11½	2¾	14¼	13,358	3,194	16,553
5	Improved Danvers (D. & F.)	11	2	13	12,777	2,323	15,101

For all-round satisfaction we recommend Chantenay.

CARROTS—DIFFERENT DATES OF SEEDING.

Six seedings were made at ten-day intervals starting May 31. The sixth seeding did not mature sufficiently to be of value as a table vegetable. Thirty feet of drill were sown at each planting, fifteen feet of which were harvested early and the balance harvested late in the season. Chantenay was the variety used, and the yield is reported in bunches per acre, each bunch consisting of five saleable roots.

CARROTS—RESULTS OF DATES OF SEEDING

Dates of seeding	Early harvesting			Late harvesting		
	Marketable	Unmarketable	Total	Marketable	Unmarketable	Total
	bunches	bunches	bunches	bunches	bunches	bunches
May 31	12,778	2,323	15,101	11,616	3,485	15,101
June 10	11,616	3,485	15,101	13,939	4,646	18,585
June 20	18,586	3,485	21,071	12,778	2,323	15,101
June 30	16,262	5,808	22,070	13,939	4,646	18,585
July 10	11,616	6,970	18,586	5,808	11,616	12,424

Mid-season plantings, on the average, would seem to give the best returns.

CAULIFLOWER—TEST OF VARIETIES.

Of the four kinds sown, Early Snowball may be recommended.

CELERY—TEST OF VARIETIES.

Five varieties were sown in the hotbeds on April 20, and transplanted to the open July 12, 1928.

CELERY—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Average weight of five heads	Yield per acre
		lb.	lb.
1	Winter Queen (Graham)	6·75	23,522
2	Giant Pascal (Graham)	5·50	19,166
3	Emperor Fordhook (Schell)	5·37	18,731
4	Golden Self Blanching (McDonald)	4·75	16,552
5	Golden Self Blanching (O-288-A)	4·25	14,374

The yield and blanching of all varieties were poor this season. Practically all varieties blighted badly.

CITRON

Colorado or green seeded gave the highest yield of the different varieties sown.

SWEET CORN.

Test of Varieties.—Thirteen varieties were planted in duplicate on June 7, 1928. Each plot was fifteen feet long and three feet wide. The following table gives the mean yield for two plots in "ears per plot" and ears per acre. It also shows the date ready for use and the length of season.

SWEET CORN—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Ready for use and length of season	Average yield, ears per plot	Average yield, ears per acre
1	Early Malcolm 1927 (C.E.F. Gen. Run)	Sept. 7—Sept. 26...	77	37,268
2	Pickaninny 1926 (C.E.F. Gen. Run)	Aug. 27—Sept. 4...	66	32,186
3	Banting 1927 (C.E.F. Gen. Run)	Aug. 27—Sept. 4...	55	26,620
4	Early White Cory (Graham)	Sept. 8—Sept. 22...	55	26,620
5	Assiniboine (Will)	Sept. 4—Sept. 12...	53	25,652
6	Golden Bantam (James)	Sept. 4—Sept. 15...	52	25,410
7	Sixty-Day Golden (Child)	Aug. 31—Sept. 7...	51	24,684
8	Golden Bantam (McDonald)	Sept. 7—Sept. 19...	50	24,200
9	Golden Bantam (Moore)	Sept. 4—Sept. 19...	48	23,474
10	Golden Bantam (Graham)	Sept. 13—Sept. 26..	47	22,748
11	Whipple Yellow-New (Harris)	Sept. 12—Sept. 29..	46	22,264
12	Mammoth White Cory (Graham)	Sept. 5—Sept. 19...	44	21,296
13	Malakoff (Vaughan)	Sept. 4—Sept. 12...	25	12,100

For earliness and quality we may recommend Banting and Pickaninny. Many people object to the dark colour of the latter, but it is very early and the quality is excellent. Sixty-Day Golden averages from early to mid-season in maturity, and is of very fine quality. Golden Bantam is, without question, one of the finest main crop corns.

CUCUMBERS

Cucumbers did not do well at the Station this season. The variety "China" grown for the first time this season, gave a fair yield, but is not an attractive looking vegetable, being long, with a decided bend similar in shape to a summer or crook-neck squash.

EGG PLANT

One variety, Extra Early Dwarf, was sown, but did not mature sufficiently for use.

LETTUCE

From our results this season Grand Rapids may be recommended as a leaf lettuce, and New York for those who prefer the head type. The latter is of excellent quality.

MUSKMELON

Four varieties were sown but did not reach sufficient size for use.

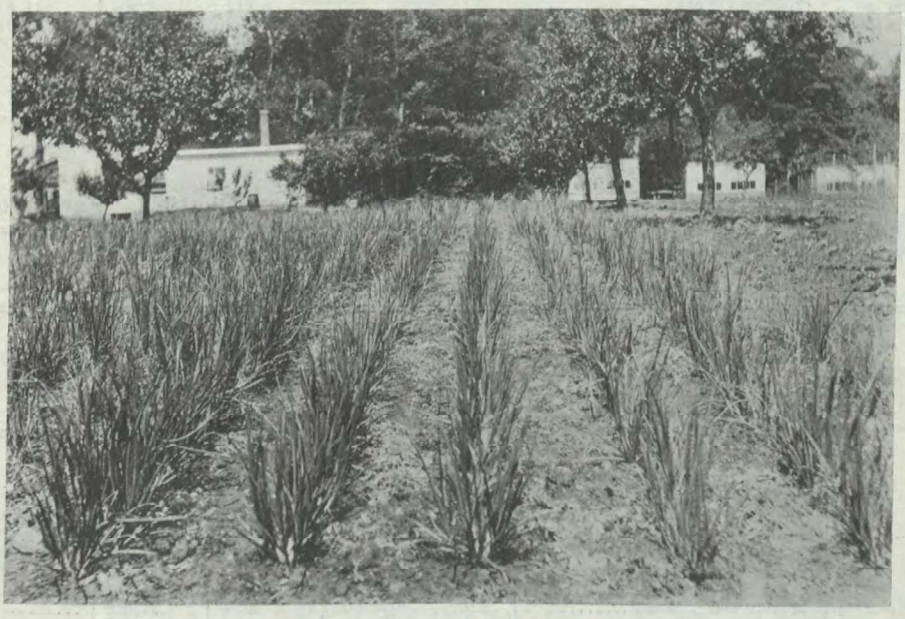
ONIONS

Test of Onions.—Eighteen varieties were planted on May 8, 1928. Each plot was 15 feet long by 15 inches wide and each variety was seeded in duplicate. The yields given for 1928 are the average of two plots.

ONIONS—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Per cent marketable	Yield in 1928		Average yield 5-yr. period 1924-28
			Per plot	Per acre	
		%	lb.	lb.	lb.
1	Southport White Globe (S.B.)	72·5	12¾	29,620	22,941
2	Extra Sel. Large Red Wethersfield (McDonald)	76·7	10¾	24,974	24,248
3	Giant Prizetaker (S.B.)	63·4	10¼	23,812	20,328
4	Southport Yellow Globe (McKenzie)	55·3	9½	22,071	20,502
5	Ailsa Craig (Graham)	56·3	8	18,585	23,000
6	Large Yellow Prizetaker (Graham)	56·3	8	18,585	18,749
7	Southport Red Globe (S.B.)	71·0	7¾	18,005	21,403
8	Yellow Globe Danvers (Ott. 8692)	82·8	7¼	16,843	.....
9	Mammoth Silver King (Graham)	48·3	7¼	16,843	19,244
10	Yellow Globe Danvers (S.B.)	70·2	7⅛	16,553	24,462
11	Large Red Wethersfield (Ott.-10477-8)	74·1	6¾	15,682	21,142
12	Yellow Globe Danvers (Graham)	66·7	6	13,939	19,050
13	American Prizetaker (Burpee)	43·5	5¾	13,358	.....
14	Large Red Wethersfield (Graham)	72·7	5½	12,777	20,154
15	Yellow Globe Danvers (Burpee)	76·2	5¼	12,197	.....
16	White Barletta (Graham)	94·3	4⅜	10,164	14,245
17	Early Flat Red (Graham)	100·0	3½	*8,139	.....
18	Australian Brown (McDonald)	61·5	3¼	7,550	10,220

*Poor germination.



Test of varieties of onions on the Charlottetown Station.

A considerable portion of the onions grown this season developed what is termed "bull necks", that is, a thickening of the neck which in turn gives rise to a soft vegetable of poor keeping qualities. In the above table we have indicated the per cent of the crop judged as marketable. The balance, or unmarketable, consisted largely of these "bull necks" and immature onions.

The column showing the five-year average yields throws an interesting sidelight on the productiveness of the several varieties. Early Flat Red or Extra Early Flat Red, as it is sometimes called, while making a poor showing this season, is an early-maturing variety of excellent quality, and can be highly recommended for the home garden.

PARSLEY

Triple curled is recommended for the home garden.

PARSNIPS—TEST OF VARIETIES

Hollow Crown may be highly recommended.

PARSNIPS—DIFFERENT DATES OF SEEDING

Each seeding consisted of one drill 30 feet long by 30 inches wide. Seedings were made at ten-day intervals starting May 31, 1928. The crop is reported in "bunches of five" marketable and unmarketable vegetables. Hollow Crown was the variety used.

PARSNIPS—RESULTS FROM DIFFERENT DATES OF SEEDING

Date sown	Variety	Marketable per acre	Unmarketable per acre	Total per acre
		bunches	bunches	bunches
May 31	Hollow Crown	7,550	2,323	9,873
June 10	Hollow Crown	8,131	3,485	11,616
June 20	Hollow Crown	8,712	2,904	11,616
June 30	Hollow Crown	4,646	6,970	11,616
July 10	Hollow Crown	1,162	2,904	4,066
July 20	Hollow Crown	*	.....	.....

*Did not mature sufficiently to harvest. The largest amounts of marketable vegetables were obtained from mid-season seedings.

GARDEN PEAS—TEST OF VARIETIES

Fourteen varieties were sown in duplicate on May 10, 1928. Each plot comprised 15 feet of a 36-inch row, and the yield given is the average of two plots, in pounds of green peas, unshelled.

GARDEN PEAS—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Date ready for use	Yields—1928		Average yield, 1924-1928
			Per 15-foot row	Per acre	
			lb.	lb.	lb.
1	Gradus x Eng. Wonder (O-2330)	July 15	18·6	18,029	.....
2	Gregory Surprise x Eng. Wonder (O-8623)	July 18	18·1	17,545	.....
3	Potlatch or Stratagem (Buckbee)	July 30	15·0	14,520	10,527
4	Gradus x American Wonder (O-8624)	July 17	14·4	13,965	.....
5	Market Garden (Mountain)	July 29	13·6	13,189	11,067
6	Gradus or Prosperity (Rennie)	July 19	13·5	13,068	8,688
7	Laxton Superb (McKenzie)	July 17	12·1	11,737	.....
8	Phenomenon (Sutton)	July 30	12·0	11,616	.....
9	Little Marvel (Rennie)	July 16	10·9	10,527	.....
10	Thomas Laxton (McDonald)	July 16	10·6	10,285	7,308
11	British Wonder (Burpee)	July 30	10·3	9,922	6,945
12	American Wonder (McDonald)	July 17	8·9	8,591	6,546
13	Daisy (Patmore)	July 28	8·5	8,228	7,284
14	Quite Content*	.....	.....	.....	.....

*Failed to germinate.

In the tall varieties Thomas Laxton is of very fine quality. In the dwarf varieties American Wonder is satisfactory for the home garden.

PEAS FOR CANNING

Several varieties were sown to test their suitability for canning purposes. Each variety occupied 200 feet of drill 3 feet wide. The pea moth caused considerable damage toward the latter part of the season. Early pickings were practically free from injury. Thomas Laxton is the only one noted as being of high quality.

PEAS FOR CANNING—RESULTS OF TEST OF VARIETIES

Variety	Ready for picking	Yield per plot unshelled	Yield per acre unshelled
		lb.	lb.
Green Seeded Admiral	July 20	253	18,368
Thomas Laxton	July 16	218	15,827
Horsford Market Garden	July 28	180	13,068
Select Advancer	July 26	165	11,979
Alaska	July 9	84	6,098

PEPPERS

One variety, Harris Earliest, was grown. This gave a yield of 10 pounds from one row 30 feet long by 18 inches wide.

PUMPKINS

Three varieties were seeded in duplicate on June 18, 1928. Each plot consisted of three hills spaced nine feet apart each way.

PUMPKINS—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Yield from 3 hills 9 by 9 feet	Yield per acre
		lb.	lb.
1	Small Sugar (Graham)	172½	30,912
2	Connecticut Field (McDonald)	127½	22,848
3	Sweet or Sugar (Ott.-8290)	110	19,712

The sugar varieties are of excellent quality for table use.

RADISHES.

The variety "Saxa" was noted to be of very fine yield. Scarlet White Tip is also of good quality.

SPINACH.

The variety "King of Denmark" gave high yields, but was later than other varieties. "Bloomsdale" is of excellent quality.

SQUASH.

Five varieties seeded gave fair to good yields; Hubbard and Delicious are recommended.

SWISS CHARD.

Only one variety, Fordhook Giant, was sown. This proved of excellent quality and gave continuous crop from July to November.

TOMATOES—TEST OF VARIETIES.

Thirty-six varieties and strains were planted in hot beds on April 20, and transplanted to the open on the 19th of June. Plants were spaced four feet

apart in the row, and rows were four feet apart. The table below gives the ripe, green and total pounds of fruit per plot, the per cent of ripe fruit, which indicates the relative earliness of the variety, the amount of fruit ripened at various pickings, and the total yield per acre. Each variety was planted in duplicate, and the yields given are the mean for two plots.

TOMATOES—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Ripe to Sept. 10	Ripe Sept. 11 to Sept. 17	Ripe Sept. 18 and later	Total ripe per plot	Total green per plot	Total crop per plot	Per cent ripe fruit	Yield per acre
		lb.	lb.	lb.	lb.	lb.	lb.	p.c.	lb.
1	Alacrity x Earlibell (Ott. 9723)	2·62	2·87	6·25	11·75	53·75	65·50	17·9	59,441
2	Select Earl. (Moore)	1·37	1·87	6·25	9·50	55·50	65·00	14·6	58,987
3	Viking (N.D.A.C.)	4·75	3·37	13·62	21·75	41·25	63·00	34·5	57,172
4	Earl. Mark. (Buck.)	1·50	2·00	6·50	10·00	50·87	60·87	16·4	55,239
5	Herald (Ott. 9725)	5·50	2·50	10·37	18·37	41·75	60·12	30·6	54,559
6	Fargo (N.D.A.C.)	3·00	1·62	5·62	10·25	43·75	54·00	19·0	49,005
7	Alacrity (Ott. 11381)	3·62	0·75	4·37	8·75	44·00	52·75	16·6	47,871
8	Alacrity (1-8·1:1-3·1:-7·1 OH9719)	2·25	1·50	7·37	11·12	40·75	51·87	21·4	47,072
9	Sunnybrook Earliana (Burpee)	2·00	1·12	3·00	6·12	45·37	51·50	11·9	46,736
10	Bonny Best (Keith)	0·25	2·00	4·62	6·87	44·50	51·37	13·4	46,618
11	Burbank (Burbank)	0·62	1·87	5·75	8·25	42·12	50·37	16·4	45,711
12	A.B.B. (Ott. 11390)	3·62	2·00	5·00	10·62	39·25	49·87	21·3	45,257
13	John Baer (S.B.)	0·75	1·37	3·00	5·12	44·50	49·62	10·3	45,030
14	Early Atlantic (McKenzie)	1·50	2·75	5·25	9·50	39·87	49·37	19·2	44,803
15	Herald (Ott. 6568)	2·62	0·75	2·87	6·25	42·75	49·00	12·8	44,467
16	Pink No. 2 (Ott. 6569)	1·00	1·00	2·87	4·87	43·75	48·62	10·0	44,123
17	Earliana Gr. 3 (Langdon)	1·37	2·00	4·00	7·37	39·75	47·12	15·6	42,761
18	Chalk Early Jewel (Mountain)	0·37	1·12	2·00	3·50	43·25	46·75	7·5	42,426
19	XXX Scarlet Skin (Rennie)	0·75	0·75	3·00	4·50	42·00	46·50	9·7	42,199
20	Canadian (Harris)	1·87	3·00	7·50	11·37	33·25	44·62	25·5	40,493
21	Alacrity x Earlibell (Ott. 6572)	3·25	2·75	8·25	14·25	29·75	44·00	32·4	39,930
22	Earliana (Ewing)	0·50	0·75	4·37	5·62	38·25	43·87	12·8	39,812
23	Danish Export (Wiboltt)	1·50	1·12	2·62	5·25	37·87	43·12	12·2	39,131
24	Prosperity (Pat.)	1·25	0·75	3·12	5·12	35·37	40·50	12·6	36,754
25	Capiana (Cap Rouge)	0·75	1·37	1·75	3·87	34·50	38·37	10·1	34,821
26	Marvena (Harris)	0·50	1·62	3·62	5·75	31·00	36·75	15·6	33,351
27	A.B.B. (Ott. 11389)	1·75	1·87	5·75	9·37	26·50	35·87	26·1	32,552
28	L.G. x B.B. (Ott. 11392)	0·25	1·62	4·25	6·12	29·75	35·87	17·1	32,552
29	Pink No. 1 (Ott. 6573)	0·25	1·12	2·62	4·00	31·50	35·50	11·3	32,216
30	Bonny Best (Stokes)	0·50	0·87	3·37	4·75	26·00	30·75	15·4	27,906
31	Rosy Morn (Livingston)	.....	0·25	1·00	1·25	29·00	30·25	4·1	27,452
32	Henderson Crimson Cushion (Henderson)	.....	0·37	1·62	2·00	23·12	25·12	8·0	22,796
33	Pink No. 1 (Ott. 9731)	0·37	0·62	2·75	3·75	19·50	23·25	16·1	21,099
34	Pink No. 2 (Ott. 9730)	0·25	0·87	2·37	3·50	17·50	21·00	16·7	19,057
35	Norton Wilt Resistant Stone (Livingston)	.....	.....	0·62	0·62	17·62	18·25	3·4	16,562
36	Early Prosperity (Buckbee)	.....	.....	0·25	0·25	10·50	10·75	2·3	9,756

The varieties Viking and Herald (Ottawa No. 9725) gave a high yield and were outstanding in the production of ripe fruit. Both may be recommended.

TOMATOES—CULTURAL TEST.

Effect of Fertilizers with Special Reference to Phosphoric Acid.—This experiment was outlined primarily to determine the effect, if any, of varying rates of fertilizers, and particularly of phosphoric acid, on the ripening of tomatoes. The experiment was arranged in two series.

Series A: Plants were pruned to one stem, tied up to stakes and headed back at the third fruit truss. Such treatment in itself has a tendency to promote ripening, and it was desired to note if ripening could be further assisted by fertilizers. Each plot consisted of eight plants, spaced 18 inches apart in rows 4 feet apart; plantings were made in quadruplicate.

Fertilizer treatment in each case was as follows:—

Treatment 1—Check, no treatment.

Treatment 2—Stable manure, 20 tons per acre.

Treatment 3—Superphosphate, 312 pounds per acre.

Treatment 4—Superphosphate, 624 pounds per acre.

Treatment 5—Superphosphate, 936 pounds per acre.

Treatment 6—Nitrate of soda, 130 pounds per acre.
Superphosphate, 625 pounds per acre.
Muriate of potash, 120 pounds per acre.

Equal to 1,000 pounds per acre of 2-10-6 mixture.

The variety Northern Adirondack was used.

TOMATOES—SERIES "A" CULTURAL TEST

Treatment No.	Fertilizer treatment per acre	Average yield—Series "A", pruned, headed back at third truss and tied to stakes						
		Marketable		Total per plot including unmarketable	Pounds per acre			Per cent ripe marketable to total yield
		Ripe per plot	Green per plot		Marketable	Unmarketable	Total	
		lb.	lb.	lb.	lb.	lb.	lb.	%
1	*Check—no treatment.....	9·03	5·68	15·75	13,354	940	14,294	57·3
2	Stable manure, 20 tons.....	15·06	13·50	30·06	25,921	1,361	27,282	50·1
3	Superphosphate, 312 pounds.	12·04	6·40	19·87	17,527	511	18,038	65·1
4	Superphosphate, 624 pounds.	11·31	8·62	20·94	18,093	908	19,001	54·0
5	Superphosphate, 936 pounds.	14·38	6·19	21·38	18,661	738	19,399	67·3
6	Complete fertilizer, 1,000 pounds 2–10–6.....	19·44	7·25	27·88	24,219	1,078	25,297	69·7

*7 plots.

TOMATOES—SERIES "B", CULTURAL TEST

Treatment No.	Fertilizer treatment per acre	Average yield, 4 plantings, Series "B", unpruned, allowed to grow on ground in natural state						
		Yield market. per plot		Total per plot including unmarketable	Pounds per acre			Per cent ripe marketable to total crop
		Ripe	Green		Marketable	Unmarketable	Total	
		lb.	lb.	lb.	lb.	lb.	lb.	%
*1	Check—no treatment.....	14·03	32·30	52·70	21,020	2,687	23,707	26·6
2	Stable manure, 20 tons.....	23·31	68·19	99·56	41,518	3,658	45,176	23·4
3	Superphosphate, 312 pounds.	23·06	45·13	74·00	30,940	2,638	33,578	31·2
4	Superphosphate, 624 pounds.	26·31	43·25	78·25	31,564	3,942	35,506	33·6
5	Superphosphate, 936 pounds.	31·69	51·13	91·75	39,376	4,056	43,432	34·5
6	Complete fertilizer, 1,000 pounds 2–10–6.....	26·19	68·38	109·31	42,908	6,693	49,601	23·9

*10 plots.

It is the intention to carry on this experiment for several years. From the data collected in one season, as tabulated above, it would be difficult to draw conclusions. Judged on this season's work there would appear to be no question that larger yields and more ripe fruit can be obtained from vines growing on the ground in the natural state. Based on the total production, the percentage of ripe fruit is materially increased by pruning, and there would appear to be evidence that an increase in the application of phosphoric acid has given an increase in the percentage of fruit ripened.

CEREALS

SEASONAL NOTES.

The weather was favourable and seeding started early in 1928. The first grain was sown May 8. The grain germinated well and there was strong growth during the favourable weather of June and July. Harvest was early, and the weather, owing to the absence of storms, almost ideal for curing grain from the 6th to the 29th of August. There was good harvest weather for late grain in September, and the harvest was completed much earlier than usual.

ROTATION FOR VARIETY TESTS

A special grain growing rotation is used for this purpose. Each season one-half the area employed is under a cereal crop.

First year.—Hoed crop, manured at the rate of 12 tons per acre.

Second year.—Grain, seeded down with 10 pounds red clover, 2 pounds alsike and 6 pounds timothy per acre.

Third year.—Clover hay. Eight tons of manure per acre are applied immediately following the harvesting of the grain crop. The land is then ploughed and topworked in preparation for the following year's grain crop.

Fourth year.—Grain, seeded down with 8 pounds of red clover and 2 pounds of alsike per acre.

Cereal breeding work on the Charlottetown Station.

SYSTEM OF TESTING VARIETIES AND STRAINS

Four types of plots are used in testing varieties of cereals at this station.

Head-Row Plots.—Selections when first made are usually studied in the head-row. At this station, this consists of a single row, 36 inches long, planted with nineteen kernels taken from a single head or panicle.

Small Increase Plots.—Selections that survive the intensive study to which they are subjected in the head-row, are transferred to the small increase plot. These also are 36 inches long and consist of from three to ten rows according to the amount of seed available. These plots, on account of their greater size permit of increasing the amount of seed available and also give an opportunity for further comparison between lines.

Rod-row Plots.—These plots consist of 5 drills, each 18½ feet long. At harvest time, or shortly before, one foot is trimmed from each end of these rows, leaving them exactly 16½ feet or one rod long. The two outer rows, as well, are discarded. To a very considerable extent, therefore, border effect is eliminated. Each variety or strain appears not less than four times. Where comparisons are desired in the shortest possible time, or when determining the relative yielding ability of close competitors, as many as eight plantings are made in different sections of the area devoted to this work.

The yields reported herein are those obtained from the rod-row plots.

One-sixtieth-acre plots.—These are planted in duplicate. They are used for testing leading and important varieties, and in addition offer opportunity for studying varieties under conditions approximating those found in the field. They also permit of the production of larger quantities of seed where such is required.

In addition to the above test plots, larger multiplying areas are devoted to the production of registered seed.

NUMBER OF PLOTS—1928

Kind of crop	Head rows	Small increase plots	Rod-row plots	1/60 acre plots	Multiplying areas	Total
Wheat	58	25	196	18	4	301
Oats	7	.....	347	28	10	392
Barley	72	25	316	18	3	434
Total	137	50	859	64	17	1,127

PRODUCTION OF NEW VARIETIES

During the winter of 1927-1928 there was undertaken for the first time at the Station the artificial hybridization of standard varieties of cereals in the hope of combining the desirable characters found in both parents and the ultimate production of a variety superior to either parent.

A number of the crosses attempted with barley, and several with wheat, proved successful, the resultant progeny being planted in head-rows in the field in the spring of 1928. Additional crosses are to be made during the coming winter.

BARLEY—TEST OF VARIETIES

Twenty-three named varieties and strains of barley were seeded in rod-row plots between May 23 and May 31, 1928. In addition to the above, twenty-two selections were tested under number. Yields from these are not reported upon. The area is badly infested with corn spurry and chick weed, which seem difficult to control.

BARLEY—RESULT OF TEST OF VARIETIES

Variety	Number of days to mature	Average length of straw including head	Strength of straw on scale of ten points	Comparative yield, check (Ch. No.80) 100%	Actual yield per acre
		in.			lb.
Check (Charlottetown No. 80) (54 plots)	92·1	36	9·7	100·0	1,951
(2) O.A.C. No. 21	86·4	38	8·6	111·8	2,182
(2) Gold	93·1	33	8·4	109·5	2,136
(1) Manchurian, Cap Rouge	86·8	38	10·0	108·1	2,109
(1) Velvet (6)	85·3	36	10·0	107·3	2,094
(1) Manchurian, Ott. 50	87·3	36	10·0	101·4	1,979
(2) Charlottetown No. 80	93·1	37	9·0	97·3	1,898
(2) Charlottetown No. 80 (re-selection)	96·1	37	9·5	94·4	1,841
(2) Early Chevalier, Ott. 51	85.0	37	8·3	91·0	1,776
(2) Star (New Seed)	91·8	31	9·4	90·8	1,771
(1) French Chevalier	93·8	40	10·0	90·4	1,764
(2) Chinese, Ott. 60	85·3	38	9·4	86·5	1,688
(1) Hannchen	91·3	34	9·9	84·9	1,656
(3) Duckbill MacD. Col. 207	94·0	31	10·0	83·3	1,626
(2) Horn	93·0	37	8·7	83·2	1,623
(5) Duckbill, Ott. 57	94·0	35	10·0	81·0	1,580
(2) Star (Old Seed)	90·3	29	9·6	79·2	1,546
(2) Bearer, Ott. 475	94·4	35	9·1	78·6	1,534
(4) Michigan Bl. Barkless (6)	87·3	31	10·0	78·0	1,521
(1) Feeder, Ott. 561	84·0	37	9·9	75·9	1,480
(1) Swedish Chevalier	92·0	33	10·0	56·2	1,097
(3) Guy Mayle (7)	88·0	30	10·0	55·9	1,091
(1) Himalayan, Ott. 59 (7)	82·0	28	9·5	45·5	888
(1) Albert, Ott. 54	80·3	33	9·5	42·6	831

NOTES.—(1) Four plots, (2) eight plots, (3) two plots only, (4) three plots only, (5) one plot only, (6) smooth awned. (7) hulless.

AVERAGE YIELDS BARLEY AT CHARLOTTETOWN 1924-1928 INCLUSIVE
Standing of different varieties relative to checks
(Charlottetown No. 80) checks=100%

—	1924	1925	1926	1927	1928	Average 1924-28
Actual yield checks (Charlottetown No. 80) in pounds per acre	2,134	2,703	1,572	1,185	1,951	1,909
Checks (Charlottetown No. 80)	100	100	100	100	100	100
Himalayan Ott. 59	87·2	64·7	75·3	47·3	45·5	65·4
Feeder-Ott. 561	74·9	69·7	68·1	95·6	75·9	75·1
Early Chevalier Ottawa 51	91·9	75·9	90·4	117·6	91·0	90·1
Chinese Ottawa 60	85·8	82·6	91·0	104·7	86·5	88·3
Bearer Ottawa 475	82·0	71·6	105·5	113·7	78·6	86·1
O.A.C. No. 21	90·0	97·6	97·3	120·4	111·8	101·6
Manchurian Ott. 50	69·9	78·0	114·0	99·9	101·4	89·6
Manchurian C. Rouge	72·5	79·8	100·3	147·9	108·1	95·8
Guy Mayle MacD	73·6	71·6	80·3	50·5	55·9	67·7
Charlottetown No. 80	100·0	100·0	110·1	107·8	97·3	102·1
Hannchen Sask. No. 299	112·0	74·8	108·2	109·2	84·9	94·9
Duckbill—Ott. 57	74·0	42·4	60·3	37·6	81·0	60·0
Duckbill -MacD. 207	77·2	48·0	68·2	46·8	83·3	64·9
French Chevalier	79·2	70·3	91·5	90·8	90·4	82·5
Swedish Chevalier	82·2	60·7	90·0	71·4	56·2	70·8
Gold	90·8	73·3	99·7	57·5	109·5	71·7
Albert Ottawa 54	70·7	67·8	42·3	59·3	42·6	58·1
Michigan Black Barbless	.....	.....	103·9	57·4	78·0	.....
Velvet	.....	.....	89·1	130·1	107·3	.....
Charlottetown No. 80 (Reselection)	.....	.....	.....	123·4	94·4	.....
Horn	.....	.....	.....	114·2	83·2	.....
Star	.....	83·3	119·0	114·1	90·8	.....

OATS—TEST OF VARIETIES

Thirty-five named sorts and selections were planted between May 18 and May 21, 1928.

OATS—RESULTS OF TESTS OF VARIETIES

Variety	Number of days to mature	Average length straw including head	Strength straw on scale of 10 points	Comparative yield to check Banner 0-49 = 100	Actual yield per acre
		in.			lb.
1. Checks (Banner Ott. 49) (45 plots)	95·0	41	10·0	100·0	1,835
2. Banner—Rennie	96·0	39	10·0	100·5	1,845
3. Irish Victor	96·3	41	10·0	99·3	1,822
4. Banner—Cap Rouge	96·0	42	10·0	98·1	1,815
5. Banner—U.B.C.	96·0	42	10·0	98·0	1,798
*6. Victory	98·5	41	10·0	96·6	1,772
7. Lincoln	97·0	40	10·0	95·2	1,747
8. Star	96·8	38	10·0	95·1	1,745
9. Banner—Sask. 99	94·8	41	10·0	94·3	1,731
10. Danish Island	97·5	39	10·0	94·2	1,729
11. O.A.C. No. 72	96·8	40	10·0	92·3	1,693
12. Banner—Sask. 144	97·3	39	10·0	91·4	1,678
13. O.A.C. No. 3	88·8	40	9·8	91·0	1,670
14. Prolific Ottawa 77	97·8	41	10·0	90·8	1,666
*15. Alaska	87·3	40	9·6	90·7	1,665
16. Columbian Ottawa 78	97·8	40	10·0	88·9	1,631
17. Banner—Waugh	97·3	41	10·0	88·7	1,628
*18. Legacy	91·1	38	9·8	87·3	1,602
19. Banner—Dow	97·5	41	10·0	86·8	1,593
20. Longfellow—Ottawa 478	91·0	41	10·0	85·9	1,577
21. Banner—McColm	97·5	40	10·0	85·9	1,577
*22. Gold Rain	94·8	41	10·0	84·6	1,552
23. Old Island Black	95·3	42	10·0	82·8	1,520
*24. Banner—Ottawa 49	95·0	41	10·0	82·3	1,511
25. O.A.C. No. 144	98·5	39	10·0	82·1	1,507
*26. Banner—Mac 4407	97·4	40	10·0	81·8	1,501
27. Banner—Dixon	96·5	44	10·0	80·1	1,470
28. Leader A	89·3	42	9·8	78·4	1,438
29. Mansholtts III	98·3	38	10·0	78·1	1,433
30. Banner—Langille	93·5	39	10·0	77·7	1,426
*31. Daubeney	88·5	38	9·7	75·1	1,378
32. Leader B	93·0	37	10·0	71·8	1,318
33. Banner—Griffin	93·8	37	10·0	70·9	1,301
34. Abundance	95·0	41	10·0	56·0	1,028
*35. Liberty—Ottawa 486	89·1	39	9·9	54·8	1,005
36. Laurel—Ottawa 477	90·3	39	10·0	52·9	970

*8 plantings—all other varieties planted 4 times.

TEST OF STRAINS OF BANNER OATS

Strain	1928 Crop					Average 5 years 1924-1928	
	Number of days to maturity	Average length straw including head	Strength straw, scale of ten points	Comparative yield Banner, Ottawa 49 = 100	Actual yield per acre	Comparative yield Banner Ott. 49 = 100	Actual yield per acre
		in.			lb.		lb.
Cap Rouge	96·0	42	10·0	120·1	1,815	107·9	1,898
U.B.C.	96·0	42	10·0	119·0	1,798	101·1	1,779
Sask. 99	94·8	41	10·0	114·6	1,731	102·0	1,794
Sask. 144	97·3	39	10·0	111·1	1,678	105·7	1,860
Waugh	97·3	41	10·0	107·7	1,628	103·8	1,826
Dow	97·5	41	10·0	105·4	1,593	99·4	1,748
McColm	97·5	40	10·0	104·4	1,577	101·3	1,782
*Ottawa 49	95·0	41	10·0	100·0	1,511	100·0	1,759
MacDonald-4407	97·4	40	10·0	99·3	1,501	101·7	1,789
Dixon	96·5	44	10·0	97·3	1,470	94·5	1,662
Langille	93·5	39	10·0	94·4	1,426	94·9	1,670
Griffin	93·8	37	10·0	86·1	1,301	94·1	1,656

*Four-year yield only.

AVERAGE YIELDS OF OATS AT CHARLOTTETOWN, 1924–1928 INCLUSIVE
Standing of different varieties relative to Banner Ott. 49 used as a check; Banner=100%

——	1924	1925	1926	1927	1928	Average 1924–1928 inclusive	
						Actual	Relative
						lb.	
Actual yield Banner checks, pounds per acre	1,507	1,987	2,335	1,202	1,835	1,773	100·0
Banner checks	100	100	100	100	100	.....	100
Alaska	91·5	82·9	89·9	98·3	90·7	1,594	89·9
Legacy, Ottawa 678	81·6	100·9	94·6	115·1	87·3	1,686	95·1
Leader A	104·0	77·1	78·9	78·0	78·4	1,464	82·6
O.A.C. No. 3	75·2	79·3	86·5	86·7	91·0	1,488	83·9
Liberty, Ottawa 480	57·5	59·2	62·9	51·3	54·8	1,027	57·9
Longfellow, Ottawa 478	46·0	86·3	82·8	97·1	85·9	1,417	79·9
Abundance	152·4	115·1	86·0	90·1	56·0	1,741	98·2
Gold Rain	77·5	97·1	99·1	93·2	84·6	1,617	91·2
Leader B	118·3	91·8	82·9	83·6	71·8	1,573	88·7
Banner, Ottawa 49	44·4	100·0	100·9	98·2	82·3	1,407	79·4
Columbian, Ottawa No. 78	100·5	116·0	95·8	103·9	88·9	1,787	100·8
Danish Island	97·5	112·4	107·3	91·3	94·2	1,807	101·9
Irish Victor P	105·1	112·2	101·9	106·7	99·3	1,860	104·9
Lincoln	108·4	112·4	92·1	112·8	95·2	1,824	102·9
O.A.C. No. 72	99·0	116·8	95·5	99·5	92·3	1,786	100·7
Laurel, Ottawa 477	62·0	62·4	67·8	70·7	52·9	1,115	62·9
Mansholtts III	102·0	116·6	86·9	76·4	78·1	1·647	92·9
Prolific Ottawa 77	85·7	111 9	100·7	95·2	90·8	1,735	97·9
Victory	84·3	113·0	113·0	95·0	96·6	1,814	102·3
Banner Cap Rouge	108·6	113·7	110·7	99·3	98·1	1,898	107·0
Banner U.B.C	99·8	105·2	100·1	93·5	98·0	1,779	100·3
Banner Sask. 99	95·6	116·6	97·8	99·9	94·3	1,794	101·2
Banner Sask. 144	102·4	108·3	114·6	104·0	91·4	1,860	104·9
Banner Waugh	103·8	108·9	112·1	96·3	88·7	1,826	103·0
Banner Dow	101·4	113·3	96·4	92·8	86·8	1,748	98·6
Banner McColm	93·2	122·3	100·2	96·6	85·9	1,782	100·5

SPRING WHEAT

Nineteen named sorts were sown on May 21 and May 22, 1928. In addition to the named varieties eleven selections were grown under number.

SPRING WHEAT—RESULTS OF TESTS OF VARIETIES

Variety	Number of days to mature	Average length straw including head	Strength straw on scale of ten points	Comparative yield to check Huron Ott. 3=100	Actual yield per acre
		in.			lb.
Checks (Huron Ottawa 3) (31 plots)	98·3	42	10·0	100·0	1,491
Crown Ottawa 353	97·0	38	9·5	105·1	1,567
Early Russian	98·8	41	10·0	104·8	1,562
Charlottetown 123	100·3	42	10·0	94·2	1,405
Aurore	96·5	40	9·6	86·5	1,290
Campbell's White Chaff	100·0	40	9·9	82·2	1,226
Ruby	92·0	39	9·9	81·3	1,212
Huron Ottawa 3	98·8	40	10·0	79·9	1,191
Garnet	92·5	38	9·8	77·6	1,157
Huron, Cap Rouge	99·1	39	10·0	76·9	1,146
Chelsea (old seed)	97·0	38	9·9	76·3	1,138
Master	90·0	36	9·1	74·8	1,116
White Russian	99·8	42	10·0	72·8	1,086
Early Red Fife	99·1	41	10·0	71·9	1,072
Red Fife	100·8	39	10·0	71·2	1,061
Bishop	96·3	41	9·9	68·6	1,023
Major	98·5	42	9·2	67·8	1,011
Reward	93·0	37	10·0	67·1	1,001
Marquis	97·8	38	10·0	61·8	922
Chelsea (new seed)	98·3	35	9·7	59·7	890

AVERAGE YIELDS SPRING WHEAT AT CHARLOTTETOWN, 1924–1928 INCLUSIVE

Standing of different varieties relative to Huron Ott. 3, used as check; Huron Ottawa 3=100%

—	1924	1925	1926	1927	1928	Average 1924–1928	
						Actual	Relative
						lb.	
Actual yield Huron Ott. 3 checks in pounds per acre..	1,622	1,793	950	642	1,491	1,300	
Huron, Ottawa 3 checks.....	100	100	100	100	100	.....	100
Garnet, Ottawa 652.....	112·2	103·6	88·4	79·3	77·6	1,237	95·2
Master, Ottawa 520.....	124·2	93·8	90·1	64·0	74·8	1,216	93·5
Ruby, Ottawa 623.....	108·4	96·0	83·9	62·5	81·3	1,178	90·6
Reward, Ottawa 928.....	118·6	89·9	92·0	37·4	67·1	1,135	87·3
Bishop, Ottawa 8.....	104·2	99·8	93·8	78·8	68·6	1,175	90·4
Chelsea, Ottawa 10 (old seed)	128·2	102·1	96·9	47·7	76·3	1,255	96·5
Early Red Fife, Ottawa 16..	67·6	101·0	78·7	81·3	71·9	1,050	80·8
Early Russian, Ottawa 40....	121·9	96·6	117·8	82·6	104·8	1,384	106·5
Major, Ottawa 522.....	81·4	92·2	88·1	49·4	67·8	1,028	79·1
Marquis, Ottawa 15.....	93·6	89·0	78·5	74·2	61·8	1,052	80·9
Huron, Ottawa 3.....	100·0	100·0	98·6	106·4	79·9	1,245	95·8
Huron, Cap Rouge.....	103·8	98·2	111·9	85·1	76·9	1,240	95·4
White Russian.....	118·2	97·8	103·4	76·2	72·8	1,245	95·8
Charlottetown 123.....	112·1	104·2	92·5	87·4	94·2	1,306	100·5
Red Fife, Ottawa 17.....	62·9	86·5	77·4	74·5	71·2	969	74·5
Campbell's White Chaff.....	88·9	96·1	107·7	82·9	82·2	1,189	91·5
Aurore.....	.....	96·3	94·6	91·8	86·5	1,126	
Crown, Ottawa 353.....	.....	88·4	82·4	54·1	105·1	1,071	

FALL SOWN WHEAT

Several varieties of so-called "winter wheat" were seeded in the autumn of 1927. These were so badly damaged by English sparrows that it was impossible to obtain records. There was a splendid stand of all the sorts sown.

AREAS DEVOTED TO SEED PRODUCTION, 1928

Crop	Variety	Field	Preceding crop	Acreage	Yield per acre
				acres	lb.
Wheat.....	Huron.....	CC–I.....	Hoed crop.....	1·0	1,650
Wheat.....	Charlottetown 123.....	G–I.....	Turnips.....	0·4	1,472
Wheat.....	Huron.....	B–I.....	Potatoes.....	1·0	1,358
Wheat.....	Early Red Fife.....	C–II.....	Potatoes.....	0·57	974
Oats.....	Banner.....	A–I.....	Mangels.....	1·0	2,145
Oats.....	Banner.....	Connolly...	Hoed crop.....	8·0	2,040
Oats.....	Banner.....	Dinnis.....	Turnips.....	7·0	1,972
Oats.....	Banner.....	Dinnis.....	Pasture.....	5·0	1,904
Oats.....	Banner.....	Blake.....	Hoed crop.....	5·0	1,870
Oats.....	Banner.....	Dinnis.....	Hoed crop.....	3·0	1,768
Oats.....	Banner.....	B–III.....	Clover.....	1·0	1,717
Oats.....	Banner.....	Connolly...	Clover.....	5·0	1,700
Oats.....	Banner.....	Dinnis.....	Pasture.....	3·0	1,700
Oats.....	O.A.C. 72.....	G–VI.....	Timothy.....	0·4	1,425
Barley.....	Charlottetown No. 80.....	CC–II.....	Potatoes.....	6·0	2,112
Barley.....	Charlottetown No. 80.....	Dinnis.....	Turnips.....	4·0	1,920
Barley.....	Ckarlottetown No. 80.....	A–V.....	Timothy.....	1·0	1,215

FORAGE CROPS, 1928

THE SEASON

The winter season of 1927-28 was very hard on the grass and clover. Very little clover survived. The grass got an early start due to favourable weather in April, and thickened up after the beneficial showers of June and July, so that there was a heavy crop of well cured hay. Roots were sown earlier than usual, but mangels did not germinate well. Later sown swedes and corn started well and made very rapid growth during the favourable weather of autumn. The swedes were still growing rapidly when harvested the first week in November.

CORN

Eleven varieties were planted on June 1, 1928. A long frost-free period and warm summer produced heavy crops. Each variety was planted in triplicate. The figures given below are the average of the three plots.

CORN FOR ENSILAGE—RESULT OF TEST OF VARIETIES

Standing	Variety or strain	Average height	State of maturity	Green yield per acre	Per cent dry matter	Dry matter per acre
		in.		lb.	%	lb.
1	Longfellow (Duke)	74	Early Dough	53,782	20·54	11,046
2	Longfellow (P. & L.)	86	Watery	54,131	19·70	10,663
3	N. Western Dent (Disco)	81	Early Dough	45,535	20·61	9,385
4	Compton Early (Duke)	88	Watery	53,782	16·89	9,086
5	Bailey (Duke)	86	Watery	44,040	19·97	8,795
6	Twitchell Pride Wisc. No. 7 (C.E.F.)	88	Early Dough	45,244	17·80	8,045
7	Golden Glow (Duke)	96	Watery	39,030	17·29	6,747
8	Northwestern Dent (McKenzie)	74	Dough	34,035	19·10	6,499
9	Quebec No. 28 (McD. Col)	56	Firm Dough	31,944	20·18	6,447
10	Pride Yellow Dent (Disco)	72	Soft Dough	30,957	19·96	6,179
11	Northwestern Dent (Brandon)	56	Late Dough	23,871	24·50	5,849

SUNFLOWERS—RESULTS OF TEST OF VARIETIES

Two varieties were sown on June 23, 1928. Each was sown in duplicate, the figures in the following table being the average taken from two plots:—

SUNFLOWERS—TEST OF VARIETIES

Standing	Variety and source of seed	Yield in pounds per acre	Per cent dry matter	Dry matter per acre
		lb.	%	lb.
1	Giant Russian (Disco)	54,596	14·24	7,776
2	Giant Russian (McDonald)	46,348	13·04	6,044

MANGLES—TEST OF VARIETIES

Sixteen varieties were sown June 5, 1928, in triplicate. Figures given below are the mean of three plots.

MANGELS—RESULTS OF TEST OF VARIETIES

Standing	Variety and source of seed	Yield in pounds per acre	Per cent dry matter	Dry matter per acre
		lb.	%	lb.
1	Yellow Intermediate (C.E.F.)	43,211	13·57	5,864
2	Long Red Mammoth (Ewing)	46,173	12·36	5,705
3	Danish Sludstrup (McDonald)	47,045	12·10	5,693
4	Giant White Half Sugar (Ewing)	43,850	12·96	5,682
5	Red Top Half Sugar (Hartmann)	38,333	14·34	5,495
6	Stryno Barres (Hartmann)	44,431	11·85	5,266
7	Red Eckendorfer (Gen. Swed. Seed Co.)	44,896	11·13	4,995
8	Rosted Barres (Hartmann)	38,623	12·11	4,679
9	Danish Sludstrup (James)*	42,689	10·94	4,671
10	Eckendorfer Yellow (Hartmann)	44,141	10·32	4,555
11	Red Globe (Dupuy & Ferguson)	36,532	12·15	4,438
12	Elvetham Mammoth (Hartmann)	35,719	12·38	4,422
13	Giant Yellow Globe (Ewing)	43,618	9·97	4,350
14	Giant Yellow Intermediate (Ewing)	37,752	10·87	4,104
15	Red Globe (Ewing)	33,861	11·70	3,962
16	Eckendorfer Red (Hartmann)	32,234	10·54	3,398

*Only sufficient seed for one planting.

SUGAR BEETS—TEST OF VARIETIES

Ten varieties were sown on June 5, 1928, and made good growth. Each was sown in triplicate, and the figures given below are the mean of three plots. In addition to field weight, per cent dry matter and pounds of dry matter per acre, there was determined for each variety the per cent of sugar and the coefficient of purity, these last two determinations having reference to the value of these varieties from a sugar manufacturing standpoint.

SUGAR BEETS—TEST OF VARIETIES

Standing	Variety and source of seed	Per cent sugar in juice	Coefficient of purity	Field weight per acre	Per cent dry matter	Dry matter per acre
		%	%	lb.	%	lb.
1	Ramon (C.E.F.)	17·95	86·30	29,911	24·51	7,331
2	Dippe (C.E.F.)	18·65	88·12	28,165	25·96	7,312
3	Kalnik (C.E.F.)	18·76	86·86	27,298	26·61	7,264
4	Niemertche (C.E.F.)	18·62	87·98	27,007	26·39	7,126
5	Uladovka E No. 4 (Amtorg)	18·07	86·18	27,007	25·17	6,799
6	Frederiksen (C.E.F)	18·55	87·06	25,265	25·26	6,382
7	Bielotzerkov E No. 10 (Amtorg)	18·67	86·62	24,397	26·05	6,355
8	Vierchniatchka N No. 3 (Amtorg Tr. Co.)	18·54	87·32	24,978	25·23	6,302
9	Buszczynski (C.E.F.)	19·28	88·41	23,813	26·18	6,235
10	Kalnik Z No. 8 (Amtorg)	18·79	87·16	21,199	25·74	5,457

SWEDE TURNIPS—TEST OF VARIETIES

Eighteen varieties were sown June 5, 1928 in triplicate. Figures as given in the following table are the mean of three plots.

SWEDE TURNIPS—TEST OF VARIETIES

Standing	Variety and source of seed	Field weight per acre	Per cent dry matter	Dry matter per acre
		lb.	%	lb.
1	Hall Westbury (Ewing)	61,274	10·23	6,269
2	Bangholm (Gen. Swed. Seed Co.)	55,466	10·10	5,603
3	Champion Purple Top (Sutton)	50,530	10·49	5,303
4	Shepherd (Trifolium)	51,981	10·16	5,282
5	Ditmars (McNutt)*	54,015	9·48	5,123
6	Bangholm (Trifolium)	43,266	11·75	5,084
7	Imp. Yellow Swedish (Gen. Swed. Seed Co.)	47,916	10·61	5,084
8	Hall Westbury (McDonald)	49,658	10·17	5,051
9	Bangholm (Ewing)	45,593	10·24	4,671
10	Yellow Williamsburger (Hartmann)	46,464	9·94	4,619
11	Invicta Bronze Top (Ewing)*	47,045	9·61	4,521
12	Bangholm (Charlottetown)	36,590	11·90	4,356
13	Sutton Champion Purple Top (Rennie)	43,560	9·96	4,339
14	Yellow Butler (Hartmann)	41,818	10·30	4,306
15	Sutton Champion Purple Top (Ewing)	39,494	10·89	4,300
16	New Century (Bruce)	40,075	10·47	4,195
17	Kangaroo (Ewing)	41,237	9·83	4,055
18	Large White Ostersundom (Hartmann)†	38,914	7·50	2,920

*Average 2 plots only. †White turnip—not a rutabaga.

SOILS AND FERTILIZERS

MANURE VS. COMMERCIAL FERTILIZERS FOR POTATOES

Information has been collected from this experiment since 1923. A four-year rotation is employed as follows: Potatoes, grain, clover, timothy. The fertilizer treatments as outlined below are applied to the potato crop. Plot number one receives stable manure at the rate of 20 tons per acre. Plot number two receives chemical fertilizers equivalent to 1,000 pounds per acre of a 4-8-8 mixture. The third plot receives stable manure at the rate of 10 tons per acre plus 500 pounds of a 4-8-8 fertilizer, while plot four is used as a check or control plot receiving no treatment.

MANURE VS. CHEMICAL FERTILIZERS ON POTATOES GROWN IN ROTATION

Treatment received per acre	Yield per acre	
	1928	Average 6 years 1923-1928
	lb.	lb.
Manure, 20 tons per acre	9,528	11,574
No manure Nitrate soda—130 pounds per acre Sulphate ammonia—100 pounds per acre Superphosphate—500 pounds per acre Muriate potash—160 pounds per acre	7,744	9,121
Manure—10 tons per acre Nitrate soda—65 pounds per acre Sulphate ammonia—50 pounds per acre Superphosphate—250 pounds per acre Muriate potash—80 pounds per acre	6,880	10,798
No manure—no fertilizer	2,960	3,649

In addition to the above, a second series of plots was given the same treatment, but potatoes were grown continuously, instead of in rotation with other crops. The following table gives the treatment and shows the yield from this series of plots:—

Treatment received per acre	Yield per acre	
	1928	Average 6 years 1923-1928
	lb.	lb.
Manure—20 tons	13,440	11,657
No manure Nitrate soda—130 pounds per acre Sulphate ammonia—100 pounds per acre Superphosphate—500 pounds per acre Muriate potash—160 pounds per acre	7,200	7,666
Manure—10 tons per acre Nitrate soda—65 pounds per acre Sulphate ammonia—50 pounds per acre Superphosphate—250 pounds per acre Muriate potash—80 pounds per acre	12,960	10,732
Check—no manure or fertilizer	1,280	2,321

It would seem that it is possible to maintain production even when potatoes are grown continuously in the same soil, if suitable fertilizing agents in reasonable quantities are applied yearly. The percentage of marketable tubers has a tendency to drop off, although this is not so noticeable in the case where stable manure is used to maintain soil fertility. This season, owing to the unfortunate destruction by fire of our main barn, the crop from these plots was destroyed before it could be separated into marketable and unmarketable tubers. This was done in the past, and it is the intention to continue the practice, so that by the end of several years valuable figures on this point should be available.

STABLE MANURE VS. CHEMICAL FERTILIZERS FOR POTATOES

An experiment similar to the foreging was started in 1927. In addition to studying the effect on yield of stable manure vs. chemical fertilizers, and potatoes grown continuously vs. those grown in rotation, there is also opportunity to compare the relative merits of nitrate of soda and sulphate of ammonia as a source of nitrogen for the potato crop.

Previous to the start of this experiment, samples of both surface and subsoil were taken from each plot and submitted to the Dominion Chemist at Ottawa for chemical and physical analyses. It is the intention to analyse samples from these plots at intervals to note whether or not the various treatments are in any way affecting the chemical or physical composition of the soil. The Dominion Chemist, Dr. Shutt, in his report on the original samples says in part:—

"The soil samples, forty-eight in number (surface and subsoil) were composites taken to a depth of 0-7 inches and 7-14 inches. The chemical examination of the soils consisted of determination of organic matter, nitrogen and lime requirements.

"The physical examination furnished seven separates, from fine gravel to clay, the method of analyses employed being that of the Bureau of Soils, United States Department of Agriculture. Since the soils were very similar physically, sixteen samples only were submitted to a mechanical analysis."

CHEMICAL ANALYSIS

"The data when tabulated showed that for the majority of the plots the soil is fairly uniform as regards its percentage of organic matter and nitrogen, the averages being 6·15 and 0·172 respectively. The greatest variation in nitrogen content occurs in plots 23, 28 and 29, the soils of which contain 0·130, 0·203 and 0·202 per cent respectively.

"These percentages indicate a soil of average fertility. They compare very favourably with those found in the soils of Prince Edward Island discussed in Bulletin No. 100 ('Soils of Prince Edward Island'). The maximum, minimum and average data for the nitrogen content of this series very closely approximate those of the manured soils tabulated on page 12 of the above bulletin.

"All of the soils show a moderate acidity, the lime requirement for the surface soils varying from 3722 to 6484 pounds per acre of carbonate of lime. The lime requirement of the surface soils is, on the average, slightly higher than that of the subsoil."

PHYSICAL ANALYSIS

"The results from a mechanical analysis of eight samples each of surface and subsoils were tabulated. It was noted that all the samples examined were very similar with respect to their percentage of sand, silt and clay. They may be classed as brownish-red 'fine sandy loam'."

From the investigations of the Dominion Chemist it would appear that the plots are reasonably uniform, and suitable for the work at hand. The following is an outline of the experiment, together with yields for 1928 and the average for 1927 and 1928.

POTATOES GROWN ON SAME LAND CONTINUOUSLY

Treatment No. 1.—Check—no treatment.

Treatment No. 2.—Fifteen tons of manure per acre.

Treatment No. 3.—258 pounds nitrate of soda, 500 pounds superphosphate, 160 pounds muriate of potash per acre.

Treatment No. 4.—200 pounds sulphate of ammonia, 500 pounds superphosphate, 160 pounds muriate of potash per acre.

Treatment No. 5.—7½ tons manure, 129 pounds nitrate of soda, 250 pounds superphosphate, 80 pounds muriate of potash per acre.

Treatment No. 6.—7½ tons manure, 100 pounds sulphate of ammonia, 250 pounds superphosphate, 80 pounds muriate of potash per acre.

POTATOES GROWN IN ROTATION (3-YEAR)

First year—Potatoes, to receive same treatment as above.

Second year—Wheat, seeded down.

Third year—Clover hay.

The two following tables give the yields from each series:—

MANURE VS. CHEMICAL FERTILIZERS FOR POTATOES GROWN CONTINUOUSLY

Treatment number	Material applied and rate per acre					Plant food supplied by chemicals			Yield per acre						Average per cent of marketable to total crop
									Marketable		Unmarketable		Total		
	*Stable manure	Nitrate soda (15½%)	Sulphate ammonia (20%)	Superphosphate (16%)	Muriate of potash (50%)	N	P_2O_5	K_2O	1928	Average 2 years, 1927-28	1928	Average 2 years, 1927-28	1928	Average 2 years, 1927-28	
	tons	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	%
1	.....	.....	.....	.....	.....	.....	.....	.....	2,960	3,140	2,600	2,460	5,560	5,600	56·1
2	15	.....	.....	.....	.....	.....	.....	.....	12,400	10,000	2,200	2,400	14,600	12,400	80·6
3	.....	258	.....	500	160	40	80	80	8,400	7,160	4,280	3,580	12,680	10,740	66·7
4	.....	.....	200	500	160	40	80	80	5,480	6,260	1,120	1,200	6,600	7,460	83·9
5	7½	129	.....	250	80	20	40	40	9,000	9,280	3,280	3,340	12,280	12,620	73·5
6	7½	.....	100	250	80	20	40	40	9,680	9,400	1,120	1,780	10,800	11,180	84·1

* Composition not determined.

MANURE VS. CHEMICAL FERTILIZER FOR POTATOES GROWN IN ROTATION

Treatment number	Material applied and rate per acre					Plant food supplied by chemicals			Yield per acre						Average per cent of marketable to total crop
									Marketable		Unmarketable		Total		
	*Stable manure	Nitrate of soda (15½ %)	Sulphate ammonia (20%)	Superphosphate (16%)	Muriate of potash (50%)	N	P_2O_5	K_2O	1928	Average 2 years, 1927-28	1928	Average 2 years, 1927-28	1928	Average 2 years, 1927-28	
	tons	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	%
1	.....	.....	.....	.....	.....	.....	.....	.....	3,320	4,960	1,880	2,480	5,200	7,440	66·7
2	15	.....	.....	.....	.....	.....	.....	.....	9,600	10,700	880	1,480	10,480	12,180	87·8
3	.....	258	.....	500	160	40	80	80	12,600	10,660	2,160	2,680	14,760	13,340	79·9
4	.....	.....	200	500	160	40	80	80	14,080	9,520	920	1,180	15,000	10,700	89·0
5	7½	129	.....	250	80	20	40	40	13,040	11,720	2,240	2,920	15,280	14,640	80·1
6	7½	.....	100	250	80	20	40	40	16,880	11,840	760	1,360	17,640	13,200	89·7

* Composition not determined.

Chemicals were applied to plots 3 and 4 equivalent to 1,000 pounds per acre of a 4–8–8 mixture, on plots 5 and 6 equivalent to 500 pounds of a 4–8–8 mixture.

This experiment has been conducted for a period of only two years, and it is too early to attempt drawing conclusions. It would appear from the tables, however, that the use of sulphate of ammonia gives a higher percentage of marketable tubers to total crop than does nitrate of soda. However, nitrate of soda seems to lead sulphate of ammonia in amount of crop produced. Manure used alone produces large crops and when used in smaller quantities supplemented by chemical fertilizers gives higher yields than either manure or chemicals used singly.

FERTILIZER FORMULÆ FOR POTATOES

This experiment was started in 1922 to test the value of different mixtures of chemical fertilizers applied at different rates, and also to test a new four-year rotation having two of the four years in potatoes, as follows:—

First year—Potatoes fertilized as per plan.

Second year—Wheat.

Third year—Clover.

Fourth year—Potatoes, no fertilizer treatment.

Production for the fourth-year crop (potatoes) would presumably depend upon residues from the original application given to the first year's crop, together with the clover aftermath ploughed down the previous autumn.

The fertilizers were applied as per plan in 1922, and the 1925 potato crop completed the first cycle of the rotation. Fertilizers were again applied in 1926, and the present year's crop of hay, reported in the following table, is the third year of the second cycle of the rotation. The 1929 crop of potatoes will complete the second cycle, and a summary of the data at that time should be of interest. For the present it will suffice to indicate only the yields of hay for the present year.

FERTILIZER FORMULAE FOR POTATOES

Application in pounds per acre in 1922 and in 1926				Equal to	Yield per acre
Nitrate of soda	Sulphate of ammonia	Superphosphate	Muriate of potash		
				2,000 pounds of	lb.
390	300	750	240	6–6–6	4,452
325	250	750	240	5–6–6	4,160
260	200	750	240	4–6–6	3,558
195	150	750	240	3–6–6	3,582
325	250	1,000	240	5–8–6	3,286
260	200	1,000	240	4–8–6	3,525
195	150	1,000	240	3–8–6	3,541
260	200	1,000	400	4–8–10	4,093
260	200	1,000	320	4–8–8	4,272
260	200	1,000	160	4–8–4	4,034
				1,500 pounds of	
290	225	560	180	6–6–6	4,611
245	190	560	180	5–6–6	4,420
195	150	560	180	4–6–6	3,642
145	115	560	180	3–6–6	3,651
245	190	750	180	5–8–6	3,967
195	150	750	180	4–8–6	4,035
145	115	750	180	3–8–6	3,779
195	150	750	300	4–8–10	3,315
195	150	750	240	4–8–8	3,662
195	150	750	120	4–8–4	3,476
				1,000 pounds of	
195	150	375	120	6–6–6	3,257
165	125	375	120	5–6–6	4,024
130	100	375	120	4–6–6	3,215
100	75	375	120	3–6–6	3,511
165	125	500	120	5–8–6	3,402
130	100	500	120	4–8–6	3,823
100	75	500	120	3–8–6	3,986
130	100	500	200	4–8–10	4,068
130	100	500	160	4–8–8	3,333
130	100	500	80	4–8–4	4,084
Permanent check plot (no chemical fertilizer, no manure, no shell mud).....					2,016
Check—No chemical fertilizer or shell mud, but received manure in autumn 1917.....					2,437
Check (average 13 plots)—Manure and shell mud autumn 1917, but no chemical fertilizer..					2,598

With reference to the check plots it may be noted that the "permanent check" has received no treatment whatsoever for a great many years. Apart from this plot the entire area except the second check plot, received an application of oyster shell mud during the autumn or early winter of 1917. The entire area, except the permanent check, received a coating of stable manure the same autumn.

PUBLICATIONS

There was published during the year 1928, as a contribution from the Division of Chemistry, Bulletin No. 100—New Series—"The Soils of Prince Edward Island, Their Nature and Composition, with Suggestions as to Fertilizer Treatment," by F. T. Shutt, D.Sc., F.I.C., Dominion Chemist. In this bulletin is given a great deal of interesting and useful information worthy of close study by all progressive farmers. A copy may be obtained free, on application to the Director, Publications Branch, Central Experimental Farm, Ottawa.

POULTRY

The effort to increase total production, and also increase size of egg, by breeding and selection, has been the chief work of the poultry department at this Station during the past year. There is evidence that a fair measure of success is being attained in both objects.

The stock on hand November 1, 1928, consisted of 59 males and 664 females as follows:—

Breed	Males	Hens	Pullets	Total
Barred Plymouth Rocks	43	28	255	326
S.C. White Leghorns	16	52	329	397
Totals	59	80	584	723

HOUSING AND YARDS

During the year a new contest house was erected. This house is 140 feet long, 16 feet wide, and is divided into twenty pens, ten on either side of a central 16 by 20-foot room. This house has been urgently needed at the Station for several seasons.

FEEDS AND FEEDING

The following is the system of feeding employed at the Station:—

Morning feeding: Sprouted oats.

Noon feeding: Green feed, usually raw mangels. In summer a plentiful supply of grass, clover, etc., is available.

Late afternoon feeding: Grain ration scattered in the floor litter. This ration is composed of equal parts of cracked corn and feed wheat.

Grit, shell and dry mash are hopper-fed and available to the birds at all times. The dry mash employed is composed of 100 pounds cornmeal, 100 pounds oatmeal, 100 pounds bran, 100 pounds shorts, 50 pounds charcoal and from 10 to 20 per cent (by weight) of beef scrap. Fresh water is before the birds at all times.

EGG PRODUCTION

As mentioned above, the effect of breeding and selection is becoming apparent in the average production per bird. In the table following the average production per bird was 121.4 for hens and 178.5 for pullets. This compares with 108.9 and 141.6 respectively, for the previous year, or a gain of 12.5 eggs per hen, and 36.9 eggs per pullet.

Egg Yields—Hens vs. Pullets

Month	Hens			Pullets		
	Number of birds	Total eggs	Average per bird	Number of birds	Total eggs	Average per bird
1927						
November	136	234	1·7	120	839	7·0
December	136	285	2·1	128	1,468	11·5
1928						
January	132	344	2·6	127	1,466	11·5
February	130	924	7·1	124	1,411	11·4
March	133	1,833	13·8	114	2,357	20·7
April	118	2,333	19·8	113	2,516	22·3
May	108	2,026	18·8	107	2,432	22·7
June	87	1,521	17·5	94	1,805	19·2
July	86	1,405	16·3	92	1,702	18·5
August	85	1,128	13·3	74	1,320	17·8
September	77	552	7·2	68	759	11·2
October	77	90	1·2	64	298	4·7
Totals	.....	12,675	121·4	.....	18,373	178·5

The following table gives the average production per bird per year for the nine-year period 1920 to 1928 inclusive:—

AVERAGE ANNUAL PRODUCTION PER BIRD

Year	Hens	Pullets
1928	121·4	178·5
1927	108·9	141·6
1926	124·5	151·8
1925	122·4	143·7
1924	127·9	166·7
1923	119·3	144·2
1922	118·2	131·7
1921	116·2	140·9
1920	91·6	109·8

New contest house erected on the Charlottetown Station in the summer of 1928.

The two tables given below report individual records for the pullet year of White Leghorns and Barred Plymouth Rocks bred and raised at the Station.

INDIVIDUAL RECORDS OF S.C. WHITE LEGHORN PULLETS BRED AND RAISED AT THE EXPERIMENTAL STATION, CHARLOTTETOWN, P.E. ISLAND

225 eggs and over			200 to 224 eggs			175 to 199 eggs		
Band Number	Number of eggs	Date of first egg	Band Number	Number of eggs	Date of first egg	Band Number	Number of eggs	Date of first egg
		1927			1927			1927
L–12	265	Oct. 5	J–34	223	Nov. 2	L–124	199	Nov. 25
J–45	231	Nov. 8	L–2	221	Oct. 3	L–19	198	Oct. 8
L–20	227	Oct. 8	L–6	219	Oct. 4	L–95	195	Oct. 13
J–42	225	Nov. 2	L–23	218	Nov. 8	J–41	193	Nov 2
			L–106	218	Nov. 11	L–22	191	Nov. 2
			J–44	217	Nov. 7	L–115	191	Nov. 25
			L–62	213	Oct. 11	L–105	189	Dec. 1
			L–83	211	Nov. 25	L–76	188	Nov. 20
			J–35	209	Nov. 20	J–47	188	Nov. 16
			L–91	208	Oct. 12	L–57	187	Dec. 1
			L–125	207	Nov. 27	L–53	186	Nov. 8
			J–33	207	Nov. 1	J–49	186	Nov. 22
			L–11	206	Oct. 5	J–32	183	Nov. 8
			L–16	205	Oct. 6	J–31	181	Nov. 1
			J–50	203	Nov. 23	L–92	178	Oct. 11
			J–38	201	Nov. 30	L–66	178	Oct. 24
						L–81	177	Dec. 13
						L–88	176	Nov. 8
4	948		16	3,386		18	3,364	
Total 4 birds	948 eggs		Total 16 birds	3,386 eggs		Total 18 birds	3,364 eggs	
Average per bird	237 eggs		Average per bird	211·6 eggs		Average per bird	186·9 eggs	

Total for 38 birds.....7,698 eggs. Average per bird.....202·6 eggs

INDIVIDUAL RECORDS OF BARRED PLYMOUTH ROCK PULLETS, BRED AND RAISED AT THE EXPERIMENTAL STATION, CHARLOTTETOWN, P.E.I.

225 eggs and over			200 to 224 eggs			175 to 199 eggs		
Band number	Number of eggs	Date of first egg	Band number	Number of eggs	Date of first egg	Band number	Number of eggs	Date of first egg
J–66	243	Dec. 1	L–188	222	Nov. 23	L–170	198	Dec. 6
L–171	241	Nov. 19	L–198	214	Nov. 15	L–183	196	Nov. 22
L–164	237	Nov. 2	L–178	212	Nov. 22	L–216	195	Dec. 24
L–179	228	Nov. 21	L–166	211	Nov. 23	L–172	193	Nov. 28
L–152	225	Nov. 10	L–161	210	Jan. 30	L–181	190	Nov. 25
.....	.....	.....	L–151	207	Nov. 19	L–200	190	Oct. 12
.....	.....	.....	L–192	206	Oct. 31	J–63	189	Dec. 8
.....	.....	.....	L–158	205	Nov. 18	L–195	187	Oct. 20
.....	.....	.....	L–191	202	Dec. 28	L–169	181	Nov. 27
.....	.....	.....	L–211	202	Nov. 24	L–173	178	Nov. 20
.....	.....	.....	J–69	201	Dec. 18	L–159	177	Jan. 11
.....	.....	.....	.....	.....	.....	L–186	176	Dec. 29
5	1,174	.....	11	2,292	.....	12	2,250	.....
Total 5 birds.....1,174 eggs			Total 11 birds.....2,292 eggs			Total 12 birds.....2,250 eggs		
Average per bird.....234·8 eggs			Average per bird.....208·4 eggs			Average per bird.....187·5 eggs		

Total for 28 birds.....5,716 eggs. Average per bird.....204·1 eggs.

STATEMENT COVERING PRODUCTION, PROFIT AND LOSS AND FEED CONSUMED BY WHITE LEGHORNS, BRED AND RAISED AT THE EXPERIMENTAL STATION, CHARLOTTETOWN, PRINCE EDWARD ISLAND

Month	Number of birds	Total eggs laid	Average per bird	Average price per dozen	Total market value	Cost per dozen	Total cost of feed	Cost feed one bird	Total monthly profit	Total monthly loss	Feed consumed						
											Grain	Mash	Grit	Shell	Roots	Oats sprouted	Total amount of feed
				cts.	$	cts.	$	cts.	$	$	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1927																	
Nov..	48	322	6·7	40	10 74	38·1	10 23	21·3	0 51	.....	225	90	14	14	200	48	591
Dec...	39	470	12·0	45	17 63	21·6	8 45	21·7	9 18	.....	180	82	9	5	186	39	501
1928																	
Jan....	39	347	8·9	42	12 15	29·7	8 60	22·1	3 55	.....	165	100	14	7	165	39	490
Feb...	38	383	10·0	33	10 53	26·1	8 34	21·9	2 19	.....	155	100	12	8	165	39	479
Mar...	35	684	19·5	30	17 10	16·0	9 11	26·0	7 99	.....	140	50	10	11	189	140	540
April..	39	751	21·4	30	18 78	13·7	8 57	22·0	10 21	.....	115	55	3	10	200	140	523
May...	36	804	22·2	30	20 10	9·3	6 22	17·3	13 88	.....	130	35	.....	5	.....	74	244
June...	30	543	18·1	25	11 31	12·6	5 71	19·0	5 60	.....	125	37	4	6	.....	54	226
July...	30	562	18·7	25	11 71	9·5	4 46	14·9	7 25	.....	90	30	.....	4	.....	50	174
Aug...	23	454	19·7	28	10 59	9·5	3 59	15·6	7 00	.....	90	28	.....	.....	.....	20	138
Sept...	21	199	9·5	30	4 98	29·7	4 92	23·4	0 06	.....	160	30	.....	.....	.....	.....	190
Oct....	16	56	3·5	30	1 40	64·5	3 01	18·8	.....	1 61	90	25	.....	.....	.....	.....	115
	.....	5,575	.....	.....	147 02	17·5	81 21	$ 2 44	67 42	1 61	1,665	662	66	70	1,105	643	4,211

STATEMENT COVERING PRODUCTION, PROFIT AND LOSS AND FEED CONSUMED BY BARRED PLYMOUTH ROCKS, BRED AND RAISED AT THE DOMINION EXPERIMENTAL STATION, CHARLOTTETOWN, PRINCE EDWARD ISLAND

Month	Number of birds	Total eggs laid	Average per bird	Average price per dozen	Total market value	Cost per dozen	Total cost of feed	Cost of feed per bird	Total monthly profit	Total monthly loss	Feed used						
											Grain	Mash	Grit	Shell	Roots	Oats sprouted	Total amount of feed
				cts.	$	cts.	$	cts.	$	$	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1927																	
Nov...	47	302	6·4	40	10 07	38·8	9 77	20·8	0 30	.....	210	88	6	6	300	47	657
Dec...	53	718	13·5	45	26 93	20·4	12 20	23·0	14 73	.....	250	127	7	6	372	53	815
1928																	
Jan....	52	866	16·6	42	30 31	17·3	12 47	23·9	17 84	.....	235	135	12	11	370	65	828
Feb...	50	722	14·4	33	19 86	19·2	11 54	23·1	8 32	.....	225	110	13	11	370	65	794
Mar...	20	415	20·7	30	10 38	18·8	6 52	32·6	3 86	.....	125	30	5	5	186	80	431
April..	20	447	22·3	30	11 17	13·7	5 09	25·4	6 08	.....	90	8	5	10	190	80	383
May...	20	446	22·3	30	11 15	15·1	5 63	28·1	5 52	.....	130	42	.....	5	.....	42	219
June...	39	733	18·8	25	15 27	11·3	6 92	17·7	8 35	.....	160	30	5	6	.....	75	276
July...	37	645	17·4	25	13 44	11·5	6 20	16·8	7 24	.....	145	23	.....	8	.....	70	246
Aug...	34	457	13·4	28	10 66	12·5	4 78	14·1	5 88	.....	135	25	.....	.....	.....	25	185
Sept...	34	334	9·8	30	8 35	16·3	4 53	13·3	3 82	.....	165	12	.....	.....	.....	.....	177
Oct....	31	202	6·5	30	5 05	35·3	5 95	19·2	.....	0 90	220	10	3	3	.....	.....	236
	.....	6,287	.....	.....	172 64	.....	91 60	$ 2 58	81 94	0 90	2,090	640	56	71	1,788	602	5,247

COMPARISON OF BREEDS FOR GROSS EGG PRODUCTION.

The two tables following give a statement covering production, profit and loss, etc., for the two breeds, viz. S. C. White Leghorns and Barred Plymouth Rocks, kept at this station:—

MEAN PRODUCTION, PROFIT AND LOSS ON BARRED PLYMOUTH ROCKS, BRED AND RAISED AT THE EXPERIMENTAL STATION, CHARLOTTETOWN

Year: (Nov. 1 to Oct. 31 in each case)	Average number of birds	Total eggs laid	Total market value of eggs	Average cost per dozen	Total cost feed at market prices	Net profit
			$ cts.	cts.	$ cts.	$ cts.
1927–28	36·4	6,287	172 64	17·5	91 60	81 04
1926–27	37·1	4,995	112 65	21·3	88 51	24 14
1925–26	70·8	9,557	212 90	24·4	194 55	18 35
1924–25	30·6	4,296	99 24	21·8	77 88	21 36
1923–24	61·8	9,763	246 10	18·4	150 09	96 01
1922–23	26·4	3,926	94 29	20·1	65 91	28 38
1921–22	33·7	4,523	127 33	21·0	79 95	47 38
1920–21	141·0	17,952	488 06	33·0	496 71	−8 65
Average	54·7	7,662	194 15	22·3	155 65	38 50

MEAN PRODUCTION, PROFIT AND LOSS ON S.C. WHITE LEGHORNS, BRED AND RAISED AT THE EXPERIMENTAL STATION, CHARLOTTETOWN

Year: (Nov. 1 to Oct. 31 in each case)	Average number of birds	Total eggs laid	Total market value of eggs	Average cost per dozen	Total cost feed at market prices	Net profit
			$ cts.	cts.	$ cts.	$ cts.
1927–28	32·8	5,567	147 02	17·5	81 21	65 81
1926–27	52·8	7,928	185 04	20·2	133 71	51 33
1925–26	73·8	12,337	267 74	16·4	168 48	99 26
1924–25	101·6	12,708	314 16	20·2	213 48	100 68
1923–24	81·0	14,518	365 89	13·8	166 44	199 42
1922–23	73·0	11,235	267 44	14·8	137 09	130 65
1921–22	44·3	6,510	180 09	19·0	105 18	74 91
1920–21	62·2	9,329	261 11	21·5	167 86	93 25
Average	65·2	10,017	248 56	17·6	164 68	101 91

From the two tables as given above we may summarize as follows:—

SUMMARY OF PRODUCTION AND COSTS, BARRED PLYMOUTH ROCKS AND S.C. WHITE LEGHORNS BRED AND RAISED AT THE EXPERIMENTAL STATION, CHARLOTTETOWN, FOR THE PERIOD NOVEMBER 1, 1920, TO OCTOBER 31, 1928

Breed	Average number birds kept	Average annual production per bird	Market value of eggs	Average cost per dozen	Average cost feed per bird	Average net profit per bird
			$ cts.	cts.	$ cts.	$ cts.
B. P. Rocks	54·7	140·1	3 55	22·3	2 85	0 70
S.C. White Leghorns	65·2	153·6	3 81	17·6	2 25	1 56

PRINCE EDWARD ISLAND EGG LAYING CONTEST.

The tenth annual Prince Edward Island Egg Laying Contest was completed on the evening of October 22, 1928. Previously these contests were conducted for a period of fifty-two weeks, but a recent ruling admits of their being completed in a fifty-one week period, thus allowing one week for cleaning and disinfecting the pens before the opening of the new contest on November 1, 1928.

Competition was keen throughout the contest, and especially for the position of "high hen" during the last several days. Hen No. 3 in Pen No. 5, a Barred Plymouth Rock owned by the Kensington Baby Chick Hatchery led the contest with 260.9 points (248 eggs). This hen held first place for some considerable time. Second place, however, was closely contested, and was won in the last few days by Hen No. 7 in Pen No. 7, a Barred Rock owned by the Model Poultry Yards, Charlottetown, with 255.5 points (244 eggs). Hen No. 5, Pen No. 11, a Barred Rock owned by Harold Laird, Kelvin, likewise slipped into the money in the last day or so of the contest, taking third place with 254.8 points (226 eggs). Fourth place was taken by Hen No. 3, Pen No. 2, a White Leghorn owned by Everett Howatt, with 254.4 points (232 eggs).

Points are awarded according to size of egg. An egg weighing 24 ounces to the dozen is taken as standard, and is awarded one point. For each ounce under 24 ounces per dozen there is a deduction of one-tenth of one point, that is, each egg running 23 ounces to the dozen gets a credit of 0.9, those running 22 ounces to the dozen 0.8, etc., the minimum points being for 20-ounce eggs. Similarly, eggs running over 24 ounces are given a bonus of 0.1 point per egg; those running 25 ounces receiving a credit of 1.1 point per egg, etc., up to 27 ounces, over 27 ounces receiving maximum credit. The problem of egg size has occupied for some time the minds of the poultry men, and the above system of scoring is an effort to give credit to the hen producing large eggs, and to discredit those birds producing small eggs. To qualify for registration a bird must produce 200 or more eggs during her contest year, averaging 24 or more ounces per dozen after the first four weeks of laying. It is noteworthy that out of 49 birds laying 200 or more eggs in the preceding contest, only 16 qualified for registration, while in the present contest 50 birds laid the required number of eggs, and 32 of these qualified. This would seem to indicate a marked improvement in so far as size of egg is concerned.

The following is a list of these 32 birds together with their production and the name and address of the owner of each:—

LIST OF BIRDS (WITH OWNERS) REGISTERING IN 1927—28 PRINCE EDWARD ISLAND EGG LAYING CONTEST

Name and address of owner	Breed	Pen number	Bird number	Total eggs	Total points	Average egg weight per dozen
						oz.
Mrs. J. F. Easton, New Wiltshire	S.C.W.L.	1	1	225	247·2	25·3
Mrs. J. F. Easton, New Wiltshire	S.C.W.L.	1	4	227	251·6	25·4
Everett Howatt, Carleton	S.C.W.L.	2	3	237	257·9	25·3
" "	S.C.W.L.	2	7	200	208·0	24·6
" "	S.C.W.L.	2	9	229	240·4	25·0
" "	S.C.W.L.	2	10	200	243·7	26·7
Experimental Station, Charlottetown	S.C.W.L.	3	4	223	232·5	24·9
" " "	S.C.W.L.	3	5	209	213·7	24·7
" " "	S.C.W.L.	3	8	201	211·6	24·4
" " "	S.C.W.L.	4	10	203	227·4	25·3
Kensington Baby Chick Hatchery, Kensington	B.P.R.	5	1	200	203·6	24·5
" " "	B.P.R.	5	3	248	260·9	25·0
Model Poultry Yards, Charlottetown	B.P.R.	7	1	212	245·6	25·7
" " "	B.P.R.	7	6	216	234·8	25·0
" " "	B.P.R.	7	7	244	255·5	24·8
Mrs. A. Hamilton, N. Perth	B.P.R.	8	6	202	230·8	25·7
Wilfred Fyfe, Stanley	B.P.R.	10	4	226	233·9	24·4
" "	B.P.R.	10	320	200	200·5	24·3
Harold Laird, Kelvin	B.P.R.	11	1	208	227·9	24·8
" "	B.P.R.	11	2	212	239·1	25·4
" "	B.P.R.	11	4	201	217·6	25·2
" "	B.P.R.	11	5	226	254·8	25·3
S. R. Pendleton, Kensington	B.P.R.	12	8	215	249·8	26·0
Chas. A. McKenna, Newton Cross	B.P.R.	14	5	206	205·5	24·0
A. L. Rogers, Kensington	B.P.R.	15	6	204	238·4	25·8
T. H. Foster, Marshfield	B.P.R.	17	6	228	228·9	24·1
" "	B.P.R.	17	10	217	236·4	25·7
Mrs. Milton Waye, St. Peters	B.P.R.	18	1	221	236·6	24·8
Ludlow Jenkins, Marshfield	B.P.R.	19	2	202	216·9	24·9
" "	B.P.R.	19	5	204	225·8	25·2
Model Poultry Yards, Charlottetown	B.P.R.	20	3	204	212·2	24·6
Model Poultry Yards, Charlottetown	B.P.R.	20	5	202	211·6	24·7

At the completion of the contest the following placings were made:—

Section I.—To the pen having the greatest number of birds qualifying for registration:—

1st, Everett Howatt (Pen 2) S.C.W.L. and Harold Laird (Pen 11) B.P.R., equal—4 birds each.

2nd, Model Poultry Yards (Pen 7) B.P.R., 3 birds.

Section II.—To the pen having the greatest number of points:—

1st, Everett Howatt, S.C.W.L. (Pen 2), 1,975 eggs, 2,070.2 points.
2nd, Model Poul. Yds. B.P.R. (Pen 7), 2,048 eggs, 2,047.4 points.
3rd, Harold Laird, B.P.R. (Pen 11), 1,893 eggs, 2,026.6 points.
4th, K.B.C. Hatchery, B.P.R. (Pen 5), 1,797 eggs, 1,877.1 points.

Section III.—To the hen having the greatest number of points:—

1st, Kensington Baby Chick Hatchery, Pen 5, Hen 3, 248 eggs, 260.9 points.
2nd, Model Poul. Yds., Pen 7, Hen 7, 244 eggs, 255.5 points.
3rd, Harold Laird, Pen 11, Hen 5, 226 eggs, 254.8 points.
4th, Everett Howatt, Pen 2, Hen 3, 232 eggs, 254.4 points.

Section IV.—To the pen giving the greatest revenue over cost of feed, for the year:

1st, Model Poultry Yards, Pen 7, B.P.R., $27.42.
2nd, Everett Howatt, Pen 2, W.L., $25.67.
3rd, Harold Laird, Pen 11, B.P.R., $23.35.

EGG PRODUCTION IN THE VARIOUS CONTESTS

Number of contest	Year	Number of birds entered	Annual average production per bird
First	1918-1919	200	.....
Second	1919-1920	220	118·8
Third	1920-1921	250	119·7
Fourth	1921-1922	200	125·8
Fifth	1922-1923	200	160·8
Sixth	1923-1924	200	170·8
Seventh	1924-1925	200	173·5
Eighth	1925-1926	200	169·8
Ninth	1926-1927	200	163·6
Tenth	1927-1928	200	163·8

APIARY

Weather conditions during the winter of 1927-28 were favourable for the bees at this Station. Bees were flying in every month of the winter season, and at no time were the entrances of the hives blocked with snow. Spring conditions were good, and the hives built up rapidly for the honey flow. Dandelions were first seen on May 15, and willow blossoms on April 20.

WINTERING

The bees came out in good condition in the spring, although short of stores. One colony died of starvation, and two others that were weak were united. All colonies were given two combs of honey to supplement their stores.

INCREASE

Twelve nuclei were started, this season, with imported queens. These were made up on June 25, with two frames of bees and brood, and by fall made good strong colonies.

HONEY FLOW

Spring and summer conditions were ideal for honey production, but, owing to the scant clover crop in this section, the yield fell below the average. A hive was placed on the scales on June 18, and weighed daily. From June 18 to 30 this hive had a net loss of 3 pounds; during the month of July the net gain was 52 pounds. The first honey flow extended from July 1 to July 12, during which period 30 pounds of honey were produced. From July 12 to 31, 20 pounds of honey were produced, the daily average for the month being 1.7 pounds. Another flow occurred from August 1 to 10. During this period 27 pounds of honey were produced, being a daily average of 2.7 pounds per day. The hive on the scales produced 110 pounds in all. Of this, 52 pounds were gathered in July, 45 pounds in August and 13 during the first eleven days of September. The average for the whole apiary was 53 pounds per colony. The honey gathered in August and September was largely from buckwheat, and in the autumn graded slightly darker than in other years.

QUEEN BREEDING

Twenty-one queens were raised at the Station this season, and all the over-wintered colonies were requeened. Home-raised queens gave better satisfaction than imported ones.

EXPERIMENTS

Experiments were carried on this year as to the best methods of detecting and controlling swarming. Brood and bees were taken from all of the hives for nuclei and mating boxes. Possibly this may have affected the experiments.

SWARM CONTROL BY DEQUEENING AND REQUEENING

Two colonies were used in this experiment. As soon as the colonies showed preparations for swarming by having larvae in queen cells, the queen was removed and all cells destroyed. Ten days later the cells were again destroyed and a young laying queen was introduced. In the colonies so treated no further signs of swarming were noticed. This practice is recommended providing young laying queens are available. These colonies gave 76 pounds of honey.

SWARM CONTROL BY SEPARATION OF QUEEN AND BROOD

Two colonies were used in this experiment. When colonies show signs of swarming, remove all combs containing brood from brood chamber and replace with drawn combs leaving the queen on these combs. Shake some bees off the combs down with the queen. The brood is placed over a queen excluder. These colonies showed no further signs of swarming, and produced 210 pounds of honey. One objection to this method is that a young queen might hatch up above the excluder and be released from the hive at the next examination.

METHOD OF DETECTING SWARMING

When the bees show signs of congestion in the spring, add a shallow super to the regular brood chamber, without a queen excluder. It has been found that if bees intend to swarm they will start building cells on the lower bars of the shallow super, and all that is necessary is to tip the top super for signs of swarming. The colonies used in this experiment did not show signs of swarming during the season and produced 91 pounds of honey. This method is generally successful when used.

SURPLUS QUEENS IN THE SPRING

In order to have young laying queens to replace those that are poor in spring, or to requeen colonies that are queenless, divide a ten-frame Langstroth hive with a tight fitting division board, place a queen in each side and pack in a wintering case in the usual way, allowing the bees an entrance to their own side. The entrance must be made so that bees will not drift to the wrong side. Should the queens not be required in the spring, the hive may be divided and allowed to build up for the honey flow.

KOOTENAY CASE.

This case is recommended for those who have only one or two colonies. It is a single, permanent packing case. The hive is packed in the case with planer shavings or other material, and is insulated from extremes in climatic changes during all seasons.

WINTERING IN FOUR-COLONY CASES.

Wintering outside in four-colony cases is recommended for this locality where the bees must have some protection for seven months of the year.

FEEDING.

Preparation for winter storage commenced on October 4, and was completed October 12. A mixture of two parts of sugar to one part of water was given in ten-pound honey pails. The eight-frame hives were given enough syrup to bring them up to 65 pounds, and ten-frame hives to 75 pounds, less covers. Twenty-eight colonies were packed in four-colony cases, and one in a Kootenay case.

GENERAL NOTES

The Charlottetown Exhibition was held during August in 1928. The Experimental Station exhibit attracted much attention and was seen by most of the 26,000 visitors who attended the exhibition. The exhibit shown at the Georgetown Fair was a demonstration of the effect of various fertilizers on the production of certified seed potatoes at the four Illustration Stations in Kings county and Southern Queens county. All the material used in preparing this exhibit was taken from the fertilizer plots at these stations. The demonstration was seen by most of the 2,000 people who attended the exhibition.

Many public meetings were attended and addresses given by the superintendent and his assistants. A visitor's day was successfully held at the Montague Illustration Station. It was followed, later in the season, by a field day attended by over 500 people. Other field days were well attended. About 1,800 sat down to lunch, on July 13, at the Potato Growers' picnic at the Charlottetown Experimental Station. The staff judged at many fairs and sent many agricultural articles to the press during the year.

ILLUSTRATION STATIONS

There are at present twelve Illustration Stations in Prince Edward Island situated at the following places: Palmer Road, Glenwood, West Devon, Richmond, New London, Rose Valley, Rustico, St. Peters, Red Point, Wood Islands, Montague and Iona. The work and demonstrations carried on at these various places is attracting the attention of the neighbouring farmers more from year to year.

The best cultural practices and reasonable rates of fertilizers are being used, such as might profitably be applied by any of the neighbouring farmers. The success of these stations depends upon the adoption of these practices by the several communities throughout the province.

On all farms a definite crop rotation is followed. In this way production is increased and the land generally improved. All cultural practices—ploughing, rolling, cultivating and hoeing—are performed as nearly as possible at the right time. This saves labour. The seed used is the best available, because poor seed often means poor crops. Commercial fertilizers are used on timothy and all hoed crops in limited quantities, as this practice has been found very profitable. The keeping of pure-bred live stock is fostered, as it is more profitable, and gives more distinction to farming. Flowers and shrubs are used to beautify the home surroundings where necessary.

Seasonal conditions for the past year have been such as to give heavier crops of roots and grain than in 1927. Clover, however, was so badly winterkilled that it was scarce, and the yield of potatoes per acre was also less than in 1927. This however, has been more than offset by the increased acreage in the province.

The following table gives the average yields and the cost of production per unit for 1928:—

AVERAGE YIELDS AND COST OF PRODUCTION IN 1928

Crop	Yield per acre	Cost per unit housed
		$ cts.
Potatoes	351·8 bushels	0 20 per bushel
Turnips	25·27 tons	2 33 per ton
Corn	14·92 tons	3 19 per ton
Sunflowers	21·06 tons	2 35 per ton
Oats	42·6 bushels	0 64 per bushel
Timothy	1·55 tons	11 74 per ton
Clover	1·40 tons	14 61 per ton

As in 1927 commercial fertilizer was applied to the timothy sod and to the hoed crops. The following table gives the average amount of fertilizer used and the increased yields due to its use.

FERTILIZER EXPERIMENT ON PRINCE EDWARD ISLAND ILLUSTRATION STATIONS IN 1928

Crop	Fertilizer used	Yield per acre*		
		With fertilizer	Without fertilizer	Increase due to fertilizer
		bush.	bush.	bush.
Potatoes	1,200 pounds of 4–8–8	360·0	238·5	121·5
		tons	tons	tons
Turnips	1,100 pounds of 4–8–4	26·04	16·84	9·20
Corn	900 pounds of 3–8–8	15·99	10·65	5·34
Timothy	125 pounds nitrate of soda	1·74	0·98	0·76

*Average yield of all the stations.

During the past year the operators in Prince Edward Island distributed for seed purposes: 608 bushels oats, 25 bushels of wheat, 31 bushels of barley, 488 pounds of timothy seed and 3,436 bushels of certified potatoes. One hundred and thirty dozens of eggs for hatching were also sold.

For the purpose of discussing the work carried on by the stations public meetings were held at the following places during the year: Glenwood, Palmer Road, West Devon, Richmond, New London, Rose Valley, Rustico, St. Peters, Baltic, Montague, Wood Islands and Iona. Field days were also held, during the growing season on the following stations: Palmer Road, West Devon, Richmond, Rose Valley, Rustico, St. Peters, Red Point, Montague, Wood Islands and Iona.

Exhibits for the purpose of further bringing the work of this division before the public were put on at the Provincial Exhibition at Charlottetown and the County Exhibition at Georgetown.

This brief summary has been prepared by R. C. Parent, M.S.A., Supervisor of the Illustration Stations for Prince Edward Island. For a complete report of the work on each station see Report on Eastern Illustration Stations for 1928, which, may be obtained free from the Publications Branch, Department of Agriculture, Ottawa.

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