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., D.Sc.

## FOR THE YEAR 1930

The dairy barn.

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# DOMINION EXPERIMENTAL STATION
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## REPORT OF THE SUPERINTENDENT, J. A. CLARK, M.S.A., D.Sc.

### THE SEASON

Autumn work was well completed before the "freeze-up" on November 29, 1929. There was a heavy snowfall during the months of December, 1929, January and February, 1930, totalling 119 inches. There was scarcely any frost in the ground and during the mild weather of early March this snow melted and soaked into the soil, forming a reserve supply of water that carried all vegetation successfully through the dry periods of April, June, and September. The season was ten days earlier than average, and seeding commenced May 3, and was completed under favourable conditions in May. June was hot and dry, maturing the grasses and clovers before they had attained normal growth. Haymaking was completed under very favourable conditions by the last day of July. There were beneficial showers in July, and the cereals maintained a splendid colour throughout the season, giving satisfactory yields of grain. They were harvested during the very favourable weather of August. The rainfall for the six summer months was $3\frac{3}{4}$ inches below average. The pastures dried out and required extra green feed for the stock. Corn, roots, and vegetables made wonderful growth and gave yields above average. November was very dry and autumn work was completed before the "freeze-up" on the 29th of the month. There was a heavy snowfall in December, and scarcely any frost in the ground.

### BUILDINGS

The new dairy barn erected during the season of 1929 was painted during the summer of 1930. This building has proven to be convenient and satisfactory.

A new dairy building 20 by 35 feet was erected to the south of and convenient to the new barn. This building is of frame structure erected on a concrete foundation, and contains a large wash room, boiler room, ice storage, and cool room for storing milk, cream, butter, etc.

At the Blake farm a combined garage and ice-house was erected to replace an old carriage house and shed formerly used for this purpose. The barn on this place, being in very poor state of repair, was torn down and removed. Part of the old masonry foundation supporting the Blake house was removed and replaced by a concrete wall. The cellar beneath this building has been wet and it is hoped that the erection of this wall, together with a certain amount of grading and fill work on the property, will tend to prevent the entrance of surface water in future.

### THE STATION AREA

No additional land was under cultivation during 1930. The original property, "Ravenwood," consisting of $29\frac{1}{2}$ acres, has grown by the addition of leased property and purchase of land until the total area now operated amounts to $334\frac{3}{4}$ acres.



22858—1½

| Month | Temperature (°F) | | | | | | Precipitation | | | | Sunshine | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | | Maximum | | Minimum | | Rain | Snow | Total precipitation | | 1930 | Average 20 years | Possible hours | Per cent possible |
| | 1930 | Average 22 years | Highest | Mean maximum | Lowest | Mean minimum | | | 1930 | Average 30 years | | | | |
| | | | | | | | in. | in. | in. | in. | hours | hours | hours | % |
| January | 17·742 | 17·485 | 47 | 27·968 | −17 | 7·516 | 1·59 | 33·75 | 4·96 | 3·78 | 90·0 | 92·36 | 280·1 | 32·97 |
| February | 18·803 | 16·647 | 46 | 28·607 | − 7 | 9·000 | 0·54 | 47·25 | 5·26 | 3·16 | 128·9 | 115·91 | 288·0 | 40·25 |
| March | 29·726 | 26·719 | 49 | 36,935 | 5 | 22·516 | 2·46 | 6·25 | 3·09 | 3·54 | 127·5 | 136·75 | 368·4 | 37·12 |
| April | 38·250 | 36·700 | 65 | 46·3 | 17 | 30·2 | 1·39 | 3·00 | 1·69 | 2·95 | 180·5 | 156·20 | 405·8 | 38·49 |
| May | 49·080 | 47·969 | 72 | 58·581 | 30 | 39·580 | 2·56 | ..... | 2·56 | 2·70 | 255·1 | 211·55 | 462·8 | 45·71 |
| June | 68·517 | 58·779 | 89 | 78·90 | 40 | 58·133 | 1·44 | ..... | 1·44 | 2·72 | 266·7 | 229·44 | 469·4 | 48·88 |
| July | 68·049 | 65·731 | 83 | 76·323 | 52 | 59·774 | 3·05 | ..... | 3·05 | 2·88 | 257·4 | 238·10 | 474·4 | 50·19 |
| August | 65·871 | 64·785 | 83 | 74·096 | 49 | 57·645 | 3·14 | ..... | 3·14 | 3·22 | 261·8 | 232·44 | 436·5 | 53·25 |
| September | 59·733 | 57·428 | 83 | 67·533 | 41 | 51·933 | 2·50 | ..... | 2·50 | 3·65 | 191·1 | 178·90 | 374·9 | 47·72 |
| October | 49·742 | 48,198 | 80 | 56·225 | 31 | 43·258 | 4·41 | ..... | 4·41 | 4·07 | 131·5 | 129·42 | 336·5 | 38·46 |
| November | 38·850 | 36·019 | 59 | 45·967 | 12 | 31·733 | 1·08 | 5·87 | 1·67 | 3·84 | 121·4 | 79·54 | 281·7 | 28·24 |
| December | 25·774 | 25·143 | 50 | 31·645 | 6 | 19·967 | 2·03 | 34·62 | 5·49 | 4·94 | 55·2 | 60·54 | 267·1 | 20·67 |
| Totals and averages | 44·309 | 41·800 | ..... | 52·423 | ..... | 35·938 | 26·19 | 130·74 | 39·26 | 41·45 | 2,067·1 | 1,861·15 | 4,445·6 | 46·50 |

METEOROLOGICAL DATA SHOWING LAST SPRING FROST, FIRST AUTUMN FROST, LENGTH OF GROWING SEASON, DATE OF "FREEZE-UP" AND WHEN TREES APPEARED GREEN IN PRINCE EDWARD ISLAND

| Year | Date last spring frost | Frost free period | Date first autumn frost | Date of "freeze up" | Date trees appeared green |
|---|---|---|---|---|---|
| 1906 | ..... | ..... | Oct. 17* | Dec. 2 | ..... |
| 1907 | May 15* | 135* | Sept. 29 | Nov. 30* | ..... |
| 1908 | " 22* | 136* | Oct. 6 | Dec. 3* | ..... |
| 1909 | " 21* | 148* | " 23* | " 11 | ..... |
| 1910 | April 30 | 160 | Oct. 4 | Dec. 6 | ..... |
| 1911 | May 17 | 142 | " 7 | Nov. 27 | ..... |
| 1912 | " 23 | 131 | " 2 | Dec. 2 | ..... |
| 1913 | " 17 | 166 | " 31 | " 13 | May 27 |
| 1914 | " 17 | 142 | " 7 | " 6 | " 28 |
| 1915 | " 18 | 136 | " 2 | " 16 | " 27 |
| 1916 | " 22 | 141 | " 11 | " 11 | " 25 |
| 1917 | " 23 | 137 | " 8 | Nov. 28 | June 6 |
| 1918 | " 12 | 142 | " 2 | " 26 | May 18 |
| 1919 | " 16 | 144 | " 8 | " 26 | " 22 |
| 1920 | " 15 | 158 | " 21 | " 24 | " 23 |
| 1921 | " 11 | 158 | " 17 | " 23 | " 18 |
| 1922 | " 16 | 150 | " 14 | Dec. 4 | " 28 |
| 1923 | " 4 | 176 | " 28 | " 7 | June 3 |
| 1924 | " 22 | 151 | " 21 | " 11 | May 24 |
| 1925 | " 24 | 140 | " 12 | Nov. 24 | " 21 |
| 1926 | " 6 | 166 | " 20 | Dec. 3 | June 3 |
| 1927 | " 5 | 175 | " 28 | " 2 | " 1 |
| 1928 | " 16 | 151 | " 15 | Nov. 27 | May 28 |
| 1929 | " 20 | 143 | " 11 | " 29 | " 31 |
| 1930 | " 14 | 159 | " 21 | " 29 | " 18 |
| Averages | May 16 | 149 | Oct. 13 | Dec. 3 | May 26 |

*Record taken at Bay View, Prince Edward Island. All other records taken at the Experimental Station, Charlottetown. Thirty-two degrees F. recorded as frost occurring. "Freeze-up" recorded the stopping of the plough by frost or snow. This usually meant the first temperature below 20 degrees Fahrenheit.

## ANIMAL HUSBANDRY

### DAIRY HERD

The Station herd of Ayrshires at the close of the year 1930 numbered 46 animals headed by the bull Ottawa Supreme 14th, 94146, A.R. No. 76, Class A.A.; the junior sire being Ottawa Supreme 42nd, 113118, A.R. No. 448-Class A.

#### DAIRY HERD RECORDS OF PRODUCTION

In the following table a detailed record is given of all cows completing a lactation period during the year 1930. In preparing this material the following fixed charges were employed:—

| | |
|---|---|
| Pasture, per month, per head | $ 1 50 |
| Meal, per ton | 36 00 |
| Hay, per ton | 11 00 |
| Roots and ensilage, per ton | 2 00 |
| Green feed, per ton | 4 00 |

In calculating the return value of products, 40 cents per pound has been allowed for butter and 50 cents per cwt. for new skim-milk. Butter production has been figured on a basis of 85 per cent fat content, and skim-milk on the basis of cream containing 30 per cent fat.

Labour charges are omitted as it is considered that these are offset by the value of the calves dropped and the manure produced.

| Name and number | 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% fat | Value butter at 40 cents per pound | Value skim-milk at 50 cents per cwt. | Total value of product | Amount meal at $1.80 per cwt. | Roots and ensilage at $2.00 per ton | Amount hay at $11 per ton | 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 to produce 1 pound butter skim-milk neglected | Profit on one pound butter | Profit on cow, labour and calf neglected |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | lb. | lb. | % | lb. | $ | $ | $ | lb. | lb. | lb. | lb. | mos. | $ | $ | cts. | cts. | $ |
| Fairvue Clarice—85792 | 9/2/29 | 367 | 12,438 | 33·9 | 4·91 | 718 | 287 20 | 52 02 | 339 22 | 4,123 | 10,425 | 2,401 | 1,155 | 4⅓ | 106 65 | 0 86 | 14·9 | 25·1 | 232 57 |
| Ravenwood Helen—83094 | 1/6/29 | 318 | 10,221 | 32·1 | 4·16 | 500 | 200 00 | 44 02 | 244 02 | 3,204 | 8,115 | 2,156 | 1,155 | 4⅓ | 86 96 | 0 85 | 17·4 | 22·6 | 157 06 |
| Ravenwood Marion—89489 | 18/5/29 | 378 | 10,995 | 29·1 | 3·93 | 509 | 203 60 | 47 77 | 251 37 | 3,822 | 9,480 | 2,864 | 1,155 | 4⅓ | 102 84 | 0 94 | 20·2 | 19·8 | 148 53 |
| Ravenwood Jess—89724 | 20/12/28 | 399 | 11,071 | 27·7 | 3·99 | 520 | 208 00 | 47 98 | 255 98 | 4,359 | 11,110 | 2,525 | 1,155 | 4⅓ | 112 27 | 1 01 | 21·6 | 18·4 | 143 71 |
| Ravenwood Buttercup—77482 | 2/6/29 | 318 | 8,707 | 27·4 | 3·96 | 406 | 162 40 | 37 79 | 200 19 | 3,174 | 8,155 | 2,156 | 1,155 | 4½ | 86 21 | 0 99 | 21·2 | 18·8 | 113 98 |
| Ravenwood Belle—85970 | 4/5/29 | 361 | 8,121 | 22·5 | 4·54 | 434 | 173 60 | 34 46 | 208 06 | 3,610 | 9,230 | 2,660 | 1,155 | 4½ | 97 65 | 1 20 | 22·5 | 17·5 | 110 41 |
| Charlottetown Queen—98434 | 1/5/29 | 334 | 8,384 | 25·1 | 3·77 | 371 | 148 40 | 36 66 | 185 06 | 3,466 | 8,355 | 2,324 | 1,155 | 4½ | 92 33 | 1 10 | 24·9 | 15·1 | 92 73 |
| Charlottetown Sup. Snow—106423 | 13/6/29 | 406 | 6,825 | 16·8 | 4·92 | 395 | 158 00 | 28 53 | 186 53 | 3,903 | 8,780 | 2,338 | 1,155 | 5⅓ | 102 25 | 1 50 | 25·9 | 14·1 | 84 33 |
| Ravenwood Nora—89286 | 4/5/29 | 331 | 7,368 | 22·3 | 4·18 | 362 | 144 80 | 31 70 | 176 50 | 3,552 | 8,330 | 2,300 | 1,155 | 4⅓ | 93 73 | 1 27 | 25·9 | 14·1 | 82 77 |
| Charlottetown Lady Love—101045 | 30/12/29 | 306 | 5,561 | 18·2 | 4·23 | 277 | 110 80 | 23 89 | 134 69 | 2,835 | 6,140 | 1,872 | 435 | 5 | 75 84 | 1 36 | 27·4 | 12·6 | 58 85 |
| Ravenwood Snow—91548 | 13/6/29 | 291 | 6,099 | 21·0 | 3·79 | 272 | 108 80 | 26 64 | 135 44 | 3,032 | 7,515 | 1,914 | 1,155 | 4⅓ | 81 43 | 1 34 | 29·9 | 10·1 | 54 01 |
| Total for all cows | ..... | 3,809 | 95,790 | ..... | ..... | 4,764 | 1,950 60 | 411 46 | 2,317 06 | 39,080 | 95,635 | 25,510 | 11,985 | 53⅓ | 1,038 11 | .... | ..... | ..... | 1,278 95 |
| Average for all cows | ..... | 346 | 8,708 | 25·1 | 4·23 | 433 | 177 33 | 37 41 | 210 64 | 3,553 | 8,694 | 2,328 | 1,090 | 4⅘ | 94 37 | 1 08 | 21·8 | 18·2 | 116 27 |
| Total 5 best cows | ..... | 1,780 | 53,432 | ..... | ..... | 2,653 | 1,061 20 | 229 58 | 1,290 78 | 18,682 | 47,285 | 12,102 | 5,775 | 22⅔ | 494 93 | ..... | ..... | ..... | 795 85 |
| Average 5 best cows | ..... | 356 | 10,686 | 30·0 | 4·22 | 531 | 212 24 | 45 92 | 258 16 | 3,736 | 9,457 | 2,420 | 1,155 | 4½ | 98 99 | 0 93 | 18·6 | 21·4 | 159 17 |

OFFICIAL RECORD OF PERFORMANCE, AYRSHIRE COWS, CHARLOTTETOWN EXPERIMENTAL STATION, JANUARY 1, 1930, TO DECEMBER 31, 1930

| Name and number of cow | Age at start of test | | Number days in test | Pounds of milk | Pounds of fat | Per cent fat | Official record number |
|---|---|---|---|---|---|---|---|
| | yrs. | days | | lb. | lb. | % | |
| Fairvue Clarice, 85792 | 6 | 23 | 365 | 12,433 | 610 | 4·91 | 4191 |
| Charlottetown Queen, 98434 | 3 | 179 | 305 | 8,257 | 311 | 3·77 | 3349A |
| Ravenwood Helen, 83094 | 6 | 127 | 318 | 10,221 | 425 | 4·16 | 4190 |
| Ravenwood Marion, 89489 | 5 | ..... | 365 | 10,958 | 431 | 3·93 | 4293 |
| Ravenwood Jess, 89724 | 4 | 228 | 365 | 10,791 | 430 | 3·98 | 4305 |

### COST OF REARING AYRSHIRE HEIFER CALVES AT THE CHARLOTTETOWN EXPERIMENTAL STATION

Over several years figures have been collected covering the cost of rearing heifers to milking age. The calves were started for a short period on whole milk, which was later changed to skim-milk. Hay, roots, meal, silage, pasture and green feed, chiefly green oats, figured in the ration as the animals grew older. The following table briefly summarizes the result of this work. Labour and overhead charges are neglected, as is also the manure produced:—

COST OF REARING AYRSHIRE HEIFER CALVES

| Age From birth to | Number of individuals | Total cost | Average cost per individual |
|---|---|---|---|
| | | $ | $ |
| 6 months | 16 | 418 55 | 26 22 |
| 12 " | 16 | 797 15 | 49 82 |
| 18 " | 16 | 1,148 83 | 71 80 |
| 24 " | 16 | 1,494 03 | 93 38 |
| 30 " | 12 | 1,418 71 | 118 23 |
| Date of freshening | 16 | 2,033 42 | 127 09 |

*The average age at freshening was 1,004 days or about 2 years and 9 months.

## BEEF CATTLE

### STEER FEEDING EXPERIMENTS

Twenty-four steers were purchased October 16, 1929, dehorned and fed for two weeks before going on comparative feed test on November 1. The work undertaken was the same as that of the previous year, namely a comparison of swede turnips and cull potatoes as a feed for short-keep steers.

The lot was divided into six groups of four steers, each group being fed loose in a roomy box stall. The average live-weight cost of the steers when weighed into the pens on November 1, was $7.60 per cwt.

The meal mixture fed was composed of.

| | Pounds |
|---|---|
| Mixed grain, crushed | 500 |
| Oil cake meal | 150 |
| Bran | 100 |

At the start of the experiment this was fed at the rate of 26 pounds per day per pen of four animals, and this amount was increased by one pound per week until the close of the feeding test.

Good quality mixed hay was fed uniformly throughout the feeding period at 40 pounds per pen per day, that is, 10 pounds per animal per day.

The feeding of roots varied between pens, and is outlined as follows:—

*Pen I* received swede turnips at the rate of 160 pounds per pen per day, which was decreased by 4 pounds per week until the close of the experiment on March 1, 1930, when they were receiving 92 pounds per pen.

*Pen II* received swedes at the rate of 60 pounds per pen per day throughout the entire feeding period.

*Pen III* was started at 80 pounds per pen per day, and decreased 2 pounds per pen per week, receiving at the close of the test 46 pounds per pen per day.

*Pen IV* was fed 100 pounds of cull potatoes per pen per day for the duration of the test.

*Pen V* received 60 pounds cull potatoes during the entire test.

*Pen VI* was used as a check lot and received neither swedes nor potatoes.

As intimated previously, the hay and grain ration was the same for all pens.

The following table shows the amount and value of the feeds consumed:—

STEER FEEDING EXPERIMENT—AMOUNT AND VALUE OF FEED

| Item | Pen number | | | | | | | | | | | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | I | | II | | III | | IV | | V | | VI | | Amount | Value |
| | tons | $ | tons | $ | tons | $ | tons | $ | tons | $ | tons | $ | tons | $ |
| Swede turnips at $2 per ton | 7·988 | 15 98 | 3·78 | 7 56 | 3·969 | 7 94 | ..... | ..... | ..... | ..... | ..... | ..... | 15·737 | 31 47 |
| Potatoes at $5 per ton | ..... | ..... | ..... | ..... | ..... | ..... | 6·3 | 31 50 | 3·78 | 18 90 | ..... | ..... | 10·08 | 50 40 |
| Mixed hay at $11 per ton | 2·02 | 22 22 | 2·02 | 22 22 | 2·02 | 22 22 | 2·02 | 22 22 | 2·02 | 22 22 | 2·02 | 22 22 | 12·12 | 133 32 |
| Meal mixture at $44 per ton | 2·174 | 95 66 | 2·174 | 95 65 | 2·174 | 95 66 | 2·174 | 95 65 | 2·174 | 95 66 | 2·174 | 95 65 | 13·044 | 573 94 |
| Total cost per pen | ..... | 133 86 | ..... | 125 43 | ..... | 125 82 | ..... | 149 37 | ..... | 136 78 | ..... | 117 87 | ..... | 789 13 |
| Average cost per steer | ..... | 33 47 | ..... | 31 36 | ..... | 31 45 | ..... | 37 34 | ..... | 34 19 | ..... | 29 47 | ..... | 32 88 |

STEER FEEDING EXPERIMENT—COMPARISON OF DIFFERENT PENS

| Item | | Pen No. I | Pen No. II | Pen No. III | Pen No. IV | Pen No. V | Pen No. VI | Pen totals and averages |
|---|---|---|---|---|---|---|---|---|
| Number of steers in lot | | 4 | 4 | 4 | 4 | 4 | 4 | 24 |
| Initial gross weight per pen | lb. | 3,200 | 3,190 | 3,190 | 3,190 | 3,190 | 3,190 | 19,150 |
| Initial average weight | lb. | 800 | 797·5 | 797·5 | 797·5 | 797·5 | 797·5 | 797·9 |
| Finished weight per pen | lb. | 4,160 | 4,380 | 4,100 | 4,330 | 4,370 | 4,260 | 25,600 |
| Average finished weight per steer | lb. | 1,040 | 1,095 | 1,025 | 1,082·5 | 1,092·5 | 1,065 | 1,067 |
| Total gain in 126 days | lb. | 960 | 1,190 | 910 | 1,140 | 1,180 | 1,070 | 6,450 |
| Average gain per steer | lb. | 240 | 297·5 | 227·5 | 285 | 295 | 267·5 | 268·75 |
| Daily gain per pen | lb. | 7·62 | 9·44 | 7·22 | 9·04 | 9·36 | 8·49 | 51·19 |
| Daily gain per steer | lb. | 1·90 | 2·36 | 1·80 | 2·26 | 2·34 | 2·12 | 2·13 |
| Value at beginning of test | $ | 243 20 | 242 44 | 242 44 | 242 44 | 242 44 | 242 44 | 1,455 40 |
| Average value per steer at start | $ | 60 80 | 60 61 | 60 61 | 60 61 | 60 61 | 60 61 | 60 64 |
| Gross cost feed per pen | $ | 133 75 | 125 43 | 125 82 | 149 37 | 136 78 | 117 87 | 789 02 |
| Average cost feed per steer | $ | 33 44 | 31 36 | 31 45 | 37 34 | 34 19 | 29 47 | 32 88 |
| Total cost—purchase price and cost feed | $ | 376 95 | 367 87 | 368 26 | 391 81 | 379 22 | 360 31 | 2,244 42 |
| Cost of one pound gain | cts. | 13·9 | 10·5 | 13·8 | 13·1 | 11·6 | 11·0 | 12·2 |
| Average increase in value per steer | $ | 44 83 | 49 58 | 40 63 | 57 07 | 43 63 | 36 62 | 45 39 |
| Sale price per pen | $ | 422 52 | 440 77 | 404 95 | 470 72 | 416 95 | 388 90 | 2,544 81 |
| Sale price per steer | $ | 105 63 | 110 19 | 101 24 | 117 68 | 104 24 | 97 23 | 106 03 |
| Profit per pen | $ | 45 57 | 72 90 | 36 69 | 78 91 | 37 73 | 28 59 | 300 59 |
| Profit per steer | $ | 11 39 | 18 22 | 9 17 | 19 73 | 9 43 | 7 15 | 12 52 |

TABLE OF WEIGHTS AND GAINS—STEER FEEDING EXPERIMENT

| Pen No. | Steer No. | Weight Nov. 1, 1929 | Weight Mar. 1, 1930 | Gain | Value at start | Cost of feed | Total cost | Sale price | Profit or (—) loss |
|---|---|---|---|---|---|---|---|---|---|
| | | lb. | lb. | lb. | $ | $ | $ | $ | $ |
| I..... | 52749 | 900 | 1,170 | 270 | 68 40 | 33 44 | 101 84 | 119 92 | 18 08 |
| | 64652 | 710 | 830 | 120 | 53 96 | 33 44 | 87 40 | 83 00 | —4 40 |
| | 64621 | 780 | 1,040 | 260 | 59 28 | 33 44 | 92 72 | 93 60 | 0 88 |
| | 52806 | 810 | 1,120 | 310 | 61 56 | 33 43 | 94 99 | 126 00 | 31 01 |
| | Total..... | 3,200 | 4,160 | 960 | 243 20 | 133 75 | 376 95 | 422 52 | 45 57 |
| | Average.. | 800 | 1,040 | 240 | 60 80 | 33 44 | 94 24 | 105 63 | 11 39 |
| II..... | 1 | 560 | 830 | 270 | 42 56 | 31 36 | 73 92 | 83 00 | 9 08 |
| | 62907 | 810 | 1,110 | 300 | 61 56 | 31 36 | 92 92 | 105 45 | 12 53 |
| | 52083 | 780 | 1,110 | 330 | 59 28 | 31 36 | 90 64 | 119 32 | 28 68 |
| | 53058 | 1,040 | 1,330 | 290 | 79 04 | 31 35 | 110 39 | 133 00 | 22 61 |
| | Total..... | 3,190 | 4,380 | 1,190 | 242 44 | 125 43 | 367 87 | 440 77 | 72 90 |
| | Average.. | 797·5 | 1,095 | 297·5 | 60 61 | 31 36 | 91 97 | 110 19 | 18 22 |
| III..... | 52208 | 760 | 1,000 | 240 | 57 76 | 31 45 | 89 21 | 95 00 | 5 79 |
| | 52206 | 800 | 1,030 | 230 | 60 80 | 31 45 | 92 25 | 113 30 | 21 05 |
| | 52377 | 870 | 1,120 | 250 | 66 12 | 31 46 | 97 58 | 106 40 | 8 82 |
| | 52751 | 760 | 950 | 190 | 57 76 | 31 46 | 89 22 | 90 25 | 1 03 |
| | Total..... | 3,190 | 4,100 | 910 | 242 44 | 125 82 | 368 26 | 404 95 | 36 69 |
| | Average.. | 797·5 | 1,025 | 227·5 | 60 61 | 31 45 | 92 07 | 101 24 | 9 17 |
| IV..... | 52376 | 860 | 1,150 | 290 | 65 36 | 37 34 | 102 70 | 123 62 | 20 92 |
| | 62906 | 760 | 1,080 | 320 | 57 76 | 37 34 | 95 10 | 118 80 | 23 70 |
| | 64620 | 720 | 1,020 | 300 | 54 72 | 37 34 | 92 06 | 112 20 | 20 14 |
| | 52744 | 850 | 1,080 | 230 | 64 60 | 37 35 | 101 95 | 116 10 | 14 15 |
| | Total..... | 3,190 | 4,330 | 1,140 | 242 44 | 149 37 | 391 81 | 470 72 | 78 91 |
| | Average.. | 797·5 | 1,082·5 | 285 | 60 61 | 37 34 | 97 95 | 117 68 | 19 73 |
| V..... | 52081 | 970 | 1,260 | 290 | 73 72 | 34 19 | 107 91 | 126 00 | 18 09 |
| | 52163 | 780 | 1,170 | 390 | 59 28 | 34 19 | 93 47 | 111 15 | 17 68 |
| | 2 | 720 | 1,040 | 320 | 54 72 | 34 20 | 88 92 | 98 80 | 9 88 |
| | 52164 | 720 | 900 | 180 | 54 72 | 34 20 | 88 92 | 81 00 | —7 92 |
| | Total..... | 3,190 | 4,370 | 1,180 | 242 44 | 136 78 | 379 22 | 416 95 | 37 73 |
| | Average.. | 797·5 | 1,092·5 | 295 | 60 61 | 34 19 | 94 80 | 104 24 | 9 43 |
| VI..... | 3 | 710 | 1,030 | 320 | 53 96 | 29 47 | 83 43 | 95 27 | 11 84 |
| | 52080 | 770 | 1,040 | 270 | 58 52 | 29 47 | 87 99 | 93 60 | 5 61 |
| | 28237 | 870 | 1,170 | 300 | 66 12 | 29 47 | 95 59 | 108 23 | 12 64 |
| | 53005 | 840 | 1,020 | 180 | 63 84 | 29 46 | 93 30 | 91 80 | —1 50 |
| | Total..... | 3,190 | 4,260 | 1,070 | 242 44 | 117 87 | 360 31 | 388 90 | 28 59 |
| | Average.. | 797·5 | 1,065 | 267·5 | 60 61 | 29 47 | 90 08 | 97 23 | 7 15 |
| | Gr. Total | 19,150 | 25,600 | 6,450 | 1,455 40 | 789 02 | 2,244 22 | 2,544 81 | 300 59 |
| | Average.. | 797·9 | 1,067 | 268·75 | 60 64 | 32 88 | 93 51 | 106 03 | 12 52 |

DEDUCTIONS—1930 TEST

Relative to the above experiment it may be said that the various methods of feeding have all been under test for a period of four years, with the exception of Treatment No. V, that is, steers receiving 60 pounds of cull potatoes per day throughout the entire experiment.

During this period, from a standpoint of average gain in weight, the pen receiving 100 pounds of cull potatoes per day has taken the lead. This applies even more strongly in the matter of profit, using the cost prices for feed given

in the various reports of this station for the years mentioned. The lot fed turnips at 160 pounds per day, this amount being reduced by 4 pounds per week, made the second greatest gains in weight, as well as the second greatest profit.

The lots receiving 60 pounds turnips per day continuously, and 80 pounds at the start, reduced by 2 pounds per week made just about the same profit, as well as gain in weight. The profit as well as gain in weight was not quite so great as the two previously mentioned treatments. It is possible, therefore, that these amounts of roots are not sufficiently heavy for the greatest gains.

In all cases profit as well as gain in weight was greater where roots or potatoes were given than where these were not fed.

A comparison of the feeding of 60 pounds of swedes versus 60 pounds of cull potatoes continuously during the feed period has been attempted for the past two years only. With amounts as low as 15 pounds roots or potatoes per day, very satisfactory gains over the check were made, turnips leading in both profit and gain in weight for the two years.

We feel safe in concluding that the practice of feeding roots or cull potatoes to short-keep steers is economically sound and to be recommended.

## SUMMARY STEER-FEEDING WORK, 1927-30

Having conducted part of this same feeding test over a period of four years, it is interesting to summarize the data in an effort to determine the return value per ton or per bushel for the potatoes and swede turnips used as feed. The following table gives the fixed charges used in this work:—

STEER FEEDING EXPERIMENT—FIXED CHARGES

| Year | Cost per cwt. of steers at start of test | Cost hay per ton | Cost meal per ton |
|---|---|---|---|
| | $ | $ | $ |
| 1927 | 6 16 | 11 00 | 40 40 |
| 1928 | 6 54½ | 12 00 | 47 40 |
| 1929 | 7 25 | 12 00 | 43 20 |
| 1930 | 7 60 | 11 00 | 44 00 |

The check pen each year received a basal ration composed of mixed hay and a meal mixture. All other pens were fed exactly the same as the check pen, but in addition received the quantities of turnips or potatoes mentioned. It is assumed, therefore, that any increase over the check pen in sale value may be credited to the supplementary feed given.

SUMMARY STEER FEEDING WORK, CHARLOTTETOWN, PRINCE EDWARD ISLAND

| Basal ration plus:— | Number of steers fed | Initial value of steers | Cost of basal ration | Total cost | Sale value | Increased sale value over checks due to roots | Total quantity turnips or potatoes fed | Return value for roots per | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | ton | bush. |
| | | $ | $ | $ | $ | $ | tons | $ | cts. |
| 160 pounds turnips per pen per day, decreased by 4 pounds per week | 16 | 919 81 | 421 67 | 1,341 48 | 1,722 52 | 209 42 | 28·05 | 7 47 | 18·68 |
| 60 pounds turnips per pen per day, throughout feed period | 16 | 916 14 | 421 67 | 1,337 81 | 1,677 09 | 163 99 | 12·87 | 12 74 | 31·85 |
| 80 pounds turnips per pen per day, decreased by 2 pounds per week | 16 | 918 66 | 421 67 | 1,340 33 | 1,685 68 | 172 58 | 14·00 | 12 33 | 30·83 |
| 100 pounds potatoes per pen per day, throughout feeding period | 16 | 915 30 | 421 67 | 1,336 97 | 1,839 84 | 326 74 | 21·45 | 15 23 | 45·69 |
| Check pen—no supplementary feed | 16 | 918 94 | 421 67 | 1,340 61 | 1,513 10 | ..... | ..... | ..... | ..... |

The outstanding result in the foregoing is the large return value per bushel that is realized for turnips and potatoes so fed. At the lower rates of feeding, approximately equivalent amounts of turnips realized about the same return value per bushel although different feeding practices were followed. The lower rates of feeding apparently are much more economical if judged by return value per bushel of roots fed. Potatoes of the quality fed, that is, cull stock of little or no market value, gave excellent returns per bushel for the amount fed. One might even advocate the feeding of the entire crop to steers, in seasons of low prices, and this with the expectation of fair monetary return per bushel.

Based on the above results we can safely recommend the feeding of turnips or cull potatoes to short-keep steers.

## HORSES

The horses at the Station on December 31, 1930, were three pure-bred Clydesdale mares, four draught geldings, four draught mares and a pure-bred Clydesdale filly born May 5, 1930. During the year two draught mares were purchased, making a total of 12 horses.

### HORSE LABOUR

The following amount of horse labour was performed during the year:—

| | Hours |
|---|---|
| Farm work | 9,998 |
| Horticultural | 581 |
| Roads | 471 |
| Hauling manure | 2,553 |
| Miscellaneous | 4,436 |
| | 18,039 |

The three-year-old filly was used only 536 hours at light work, so that the average labour per horse, including the mare that raised the foal, was 1,750 hours. The Wallis tractor did most of the heavy work during the rush seasons, hauling a three-bottom plough or heavy harrows for a total of 328 hours. The tractor ploughed 100 acres and harrowed 464 acres at a cost of $1.18 per acre ploughed, and from 42 to 49 cents per acre for harrowing or disking.

The following quantities of feed were consumed by the ten work horses during the year:—

| | |
|---|---|
| Hay, 33 tons, 843 pounds at $11 | $ 367 64 |
| Grain, 1,295 bushels at 55 cents | 712 25 |
| Bran, 5 tons 600 pounds at $30 | 159 00 |
| | $1,238 89 |

Using the same cost figures, the feed for the young mare cost $96.51 and for the foal $24.51, a total of $1,359.91.

## SWINE

The herd of pure-bred Yorkshire swine at the Charlottetown Experimental Station consisted of six breeding sows and young stock and was increased by a promising young boar from the Ste. Anne de la Pocatière Experimental Station in Quebec, Ste. Anne Alexander 51-145551. One old sow was sold for pork and replaced by her own daughter. The total swine herd numbered 35 on December 31, 1930. Five of these were young sows sold for delivery in January, 1931. Two males were sold to Agricultural Societies on the Magdalen Islands, and two other sows were sold for breeding purposes.

22858—2½

FARROWING RECORDS

| Sow number | Sire of litter | Farrowing date | Number of pigs in litter | Number reared |
|---|---|---|---|---|
| 6420 | Tyrone Hall Masterpiece 20 | Feb. 4 | 15 | 0 |
| 56 | " " | June 9 | 8 | 6 |
| 55 | Falconwood 192 | " 10 | 12 | 8 |
| 57 | Falconwood 214 | " 10 | 9 | 9 |
| 6420 | Tyrone Hall Masterpiece 20 | July 4 | 7 | 2 |
| 16 | Tyrone Hall Masterpiece 20 | " 13 | 17 | 12 |
| 17 | Tyrone Hall Masterpiece 20 | Oct. 20 | 13 | 13 |
| | | | 81 | 50 |

## COST OF REARING LITTERS

Average amount feed consumed by sows from breeding date to date of farrowing:—

| | |
|---|---|
| Crushed oats, 235 pounds at $32.35 per ton | $3 80 |
| Bran, 235 pounds at $30 per ton | 3 53 |
| Oilcake meal, 35 pounds at $50 per ton | 0 88 |
| Roots, 1,435 pounds at $2 per ton | 1 44 |
| Total | $9 65 |

AVERAGE FEED FED SOW AND LITTER FROM BIRTH TO WEANING

| | |
|---|---|
| Crushed oats, 335 pounds at $32.35 per ton | $ 5 42 |
| Bran, 190 pounds at $30 per ton | 2 85 |
| Middlings, 180 pounds at $32 per ton | 2 88 |
| Schumacher, 240 pounds at $39 per ton | 4 68 |
| Oil cake meal, 71 pounds at $50 per ton | 1 78 |
| Milk, 1,419 pounds at $5 per ton | 3 55 |
| Total | $21 16 |

STATEMENT OF COSTS (To 8 WEEKS OLD)

| | |
|---|---|
| Boar service | $ 2 00 |
| Feed to birth | 9 65 |
| Feed, birth to weaning | 21 16 |
| Total cost to weaning | $32 81 |
| Average cost per pig to weaning (9·6 pigs per litter) | 3 42 |

## ADVANCED REGISTRATION OF SWINE

Three sows were entered in Advanced Registry for swine in co-operation with the Dominion Live Stock Branch. Five pigs from each litter were nominated, four to be selected for slaughter test, and fed as individual groups. The sows and litters were tattooed X.G., X.H., and X.I.

The following table indicates the performance of the four pigs from the litter X.G. from a live grading basis at the abattoir:—

PERFORMANCE OF PIGS

| Sow | Fasted weight | Grading | Age birth to slaughtered |
|---|---|---|---|
| Charlottetown Girl 26—139543—Tag 57 X.G. | 205 | Select..... | 192 |
| | 215 | Select..... | 192 |
| | 200 | Select..... | 185 |
| | 230 | Butchers.... | 185 |

The rating for this sow from the Advanced Registry has not been received to date. The other two entries are very promising.

## FIELD HUSBANDRY

### THE SEASON

A fall of over seven inches of snow on November 29, 1929, stopped the plough with all autumn work well completed. This blanket of snow was increased by heavy snowfalls in December, January and February. The total snowfall for the winter was 144½ inches. Most of this soaked into the unfrozen ground during early March and April, building up a reserve that tided vegetation over the dry periods of April and June. The season opened ten days earlier than average.

The rotations, A. B. C. and G. were seeded May 3. The grasses and clovers matured before reaching normal growth, as June temperatures were 10 degrees above a mean average of 22 years, and the rainfall during the month was less than 1½ inches. The grain germinated quickly and retained a good colour owing to beneficial showers in July. Haymaking and harvesting weather were very favourable, and these crops were saved in first class condition. Potatoes were very free from disease, and though the total crop was below average, the marketable crop was above average in quality and in quantity shipped from the province. The summer rainfall was 3¾ inches below average, and the pastures were poor and very dry. Corn, vegetables and roots were above average, and autumn work was completed before the "freeze-up" on November 29.

### CROP ROTATIONS

The several demonstration rotations at the Station have served for a number of years as a source of data relative to the cost of production of various crops. The time required for the various operations in producing the different crops is noted, and this is charged at a specified rate. Seed, twine, etc., as well as a charge for machinery, and a charge for rental which covers taxes, etc., are also entered against the crop in determining the unit cost. The following tables show the cost charges as well as the return values employed for the season of 1930:—

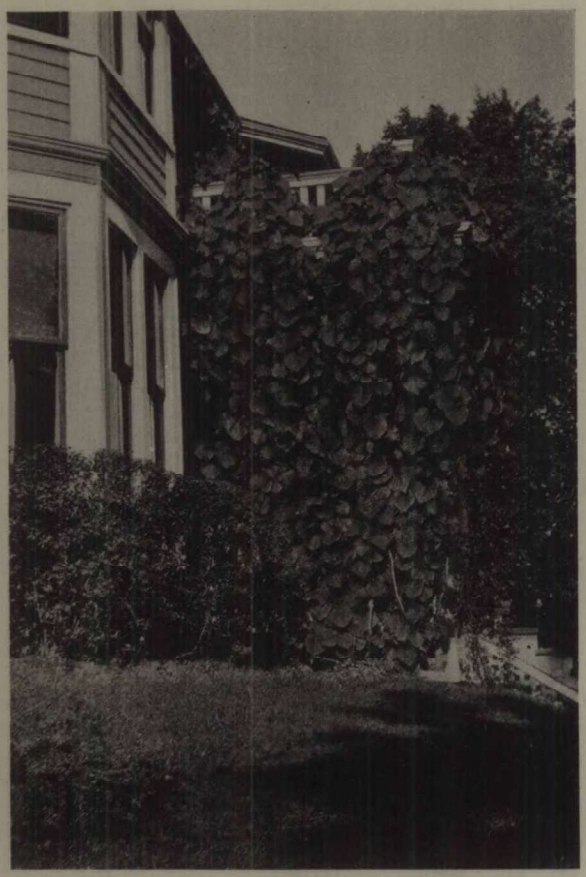
COSTS

| | |
|---|---|
| Rent of land | $3 00 |
| Manure, per ton (spread) | 1 50 |
| Use of machinery, per acre | 2 85 |
| Seed oats, per bushel | 1 00 |
| Seed barley, per bushel | 1 50 |
| Seed wheat, per bushel | 2 50 |
| Manual labour, per hour | 0 30 |
| Horse labour, per hour | 0 10 |
| Tractor labour (including operator) per hour | 0 88 |
| 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 40 |
| Barley, per bushel | 0 40 |
| Wheat, per bushel | 0 90 |
| Hay, per ton | 11 00 |
| Potatoes, per bushel (field run) | 0 30 |
| Oat straw, per ton | 4 00 |
| Barley straw, per ton | 2 00 |
| Wheat straw, per ton | 2 00 |

The above values we believe to be a fair estimate of prevailing market prices for the items listed.



Dutchman's pipe, on the Superintendent's residence.

The following is a very brief outline of the four demonstration rotations conducted at this Station:—

ROTATION "A."—Suitable for dairy farming. Relatively large amounts of grain are produced, valuable in the feeding of stock.

First year—Hoed crop—mangels—stable manure and chemical fertilizer.
Second year—Grain—oats—seeded down.
Third year—Clover hay.
Fourth year—Timothy hay.
Fifth year—Grain—barley—grass seed sown as green manure for root crop.

ROTATION "B."—Satisfactory for the suppression of perennial weeds.

First year—Hoed crop—potatoes—stable manure and chemical fertilizer.
Second year—Grain—wheat—seeded down.
Third year—Clover hay.
Fourth year—Grain—oats—seeded down.
Fifth year—Clover hay.

ROTATION "C."—Makes for an intensive system of farming with comparatively large area in roots. Should make a good rotation for the potato grower.

First year—Hoed crop—potatoes—stable manure and chemical fertilizer.
Second year—Grain—wheat—seeded down.
Third year—Clover hay.
Fourth year—Timothy hay.

ROTATION "G."—Known locally as the "Old Scotch" or "Old P.E. Island" rotation. Has shown up remarkably well.

First year—Grain—oats—clover seed sown as green manure for hoed crop.
Second year—Hoed crop—turnips—stable manure and chemical fertilizer.
Third year—Grain—wheat—seeded down.
Fourth year—Clover hay.
Fifth year—Timothy hay.
Sixth year—Timothy hay or pasture.
Seventh year—Timothy hay or pasture.

The following table gives in condensed form the average yield, average cost, current year's yield and current year's cost of the various rotations mentioned:—

ROTATION SUMMARY

| Rotation | Crop | Yield per acre | | Value, 1930 | Cost of production | Profit or (loss −) |
|---|---|---|---|---|---|---|
| | | 11-year average | 1930 | | | |
| | | | | $ | $ | $ |
| Rotation "A" | Mangels ... tons | 16·60 | 11·94 | ... | 59 93 | ... |
| | Oats—Banner ... bush. | 65·43 | 68·24 | 27 29 | 25 93 | 6 30 |
| | Straw ... tons | 1·23 | 1·24 | 4 94 | | |
| | Clover hay ... tons | 2·11 | 1·48 | 16 27 | 18 04 | (−) 1 77 |
| | Timothy hay ... tons | 2·26 | 2·13 | 23 45 | 14 29 | 9 16 |
| | Barley—Ch. No. 80 ... bush. | 35·88 | 28·75 | 11 50 | 22 51 | (−) 9 81 |
| | Straw ... tons | 0·92 | 0·60 | 1 20 | | |
| Rotation "B" | Potatoes I.C. ... bush. | 255·88 | 280·58 | 84 17 | 66 46 | 17 71 |
| | Wheat—Huron ... bush. | 24·59 | 26·67 | 24 00 | 25 76 | 0 15 |
| | Straw ... tons | 1·22 | 0·96 | 1 91 | | |
| | Clover hay ... tons | 2·33 | 1·17 | 12 89 | 20 06 | (−) 7 17 |
| | Oats—Banner ... bush. | 58·59 | 64·56 | 25 82 | 21 57 | 7 68 |
| | Straw ... tons | 1·14 | 0·86 | 3 43 | | |
| | Clover hay ... tons | 1·65 | 1·34 | 14 74 | 13 64 | 1 10 |
| Rotation "C" | Potatoes I.C. ... bush. | 300·87 | 316·43 | 94 93 | 62 56 | 32 37 |
| | Wheat—E.R. Fife ... bush. | 26·92 | 31·28 | 28 15 | 29 37 | 1 25 |
| | Straw ... tons | 1·56 | 1·24 | 2 47 | | |
| | Clover hay ... tons | 2·69 | 2·30 | 25 27 | 16 42 | 8 85 |
| | Timothy hay ... tons | 2·76 | 2·21 | 24 32 | 13 42 | 10 90 |
| Rotation "G" | Oats, O.A.C. 72 ... bush. | 55·60 | 78·68 | 31 45 | 23 60 | 11 80 |
| | Straw ... tons | 1·17 | 0·99 | 3 95 | | |
| | Turnips ... tons | 17·29 | 13·83 | ... | 61 60 | ... |
| | Wheat, Ch. No. 123 ... bush. | 26·52 | 28·33 | 25 50 | 31 18 | 3 63 |
| | Straw ... tons | 1·36 | 1·02 | 2 05 | | |
| | Clover hay ... tons | 2·37 | 2·02 | 22 17 | 16 52 | 5 65 |
| | Timothy hay ... tons | 2·84 | 2·38 | 25 59 | 13 50 | 12 09 |
| | Timothy hay ... tons | 3·55 | 2·45 | 26 98 | 21 00 | 5 98 |
| | Timothy ... tons | 3·08 | 2·64 | 29 05 | 15 90 | 13 15 |

## COST OF PRODUCTION OF FIELD CROPS

The following tables show the cost of production of various crops during 1930, and also the average cost over an 11-year period based on the fixed charges given in an earlier page of this report. The data given are collected from the rotation areas previously described. It must be borne in mind that fixed charges, conditions of plant growth, soil types, state of soil fertility, etc., are modifying features varying to a considerable extent within comparatively short distances. The information given, therefore, must be considered as directly applicable only to conditions as obtained in the area surveyed.

COST OF PRODUCING WHEAT AFTER A HOED CROP

(Figures based on 1 acre wheat grown on rotation "B", 1930)

| Item | 1930 | 11-year average 1920-30 |
|---|---|---|
| | $ | $ |
| Rent of land | 3 00 | 3 00 |
| Manure and chemical fertilizers | 7 95 | 9 19 |
| Use of machinery | 2 85 | 2 28 |
| Seed, 1¾ bushels at $2.50 per bush. | 4 37 | 3 24 |
| Twine, 2 pounds at 13 cents per pound | 0 26 | 0 41 |
| Manual labour at 30 cents per hour | 5 08 | 4 25 |
| Horse labour at 10 cents per hour | 2 25 | 1 90 |
| Total cost per acre | 25 76 | 24 27 |
| Yield per acre—grain ..... bush. | 26 67 | 24 59 |
| Yield per acre—straw ..... tons | 0 96 | 1 22 |
| Value per acre—grain ..... $ | 24 00 | 22 13 |
| Value per acre—straw ..... $ | 1 91 | 2 44 |
| Total value ..... $ | 25 91 | 24 57 |
| Profit per acre ..... $ | 0 15 | 0 30 |
| Cost per bushel (value of straw considered) ..... cts. | 89·4 | 88·9 |

The return value of ninety cents per bushel allows very little profit on this crop grown under our conditions, in spite of the fact that the average yield per acre is comparatively light.

COST OF PRODUCING CLOVER HAY AFTER WHEAT

(Figures based on 1 acre clover grown on rotation "C", 1930)

| Item | 1930 | 11-year average, 1920-30 |
|---|---|---|
| | $ | $ |
| Rent of land | 3 00 | 3 00 |
| Manure | 6 00 | 6 45 |
| Use of machinery | 2 85 | 2 28 |
| Grass and clover seed at cost | 2 02 | 3 02 |
| Manual labour | 2 05 | 2 17 |
| Horse labour | 0 51 | 0 54 |
| | 16 43 | 17 46 |
| Yield per acre ..... tons | 2·30 | 2·69 |
| Value per acre ..... $ | 25 27 | 29 59 |
| Profit or loss per acre ..... $ | 8 84 | 12 93 |
| Cost per ton ..... $ | 7 14 | 6 49 |

The lower yield this season is reflected in a higher cost per ton than is shown for an 11-year period.

COST OF PRODUCING OATS AFTER A HOED CROP

(Figures based on 1 acre oats grown on rotation "A", 1930)

| Item | 1930 | 11-year average, 1920-30 |
|---|---|---|
| | $ | $ |
| Rent of land | 3 00 | 3 00 |
| Manure and chemical fertilizer | 9 38 | 9 40 |
| Use of machinery | 2 85 | 2 28 |
| Seed, 2¾ bushels at $1.00 | 2 75 | 2 52 |
| Twine, 3½ pounds at 13 cents | 0 46 | 0 46 |
| Manual labour | 5 17 | 4 53 |
| Horse labour | 2 32 | 2 36 |
| Total cost per acre | 25 93 | 24 55 |
| Yield per acre—grain ..... bush. | 68·24 | 65·43 |
| Yield per acre—straw ..... tons | 1·24 | 1·23 |
| Value per acre—grain ..... $ | 27 29 | 26 17 |
| Value per acre—straw ..... $ | 4 94 | 4 92 |
| Total value ..... $ | 32 23 | 31 09 |
| Profit or loss per acre ..... $ | 6 30 | 6 54 |
| Cost per bushel—(value of straw considered) ..... cts. | 32·1 | 31·6 |

With good yields oats may be produced in this province at reasonable prices. Oats of excellent quality is produced, and this province was at one time noted for its exports of this commodity.

COST OF PRODUCING MANGELS AFTER BARLEY

(Figures based on 1 acre mangels grown on rotation "A", 1930)

| Item | 1930 | 11-year average 1920-30 |
|---|---|---|
| | $ | $ |
| Rent of land | 3 00 | 3 00 |
| Manure and chemical fertilizer | 12 42 | 13 95 |
| Use of machinery | 2 85 | 2 28 |
| Clover seed (sown with preceding crop as green manure) | 2 14 | 3 27 |
| Seed, 7 pounds at 60 cents per pound | 4 20 | 4 82 |
| Manual labour | 30 55 | 32 86 |
| Horse labour | 4 77 | 6 37 |
| Total cost per acre | 59 93 | 66 55 |
| Yield per acre ..... tons | 11·94 | 16·60 |
| Cost of producing one ton ..... $ | 5 02 | 4 01 |
| Cost of producing one bushel ..... cts. | 10·0 | 8·0 |

Low yields of mangels on this area in recent years have increased the cost of production.

COST OF PRODUCING TURNIPS AFTER OATS

(Figures based on 1 acre turnips grown on rotation "G", 1930

| Item | 1930 | 11-year average 1920-30 |
|---|---|---|
| | $ | $ |
| Rent of land | 3 00 | 3 00 |
| Manure and chemical fertilizer | 12 05 | 13 69 |
| Use of machinery | 2 85 | 2 28 |
| Clover seed (sown with preceding crop for green manure) | 2 15 | 3 98 |
| Seed, 3¾ pounds at 70 cents per pound | 2 63 | 2 84 |
| Manual labour at 30 cents per hour | 28 12 | 31 01 |
| Horse labour, at 10 cents per hour | 4 25 | 7 37 |
| Total cost per acre | 55 05 | 64 17 |
| Yield per acre ... tons | 13·83 | 17·29 |
| Cost of producing one ton ... $ | 3 98 | 3 71 |
| Cost of producing one bushel ... cts. | 7·9 | 7·4 |

The crop is below average for this area for this season, but this rotation has maintained yields very successfully, and cost of production is reasonably low.

COST OF PRODUCING POTATOES AFTER SOD

(Figures based on 1 acre grown on rotation "C", 1930)

| Item | 1930 | 11-year average, 1920-30 |
|---|---|---|
| | $ | $ |
| Rent of land | 3 00 | 3 00 |
| Manure and chemical fertilizer | 12 00 | 12 09 |
| Use of machinery | 2 85 | 2 28 |
| Seed | 10 87 | 16 78 |
| Spray materials | 1 56 | 5 10 |
| Manual labour | 25 79 | 21 16 |
| Horse labour | 6 49 | 7 98 |
| Total cost per acre | 62 56 | 68 39 |
| Yield per acre ... bush. | 316·43 | 300·87 |
| Cost of producing one bushel, field run ... cts. | 19·8 | 22·7 |

The above cost of production per bushel must be understood as the cost of field-run potatoes landed in the cellar or other storage on the farm. No grading or culling is shown in the above figures, and the cost of culled, graded and hand-sorted stock suitable either for seed or table stock would be much higher than the above figure.

SUMMARY OF COST OF PRODUCTION OF VARIOUS CROPS

(Figures covering 11-year period (1920-30) on rotations "A", "B", "C" and "G")

| Crop | Rotation and duration in years | | | |
|---|---|---|---|---|
| | "A", 5 years | "B", 5 years | "C", 4 years | "G" 7 years |
| Oats—cents per bushel | 31·6 | *37·8 | ..... | *47·4 |
| Wheat—per bushel | ..... | 88·9 cts. | *91·2 cts. | *$1 09 |
| Barley—cents per bushel | *55·8 | ..... | ..... | ..... |
| Potatoes—cents per bush | ..... | 28·4 | 22·7 | ..... |
| Turnips—$ per ton | ..... | ..... | ..... | 3 71 |
| Mangels—$ per ton | 4 01 | ..... | ..... | ..... |
| Clover hay—$ per ton | 8 76 | †9 30 | 6 49 | 7 06 |
| Timothy hay—$ per ton | 6 71 | ..... | 5 35 | ‡5 29 |

*Value straw neglected. †Average 3 and 5 years of rotation.
‡Average 5th, 6th and 7th years of rotation.

SUMMARY OF YIELDS OF VARIOUS CROPS

(Figures covering 11-year period (1920-30) on rotations "A", "B", "C" and "G")

| Crop | | Rotation and duration in years | | | |
|---|---|---|---|---|---|
| | | "A" 5 years | "B" 5 years | "C" 4 years | "G" 7 years |
| Oats | bush. | 65·43 | 58·59 | ..... | 55·60 |
| Wheat | bush. | ..... | 24·59 | 26·92 | 26·52 |
| Barley | bush. | 35·88 | ..... | ..... | ..... |
| Potatoes | bush. | ..... | 255·88 | 300·87 | ..... |
| Turnips | tons | ..... | ..... | ..... | 17·29 |
| Mangels | tons | 16·60 | ..... | ..... | ..... |
| Clover hay | tons | 2·11 | *1·99 | 2·69 | 2·37 |
| Timothy hay | tons | 2·26 | ..... | 2·76 | †3·16 |

*Average of 3rd and 5th years of rotations.
†Average of 5th, 6th and 7th years of rotation.

DRY MATTER DETERMINATIONS

At the present time the absolute dry weight is being determined for all hay and forage crops. Yields of hay are adjusted to a uniform moisture content of 12 per cent, and are so given in this report.

COST OF OPERATING TRACTOR

A new tractor was purchased in May, 1930. This is a Wallis 12-20, manufactured by the Massey-Harris Company. This machine has given satisfactory service during the year.

WALLIS 12-20

| | |
|---|---|
| Depreciation, 10 per cent of initial cost | $ 89 40 |
| Interest, 6 per cent on one-half initial cost | 26 82 |
| Servicing—Filling, oiling, etc. | 3 04 |
| Gasoline, 584⅓ gallons | 116 90 |
| Oil, 14 gallons | 19 46 |
| Operator, 454½ hours at 38 cents | 172 71 |
| Total cost for year | $428 33 |

WORK PERFORMED

| | Hours |
|---|---|
| Ploughing | $122 25 |
| Disking | 78 00 |
| Harrowing | 127 75 |
| Threshing | 45 00 |
| Ensiling | 27 50 |
| Harvesting corn | 13 00 |
| Draw bar work, such as hauling | 41 00 |
| Total hours work | $454 50 |
| 454.5 hours at 94·24 cents per hour | $428 33 |

# HORTICULTURE

## SEASONAL NOTES

Winter conditions began with a heavy snowfall November 29, 1929. This was followed by frequent snow storms in December, January and February, which made a heavy blanket of snow over the unfrozen ground throughout the winter. In early March most of this melted and soaked into the ground. April was dry and the season was very much earlier than usual. The trees appeared green May 18, about two weeks earlier than under average conditions. There was no late spring frost. Perennials and shrubs wintered well. There was about average bloom, but the dry weather withered it quickly in June, and the set of fruit was below average. The months of April, June and September were dry and fruit was below average in size. The open autumn gave new wood a good chance to mature. In fact, buds of lilac and other shrubs swelled so that severe weather may injure them. Insects were numerous and destructive. The weather was very favourable for corn, and other vegetables yielded above average. Potatoes were very free from disease and an average crop.

## VEGETABLES

### BEANS—TEST OF VARIETIES

Six varieties were seeded on June 6, 1930. The following table reports the yield of snap beans in pounds per acre, and also the pounds harvested from one row 30 feet long by 2½ feet wide.

BEANS—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Yield per plot | Yield per acre |
|---|---|---|
| | lb. | lb. |
| Kentucky Wonder Wax (Wills) | 54·50 | 31,654 |
| Yellow Pod Bountiful (Schell) | 36·75 | 21,344 |
| Round Pod Kidney Wax (McDonald) | 36·00 | 20,909 |
| Interloper Challenge Black Wax (C.E.F.) | 34·00 | 19,747 |
| Langport Wonder (Kelway) | 30·75 | 17,860 |
| Princess of Artois (C.E.F.) | 22·50 | 13,068 |

A very extensive tabulation of results of tests of varieties of beans is to be found on page 26 of the 1929 report. In that report Round Pod Kidney Wax is recommended, and for uniformity of quality and yield it may still be considered the best for general use.

BEANS.—Several varieties maturing at different seasons vs. one variety planted at different dates.

This experiment was conducted over a period of six seasons. The varieties Round Pod Kidney Wax, Stringless Green Pod, Early Red Valentine and Refugee, representing different seasons of maturity, were checked against Round Pod Kidney Wax sown at four different dates at intervals of one week. Records were taken on the yield per acre of "green" or snap beans and also of ripe beans. Record was also taken of the number of days from date of planting until beans were ready for use as a table vegetable. The following table shows the results of the test:—

BEANS OF DIFFERENT SEASONS VS. ONE VARIETY PLANTED AT DIFFERENT DATES

| Year of test | Round Pod Kidney Wax | | | | | | | | Stringless Green Pod | | Early Red Valentine | | Refugee | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1st seeding | | 2nd seeding | | 3rd seeding | | 4th seeding | | | | | | | |
| | Green | Ripe | Green | Ripe | Green | Ripe | Green | Ripe | Green | Ripe | Green | Ripe | Green | Ripe |
| | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. |
| 1st | 1,394 | 522 | 4,182 | 763 | 2,788 | 501 | 2,788 | 305 | 2,439 | 913 | 5,924 | 1,394 | 10,629 | 2,045 |
| 2nd | 2,265 | 174 | 2,614 | 261 | 1,394 | 87 | 1,568 | 44 | 4,531 | 871 | 8,887 | 1,830 | 12,546 | 1,830 |
| 3rd | 5,808 | 1,161 | 6,824 | 580 | ..... | ..... | ..... | ..... | 6,969 | 871 | 13,939 | 2,468 | 14,810 | 1,742 |
| 4th | 10,106 | 1,219 | 19,008 | 609 | 6,471 | 522 | 1,244 | 0 | 9,235 | 1,742 | 13,940 | 2,788 | 2,962 | 958 |
| 5th | 1,914 | 696 | 7,115 | 1,161 | 11,906 | 0 | 3,484 | 0 | 7,316 | 1,045 | 8,379 | 1,914 | 5,922 | 2,613 |
| 6th | 2,135 | 87 | 1,742 | 87 | 2,265 | 87 | 1,220 | 43 | 3,920 | 958 | ..... | ..... | 7,623 | 1,132 |
| Total | 23,622 | 3,859 | 41,485 | 3,461 | 24,824 | 1,197 | 10,304 | 392 | 34,410 | 6,400 | 51,069 | 10,394 | 54,492 | 10,320 |
| Average | 3,937 | 643 | 6,914 | 577 | 4,965 | 239 | 2,061 | 78 | 5,735 | 1,067 | 10,214 | 2,079 | 9,082 | 1,720 |
| Average days ready for use. | 60·3 | | 60·0 | | 57·2 | | 54·6 | | 66·2 | | 63·6 | | 73·7 | |

From the foregoing it would appear that greater satisfaction may be obtained by planting at one time a series of varieties that will mature at different times than by planting one variety at several different times. Not only has the yield been greater, but the season is extended over a greater period.

### BEETS—VARIETY TEST

Six varieties were seeded on May 20, 1930. The yields below are reported in "bunches of 5, marketable size" beets per acre, and also in yield per plot from one row 30 feet long and 2½ feet wide.

BEETS—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Yield per plot | Yield per acre | | |
|---|---|---|---|---|
| | | Marketable | Unmarketable | Total |
| | bunches | bunches | bunches | bunches |
| Detroit Dark Red—McDonald | 37½ | 20,618 | 1,162 | 21,780 |
| Early Wonder or Boston Crosby—Burpee | 34½ | 18,586 | 1,452 | 20,038 |
| Flat Egyptian—James | 33½ | 17,134 | 2,323 | 19,457 |
| Detroit Dark Red—Ottawa 2195 | 31 | 16,843 | 1,162 | 18,005 |
| Half Long Dwarf Dark—Kelway | 27½ | 15,972 | ..... | 15,972 |
| Half Long Kitchener—Kelway | 28 | 15,100 | 1,162 | 16,262 |

Detroit Dark Red and Early Wonder are recommended.

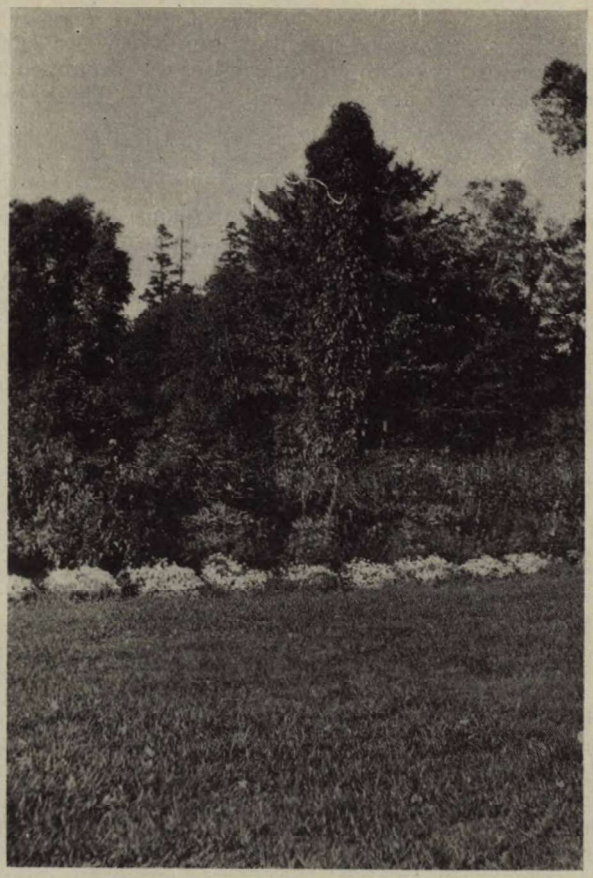
### BEETS—DIFFERENT DATES OF SEEDING

The first seeding was made May 20, 1930, with additional seedings at intervals of ten days until six seedings had been made. Two seedings at each date were made—one of which was harvested during the season similar to harvesting a crop in the home garden. The second lot was left until the end of the season, and would be equivalent to harvesting for storage purposes. Detroit Dark Red was the variety used, and yields are reported in bunches of 5 marketable beets per acre.

BEETS—RESULTS OF DATES OF SEEDING

| Date seeding | Early harvesting—Yields per acre | | | Late harvesting—Yields per acre | | |
|---|---|---|---|---|---|---|
| | Marketable | Unmarketable | Total | Marketable | Unmarketable | Total |
| 1930 | bunches | bunches | bunches | bunches | bunches | bunches |
| May 29 | 21,199 | 2,323 | 23,522 | 13,939 | 4,646 | 18,583 |
| June 8 | 13,939 | 581 | 14,520 | 11,035 | 3,485 | 14,520 |
| June 18 | 10,454 | 6,970 | 17,424 | 11,035 | 7,550 | 18,585 |
| June 28 | 11,616 | 4,646 | 16,262 | 10,454 | 4,646 | 15,100 |
| July 8 | 2,323 | 20,909 | 23,232 | 1,742 | 20,909 | 22,651 |
| July 18 | ..... | 9,293 | 9,293 | ..... | 12,778 | 12,778 |

Harvesting during the season seems to return satisfactorily high yields with a smaller percentage of unmarketable beets. Early seedings left until the end of the season tend to produce many oversize misshapen beets unfit for use. If harvested during the season, however, early seedings give the greater yield with few oversize roots.



Virginia creeper on a telephone pole.

BRUSSELS SPROUTS—TEST OF VARIETIES

Five varieties and strains were sown but did not mature sufficiently to harvest.

CABBAGE—TEST OF VARIETIES

Ten varieties were sown in hotbeds May 9, and transplanted in the open June 28, 1930.

CABBAGE—TEST OF VARIETIES

| Variety and source of seed | Yield per acre |
|---|---|
| | lb. |
| Copenhagen Market—Strandholm | 58,080 |
| Copenhagen Market—James | 47,190 |
| Danish Roundhead—C.E.F | 47,190 |
| Fottler Improved Brunswick—Rice | 47,190 |
| Golden Acre—Dreer | 40,656 |
| Midseason Market—Harris | 37,752 |
| Haco—Dupuy and Ferguson | 31,944 |
| Danish Ballhead—Strandholm | 30,492 |
| Ex. Amager Danish Ballhead—Ottawa-8937 | 28,314 |
| Golden Acre—Harris | 20,691 |

Golden Acre is recommended for high quality where earliness is a consideration. For standard or main crop varieties, we recommend Danish Roundhead and Danish Ballhead for yield and quality. These two varieties will keep during winter storage also.

CARROTS—TEST OF VARIETIES

Three varieties were seeded on May 20, 1930. Some damage was caused by the Carrot Rust Fly, this being more particularly noticeable in the Improved Danvers. Each plot occupied 60 feet of row, $2\frac{1}{2}$ feet wide.

CARROTS—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Total per plot | Yield in bunches of 5 carrots | | |
|---|---|---|---|---|
| | | Per acre | | |
| | | Marketable | Unmarketable | Total |
| Chantenay—O-285-A | 36 | 17,424 | 3,485 | 20,909 |
| Chantenay—McDonald | 41 | 14,230 | 9,583 | 23,813 |
| Improved Danvers—Dupuy & Ferguson | $32\frac{1}{2}$ | 14,230 | 4,646 | 18,876 |

Chantenay has proven one of the most satisfactory varieties for this locality.

CARROTS—DIFFERENT DATES OF SEEDING

The variety Chantenay was used for this test. The first planting was made on May 20, and successive plantings were made at 10-day intervals until a total of six plantings were made. Half of each area was harvested during the season in a manner similar to harvesting from the home garden. The remaining half was left until the end of the season and allowed to mature sufficiently for storage purposes. Yields are reported in bunches of five marketable carrots.

CARROTS—RESULTS OF DATES OF SEEDING

| Date of seeding | Early harvesting—yields per acre | | | Late harvesting—yields per acre | | |
|---|---|---|---|---|---|---|
| | Marketable | Unmarketable | Total | Marketable | Unmarketable | Total |
| 1930 | bunches | bunches | bunches | bunches | bunches | bunches |
| May 20 | 11,035 | 12,487 | 23,522 | 3,485 | 1,742 | 5,227 |
| May 30 | 5,808 | 3,485 | 9,293 | 8,131 | 9,293 | 17,424 |
| June 9 | 7,550 | 48,787 | 56,337 | 4,646 | 32,525 | 37,171 |
| June 19 | 22,070 | 48,787 | 70,857 | 25,555 | 34,848 | 60,403 |
| June 30 | 13,939 | 30,202 | 44,141 | 18,586 | 13,939 | 32,525 |
| July 9 | 3,485 | 13,939 | 17,424 | ..... | 34,848 | 34,848 |

There was heavy injury by carrot rust fly, particularly in the early seedings.

CAULIFLOWER—TEST OF VARIETIES

Little difference was noted in the yield per acre between the three varieties tested. Early Snowball is recommended.

CELERY—TEST OF VARIETIES

Eight varieties were planted in hotbeds April 23, and transplanted to the open June 24, 1930. Yield is reported in pounds per acre.

CELERY—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Average weight 6 heads | Yield per acre |
|---|---|---|
| | lb. | lb. |
| Winter Queen—Graham | 15¾ | 45,738 |
| Golden Self Blanching—Ottawa-4082 | 10½ | 30,492 |
| Giant Pascal—Graham | 10½ | 30,492 |
| Emperor—Schell | 9 | 26,136 |
| Golden Self Blanching—McDonald | 9 | 26,136 |
| Golden Phenomenal—Morse | 8¼ | 23,958 |
| Easy Blanching—Graham | 8⅛ | 23,522 |
| Winter Queen—Old seed | Failed to germinate. | |

The last item—Winter Queen was a supply of old seed that was on hand. This failed to germinate sufficiently to make a computation of yield possible.

CITRON—TEST OF VARIETIES

The variety Colorado gave a much heavier yield than Red Seeded. It is also recommended for its superior quality.

CORN—TEST OF VARIETIES

Ten varieties were planted on June 9, 1930, each variety occupying a plot 60 feet by 3 feet. Yield is given in number of marketable ears per plot and per acre.

SWEET CORN—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Ready for use and length of season | Yield per plot | Yield per acre |
|---|---|---|---|
| | | ears. | ears. |
| Early Malcolm—C.E.F | Aug. 29—Sept. 13 | 211 | 51,062 |
| Golden Bantam—Harris | Aug. 29—Sept. 13 | 170 | 41,140 |
| Golden Bantam—McDonald | Aug. 28—Sept. 13 | 153 | 37,026 |
| Pickaninny—C.E.F | Aug. 16—Aug. 28 | 151 | 36,542 |
| Washburn Special—Graham | Aug. 21—Sept. 13 | 149 | 36,058 |
| Golden Bantam—Moore | Aug. 24—Sept. 13 | 141 | 34,122 |
| Early Bantam—Harris | Aug. 19—Sept. 13 | 141 | 34,122 |
| Banting—C.E.F | Aug. 16—Aug. 25 | 133 | 32,186 |
| Sixty Day Golden—Childs | Aug. 19—Sept. 2 | 133 | 32,186 |
| Mammoth White Cory—Graham | Aug. 19—Aug. 27 | 127 | 30,734 |

We recommend Golden Bantam as being of excellent quality and high yield.

CUCUMBER—TEST OF VARIETIES

Four varieties, Early Fortune, Prolific, Davis Perfect and Improved Long Green were sown, the standing of varieties with respect to yield being in the order named.

EGG PLANT

Only one variety, Early Dwarf, was sown. This gave an excellent yield this season.

LETTUCE

Grand Rapids is recommended as a leaf type, and New York as a head type of lettuce.

ONIONS FROM SETS

Yellow and red were planted, the yellow giving the heavier yields. The planting of sets rather than seed is usually preferable where earliness and a well-matured crop is desired.

ONIONS—THINNING EXPERIMENT

During the first three years of the test the varieties Large Red Wethersfield, Extra Early Red, and Yellow Globe Danvers were used, being thinned to distances of one, two, and three inches apart in the row. In the latter four years of the test Early Red was replaced by Giant Prizetaker.

ONIONS—THINNING EXPERIMENT

*First Series—Yield per acre*

| Year of test | Variety and distance of thinning | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Large Red Wethersfield | | | Extra Early Red | | | Yellow Globe Danvers | | |
| | 1-inch. | 2-inch. | 3 inch. | 1 inch. | 2 inch. | 3 inch. | 1 inch. | 2 inch. | 3 inch. |
| | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. |
| 1..... | 6,795 | 9,932 | 6,273 | 10,454 | 9,409 | 8,886 | 8,364 | 7,841 | 7,318 |
| 2..... | 6,534 | 14,375 | 11,761 | 9,148 | 10,454 | 9,148 | 7,841 | 9,801 | 9,148 |
| 3..... | 14,111 | 6,267 | 17,245 | 9,401 | 10,968 | 20,378 | 17,245 | 12,544 | 17,245 |
| Total... | 27,440 | 30,574 | 35,279 | 29,003 | 30,831 | 38,412 | 33,450 | 30,186 | 33,711 |
| Average... | 9,147 | 10,191 | 11,760 | 9,668 | 10,277 | 12,804 | 11,150 | 10,062 | 11,237 |

*Second Series—Yield per acre*

| Year of test | Variety and distance of thinning | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Large Red Wethersfield | | | Yellow Globe Danvers | | | Giant Prizetaker | | |
| | 1 inch. | 2 inch. | 3 inch. | 1 inch. | 2 inch. | 3 inch. | 1 inch. | 2 inch. | 3 inch. |
| | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. |
| 1..... | 21,431 | 21,954 | 21,431 | 16,727 | 15,158 | 14,636 | 21,431 | 21,431 | 13,590 |
| 2..... | 1,829 | 5,488 | 8,102 | 6,795 | 7,318 | 8,363 | 4,958 | 9,931 | 6,795 |
| 3..... | 17,779 | 11,504 | 7,321 | 18,824 | 10,458 | 7,321 | 20,916 | 13,595 | 10,458 |
| 4..... | 36,590 | 28,227 | 29,272 | 45,999 | 31,363 | 28,227 | 29,272 | 21,954 | 21,954 |
| Total... | 77,629 | 67,173 | 66,126 | 88,345 | 64,297 | 58,547 | 76,577 | 66,911 | 52,797 |
| Average... | 19,407 | 16,793 | 16,532 | 22,086 | 16,074 | 14,637 | 19,144 | 16,728 | 13,199 |

The evidence as shown above is conflicting. However, in the second series the yield decreases in every instance with the increase in distance between plants. It seems fair to assume that thicker plantings will, on the average, return greater yields.

ONIONS TRANSPLANTED FROM HOTBEDS VS. SOWN IN OPEN

This amounts in reality to testing very early plantings made in the hotbeds against much later seedings made in the open after danger from frost injury is past.

ONIONS TRANSPLANTED VS. SOWN IN OPEN—YIELD PER ACRE

| Year of test | Variety and treatment | | | | | |
|---|---|---|---|---|---|---|
| | Large Red Wethersfield | | Yellow Globe Danvers | | Giant Prizetaker | |
| | Transplanted | Sown in open | Transplanted | Sown in open | Transplanted | Sown in open |
| | lb. | lb. | lb. | lb. | lb. | lb. |
| 1st year | 13,165 | 3,775 | 12,390 | 3,192 | 13,165 | 9,583 |
| 2nd year | 13,165 | 8,102 | 12,390 | 8,363 | 13,165 | 6,795 |
| 3rd year | 14,636 | 47,626 | 20,909 | 44,141 | 12,197 | 47,627 |
| Total | 40,966 | 59,503 | 45,689 | 55,696 | 38,527 | 64,005 |
| Average | 13,655 | 19,834 | 15,230 | 18,565 | 12,842 | 21,335 |

The above figures would indicate the superiority, from a yield standpoint, of plantings made in the open. It is doubtful, however, if this is absolutely true, as the third year, apparently very favourable for the growing of onions, shows an immense advantage for those sown late in the open, thus increasing the mean yield for the method of planting. The first two seasons show an advantage for early seedings in the hotbed, and it is felt that this system is to be recommended for early-maturing large crops.

ONIONS—TEST OF VARIETIES

Nine varieties were sown on May 8, 1930, each variety occupying one drill 30 feet long by 15 inches wide. The following table gives the yield per plot and total yield per acre in pounds, and also shows the percentage marketable:—

ONIONS—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Yield per plot | Per cent marketable | Yield per acre | | |
|---|---|---|---|---|---|
| | | | Marketable | Unmarketable | Total |
| | lb. | % | lb. | lb. | lb. |
| Yellow Prizetaker—Graham | 15¼ | 91·8 | 16,262 | 1,452 | 17,714 |
| Flat Red—Graham | 15 | 86·7 | 15,101 | 2,323 | 17,424 |
| Yellow Globe Danvers—Graham | 13¾ | 86·8 | 13,358 | 2,033 | 15,391 |
| Large Red Wethersfield—Ottawa 3382 | 13 | 100·0 | 15,101 | ..... | 15,101 |
| Sel. Large Red Wethersfield—McDonald | 12½ | 88·0 | 12,778 | 1,742 | 14,520 |
| Southport Red Globe—Steele Briggs | 12½ | 88·0 | 12,778 | 1,742 | 14,520 |
| Large Red Wethersfield—Graham | 11¼ | 85·1 | 11,616 | 2,033 | 13,649 |
| Yellow Globe Danvers—Ottawa 3914 | 7¾ | 96·8 | 8,712 | 290 | 9,002 |
| Southport Yellow Globe—McKenzie | 5¾ | 91·3 | 6,098 | 581 | 6,679 |

PARSLEY

Two varieties, Triple Curled and Moss Curled, were sown. Both are satisfactory.

PARSNIPS

Two strains of Hollow Crown were sown. This variety is recommended for general use.

PARSNIPS—DIFFERENT DATES OF SEEDING

Six seedings were made at ten-day intervals, starting May 20, 1930. The following table reports the yield per acre in bunches of five marketable roots.

PARSNIPS—RESULTS OF DATES OF SEEDING

| Dates of seeding | Yield per acre | | |
|---|---|---|---|
| | Marketable | Unmarketable | Total |
| 1930 | bunches | bunches | bunches |
| May 20 | 11,616 | 2,614 | 14,230 |
| May 30 | 6,679 | 2,323 | 9,002 |
| June 9 | 10,454 | 13,649 | 24,103 |
| June 19 | 15,101 | 14,520 | 29,621 |
| June 30 | 3,485 | 33,106 | 36,591 |
| July 9 | ..... | 19,166 | 19,166 |

Elite stock Hollow Crown parsnip.

PARSNIPS—DISTANCE OF THINNING

This test was conducted for a period of five years, using the variety Hollow Crown.

PARSNIPS—DISTANCE OF THINNING—YIELD PER ACRE

| Year of test | Distance of thinning in inches | | |
|---|---|---|---|
| | 2 inches | 3 inches | 4 inches |
| | lb. | lb. | lb. |
| First | 34,501 | 41,820 | 39,729 |
| Second | 27,181 | 26,136 | 23,522 |
| Third | 16,726 | 18,295 | 20,908 |
| Fourth | 15,687 | 16,773 | 18,824 |
| Fifth | 19,870 | 17,256 | 15,687 |
| Total | 113,965 | 120,280 | 118,670 |
| Mean | 22,793 | 24,056 | 23,734 |

There is not much difference in yield at the respective distances, but thinning to three or four inches produces parsnips of better size than when left close in the row.

### PEAS—TEST OF VARIETIES

Fourteen varieties were seeded May 10, 1930, in plots 30 feet long by 3 feet wide. The yields are given in pounds of green unshelled peas.

PEAS—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Date ready for use | Yield per plot | Yield per acre |
|---|---|---|---|
| | 1930 | lb. | lb. |
| Bruce—Invermere | July 19 | 25 | 12,100 |
| Quite Content—Vaughan | " 14 | 21¾ | 10,527 |
| Badger—Ott. 5415 | " 18 | 20 | 9,680 |
| Kootenay—Invermere | " 14 | 19 | 9,196 |
| Gregory Surprise X English Wonder C.E.F. | " 14 | 16¼ | 7,865 |
| Director—Invermere | " 14 | 15½ | 7,381 |
| Gradus X American Wonder—Ott. 4143 | " 14 | 13¼ | 6,413 |
| Lincoln—Invermere | " 20 | 13¼ | 6,413 |
| Horol (1929) C.E.F. | " 17 | 11¾ | 5,687 |
| Thomas Laxton—McDonald | " 10 | 9¾ | 4,719 |
| Fenland Wonder—Elsom | " 14 | 8¼ | 4,051 |
| Sensation—Sutton | " 14 | 8¼ | 3,993 |
| Little Marvel—Rennie | " 9 | 7¾ | 3,751 |
| Unica—C.E.F. | " 19 | 7¼ | 3,509 |

### PEAS—DIFFERENT DISTANCES OF PLANTING

Three varieties were tested over a five-year period at distances of one, two, and three inches in the row.

PEAS—DIFFERENT DISTANCES OF PLANTING—YIELD OF GREEN PEAS PER ACRE

| Year of test | Variety and distance of planting | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | English Wonder | | | Thomas Laxton | | | Stratagem | | |
| | 1 inch. | 2 inch. | 3 inch. | 1 inch. | 2 inch. | 3 inch. | 1 inch. | 2 inch. | 3 inch. |
| | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. |
| First | 6,655 | 8,712 | 4,958 | 9,922 | 8,591 | 8,954 | 8,107 | 10,164 | 10,406 |
| Second | 5,929 | 6,655 | 5,747 | 8,914 | 8,228 | 6,655 | 4,462 | 4,840 | 3,347 |
| Third | 5,082 | 5,324 | 6,776 | 5,324 | 7,018 | 6,534 | 3,630 | 2,783 | 1,573 |
| Fourth | 4,598 | 2,541 | 3,388 | 3,146 | 3,388 | 2,420 | 3,630 | 726 | 968 |
| Fifth | 7,502 | 4,840 | 5,203 | 4,961 | 4,356 | 4,719 | 7,865 | 7,744 | 6,292 |
| Total | 29,766 | 28,072 | 26,072 | 32,267 | 31,581 | 29,282 | 27,694 | 26,257 | 22,586 |
| Mean | 5,953 | 5,614 | 5,214 | 6,453 | 6,316 | 5,856 | 5,539 | 5,251 | 4,517 |

It would appear from the above figures that planting at the thicker rate is to be recommended.

### PEAS—DIFFERENT SEASONS VS. ONE VARIETY SOWN AT DIFFERENT DATES

In this test four varieties maturing at different seasons were planted on the same date and compared with one of the varieties planted at four different dates, each planting one week apart.

PEAS—DIFFERENT SEASONS VS. ONE VARIETY AT DIFFERENT DATES—YIELD GREEN PEAS PER ACRE

| Year of test | Variety and planting | | | | | | |
|---|---|---|---|---|---|---|---|
| | Thomas Laxton | | | | Strata-gem | McLean Ad-vancer | Gradus |
| | 1st planting | 2nd planting | 3rd planting | 4th planting | | | |
| | lb. | lb. | lb. | lb. | lb. | lb. | lb. |
| First | 4,356 | 5,227 | 2,904 | 4,066 | 8,712 | 4,937 | 8,131 |
| Second | 2,178 | 2,343 | 2,343 | 726 | 1,452 | 2,904 | 2,831 |
| Third | 7,696 | 8,276 | 7,696 | 7,115 | 4,646 | 7,405 | 6,752 |
| Fourth | 1,815 | 6,824 | 7,333 | 5,808 | 5,227 | 4,138 | 6,897 |
| Total | 16,045 | 22,670 | 20,276 | 17,715 | 20,037 | 19,384 | 24,611 |
| Mean | 4,011 | 5,668 | 5,069 | 4,429 | 5,009 | 4,846 | 6,153 |

There would seem to be little to choose between the two treatments.

PEAS—SUPPORTS VS. NO SUPPORTS

In this experiment four varieties were on test. Each variety was grown supported on wire trellis, and also grown on the ground, not supported in any way. The following table indicates the superiority, from the standpoint of yield of green peas, of supporting the vines.

PEAS—SUPPORTS VS. NO SUPPORTS—YIELD PER ACRE

| Year of test | Variety and method of growing | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Thomas Laxton | | Gradus | | Stratagem | | McLean Advancer | |
| | Supports | No. supports | Supports | No. supports | Supports | No. supports | Supports | No. supports |
| | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. |
| First | 4,356 | 3,194 | 3,131 | 3,775 | 3,712 | 6,679 | 4,937 | 4,356 |
| Second | 2,178 | 1,742 | 2,831 | 1,888 | 1,452 | ..... | 2,904 | 2,323 |
| Total | 6,534 | 4,936 | 10,962 | 5,663 | 10,164 | 6,679 | 7,841 | 6,679 |
| Mean | 3,267 | 2,468 | 5,481 | 2,832 | 5,082 | 6,679 | 3,921 | 3,340 |

PEPPERS

Only one variety, Harris Earliest, was seeded this spring. This gave a good yield with a fair percentage ripening.

PUMPKINS

Connecticut Field continues to lead from the standpoint of yield, but lacks the quality of the Sweet or Sugar pumpkins.

PUMPKINS—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Yield from 3 hills 9 by 9 feet | Yield per acre |
|---|---|---|
| | lb. | lb. |
| Connecticut Field—McDonald | 416 | 74,547 |
| Small Sugar—Graham | 279 | 49,996 |
| *Sweet or Sugar—Ott. 11015 | 130 | 23,296 |

*Poor germination—recorded as only 25%.

RADISHES

XXX Scarlet Oval and Saxa were the best of the three varieties tested this season.

SALSIFY—VARIETY TEST

Salsify was grown for a number of years at this Station, but did not prove popular as a table vegetable in this district. Long White and Mammoth Sandwich Island were the only two varieties tested, and there seemed to be little to choose between them. Either can be recommended to anyone who wishes to try this vegetable in his garden.

SPINACH

Two varieties were planted, King of Denmark yielding at the rate of 15,101 pounds per acre and Viroflay 13,939 pounds per acre.

SQUASH

Five varieties were planted in hills 9 feet by 9 feet on June 10, 1930. Hubbard and Delicious are recommended.

SWISS CHARD

One variety only was planted. This yielded at the rate of 81,748 pounds per acre.

TOMATOES

Seven varieties were planted this season, all giving rather excellent yields of ripe fruit.

TOMATOES—RESULTS OF TEST OF VARIETIES

| Variety and source of seed | Ripe to Sept. 9 | Ripe Sept. 10 to Sept. 19 | Ripe Sept. 20 and later | Total ripe per plot | Total green per plot | Total crop per plot | | Per cent ripe fruit | Total yield per acre |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Marketable | Unmarketable | | |
| | lb. | lb. | lb. | lb. | lb. | lb. | lb. | % | lb. |
| Earliana Gr. 2—Langdon | 35·75 | 38·0 | 12·75 | 86·50 | 18·0 | 104·50 | 2·0 | 81·2 | 57,989 |
| Bonny Best—Stokes | 19·0 | 35·50 | 13·0 | 67·50 | 37·0 | 104·50 | 2·0 | 63·4 | 57,989 |
| Viking—N. B. Agr. College | 43·0 | 14·0 | 3·50 | 50·60 | 12·0 | 72·50 | 3·50 | 79·6 | 41,382 |
| Prosperity—Buckbee | 2·50 | 3·75 | 9·50 | 15·75 | 52·0 | 67·75 | 1·50 | 22·7 | 37,707 |
| Herald—Ottawa 9726 | 33·25 | 12·75 | 4·0 | 50·0 | 10·0 | 60·0 | 1·75 | 81·0 | 33,623 |
| Alacrity x Earlibell—Ott. 11385 | 32·0 | 7·75 | 4·50 | 44·25 | 11·25 | 55·50 | ..... | 79·7 | 30,220 |
| Fargo | 19·50 | 17·25 | 5·0 | 41·75 | 7·0 | 48·75 | ..... | 85·6 | 26,544 |

Each plot consisted of five plants set 4 feet apart each way. The per cent ripe fruit as set down in the second last column above is an index of the earliness of the variety. The per cent of ripe fruit given is based on weight of "marketable" fruit harvested, and does not account for fruit that ripened but was unfit for use.

## FRUITS

PEARS

The trees in the pear orchard wintered well and made a fair growth this season. A number of varieties have proven to be short lived, but the following are doing well and their yield this year was well above the average over a period of years: Lucrative has proven to be the most reliable bearer, followed by Clapps Favourite, Seckel and B. D'Anjou. Flemish Beauty has yielded well, but most of the fruit was scabby and useless.

PLUMS

All varieties of plums wintered well. Black knot has been completely controlled by cutting and burning all knots as soon as they appear and by spraying with lime-sulphur. During the past season the trees made a good growth, but the crop of fruit was below average.

CHERRIES

The cherry trees set out in 1924 bore a good crop this year. All varieties have made good growth and have not been injured by black knot. English Morello gave the largest yield in 1930, followed closely by Montmorency. The Early Richmonds have not borne any fruit to date.

APPLES

During the past twenty years many varieties of apples have been tested at this Station with the object of determining their hardiness, production, quality of fruit and general suitability for planting in this province. The main orchard is situated in an exposed position and the test for hardiness is, therefore, very severe. Many of the newer varieties, while fairly satisfactory, have proven to be no more desirable than older varieties, and are not recommended. Others planted recently have not begun to yield. Following is a list of varieties under test, together with the number of trees of each, and the date when first planted. Space will not permit of giving more than brief remarks regarding each variety, but detailed information will be given to all interested if application is made to the superintendent at this Station. Recommendations refer only to suitability for domestic use and local markets.

APPLES—LIST OF VARIETIES

| Variety | Number of trees | When first planted | Remarks |
|---|---|---|---|
| Adonis | 2 | 1912 | Fair bearer, lacks flavour, not recommended. |
| Alexander | 4 | 1910 | Coarse flesh, heavy bearer alternate years. |
| American Golden Russet | 2 | 1910 | Good quality, annual bearer of light crop. |
| Anson | 2 | 1913 | Fair bearer, late fall, not recommended. |
| Ascot | 2 | 1926 | |
| Astrachan, Red | 4 | 1910 | Good, early, season short, recommended. |
| Atlas | 3 | 1918 | |
| Baldwin | 2 | 1910 | Tender, not recommended. |
| Battle | 2 | 1913 | Season short, fair quality, not recommended. |
| Baxter | 4 | 1924 | Large, good cooking, winter, medium crop annually. |
| Belle de Boskop | 2 | 1910 | Coarse, somewhat acid, not recommended. |
| Ben Davis | 1 | —— | Excellent keeper, but quality very poor. |
| Bethanis | 1 | 1926 | |
| Bingo | 1 | 1913 | Late beginning to bear, not sufficiently tested. |
| Blenheim | 2 | 1924 | |
| Brisco | 1 | 1917 | Unfavourable position, new fruited. |
| Brock | 1 | 1919 | Promising. |
| Bruno | 2 | 1910 | Fruit small, poor quality, not recommended. |
| Canada Baldwin | 2 | 1910 | Strong grower, fair bearer, not recommended. |
| Choate | 2 | 1924 | |
| Claire | 2 | 1910 | Early, not outstanding, not recommended. |
| Clive | 2 | 1910 | Inferior to Wealthy, not recommended. |
| Cobalt | 1 | 1913 | Inclined to be small, not recommended. |
| Congo | 1 | 1910 | Promising as late winter apple. |
| Crimson Beauty | 6 | 1910 | Extra early, heavy cropper, season short. |
| Crusoe | 2 | 1910 | Poor bearer, small, not recommended. |
| Currie | 2 | 1924 | |
| Danville | 2 | 1913 | Not recommended at present. |
| Delicious | 2 | 1912 | Uncertain bearer, not promising. |
| Diana | 4 | 1916 | Good bearer, somewhat acid, season short. |
| Donald | 3 | 1916 | Good bearer, good keeper, not high flavour. |
| Drumbo | 2 | 1926 | |
| Duchess | 4 | 1910 | Probably the best early fall cooking apple, recommended. |

APPLES—LIST OF VARIETIES—*Continued*

| Variety | Number of trees | When first planted | Remarks |
|---|---|---|---|
| Dudley | 3 | 1910 | Good bearer, large, attractive. |
| Edgehill | 2 | 1912 | Small, poor quality, not recommended. |
| Elmer | 2 | 1918 | May prove useful. |
| Emilia | 2 | 1926 | |
| Fameuse | 2 | 1910 | Good bearer, good quality, requires thorough spraying. |
| Galena | 1 | 1917 | Never fruited. |
| Galetta | 4 | 1910 | Not promising. |
| Galton | 1 | 1924 | |
| Gideon | 2 | —— | Poor quality, rots at core, not recommended. |
| Glenton | 2 | 1913 | Inferior to other early winter varieties, not recommended. |
| Granby | 1 | 1910 | Fair bearer but poor quality, not recommended. |
| Grimes Golden | 2 | 1910 | May be worthy of further trial. |
| Hibernal | 2 | 1910 | Heavy bearer, poor quality, not recommended. |
| Horace | 1 | 1910 | Good bearer, attractive, not outstanding. |
| Hubbardson | 2 | 1910 | Promising. |
| Hume | 2 | 1924 | |
| Hutchkin Red | 2 | 1912 | Small, poor quality, not recommended. |
| Hyslop (crab) | 2 | 1910 | Good, attractive colour, medium crop annually. |
| Jethro | 1 | 1917 | Unfavourable position, never fruited. |
| Jonathan | 2 | 1910 | Small, no flavour, not recommended. |
| Joyce | 3 | 1924 | |
| Keetosh | 4 | 1926 | |
| King | 2 | 1924 | |
| Lack Seedling | 2 | 1924 | |
| Langford Beauty | 2 | 1910 | Good bearer, drops badly, subject to scab, not recommended. |
| La Victoire | 2 | 1910 | Slow in bearing, worth further trial. |
| Lawfam | 2 | 1924 | |
| Lawtosh | 2 | 1926 | |
| Linton | 4 | 1912 | Productive, early fall, may be useful. |
| Lipton | 2 | 1924 | |
| Lobo | 2 | 1913 | Good, excellent quality, requires thorough spraying. |
| Lowbeth | 2 | 1924 | |
| Lowland Raspberry | 4 | 1910 | Good bearer, fruit small, not recommended. |
| Lubsk | 2 | 1912 | Fruit good size, quality very poor, not recommended |
| Lawseed | 1 | 1928 | |
| Maclaw | 2 | 1926 | |
| Magnet | 1 | 1912 | Just beginning to bear. |
| Mammoth Black Twig | 1 | 1912 | Worth further trial. |
| Mann | 1 | 1924 | |
| Manks Codling | 1 | —— | Old variety, poor quality, not recommended. |
| Martha (crab) | 2 | 1910 | Fair bearer, good quality, not as good as Hyslop. |
| Mavis | 2 | 1926 | |
| McIntosh | 14 | 1910 | Fair bearer, excellent quality, requires thorough spraying. |
| McMahan White | 2 | 1910 | Good bearer alternate years, fair for cooking. |
| McSweet | 2 | 1926 | |
| Melba | 13 | 1919 | High grade late autumn, good bearer alternate years. |
| Mendel | 2 | 1910 | Good bearer, good size fruit, value doubtful. |
| Miltosh | 2 | 1924 | |
| Milwaukee | 2 | 1912 | Fair annual bearer, early winter, good for cooking. |
| Navan | 2 | 1910 | Early, fair but not outstanding. |
| Newtown Pippin | 2 | 1910 | Light bearer, not recommended. |
| Newtosh | 1 | 1924 | |
| Niobe | 3 | 1913 | Promising. |
| Noel | 2 | 1910 | Not so good as Wealthy. |
| Norah | 1 | 1913 | Fair bearer, not recommended. |
| Northern Spy | 2 | 1924 | |
| Northwestern Greening | 3 | 1910 | Unattractive, poor quality, not recommended. |
| Okabena | 1 | 1918 | |
| Ontario | 1 | 1924 | Tender, not recommended. |
| Ottawa | 2 | 1910 | Fruit small, annual bearer, very hardy. |
| Patricia | 2 | 1924 mature tree | |
| Pear Apple | 1 | 1909 | Very old variety, not recommended. |
| Pedro | 3 | 1918 | Worthy of further trial. |
| Pensaukee Russet | 2 | 1913 | Fruit small, light annual bearer, not recommended. |
| Petrel | 1 | 1924 | |

APPLES—LIST OF VARIETIES—*Concluded*

| Variety | Number of trees | When first planted | Remarks |
|---|---|---|---|
| Pewaukee | 19 | 1910 | Good annual bearer, good keeper, quality poor. |
| Pinto | 2 | 1913 | Fair annual bearer, not recommended. |
| Pikes Seedling | 1 | 1912 mature tree | Poor bearer, not recommended. |
| Quarendon (Red) | 1 | 1909 | Very old variety, not recommended. |
| Red Fameuse | 2 | 1924 | |
| Rhode Island Greening | 1 | 1910 | Very poor bearer, not recommended. |
| Ribston Pippin | 7 | 1910 | Good annual bearer, good quality, recommended. |
| Roberval | 2 | 1910 | Small, light bearer, not recommended. |
| Roger | 1 | 1913 | Heavy bearer, value doubtful. |
| Rosalie | 1 | 1913 | Light bearer, not recommended. |
| Rosetta | 2 | 1926 | |
| Rouleau | 2 | 1913 | Good bearer but not recommended. |
| Rupert | 2 | 1910 | Small, not recommended. |
| Salome | 2 | 1910 | Fruit frequently small, not recommended. |
| Scarlet Pippin | 2 | 1910 | Attractive, good quality, good bearer, recommended. |
| Schiawasse | 2 | 1910 | Attractive, good quality, good bearer, recommended. |
| Severn | 1 | 1910 | Very poor bearer, not recommended. |
| Sonora | 2 | 1912 | Poor bearer, not recommended. |
| Sparta | 2 | 1926 | |
| Spiana | 1 | 1926 | |
| Spiland | 2 | 1926 | |
| Spimil | 2 | 1924 | |
| Spimore | 2 | 1924 | |
| Spiretta | 2 | 1926 | |
| Spiro | 2 | 1926 | |
| St. Lawrence | 2 | 1910 | Light annual bearer, good quality, not recommended. |
| Stone | 1 | 1912 | Poor quality, not recommended. |
| Stonetosh | 3 | 1926 | |
| Sutton Beauty | 2 | 1910 | Fruit small, poor bearer, not recommended. |
| Swazie Pomme Grise | 4 | 1910 | Fruit small, light annual bearer, not recommended. |
| Spilaw | 1 | 1928 | |
| Spiza | 2 | 1928 | |
| Sweetmac | 2 | 1928 | |
| Thurso | 4 | 1910 | Fair annual bearer, worth further trial. |
| Tolman Sweet | 3 | 1910 | Good sweet apple, keeps well, recommended. |
| Toshkee | 3 | 1926 | |
| Trenton | 2 | 1912 | Early fall, season short, not recommended. |
| Wagener | 1 | 1910 | Tender, not recommended. |
| Walter | 2 | 1912 | Fair bearer, large fruit, good flavour, late fall. |
| Walton | 2 | 1910 | Not recommended. |
| Wealthy | 5 | 1910 | Good bearer, late fall, attractive, recommended. |
| Wellington | 2 | 1910 | Not recommended. |
| Whitney (crab) | 2 | 1910 | Not recommended. |
| Winton | 1 | 1918 | Heavy bearer, early fall, promising. |
| Wolf River | 7 | 1910 | Good bearer, large, coarse, lacks flavour, not recommended. |
| Yellow transparent | 2 | 1910 | Very early, good bearer, season short, recommended. |
| York Imperial | 2 | 1910 | Poor quality, not recommended. |

GOOSEBERRIES—TEST OF VARIETIES

In the spring of 1919 six bushes of each of 6 varieties of gooseberries, 7 varieties of red currants and 9 varieties of black currants were received from the Central Experimental Farm, Ottawa. They were planted in a sheltered position east of the main orchard, on land having a southerly slope. The soil was a medium clay loam, medium in fertility and in a good state of cultivation. During each of the first eight years a light application of manure was applied in autumn and dug in about the bushes in early spring.

The following table shows the yield each year from 1920 to 1930 inclusive, also the eleven-year average:—

GOOSEBERRIES—TEST OF VARIETIES

| Variety | Yield per acre, in standard quart boxes | | | | | | | | | | | 11-year average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | |
| Pearl | 182 | 363 | 726 | 3,933 | 4,114 | 6,970 | 7,260 | 5,324 | 3,146 | 5,566 | 2,662 | 3,659 |
| Downing | 272 | 908 | 1,936 | 4,719 | 2,904 | 6,050 | 3,509 | 5,566 | 2,904 | 4,356 | 1,694 | 3,105 |
| Mabel | 363 | 817 | 1,452 | 2,904 | 3,888 | 6,970 | 3,146 | 3,872 | 2,904 | 4,646 | 1,742 | 2,974 |
| Keepsake | 0 | 363 | 726 | 1,815 | 4,211 | 4,356 | 3,388 | 3,872 | 3,194 | 3,775 | 2,614 | 2,574 |
| Red Jacket | 91 | 121 | 484 | 1,694 | 0 | 3,146 | 3,630 | 2,420 | 3,630 | 3,264 | 1,573 | 1,823 |
| Smith Improved | 0 | 0 | 0 | 969 | 726 | 944 | 3,267 | 484 | 121 | 182 | 0 | 608 |

RED CURRANTS—TEST OF VARIETIES

| Variety | Yield per acre in standard quart boxes | | | | | | | | | | | 11-year average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | |
| Red Grape | 0 | 653 | 1,210 | 726 | 3,570 | 6,776 | 2,033 | 1,936 | 2,783 | 4,356 | 3,872 | 2,538 |
| Knight Large | 0 | 182 | 242 | 726 | 1,694 | 6,534 | 6,534 | 3,025 | 2,541 | 2,904 | 2,904 | 2,481 |
| La Conde | 0 | 61 | 484 | 786 | 3,267 | 6,050 | 2,904 | 2,420 | 3,388 | 5,082 | 1,694 | 2,376 |
| Holland Red | 0 | 61 | 0 | 0 | 1,331 | 5,324 | 2,904 | 4,598 | 2,662 | 968 | 1,694 | 1,777 |
| London Red | 0 | 61 | 242 | 121 | 786 | 3,630 | 3,872 | 2,904 | 303 | 1,452 | 1,694 | 1,370 |
| Perfection | 0 | 0 | 242 | 484 | 968 | 2,662 | 2,541 | 2,178 | 1,210 | 1,331 | 1,210 | 1,166 |
| New Red Dutch | 0 | 0 | 0 | 0 | 242 | 4,114 | 3,146 | 1,331 | 666 | 242 | 1,331 | 1,007 |

BLACK CURRANTS—TEST OF VARIETIES

| Variety | Yield per acre in standard quart boxes | | | | | | | | | | | 11-year average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 | 1927 | 1928 | 1929 | 1930 | |
| Topsy | 0 | 61 | 484 | 1,512 | 6,050 | 5,445 | 3,267 | 3,508 | 1,694 | 1,210 | 605 | 2,167 |
| Climax | 61 | 1,028 | 0 | 1,573 | 4,396 | 3,388 | 2,118 | 1,815 | 484 | 726 | 605 | 1,472 |
| Victoria | 242 | 121 | 726 | 2,057 | 2,360 | 3,933 | 3,025 | 1,210 | 908 | 726 | 484 | 1,436 |
| Eclipse | 0 | 182 | 484 | 968 | 3,267 | 3,388 | 2,057 | 1,452 | 1,089 | 242 | 544 | 1,243 |
| Kerry | 121 | 272 | 786 | 968 | 2,541 | 2,420 | 1,694 | 1,936 | 1,089 | 484 | 605 | 1,174 |
| Champion | 121 | 73 | 484 | 1,633 | 1,936 | 2,783 | 1,694 | 1,331 | 666 | 968 | 181 | 1,079 |
| Buddenborg | 0 | 182 | 726 | 1,936 | 2,178 | 2,057 | 605 | 968 | 666 | 121 | 30 | 861 |
| Boskoop Giant | 0 | 36 | 242 | 484 | 968 | 1,302 | 787 | 1,936 | 303 | 726 | 91 | 639 |
| Beauty | 0 | 0 | 0 | 484 | 605 | 871 | 242 | 2,033 | 430 | 436 | 30 | 468 |

Red Grape, Knight Large and LaConde proved to be the outstanding varieties of red currants. They were characterized by strong growth and a fair production of good-sized fruit.

Among the black currants Topsy, Climax and Victoria produced the strongest growth and bore the largest quantity of good-sized fruit. The fruit of Boskop Giant was exceptionally large but the yield was small.

## ORNAMENTALS

The shrubs and perennial plants wintered well and made a good showing during the season of 1930. Special mention should be made of perennial phlox, which produced masses of brilliant colours over a long season. Visitors were much impressed with the showing of perennial phlox, and its popularity is increasing as its merits become known. Owing to dry weather the bloom of sweet peas and dahlias was inferior to that of former years. The water lilies are becoming somewhat crowded in the pond, and as a result the size of individual blooms is decreasing. A great many roots were distributed in the spring of 1930 to stock ponds throughout this province.

Arbor vitae, planted in 1910, height 15 feet.

## CEREALS

### THE SEASON

The heavy precipitation of January and February, which exceeded a thirty-year average by 3¼ inches, practically all eventually soaked into the unfrozen soil and formed a reserve that no doubt greatly helped the cereal crops during the dry summer season of 1930. The snow went early in March, and the grass started much earlier than usual. The ground was ready to work the last of April and seeding started early in May. June was very warm and dry; the average mean daily temperature was 10 degrees above a 21-year average. The growing season, April to September, maintained a mean monthly temperature three degrees above average; there was an average of 27½ hours more sunshine per month and an average of 0·62 inch less rain per month. This gave very favourable weather for seeding, germination and growth. The early cereals grew strong with splendid colour. They ripened rapidly about ten days earlier than usual, and gave average yields. The harvest was completed in August.

## THE TESTING OF VARIETIES AND STRAINS

Four types of plots are employed in the study and testing of cereals at this station. These are as follows:—

HEAD ROW PLOTS.—These consist of a single row, thirty-six inches long, with the seeds spaced uniformly at two inches apart in the row. The seed for planting a head row is all taken from a single head or ear.

SMALL INCREASE PLOTS.—After preliminary survey in the head row, the material deemed of value is transferred to small increase plots and subjected to intensive study and rigorous selection. Each plot comprises from three to ten rows, each thirty-six inches long, with seeds spaced uniformly two inches in the row.

ROD-ROW PLOTS.—All standard varieties, as well as those selections and hybrids surviving study in the increase plots, are tested for yielding ability in rod-row plots. Each plot consists of five drills, eighteen and one-half feet long and seven inches apart. At harvest time the plot is trimmed to exactly sixteen and one-half feet, or one rod long, and the two outer rows are discarded. By this method, border effect is very largely eliminated.

Each variety or strain is planted not less than four times, and where reliable comparisons are desired in the shortest possible period of time, eight plantings are made.

The several plantings are distributed over the area devoted to cereal work, so that differences due to soil variation may be eliminated in so far as is possible. A check is sown every fifth plot, which serves as a measure for this variability.

The yields reported herein, unless otherwise specified, are those obtained from rod-row plots.

ONE-HUNDRED-AND-TWENTIETH-ACRE PLOTS.—These are planted in quadruplicate, and are used for testing the leading or more important varieties. They also offer opportunity for study of the varieties under conditions approximating those found in the field. In addition, they permit of the production of larger quantities of seed, where such are required.

Larger multiplying areas are devoted to the production of registered seed.

## PRODUCTION OF NEW VARIETIES

A number of selections have been made from naturally-occurring and artificial hybrids in the hope of procuring sorts superior in one or several of the more desirable characters. A number of these have been tested in the rod-row plots and show considerable promise.

## SPRING WHEAT

Seventeen named varieties of spring wheat were sown in rod-row plots on May 12 and 13, 1930. In addition to these named varieties, 27 selections and hybrids were tested under number.

SPRING WHEAT—RESULTS OF TEST OF VARIETIES, 1930

| Variety or strain | Number of days to mature | Average length of straw | Strength of straw. Scale of 10 | Relative yield check (Huron Ott. 3) = 100% | Actual yield per acre |
|---|---|---|---|---|---|
| | | in. | | | lb. |
| Checks (Huron Ott. 3) | 91·2 | 36·1 | 10·0 | 100·0 | 1,157 |
| O.A.C. No. 85 | 92·8 | 39·5 | 10·0 | 102·3 | 1,184 |
| Early Red Fife | 90·1 | 36·5 | 10·0 | 101·7 | 1,177 |
| Charlottetown No. 123 | 91·2 | 43·0 | 10·0 | 101·6 | 1,175 |
| Huron, Ottawa No. 3 | 92·4 | 36·3 | 10·0 | 98·3 | 1,137 |
| White Russian | 90·5 | 36·3 | 10·0 | 97·8 | 1,131 |
| Goose | 91·3 | 37·3 | 10·0 | 94·7 | 1,096 |
| Garnet No. 22-17 | 87·0 | 35·0 | 10·0 | 90·7 | 1,049 |
| Bluestem No. 196-C | 94·3 | 38·5 | 10·0 | 86·1 | 996 |
| Mindum | 91·5 | 36·0 | 10·0 | 83·6 | 967 |
| White Fife | 94·0 | 36·8 | 10·0 | 81·2 | 940 |
| Red Fife | 92·3 | 37·0 | 10·0 | 79·6 | 921 |
| Ceres | 89·3 | 31·5 | 10·0 | 79·0 | 914 |
| Garnet No. 652 | 85·0 | 33·3 | 9·9 | 74·4 | 861 |
| Marquis, Ott. 15 | 90·3 | 31·5 | 10·0 | 71·7 | 830 |
| Reward | 85·0 | 33·3 | 10·0 | 63·6 | 736 |
| Red Quality A | 85·3 | 30·0 | 10·0 | 59·0 | 683 |
| Quality A | 84·5 | 30·0 | 10·0 | 59·0 | 683 |

AVERAGES FOR SPRING WHEAT AT CHARLOTTETOWN

The following tables give data averaged over the five-year period 1926 to 1930 inclusive:—

YIELDS SPRING WHEAT AT CHARLOTTETOWN, 1926-1930 INCLUSIVE

| Year | Actual yield checks | Standing of varieties relative to check (Huron) = 100 %. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Huron Ottawa No. 3 | Charlottetown No. 123 | White Russian | Early Red Fife No. 16 | Garnet No. 652 | Red Fife No. 17 | Marquis No. 15 | Reward No. 928 |
| | lb. | % | % | % | % | % | % | % | % |
| 1926.... | 950 | 98·6 | 92·5 | 103·4 | 78·7 | 88·4 | 77·4 | 78·5 | 92·0 |
| 1927.... | 642 | 106·4 | 87·3 | 76·2 | 81·3 | 79·3 | 74·5 | 74·1 | 37·4 |
| 1928.... | 1,491 | 79·9 | 94·2 | 72·8 | 71·9 | 77·6 | 71·2 | 61·8 | 67·1 |
| 1929.... | 764 | 107·3 | 88·6 | 107·9 | 93·1 | 65·3 | 76·3 | 91·8 | 84·3 |
| 1930.... | 1,157 | 98·3 | 101·6 | 97·8 | 101·7 | 74·4 | 79·6 | 71·7 | 63·6 |
| Average | 1,001 | 98·1 | 92·8 | 91·6 | 85·3 | 77·0 | 75·8 | 75·6 | 68·9 |

SPRING WHEAT AT CHARLOTTETOWN, 1926 TO 1930 INCLUSIVE

| Variety or strain | Average | | | | | |
|---|---|---|---|---|---|---|
| | Number days to mature | Length of straw | Strength of straw | Weight per measured bushel | Yield per acre | Yield per acre |
| | days | in. | points | lb. | bush. | lb. |
| Huron Ott. No. 3 | 95·9 | 38·3 | 10·0 | 59·8 | 16·4 | 982 |
| Charlottetown No. 123 | 96·4 | 40·6 | 10·0 | 56·6 | 15·5 | 929 |
| White Russian | 96·9 | 38·9 | 10·0 | 58·2 | 15·3 | 917 |
| Early Red Fife, Ott. No. 16 | 95·5 | 38·1 | 10·0 | 58·7 | 14·2 | 854 |
| Garnte, Ott. No. 652 | 88·7 | 34·4 | 9·9 | 60·2 | 12·8 | 771 |
| Red Fife Ott. No. 17 | 96·4 | 37·1 | 9·9 | 59·5 | 12·6 | 759 |
| Marquis Ott. No. 15 | 93·5 | 34·9 | 9·9 | 57·2 | 12·6 | 757 |
| Reward Ott. No. 928 | 88·6 | 34·6 | 10·0 | 61·7 | 11·5 | 690 |

## OATS—TEST OF VARIETIES

Twenty-six varieties and strains were sown on May 14, 1930. Most of these gave an excellent yield.

OATS—RESULT OF TEST OF VARIETIES, 1930

| Variety or strain | Number of days to mature | Average length of straw | Strength of straw on scale of 10 points | Relative yield, check (Banner Ott 49) =100 | Actual yield, per acre |
|---|---|---|---|---|---|
| | | in. | | % | lb. |
| Check—(Banner Ott. 49) | 88·6 | 41·7 | 10·0 | 100·0 | 1,937 |
| Banner—Ottawa 49 | 88·8 | 41·0 | 9·9 | 104·7 | 2,029 |
| Banner—Waugh | 89·5 | 43·0 | 10·0 | 104·5 | 2,025 |
| Banner—Mac. 4407 | 88·0 | 41·8 | 10·0 | 104·2 | 2,019 |
| Victory | 89·3 | 41·4 | 10·0 | 101·3 | 1,963 |
| Banner—Sask. 144 | 89·0 | 42·0 | 10·0 | 97·1 | 1,881 |
| Star | 88·5 | 38·8 | 10·0 | 96·2 | 1,863 |
| Danish Island | 88·5 | 42·0 | 10·0 | 94·7 | 1,834 |
| Banner—Cap Rouge | 88·5 | 42·5 | 10·0 | 90·6 | 1,755 |
| Gold Rain | 88·6 | 43·5 | 9·9 | 90·2 | 1,748 |
| Irish Victor | 89·3 | 42·0 | 10·0 | 89·1 | 1,725 |
| Legacy No. 678 | 88·5 | 36·0 | 9·9 | 86·5 | 1,676 |
| Lincoln | 88·8 | 42·8 | 10·0 | 85·9 | 1,664 |
| O.A.C. No. 72 | 88·8 | 45·8 | 10·0 | 85·4 | 1,654 |
| Prolific No. 77 | 88·5 | 41·5 | 10·0 | 83·9 | 1,626 |
| Leader B | 90·3 | 39·3 | 9·8 | 82·7 | 1,602 |
| O.A.C. No. 144 | 91·8 | 41·8 | 10·0 | 77·5 | 1,502 |
| Abundance | 89·8 | 40·5 | 9·3 | 77·3 | 1,497 |
| Old Island Black | 88·5 | 44·5 | 10·0 | 77·1 | 1,494 |
| Gopher | 82·8 | 35·3 | 9·9 | 74·0 | 1,434 |
| *Laurel No. 477 | 88·8 | 39·3 | 10·0 | 71·9 | 1,393 |
| White Cross | 82·5 | 39·3 | 8·8 | 68·9 | 1,335 |
| Longfellow No. 478 | 88·3 | 41·3 | 10·0 | 68·8 | 1,333 |
| O.A.C. No. 3 | 82·5 | 37·8 | 9·5 | 58·6 | 1,136 |
| Daubeney | 82·5 | 35·5 | 9·0 | 55·9 | 1,082 |
| Leader A | 83·5 | 38·8 | 9·6 | 54·5 | 1,056 |
| Alaska | 81·5 | 37·0 | 8·9 | 52·7 | 1,020 |

*Hulless variety.

## AVERAGES FOR OATS AT CHARLOTTETOWN

The following tables give data relative to several varieties grown at this station for the five-year period 1926 to 1930 inclusive:—

YIELD OF OATS AT CHARLOTTETOWN, 1926 TO 1930 INCLUSIVE

| Variety or strain | Standing of varieties relative to check (Banner Ott. 49) =100 | | | | | |
|---|---|---|---|---|---|---|
| | 1926 | 1927 | 1928 | 1929 | 1930 | Average |
| Checks—actual yields pounds per acre, (Banner Ott. 49) | 2,335 | 1,202 | 1,835 | 1,668 | 1,937 | 1,795 |
| Banner—Sask. 144 | 144·6 | 104·0 | 91·4 | 107·4 | 97·1 | 102·9 |
| Banner—Cap Rouge | 110·7 | 99·3 | 98·1 | 110·9 | 90·6 | 101·9 |
| Banner—Waugh | 112·1 | 96·3 | 88·7 | 106·7 | 104·5 | 101·7 |
| Irish Victor | 101·9 | 106·7 | 99·3 | 106·9 | 89·1 | 100·8 |
| Victory | 113·0 | 95·0 | 96·6 | 97·0 | 101·3 | 100·6 |
| Danish Island | 107·3 | 91·3 | 94·2 | 106·9 | 94·7 | 98·9 |
| Lincoln | 92·1 | 112·8 | 95·2 | 107·1 | 85·9 | 98·6 |
| Banner Mac. 4407 | 102·7 | 101·9 | 81·8 | 97·2 | 104·2 | 97·6 |
| O.A.C. No. 72 | 95·5 | 99·5 | 92·3 | 105·5 | 85·4 | 95·6 |
| Legacy | 94·6 | 115·1 | 87·3 | 94·1 | 86·5 | 95·5 |
| Banner—Ott. 49 | 100·9 | 98·2 | 82·3 | 87·5 | 104·7 | 94·7 |
| Prolific—Ott. 77 | 100·7 | 95·2 | 90·8 | 101·6 | 83·9 | 94·4 |
| Gold Rain | 99·1 | 93·2 | 84·6 | 90·1 | 90·2 | 91·4 |
| Longfellow | 82·8 | 97·1 | 85·9 | 93·2 | 68·8 | 85·6 |
| Alaska | 89·9 | 98·3 | 90·7 | 83·8 | 52·7 | 83·1 |
| O.A.C. No. 3 | 86·5 | 86·7 | 91·0 | 92·2 | 58·6 | 83·0 |
| Abundance | 86·0 | 90·1 | 56·0 | 104·9 | 77·3 | 82·9 |
| Leader B | 82·9 | 83·6 | 71·8 | 91·9 | 82·7 | 82·6 |
| Leader A | 78·9 | 78·0 | 78·4 | 85·0 | 54·5 | 75·0 |
| Laurel* | 67·8 | 70·7 | 52·9 | 65·6 | 71·9 | 65·8 |

*Hulless variety.

OATS AT CHARLOTTETOWN, 1926 TO 1930 INCLUSIVE

| Variety or strain | Average | | | | | |
|---|---|---|---|---|---|---|
| | Days to maturity | Length of straw | Strength of straw | Weight per measured bushel | Yield per acre | Yield per acre |
| | days | in. | | lb. | bush. | lb. |
| Banner Sask. 144 | 94·4 | 40·7 | 9·4 | 33·1 | 54·3 | 1,847 |
| Banner Cap Rouge | 94·1 | 41·2 | 9·1 | 33·1 | 53·8 | 1,829 |
| Banner Waugh | 94·5 | 41·7 | 9·3 | 33·6 | 53·7 | 1,825 |
| Irish Victor | 94·3 | 40·8 | 9·0 | 34·1 | 53·2 | 1,809 |
| Victory | 94·8 | 41·0 | 9·1 | 36·4 | 53·1 | 1,806 |
| Danish Island | 94·4 | 40·6 | 9·0 | 30·4 | 52·2 | 1,775 |
| Lincoln | 94·2 | 40·8 | 9·0 | 34·2 | 52·1 | 1,770 |
| Banner Mac 4407 | 93·6 | 40·9 | 9·2 | 31·9 | 51·5 | 1,752 |
| O.A.C. No. 72 | 94·3 | 42·1 | 9·1 | 34·0 | 50·5 | 1,716 |
| Legacy Ott. 678 | 90·8 | 35·9 | 8·7 | 33·1 | 50·4 | 1,714 |
| Banner Ott. 49 | 93·2 | 40·4 | 9·0 | 33·2 | 50·0 | 1,700 |
| Prolific Ott. 77 | 94·7 | 39·7 | 9·2 | 36·7 | 49·8 | 1,694 |
| Gold Rain | 92·5 | 41·1 | 8·9 | 35·8 | 48·3 | 1,641 |
| Longfellow Ott. 478 | 91·5 | 39·3 | 8·9 | 33·8 | 45·2 | 1,537 |
| Alaska | 87·8 | 37·2 | 8·4 | 36·7 | 43·9 | 1,492 |
| O.A.C. No. 3 | 89·6 | 36·9 | 8·3 | 34·5 | 43·8 | 1,490 |
| Abundance | 92·4 | 38·8 | 8·9 | 34·9 | 43·8 | 1,488 |
| Leader B | 92·7 | 37·6 | 8·9 | 31·1 | 43·6 | 1,483 |
| Leader A | 89·5 | 38·4 | 8·4 | 30·9 | 39·6 | 1,346 |
| Laurel Ott. 477* | 91·3 | 37·3 | 9·1 | 46·2 | 34·7 | 1,181 |

*Hulless variety.

BARLEY

Twenty-seven standard varieties and strains were sown on May 15, 16 and 17, 1930. In addition 30 selections and hybrids were tested under number.

BARLEY—RESULTS OF TEST OF VARIETIES 1930

| Variety or strain | Days to maturity | Average length of straw | Strength of straw | Relative yield check (Ch. No. 80) =100 | Actual yield per acre |
|---|---|---|---|---|---|
| | days | in. | | % | lb. |
| Check (Charlottetown No. 80) | 86·9 | 35·6 | 10·0 | 100·0 | 1,891 |
| Bearer Ottawa No. 475 | 86·5 | 32·3 | 10·0 | 107·2 | 2,028 |
| Charlottetown No. 80 | 86·0 | 34·1 | 10·0 | 99·5 | 1,882 |
| Binder C. D. 546 | 86·3 | 33·7 | 10·0 | 94·9 | 1,795 |
| Charlottetown No. 80 (Reselection) | 85·4 | 33·8 | 10·0 | 94·4 | 1,785 |
| Horn | 86·1 | 31·5 | 9·4 | 91·4 | 1,729 |
| Gold | 85·5 | 32·5 | 9·5 | 91·2 | 1,725 |
| Early Chevalier Ottawa No. 51 | 80·9 | 34·9 | 10·0 | 89·1 | 1,684 |
| O.A.C. No. 21 | 82·9 | 38·1 | 10·0 | 89·0 | 1,683 |
| Hannchen Sask. 299 | 87·8 | 37·8 | 8·5 | 86·9 | 1,643 |
| Mensury, Ottawa No. 60 | 81·0 | 33·3 | 10·0 | 86·3 | 1,632 |
| Star | 86·4 | 25·1 | 10·0 | 83·7 | 1,583 |
| Manchurian, Cap Rouge | 83·3 | 37·8 | 10·0 | 81·4 | 1,540 |
| Velvet No. 447 | 83·5 | 37·5 | 10·0 | 81·2 | 1,536 |
| Gordon—A | 86·7 | 39·0 | 10·0 | 80·8 | 1,527 |
| Trebi | 81·5 | 24·0 | 10·0 | 80·4 | 1,521 |
| French Chevalier | 86·3 | 36·8 | 10·0 | 78·7 | 1,489 |
| Pontiac M.C. | 81·3 | 36·0 | 10·0 | 78·6 | 1,487 |
| Stella Ottawa No. 58 | 82·3 | 37·5 | 10·0 | 75·3 | 1,423 |
| Manchurian, Ottawa No. 50 | 86·3 | 37·3 | 10·0 | 74·2 | 1,403 |
| Duckbill, Ottawa No. 57 | 89·5 | 37·5 | 10·0 | 62·2 | 1,176 |
| Baku | 88·0 | 34·0 | 6·5 | 60·2 | 1,139 |
| Guy Mayle* | 79·3 | 22·0 | 10·0 | 57·9 | 1,094 |
| Himalayan* | 78·8 | 21·5 | 10·0 | 55·4 | 1,047 |
| Duckbill Mac No. 207 | 90·5 | 33·3 | 10·0 | 50·2 | 950 |
| Canadian Thorpe | 95·8 | 34·5 | 10·0 | 49·7 | 940 |
| Plumage Archer | 97·5 | 33·0 | 10·0 | 47·5 | 899 |
| Albert, Ottawa No. 54 | 74·3 | 22·8 | 10·0 | 45·0 | 851 |

* Hulless variety.

## AVERAGES FOR BARLEY AT CHARLOTTETOWN

The following tables give data for several varieties grown at this station during the five-year period 1926 to 1930 inclusive:—

YIELDS OF BARLEY AT CHARLOTTETOWN 1926 TO 1930 INCLUSIVE

| Variety or strain | Standing of varieties relative to check (Charlottetown No. 80) =100 | | | | | |
|---|---|---|---|---|---|---|
| | 1926 | 1927 | 1928 | 1929 | 1930 | Average |
| Check (Charlottetown No. 80) in pounds per acre | 1,572 | 1,185 | 1,951 | 2,524 | 1,891 | 1,825 |
| Manchurian Cap Rouge | 100·3 | 147·9 | 108·1 | 93·3 | 81·4 | 106·2 |
| Charlottetown No. 80 | 110·1 | 107·8 | 97·3 | 102·6 | 99·5 | 103·5 |
| O.A.C. No. 21 | 97·3 | 120·4 | 111·8 | 90·7 | 89·0 | 101·8 |
| Velvet No. 447 | 89·1 | 130·1 | 107·3 | 94·8 | 81·2 | 100·5 |
| Bearer, Ottawa No. 475 | 105·5 | 113·7 | 78·6 | 91·9 | 107·2 | 99·4 |
| Manchurian, Ottawa No. 50 | 114·0 | 99·9 | 101·4 | 93·6 | 74·2 | 96·6 |
| Hannchen, Sask. No. 299 | 108·2 | 109·2 | 84·9 | 92·7 | 86·9 | 96·4 |
| Early Chevalier, Ottawa No. 51 | 90·4 | 117·6 | 91·0 | 87·0 | 89·1 | 95·0 |
| Mensury, Ottawa No. 60 | 91·0 | 104·7 | 86·5 | 84·7 | 86·3 | 90·6 |
| French Chevalier | 91·5 | 90·8 | 90·4 | 91·1 | 78·7 | 88·5 |
| Gold | 99·7 | 57·5 | 109·5 | 82·5 | 91·2 | 88·1 |
| Guy Mayle* | 80·3 | 50·5 | 55·9 | 76·5 | 57·9 | 64·2 |
| Duckbill, Mac No. 207 | 68·2 | 46·8 | 83·3 | 69·5 | 50·2 | 63·6 |
| Duckbill, Ottawa No. 57 | 60·3 | 37·6 | 81·0 | 74·4 | 62·2 | 63·1 |
| Himalayan* | 75·3 | 47·3 | 45·5 | 75·7 | 55·4 | 59·8 |
| Albert, Ottawa No. 54 | 42·3 | 59·3 | 42·6 | 50·8 | 45·0 | 48·0 |

* Hulless variety.

BARLEY AT CHARLOTTETOWN, 1926–1930 INCLUSIVE

| Variety or strain | Average | | | | | |
|---|---|---|---|---|---|---|
| | Days to mature | Length of straw | Strength of straw | Weight per measured bushel | Yield per acre | Yield per acre |
| | days | in. | points | lb. | bush. | lb. |
| Manchurian Cap Rouge | 87·1 | 35·8 | 9·6 | 42·6 | 40·4 | 1,938 |
| Charlottetown No. 80 | 91·9 | 33·5 | 9·8 | 50·9 | 39·4 | 1,889 |
| O.A.C. No. 21 | 86·7 | 35·1 | 8·7 | 45·6 | 38·7 | 1,858 |
| Velvet No. 447 | 86·1 | 35·7 | 9·8 | 43·0 | 38·2 | 1,834 |
| Bearer, Ottawa No. 475 | 92·0 | 33·5 | 9·8 | 42·5 | 37·8 | 1,814 |
| Manchurian, Ottawa No. 50 | 87·8 | 35·2 | 9·6 | 43·9 | 36·7 | 1,763 |
| Hannchen, Sask. No. 299 | 89·5 | 32·5 | 8·9 | 48·7 | 36·6 | 1,759 |
| Early Chevalier, Ottawa No. 51 | 84·7 | 35·5 | 8·5 | 49·5 | 36·1 | 1,734 |
| Mensury, Ottawa No. 60 | 85·3 | 34·8 | 9·3 | 43·9 | 34·4 | 1,653 |
| French Chevalier | 91·5 | 38·4 | 9·7 | 50·5 | 33·6 | 1,615 |
| Gold | 90·6 | 30·8 | 9·5 | 49·7 | 33·5 | 1,608 |
| Guy Mayle* | 84·9 | 27·0 | 8·9 | 58·7 | 24·4 | 1,172 |
| Duckbill, Mac No. 207 | 92·2 | 31·8 | 10·0 | 46·1 | 24·2 | 1,161 |
| Duckbill, Ottawa No. 57 | 92·4 | 33·6 | 10·0 | 47·3 | 24·0 | 1,152 |
| Himalayan* | 82·7 | 25·6 | 8·9 | 59·8 | 22·7 | 1,091 |
| Albert, Ottawa No. 54 | 79·3 | 29·0 | 9·3 | 40·9 | 18·2 | 876 |

* Hulless variety.

Cereal breeding—Banner x Alaska oats.

## FORAGE CROPS

### SEASONAL NOTES

There was a good covering of snow during the early winter of 1929-30, so that the frost did not freeze the soil to any great depth. The ground was thoroughly saturated when the snow melted early in March. The season opened early and was much warmer than usual, with 27½ hours more sunshine per month for the six months April to September than the average for twenty years. The rainfall for April and June was light, but it was about average for the rest of the growing season. This was very favourable for forage crops, and gave yields of corn and roots much above average, and satisfactory crops of hay and sunflowers. The autumn weather for harvesting roots was very favourable.

### CORN

Nine varieties were planted in duplicate, on barley stubble, June 11, 1930. The season was very favourable for corn and heavy yields were obtained, as

indicated in the following table. All figures shown are given as the mean of two plots. The crop was grown in hills 30 inches by 30 inches, 5 plants per hill, and yields computed from 40 hills having full stand.

CORN FOR ENSILAGE—RESULT OF TEST OF VARIETIES

| Standing | Variety or strain | Height | State of maturity | Green yield per acre | Per cent dry matter | Dry matter per acre |
|---|---|---|---|---|---|---|
| | | inch. | | tons | % | tons |
| 1 | Wisconsin No. 7* (commercial seed) | 108 | Soft dough | 28·430 | 19·95 | 5·672 |
| 2 | Bailey No. 1—Duke | 102 | Softdough | 25·701 | 20·58 | 5·288 |
| 3 | N. W. Dent, Disco | 81 | Firm dough | 23·131 | 21·97 | 5·083 |
| 4 | Longfellow—Duke | 102 | Firm dough | 25·091 | 20·04 | 5·030 |
| 5 | Compton Early—Duke | 102 | Soft dough | 25·701 | 19·08 | 4·903 |
| 6 | Golden Glow—Duke | 99 | Soft dough | 24·263 | 17·66 | 4·286 |
| 7 | Pride Yellow Dent—Disco | 87 | Firm dough | 20·953 | 19·34 | 4·053 |
| 8 | Quebec No. 28—McD. College | 72 | Glazed | 18·078 | 22·20 | 4·014 |
| 9 | N. W. Dent—Brandon | 69 | Glazed | 13·548 | 26·93 | 3·648 |

* Mean of 3 plantings.

SUNFLOWERS

Three varieties were planted June 11, 1930. Mammoth Russian (McDonald) yielded at the rate of 34·456 tons (green weight) per acre, testing 17·20 per cent dry matter for a total of 5·928 tons. Giant Russian (Disco) and Mammoth Russian (Disco) germinated below 40 per cent and were discarded.

MANGELS

Nine varieties were seeded in triplicate on June 5, 1930. Data tabulated below are the mean of three plots.

MANGELS—RESULTS OF TEST OF VARIETIES

| Standing | Variety and source of seed | Yield in tons per acre | Per cent dry matter | Dry matter per acre |
|---|---|---|---|---|
| | | tons | % | tons |
| 1 | Long Red Mammoth—Ewing | 37·752 | 13·44 | 5·076 |
| 2 | Giant White Half Sugar—Ewing | 38·043 | 12·24 | 4·657 |
| 3 | Yellow Intermediate—C.E.F | 34·558 | 13·47 | 4·656 |
| 4 | Stryno Barres—Hartmann | 36·591 | 11·75 | 4·301 |
| 5 | Rosted Barres—Hartmann | 36·881 | 10·91 | 4·023 |
| 6 | Red Eckendorfer—Hartmann | 39·204 | 9·39 | 3·684 |
| 7 | Elvetham Mammoth—Hartmann | 34·848 | 10·13 | 3·530 |
| 8 | Eckendorfer Yellow—Hartmann | 26·136 | 8·78 | 2·295 |
| 9 | Danish Sludstrup—McDonald | * | ..... | ..... |

* Germination so poor plots had to be discarded.

SUGAR BEETS

Three varieties were sown in triplicate June 5, 1930. In addition to the regular data there are also reported the per cent of sugar in juice and the coefficient of purity as determined by the Dominion Chemist.

SUGAR BEETS—RESULTS OF TESTS OF VARIETIES

| Standing | Variety | Per cent sugar in juice | Coefficient of purity | Field weight per acre | Per cent dry matter | Dry matter per acre |
|---|---|---|---|---|---|---|
| | | % | % | tons | % | tons |
| 1 | Rabbethige & Gieske | 19·94 | 89·28 | 21·780 | 23·73 | 5·169 |
| 2 | Dippe | 19·45 | 88·84 | 18·876 | 24·70 | 4·663 |
| 3 | Fredericksen | 20·06 | 88·24 | 18·295 | 24·80 | 4·537 |

SWEDE TURNIPS

Nine varieties were seeded on June 5, 1930, in triplicate plots. All figures given are the mean of the three plantings.

SWEDE TURNIPS—TEST OF VARIETIES

| Standing | Variety and source of seed | Green weight per acre | Per cent dry matter | Dry matter per acre |
|---|---|---|---|---|
| | | tons | % | tons |
| 1 | Champion Purple Top—Sutton | 34·267 | 10·86 | 3·721 |
| 2 | Ditmars—McNutt | 29·562 | 11·36 | 3·358 |
| 3 | Yellow Swedish—General Swedish Seed Co | 31·305 | 10·53 | 3·298 |
| 4 | Halls Westbury—McDonald | 33·048 | 9·89 | 3·269 |
| 5 | Halls Westbury—Ewing | 29·795 | 10·92 | 3·253 |
| 6 | Invicta Bronze Top—Ewing | 30·260 | 10·09 | 3·054 |
| 7 | Bangholm—Ewing | 25·265 | 11·43 | 2·889 |
| 8 | Bangholm—Charlottetown | 22·245 | 12·98 | 2·887 |
| 9 | Hazards Improved—Rennie* | ..... | ..... | ..... |

*Germination so poor had to be discarded.

CLOVER PLOTS

Twenty plots of one-forty-fifth-acre each were seeded with red clover in July, 1928. Early Swedish, Alta Swede, Late Swedish, Chateauguay and St. Clet were sown in quadruplicate plots with four-foot paths between. Clover on the paths was removed immediately before the plots were cut. The plots were so situated that they were exposed to the most severe winter conditions. In the spring of 1929 Alta Swede was found to have wintered in perfect condition; three plots of Late Swedish were in perfect condition, one showed slight winter-killing, and all plots of Early Swedish, Chateauguay and St. Clet showed about 10 per cent winter-killing. Early in the spring of 1930 there was a good stand of clover on all plots of Alta Swede; a fair stand on all plots of Late Swedish, a 50 per cent stand on plots of Chateauguay and St. Clet, and Early Swedish had entirely disappeared. The exceptionally dry weather of June and early July checked the growth of the clover to such an extent that Stitchwort took possession of the plots and no yields were taken.

YIELD OF CLOVER PLOTS AT CHARLOTTETOWN, SEASON 1929

| Variety | Average yield per acre, 88 per cent dry matter |
|---|---|
| Early Swedish | 3,426 |
| Alta Swede | 5,607 |
| Chateauguay | 3,369 |
| St. Clet | 3,307 |
| Late Swedish | 4,921 |

# SOILS AND FERTILIZERS, 1930

## STABLE MANURE VERSUS CHEMICAL FERTILIZERS FOR POTATOES

This experiment was started in the crop year of 1927. In addition to studying the effect on yield of crop, of stable manure versus chemical fertilizers, alone and in combination, and a rotation versus a continuous cropping of potatoes on the same area, there is also an opportunity for comparing the relative merits of nitrate of soda versus sulphate of ammonia as a source of nitrogen for potato growing.

Soil samples from surface and subsoil were drawn from all plots previous to the start of the experiment. These were submitted to chemical and physical analyses by the Dominion Chemist. It is the intention to resample at a later date to determine whether or not the various treatments produce any effect on the physical or chemical composition of the soil.

The following is an outline of the experiment:—

### POTATOES GROWN ON SAME LAND CONTINUOUSLY

*Treatment No. 1.*—Check—no manure—no chemicals.

*Treatment No. 2.*—Fifteen tons stable manure per acre.

*Treatment No. 3.*—Two hundred and fifty-eight pounds nitrate of soda, five hundred pounds superphosphate and one hundred and sixty pounds muriate of potash per acre.

*Treatment No. 4.*—Two hundred pounds sulphate of ammonia, five hundred pounds superphosphate and one hundred and sixty pounds muriate of potash per acre.

*Treatment No. 5.*—Seven and one-half tons stable manure, one hundred and twenty-nine pounds nitrate of soda, two hundred and fifty pounds superphosphate, eighty pounds muriate of potash per acre.

*Treatment No. 6.*—Seven and one-half tons manure, one hundred pounds sulphate of ammonia, two hundred and fifty pounds superphosphate, eighty 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 with clover and timothy.

*Third Year.*—Hay.

The tables following give the yields from each series:—

MANURE VERSUS CHEMICAL FERTILIZERS ON POTATOES GROWN CONTINUOUSLY

| Treatment number | Material applied and rate per acre | | | | | Plant food supplied by chemicals | | | Yield per acre | | | | | | Average per cent total crop marketable |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Marketable | | Unmarketable | | Total | | |
| | *Stable manure | Nitrate of soda (15½%) | Sulphate of ammonia (20%) | Superphosphate (16%) | Muriate of potash (50%) | N | $P_2O_5$ | $K_2O$ | 1930 | Average, 4 years, 1927-30 | 1930 | Average, 4 years, 1927-30 | 1930 | Average 4 years, 1927-30 | |
| | tons | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | % |
| 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4,998 | 3,920 | 1,244 | 2,021 | 6,242 | 5,941 | 66·0 |
| 2 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 15,200 | 11,460 | 960 | 1,770 | 16,160 | 13,230 | 86·6 |
| 3 | ..... | 258 | ..... | 500 | 160 | 40 | 80 | 80 | 11,280 | 8,380 | 920 | 2,410 | 12,200 | 10,790 | 77·7 |
| 4 | ..... | ..... | 200 | 500 | 160 | 40 | 80 | 80 | 7,360 | 6,610 | 1,040 | 1,420 | 8,400 | 8,030 | 82·3 |
| 5 | 7½ | 129 | ..... | 250 | 80 | 20 | 40 | 40 | 12,880 | 10,280 | 1,560 | 2,710 | 14,440 | 12,990 | 79·1 |
| 6 | 7½ | ..... | 100 | 250 | 80 | 20 | 40 | 40 | 11,360 | 8,830 | 1,640 | 1,680 | 13,000 | 10,510 | 84·0 |

* Chemical composition not dotormined.

MANURE VERSUS CHEMICAL FERTILIZERS ON POTATOES GROWN IN ROTATION

| Treatment number | Material applied and rate per acre | | | | | Plant food supplied by chemicals | | | Yield per acre | | | | | | Average per cent total crop marketable |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Marketable | | Unmarketable | | Total | | |
| | *Stable manure | Nitrate of soda (15%) | Sulphate of ammonia (20%) | Superphosphate (16%) | Muriate of potash (50%) | N | $P_2O_5$ | $K_2O$ | 1930 | Average 4 years, 1927-30 | 1930 | Average, 4 years, 1927-30 | 1930 | Average, 4 years, 1927-30 | |
| | tons | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | lb. | % |
| 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 6,360 | 6,220 | 1,720 | 2,280 | 8,080 | 8,500 | 73·2 |
| 2 | 15 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 13,400 | 11,960 | 1,520 | 1,630 | 14,920 | 13,590 | 88·0 |
| 3 | ..... | 258 | ..... | 500 | 160 | 40 | 80 | 80 | 9,760 | 11,020 | 1,480 | 2,080 | 11,240 | 13,100 | 84·1 |
| 4 | ..... | ..... | 200 | 500 | 160 | 40 | 80 | 80 | 6,600 | 9,190 | 2,080 | 1,550 | 8,680 | 10,740 | 85·6 |
| 5 | 7½ | 129 | ..... | 250 | 80 | 20 | 40 | 40 | 11,640 | 11,810 | 1,560 | 2,250 | 13,200 | 14,060 | 84·0 |
| 6 | 7½ | ..... | 100 | 250 | 80 | 20 | 40 | 40 | 8,960 | 11,020 | 1,440 | 1,690 | 10,400 | 12,710 | 86·7 |

* Chemical composition not determined.

The most casual perusal of the above figures indicates the value of stable manure in the production of a potato crop.

It would seem also that there is a decided advantage in yield in favour of the nitrate of soda plots over those treated with sulphate of ammonia. This is apparent in the yield from plots grown with chemical fertilizers only, as well as from those grown with manure plus fertilizer, and is equally pronounced from plots grown in rotation as from those on which potatoes have been grown continuously.

Sulphate of ammonia, however, seems to produce a higher percentage of marketable-to-total crop. This is more evident from the "continuous" plot yields.

## CONCENTRATED FERTILIZERS

Considerable attention has recently been given to the relative merits of highly concentrated fertilizers as compared with the standard mixtures of ordinary strength at present in general use. Much can be said in favour of the use of the high analysis mixtures—there would be a material saving in shipping charges, and there would as well, be a smaller amount of material to haul and spread. It remains, however, for the proponents of these fertilizers to demonstrate the productive value.

This season a simple test was conducted at this Station using concentrated fertilizer at the rate of 1,000 pounds per acre of an 8-16-20 mixture against 2,000 per acre of a 4-8-10 mixture on potatoes. It will be noted that equivalent amounts of plant food are supplied in both cases. While conclusions are unwarranted, it may be said that the concentrated fertilizer produced a crop slightly greater in yield than the heavier application of less concentrated material.

## SOILS AND FERTILIZERS

A simple test was made this season in an effort to determine whether or not one-half the quantity of an 8-16-20 mixed fertilizer was equal, as measured by crop yield, to the regular application of a 4-8-10 mixture.

To this end two quarter-acre plots of potatoes were set aside for the test. One plot received an application of a ready-mixed commercial fertilizer at the rate of 1,000 pounds per acre of an 8-16-20 mixture, while the second plot received an application equivalent to 2,000 pounds per acre of a 4-8-10 mixture made up as follows: Two hundred and fifty pounds sulphate of ammonia, 200 pounds nitrate of soda, 1,000 pounds superphosphate, 400 pounds muriate of potash, and 150 pounds of filler. Following is the result of this test:—

CONCENTRATED VERSUS ORDINARY STRENGTH CHEMICAL FERTILIZERS

| Material applied and rate per acre | Plant food supplied | | | Yield potatoes per acre |
|---|---|---|---|---|
| | N | $P_2O_5$ | $K_2O$ | |
| | | | | bush. |
| 1,000 pounds per acre 8-16-20 mixture | 80 | 160 | 200 | 483·2 |
| 2,000 pounds per acre 4-8-10 mixture | 80 | 160 | 200 | 433·5 |

From the above figures one would judge that the highly concentrated fertilizer had proved superior to the ordinary mixture. It would not be wise, however, to draw conclusions from one season's work, nor from an experiment where plots were not replicated. If repeated trials should prove that higher concentrated materials are as effective as the mixtures commonly found on the market, their use would be preferable from the economic point of view, owing to saving in freight and also the saving in handling, hauling, spreading, etc.

## POULTRY

Work has been continued in pedigree breeding in an effort to isolate family lines possessing the qualities of high production and heavy egg weight. Several such lines have been selected as highly promising, and a further detailed survey is to be undertaken at an early date with a view of further reducing the number of blood lines now being carried.

### STOCK

The stock on hand as at November 1, 1930, consisted of 59 males and 479 females, as follows:—

BREEDING STOCK AT THE CHARLOTTETOWN STATION

| Breed | Males | Hens | Pullets | Total |
|---|---|---|---|---|
| Barred Plymouth Rocks | 59 | 142 | 337 | 538 |

### HOUSING AND YARDS

No new buildings were erected during the current year. Yards were fenced, where necessary, with hurdles, and these were removed in the autumn, allowing free access for ploughing of yards.

### FEEDS AND FEEDING

A very light feeding of scratch grain is given in the litter morning and noon, and a heavy feeding in the evening.

Mangels were fed as a green feed from November until May. These are fed whole by being stuck on a heavy spike driven into the wall about one foot from the floor. Mangels are given about 11 a.m., and left until about 2 p.m., when the uneaten portion is removed.

The scratch grain used was a commercial product composed of corn, wheat, oats, barley, buckwheat, sunflower seed and Milo maize, in varying amounts. This grain gave excellent satisfaction.

The birds had access at all times to dry mash, grit and shell, all hopper-fed, and an abundant supply of drinking water was always available. The home-mixed dry mash used was composed of 100 pounds bran, 100 pounds shorts, 100 pounds cornmeal, 100 pounds oatmeal (Scotch cut), 100 pounds meat scrap, 50 pounds charcoal, and 1 gallon cod liver oil.

During the hatching season some of the pens were fed buttermilk. The meat scrap for these pens was reduced to 5 per cent of the mixture.

### EGG PRODUCTION

In the following table is shown the average production per hen and per pullet by the month and for the year completed October 31, 1930:—

EGG YIELDS—BARRED ROCKS—HENS VS. PULLETS

| Month | Hens | | | Pullets | | |
|---|---|---|---|---|---|---|
| | Average number birds for month | Total eggs laid | Average per bird | Average number birds for month | Total eggs laid | Average per bird |
| 1929 | | | | | | |
| November | 246 | 359 | 1·46 | 216 | 1,349 | 6·25 |
| December | 187 | 426 | 2·28 | 214 | 1,960 | 9·16 |
| 1930 | | | | | | |
| January | 137 | 882 | 6·44 | 214 | 2,425 | 11·33 |
| February | 135 | 1,193 | 8·84 | 172 | 2,172 | 12·63 |
| March | 132 | 2,074 | 15·71 | 161 | 3,446 | 21·40 |
| April | 117 | 1,901 | 16·25 | 138 | 2,717 | 19·69 |
| May | 109 | 1,709 | 15·66 | 131 | 2,298 | 17·54 |
| June | 68 | 1,087 | 15·99 | 105 | 1,798 | 17·12 |
| July | 68 | 992 | 14·59 | 97 | 1,428 | 14·72 |
| August | 66 | 776 | 11·76 | 90 | 1,333 | 14·81 |
| September | 62 | 632 | 10·19 | 62 | 874 | 14·10 |
| October | 62 | 365 | 5·89 | 62 | 394 | 6·35 |
| Totals and averages | ..... | 12,396 | 125·06 | ..... | 22,194 | 165·10 |

### AVERAGE ANNUAL PRODUCTION PER BIRD

The following table shows the average annual production per bird for the 11-year period 1920 to 1930 inclusive:—

AVERAGE ANNUAL PRODUCTION PER BIRD

| Year | Hens | Pullets | Year | Hens | Pullets |
|---|---|---|---|---|---|
| 1930 | 125·1 | 165·1 | 1924 | 127·9 | 166·7 |
| 1929 | 115·3 | 173·7 | 1923 | 119·3 | 144·2 |
| 1928 | 121·4 | 178·5 | 1922 | 118·2 | 131·7 |
| 1927 | 108·9 | 141·6 | 1921 | 116·2 | 140·9 |
| 1926 | 124·5 | 151·8 | 1920 | 91·6 | 109·8 |
| 1925 | 122·4 | 143·7 | | | |

PRODUCTION OF B.P. ROCK PULLETS AT THE CHARLOTTETOWN STATION

In the following table is shown the pullet year record of Barred Plymouth Rock pullets bred and raised at the Experimental Station, Charlottetown, Prince Edward Island, for the year 1929-30:—

INDIVIDUAL RECORDS B.P. ROCK PULLETS BRED AND RAISED AT THE EXPERIMENTAL STATION, CHARLOTTETOWN, P.E. ISLAND

| 225 or more eggs | | | 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 |
| | | 1929 | | | 1929 | | | 1929 |
| N242 | 254 | Nov. 8 | N263 | 222 | Nov. 15 | N284 | 198 | Sept. 28 |
| N265 | 254 | Nov. 10 | N314 | 221 | Dec. 24 | N240 | 197 | Oct. 9 |
| N296 | 253 | Oct. 8 | N264 | 219 | Oct. 18 | N248 | 196 | Oct. 12 |
| N225 | 246 | Sept. 15 | N311 | 219 | Nov. 6 | N219 | 196 | Oct. 27 |
| N272 | 244 | Oct. 9 | N226 | 214 | Oct. 28 | N200 | 195 | Oct. 10 |
| N213 | 239 | Oct. 25 | N303 | 214 | Dec. 10 | N330 | 195 | Nov. 2 |
| N215 | 233 | Oct. 11 | N295 | 213 | Oct. 8 | N206 | 194 | Sept. 29 |
| N290 | 229 | Oct. 7 | N182 | 212 | Oct. 20 | N170 | 194 | Dec. 12 |
| N275 | 229 | Nov. 2 | N180 | 211 | Oct. 8 | N177 | 192 | Nov. 16 |
| N329 | 227 | Oct. 11 | N199 | 211 | Oct. 9 | N216 | 191 | Oct. 16 |
| N197 | 227 | Oct. 16 | N223 | 211 | Oct. 14 | N242 | 191 | Dec. 1 |
| N203 | 225 | Oct. 8 | N214 | 208 | Oct. 20 | N298 | 191 | Nov. 3 |
| | | | N286 | 207 | Sept. 11 | N198 | 190 | Oct. 11 |
| | | | N201 | 207 | Dec. 12 | N235 | 190 | Oct. 17 |
| | | | N196 | 206 | Oct. 10 | N247 | 189 | Oct. 13 |
| | | | N210 | 206 | Dec. 14 | N233 | 189 | Oct. 16 |
| | | | N157 | 205 | Oct. 8 | N165 | 188 | Oct. 9 |
| | | | N253 | 205 | Oct. 20 | N334 | 187 | Sept. 12 |
| | | | N166 | 204 | Nov. 26 | N171 | 187 | Oct. 5 |
| | | | N232 | 203 | Oct. 9 | N179 | 187 | Oct. 25 |
| | | | N250 | 202 | Nov. 2 | N320 | 187 | Nov. 12 |
| | | | N260 | 202 | Nov. 2 | N245 | 185 | Sept. 14 |
| | | | N204 | 202 | Nov. 13 | N211 | 184 | Oct. 27 |
| | | | N146 | 201 | Oct. 9 | N205 | 184 | Oct. 28 |
| | | | N332 | 200 | Oct. 10 | N195 | 183 | Sept. 17 |
| | | | | | | N337 | 183 | Oct. 14 |
| | | | | | | N175 | 183 | Oct. 16 |
| | | | | | | N243 | 183 | Jan. 7/30 |
| | | | | | | N294 | 182 | Nov. 8 |
| | | | | | | N167 | 181 | Oct. 11 |
| | | | | | | N262 | 180 | Dec. 4 |
| | | | | | | N209 | 180 | Jan. 28/30 |
| | | | | | | N207 | 178 | Oct. 9 |
| | | | | | | N239 | 178 | Dec. 22 |
| | | | | | | N234 | 177 | Oct. 8 |
| | | | | | | N212 | 176 | Oct. 15 |
| | | | | | | N208 | 176 | Oct. 18 |
| | | | | | | N288 | 176 | Dec. 5 |
| | | | | | | N244 | 175 | Sept. 11 |
| | | | | | | N269 | 175 | Dec. 24 |
| | | | | | | N301 | 175 | Jan. 20/30 |
| 12 | 2,860 | ..... | 25 | 5,225 | ..... | 41 | 7,618 | |
| Total, 12 birds—2,860 eggs | | | Total, 25 birds..5,225 eggs | | | Total, 41 birds—7,618 eggs | | |
| Average per bird—238·3 | | | Average per bird—209 | | | Average per bird—185·8 | | |

Total for 78 birds—15,703 eggs. Average per bird—201·3 eggs.

HATCHING AT DIFFERENT DATES

Much discussion takes place among local poultry raisers as to the best date for hatching. In order to throw some light on the matter, our hatching records for the years 1928, 1929, and 1930 are summarized in the following table. It will be noted that eggs hatched during the first ten days in May have shown the highest per cent fertility and the lowest number of eggs required for one chick hatched. Also strength of chick is indicated by the high percentage of chicks alive at time of wing-banding, approximately three weeks of age. It is on data such as this that we have been basing our recommendations to hatch during the first half of May.

HATCHING RESULTS 1928, 1929, 1930, CHARLOTTETOWN, GIVEN IN 10-DAY INTERVALS

| Inclusive period hatched, between | Total egs set | Number eggs fertile | Per cent eggs fertile | Number of chicks hatched | Per cent of total eggs hatched | Per cent fertile eggs hatched | Number of chicks alive when wing banded* | Per cent chicks hatched, alive when wing banded | Total eggs required for one chick hatched | Total fertile eggs for one chick hatched | Total eggs required for one chick when wing banded |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | % | | % | % | | % | | | |
| April 1 and 10..... | 434 | 320 | 73·7 | 166 | 38·2 | 51·9 | 152 | 91·6 | 2·6 | 1·9 | 2·9 |
| April 11 and 20..... | 497 | 418 | 84·1 | 245 | 49·3 | 58·6 | 184 | 75·1 | 2·0 | 1·7 | 2·7 |
| April 21 and 30..... | 474 | 395 | 83·3 | 262 | 55·3 | 66·3 | 221 | 84·4 | 1·8 | 1·5 | 2·1 |
| May 1 and 10..... | 480 | 403 | 84·0 | 279 | 58·1 | 69·2 | 249 | 89·2 | 1·7 | 1·5 | 1·9 |
| May 11 and 20..... | 32 | 30 | 93·7 | 17 | 53·1 | 56·7 | 1 | 5·9 | 1·9 | 1·8 | 32·0 |
| May 21 and 30..... | 108 | 53 | 49·1 | 17 | 15·7 | 32·1 | 14 | 82·4 | 6·4 | 3·1 | 7·7 |
| Totals..... | 2,025 | 1,619 | 80·0 | 986 | 48·7 | 60·9 | 821 | 83·3 | 2·1 | 1·6 | 2·5 |

* Approximate age at wing-banding—3 weeks.
The above represents 286 individual settings of eggs.

## DATE OF HATCHING AS AFFECTING PRODUCTION

A question naturally arising from the foregoing table is whether or not date of hatching affects pullet-year production. A study of the production of 200 birds whose date of hatch was readily available would seem to indicate that within reasonable limits date of hatch did not materially affect annual production. It would appear, however, that birds hatched during the period May 1 to 10 gave greater production during the winter months; that is November, December, January, and February. Presumably this date is sufficiently early to allow full maturity before the laying season starts, and late enough to ensure good weather conditions for rearing. The following table further strengthens our recommendation—hatch during the first half of May:—

DATE OF HATCH AS AFFECTING PRODUCTION

| Date of hatch | Number of birds | Total production | Average annual production | Total winter production | Average winter production |
|---|---|---|---|---|---|
| | | eggs | eggs | eggs | eggs |
| April 11-20 inclusive | 45 | 8,365 | 191·9 | 2,629 | 58·4 |
| April 21-30 | 48 | 9,207 | 191·8 | 2,912 | 60·7 |
| May 1-10 | 72 | 13,666 | 189·8 | 4,468 | 62·1 |
| May 11-20 | 8 | 1,495 | 186·9 | 399 | 49·9 |
| May 21-30 | 27 | 5,101 | 188·9 | 1,380 | 51·1 |
| | 200 | 38,104 | 190·5 | 11,788 | 58·9 |

## PRINCE EDWARD ISLAND EGG LAYING CONTEST

The twelfth consecutive annual Prince Edward Island Egg Laying Contest was completed on October 23, 1930.

Average annual production per bird was lower than for the previous year, which was outstanding in this point in so far as this contest was concerned.

The pen of Barred Rocks owned by Mr. James Tuplin, Summerside R.R. No. 2, won the contest with 2,164·2 points, 1,969 eggs. Mr. William Sansom's (Durham Bridge, N.B.) Barred Rocks were second with 2,148·3 points, 2,051 eggs. The Barred Rocks owned by the Kensington Baby Chick Hatchery, Kensington, were third with 2,119·9 points, 1,906 eggs. Mr. H. C. Muttart, Marshfield, with a Barred Rock pen took fourth place with 2,091·3 points, 1,899 eggs.

To summarize, the first ten positions, with the exception of seventh place, were won by Barred Rocks, the seventh place going to the White Leghorns owned by Mrs. J. F. Easton, New Wiltshire, with 1,971·2 points, 1,855 eggs. Hen No. 7 in Pen No. 13, a Barred Rock owned by J. W. Bell, York Point, led the contest with 279·9 points, 244 eggs. A close second was hen No. 7, in Pen No. 5, a Barred Rock owned by the Experimental Station, Charlottetown, with 279·1 points, 243 eggs. Third place also went to Mr. Bell on hen No. 5, with 276·1 points, 234 eggs. James Tuplin's hen No. 6 took fourth place with 273·3 points, 232 eggs.

EGG PRODUCTION IN THE VARIOUS CONTESTS

| Number of contest | Year | Number of birds entered | Annual mean production per bird |
|---|---|---|---|
| *First | 1918-1919 | 160 | 129·2 |
| 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 |
| Eleventh | 1928-1929 | 200 | 187·0 |
| Twelfth | 1929-1930 | 200 | 175·7 |

* The first contest was for 11 months only and consisted of twenty pens of eight birds each. All contests from the second to the ninth inclusive were for 52 weeks and the pens were of 10 birds each. The remaining contests were 10-bird pens and the duration was 51 weeks, with the remaining week of the year for returning the birds, cleaning and disinfecting premises and receiving pens of birds for the new contest.

## THE APIARY

Weather conditions during the winter 1929-30 were good for the bees.

The snow left the ground early in March and the bees were noticed working on the willows on April 29.

### CONDITION OF HIVES IN SPRING

The 34 colonies put into winter quarters in the fall of 1929 were all alive in the spring of 1930. On first examination two were found to have drone laying queens and one was queenless. These were requeened with queens taken from double colonies.

Following is a table giving the number of colonies stored, average amount of feed, and average number of combs covered by bees in the fall and spring.

| Fall | | | Spring | | |
|---|---|---|---|---|---|
| Number of colonies over-wintered 1929-1930 | Estimated average number of frames covered | Average pounds of syrup fed | Number of colonies alive, spring 1930 | Estimated average number of frames covered | Estimated amount of stores in hive, first examination |
| | | lb. | | | lb. |
| 34 | 9 | 41·3 | 34 | 6·6 | 10·1 |

### HONEY FLOW

The average number of hours of sunshine from April to September was 27½ hours greater than the average for the previous 20 years. The rainfall for April and June was light. This reduced the yield of clover below average. The hot, dry weather of June dried up the clover blossoms so quickly that the flow from this source was light. A hive was placed on the scales on June 1 and weighed daily until September 15. In June this hive gained 49 pounds, with the highest daily gain of 12 pounds on June 27. In July the gain was 89 pounds, with the highest daily gain of 10 pounds recorded on July 6, 14 and 16. In August the gain was 20 pounds, with the highest gain on August 4. For September a loss of 6 pounds was recorded for the first 15 days.

The following table shows the loss or gain by months for the last 6 years:—

COLONY ON SCALES

| Year | June | July | August | September |
|---|---|---|---|---|
| | lb. | lb. | lb. | lb. |
| 1925 | 3 loss | 68 gain | 36 gain | 2 gain |
| 1926 | 10 gain | 66 gain | 40·5 gain | ..... |
| 1927 | 3 loss | 116·5 gain | 72·5 gain | 8 gain |
| 1928 | 3 loss | 52 gain | 45 gain | 13 gain |
| 1929 | 28·25 gain | 166·25 gain | 18 gain | ..... |
| 1930 | 49 gain | 89 gain | 20 gain | 6 loss |

The following table gives the number of colonies, spring count, overwintered, total amount of honey produced, and average per colony.

PERFORMANCE OF OVERWINTERED COLONIES

| Year | Number of colonies in spring | Number of colonies in fall | Pounds of honey produced | Average per colony spring count |
|---|---|---|---|---|
| | | | lb. | lb. |
| 1925 | 16 | 25 | 612 | 38·2 |
| 1926 | 17 | 22 | 1,446 | 85·0 |
| 1927 | 18 | 20 | 772 | 42·9 |
| 1928 | 17 | 29 | 904 | 53·1 |
| 1929 | 25 | 34 | 2,299 | 92·0 |
| 1930 | 34 | 37 | 2,049 | 60·2 |

## QUEEN BREEDING

Twenty-six queens were raised this season and six were purchased. Thirty were introduced to single colonies, and two are being carried over in a double colony. With the exception of three, all colonies have now young queens.

## EXPERIMENTS

Experiments carried on this year were the same as those reported for last year. These were:—

1. Best methods for detecting and controlling swarming.
2. Study of honey flow.
3. Different methods of wintering.

Only three of the overwintered colonies showed signs of swarming, and these were colonies that had queens two years old. None of the colonies in which young queens were introduced in 1929 made any attempt to swarm. This lack of desire to swarm was also reported by other beekeepers.

## SWARM CONTROL BY SEPARATION OF QUEEN AND BROOD

Two colonies that showed preparation for swarming by having larvae in queen cells were treated by separating the queen and brood. All combs containing brood were taken from the brood chamber and replaced by drawn comb. The queen and bees shaken from one or two frames were left in the brood chamber, and the combs containing brood were raised above the queen excluder. Colonies treated by this method made no further attempt at swarming, and produced an average of 105 pounds of honey.

### SWARM CONTROL BY DEQUEENING AND REQUEENING

One colony was used in this experiment. When colonies showed signs of swarming by having larvæ in queen cells, they were dequeened and all queen cells cut out. Ten days later the hives were again examined and all newly formed queen cells were removed and a young laying queen introduced. The colony made no further attempt at swarming. The queen in this colony was two years old and probably failing. Conclusions under the circumstances are hardly justified.

### SURPLUS QUEENS IN SPRING

In the spring it is often desirable to have available young laying queens to replace those that are poor or weak, or to requeen colonies that are queenless. It is good practice to divide a ten-frame Langstroth hive with a tight-fitting division board and place a queen in each side. Feed, and pack in a wintering case in the usual way, giving each side of the hive its own tunnel. Four queens were wintered in this manner in 1929 and came through in good condition. A place was found for these in colonies that were queenless or had drone laying queens.

### WINTERING IN FOUR-COLONY CASES

Where bees require protection for seven months of the year, outside wintering in four-colony cases is recommended.

### 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 of climatic changes during all seasons. Two such cases are used at this station, and have given splendid results over a period of years.

### FEEDING

Preparations for winter storage commenced on October 17, and were completed October 28. All hives were weighed; the average weight of all colonies before feeding was 46·2 pounds. The bees were given enough syrup, composed of 2 parts of sugar to one part of water, to bring the 8-frame hives up to 65 pounds and the 10-frame hives to 75 pounds (without covers). Thirty-six colonies and one double colony were packed in nine 4-colony packing cases and 2 Kootenay cases in the autumn of 1930.

## EXTENSION AND PUBLICITY

The following methods were used, during 1930, to bring the work of the Station to the attention of the farmers of Prince Edward Island and to the business men of our towns and villages:—

(1) The annual report for 1929 was published and distributed before the planting season to every rural home in the province as listed in the post office directory for Prince Edward Island.

(2) Many bulletins were sent to interested parties.

(3) Farmers' meetings and Women's Institutes were attended and addresses given on subjects suggested by them.

(4) A series of short timely addresses were delivered every Thursday evening at 6 p.m. over the radio from January 23 to May 8, 1930.

(5) Press articles on agricultural subjects were sent out systematically.

(6) Circulars were mailed to all who applied for them on subjects in which they were particularly interested.

(7) Field days were held for important agricultural co-operative organizations, and farmers were encouraged to visit the Station in smaller groups to learn of the experimental work under way.

(8) Farmers were encouraged to write to the Station in connection with their work with live stock, field crops and the beautification of their homesteads.

(9) Special encouragement and assistance was given to the schools and Women's Institutes by supplying plans, bulbs, seeds and perennials for the improvement of the school grounds.

(10) The business men and members of the Associated Boards of Trade were invited to bring their friends and visit the Station.

(11) Certain problems and recommendations for their solution were demonstrated at the Provincial Exhibition and at the county and district fairs.

(12) The staff kept in touch with, and was represented on the Council of the Charlottetown Board of Trade and the Canadian Chamber of Commerce, and assisted in interesting these organizations in agricultural research.

## EXHIBITIONS

The Prince Edward Island Exhibition was held at Charlottetown from August 18 to 22. The weather was very favourable, and the season so much earlier than usual that the showing of roots, vegetables and fruits was equal to that of many former years when the exhibition was held later than the middle of September. The attendance was about 40,000, which was very encouraging. There was a very great increase in the entries of all classes of stock, poultry, roots and vegetables. The Experimental Farms Exhibit was in charge of Mr. Sydney Henry, who brought it from the Division of Extension and Publicity, Central Experimental Farm, Ottawa. He was assisted by the officers and men from the Charlottetown Station, the Division of Botany and the Fruit Branch. The poultry exhibit contained live chicks. The exhibit of certified seed potatoes also had many specimens of plant diseases with suggested treatments. Early grain and alfalfa were shown from the Illustration Stations, and grades of table stock turnips and potatoes were shown by the Fruit Branch. The exhibit was well located, and the attendance about the booth was the best in years. It required four or more attendants most of each day to answer questions and give information.

The weather was very fine for the Georgetown Exhibition, September 10, and the attendance was about 4,000. The Fruit Branch and the Division of Botany co-operated with the Station in putting up a two-panel exhibit with a display of plant disease specimens and recommended treatments. Striking comparative samples of graded and ungraded farm produce were shown and the booth was thronged throughout the day with interested visitors.

A similar exhibit was displayed at the Souris Exhibition on September 17, when about 2,000 visitors were present, and at Alberton on September 18, when the attendance was over 3,000. The demonstration of certified seed potatoes and the grades of table stock turnips drew a lot of attention. The Superintendent gave addresses at these fairs, and he and members of his staff judged cereals, forage crops, vegetables, fruits and flowers at the fairs mentioned, and also at the Egmont Bay and Mount Carmel Exhibition September 22, where there was an attendance of about 2,000. They also judged at the following school fairs, Wheatley River, North Wiltshire, Mayfield, Winsloe, Stanhope, Tracadie, Mount Stewart and West Royalty.

## FARMERS' WEEK

The farmers' co-operative organizations held their annual and semi-annual meetings during the week of January 27 to 31, and many of the delegates visited the Stations to discuss with the staff farm problems and to see the live stock and poultry. The meetings were well attended. About 400 were at the Potato

Growers' meeting. During the week the Superintendent gave an address on "Feeds and Feeding" at the Central Farmers' Institute, and answered a great many questions asked by the audience.

### THE AYRSHIRE FIELD DAY

The annual Ayrshire Field Day and Picnic was held on July 4. The day was showery. The attendance was good, and the consignment sale, a feature in 1930, was a splendid success. Twenty-three animals were sold at an average price of $124. These were mostly heifers and young bulls.

### THE POTATO GROWERS' FIELD DAY

On Thursday, July 10, the Prince Edward Island Potato Growers' Association held their annual picnic in the beech grove at the Station. Over 500 attended, and were addressed by Dr. J. H. Grisdale, Deputy Minister of Agriculture. After an inspection of the Farm and the Plant Pathology experiments, they held their annual meeting in Prince of Wales College Hall.

### THE WOMEN'S INSTITUTE CONVENTION

The Women's Institute Convention, with about 300 delegates, were served with lunch at the Station, July 10. They were addressed by Dr. J. H. Grisdale, Deputy Minister of Agriculture, and were shown through the stables, the poultry plant and the vegetable and flower gardens. Many of the delegates wrote to the Superintendent after returning home for further information.

### THE C.S.T.A AND C.S.G.A. TOUR

The Canadian Society of Technical Agriculturists and the Canadian Seed Growers' Association held their annual conventions at Wolfville, and following the convention the delegates made a tour of the Maritimes. The Charlottetown Station assisted in entertaining them, and took them for a tour of inspection of the farm, stock and gardens. Many letters of appreciation were received from the delegates during the summer.

### THE ASSOCIATED BOARDS OF TRADE MEETING

The Prince Edward Island Associated Boards of Trade held their annual meeting at the Station on August 28. The delegates, numbering 125, included many ladies who were delegates from the Women's Institutes to the board. The meetings were held on the lawn and lunch served in the picnic grove. This was the annual get-together of the citizens of towns and country, where they unite to discuss the improvement of the public health, transportation, education and agriculture.

### AMERICAN AGRICULTURAL EDITORS' ASSOCIATION

A noon luncheon was served the seventy-two members of the American Agricultural Editors' Association, when they toured Prince Edward Island on June 17. Reports, bulletins and leaflets were sent to them. They were taken over the Farm and shown the stock, field crops, pasture experiments and gardens. They gathered a great deal of information, and many of them forwarded to the Superintendent published articles on their visit to the Province and the Charlottetown Station, together with letters of appreciation for their entertainment.

### ILLUSTRATION STATION OPERATORS' CONFERENCE

The Illustration Station operators of Prince Edward Island and their wives were entertained on June 30 to supper. The staff went over the farm,

experimental plots, stock, poultry and gardens with them, discussing problems affecting their work and showing them material for demonstration purposes. They were taken to the Montague Illustration Station and to other farms in that neighbourhood on an inspection tour.

### TOUR OF THE PENNSYLVANIA FARMERS' ASSOCIATION

The superintendent addressed the Pennslyvania Farmers' Association at Bedeque, and went with them through the potato district of Borden, Augustine Cove, Crapaud, Victoria and Bedeque on their Prince Edward Island tour of inspection of certified seed potato fields.

### ILLUSTRATION STATION FIELD DAYS

The superintendent or members of his staff attended twelve Illustration Station field days throughout the province, assisting in demonstrations, giving addresses and taking part in the discussions that were held. They also visited these stations from time to time throughout the summer. Very excellent progress has been made with the demonstration work at these stations under the supervision of R. C. Parent, M.S.A. A summary of his work is incorporated in this report, or may be found in the report of the Chief Supervisor of Illustration Stations for Eastern Canada for 1930.

### VISITS OF STUDENTS AND SCHOOL CHILDREN

An annual visit of school children with their teachers was held at the Station. These children ask many questions. They were shown many things of great interest to them. The students of Prince of Wales College spent an evening on the lawns at the Station in the autumn. Every encouragement is given these young folk to visit their Experimental Stations under supervision so that they may obtain useful information.

## ILLUSTRATION STATIONS

There are in Prince Edward Island twelve Dominion Government Illustration Stations: four in Prince county, five in Queens and three in Kings. These stations are well distributed and no farmer in the province is more than twenty-five miles from his nearest station, a distance which means very little under the present mode of travel.

The main objects of the Stations are to demonstrate, under average farm conditions, the principal findings of the Experimental Farm System. Each station is run systematically, the best of seed is used, approved methods of cultivation followed, and commercial fertilizer used judiciously. Many demonstrations with new crops as corn and alfalfa, and tests with various combinations of commercial fertilizer are conducted each year. Gardens and flowers receive their share of attention as do also live stock and poultry.

Records kept on the stations for the past year show that the average yields of potatoes, corn and oats were higher than in 1929, while the yields of clover and timothy were lower. Dry weather in June and July affected the hay crop. The remainder of the season was ideal, not only for growth, but also for the harvesting of all crops.

The following table gives the average yields and cost per unit of the various crops for 1930:—

YIELDS AND COSTS OF PRODUCTION FOR 1930

| Crop | Yield per acre | Cost per unit housed |
|---|---|---|
| | | $ |
| Potatoes.....bush. | 334·1 | 0 22* |
| Turnips..... tons | 24·10 | 2 17 |
| Corn..... tons | 19·13 | 2 32 |
| Timothy..... tons | 1·28 | 12 01 |
| Clover..... tons | 1·12 | 15 96 |
| Timothy seed..... lb. | 274·2 | 0 068 |
| Oats.....bush. | 43·6 | 0 59 |

*The cost of producing one bushel seed potatoes on the Stations in 1930 was 43 cents and for the province calculated at 76 cents.

As in former years the extra yields obtained by the use of commercial fertilizer on timothy, potatoes, turnips and corn was more than sufficient to pay for the fertilizer used and cost of applying the same. Below are the results:—

FERTILIZER EXPERIMENT ON THE ILLUSTRATION STATIONS FOR 1930, AVERAGE OF 12 STATIONS

| Crop | Fertilizer used per acre | Yield per acre | |
|---|---|---|---|
| | | With fertilizer | Without fertilizer |
| Potatoes | *1,200 pounds of a 4-8-8 mixture | 334·1 bush. | 207·1 bush. |
| Corn | 1,000 pounds of a 3-10-4 mixture | 19·13 tons | 14·58 tons |
| Turnips | 1,000 pounds of a 3-10-4 mixture | 24·10 tons | 17·25 tons |
| Timothy hay | 125 pounds nitrate of soda | 1·47 tons | 0·76 tons |

*1,500 pounds used at Wood Islands and Iona.

In addition to the above the following fertilizer demonstrations were carried on outside the station fields:—

(1) Manure vs. commercial fertilizer for potatoes.
(2) Effect of varying amounts of potash on the potato crop.
(3) Concentrated fertilizers for the potato crop.
(4) Concentrated fertilizers for corn and turnips.
(5) A comparison of nitrate of soda, sulphate of ammonia and nitrochalk for timothy.
(6) Ground limestone for clover.
(7) Nitrophoska for pastures.

Following up one of the original intentions, the Illustration Station operators continue to supply good seed and breeding stock to their neighbours and outside buyers. In 1930 the following quantities of seed and stock for breeding purposes were sold by the operators in addition to their regular sales to the general market:—

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

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

During the growing season of 1930 a Field Day was held on each of the twelve Illustration Stations, the average attendance being sixty-five people. Officials from the Experimental Station and from the Live Stock Branch assisted the Supervisor in making the program more instructive and more interesting. Other lines of work for the year included the building of a concrete sheep dipping tank on two stations and the holding of two Turnip Growing Competitions under the auspices of the Division.

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