DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

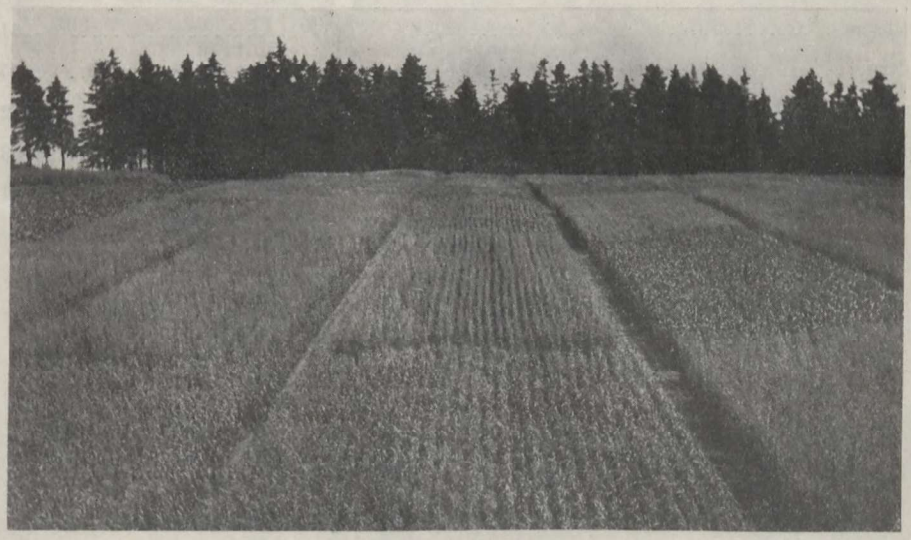
EXPERIMENTAL FARM

NAPPAN, N.S.

REPORT OF THE SUPERINTENDENT

W. W. BAIRD, B.S.A

FOR THE YEAR 1925



Variety-test plots of oats, wheat and barley at Nappan. The leading varieties are listed in the cereal section of this report.

Printed by authority of the Hon. S. F. Tolmie, Minister of Agriculture, Ottawa, 1926

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DOMINION EXPERIMENTAL FARM, NAPPAN, N.S.

REPORT OF THE SUPERINTENDENT, W. W. BAIRD, B.S.A.

THE SEASON

The winter of 1924-25 was characterized by the extremes of temperature recorded. A few cold days occurred in November but steady cold weather did not set in until December 15. From that date to February 7 the mercury dropped below zero on twenty-seven different days. From January 15 to 25 inclusive the minimum temperature ranged from 1 below to 34 degrees below. The monthly mean for January was 9.66 degrees, the second lowest on record. In 1920 the mean for January was 7.05 degrees. No zero weather was recorded after February 7, the temperature rising very rapidly and the fields were bare of snow after the 15th. The mean temperatures for February and March were several degrees above average, while the sunshine recorded in February was 23 hours below average. April was above the average in sunshine recorded and below in rainfall. The month as a whole was very agreeable but the ground did not lighten up as readily as other years when the frost has remained in until the last of March or even later. May was very seasonable, but several heavy rains prevented an early completion of seeding operations. These started on May 7 but were not general until the 20th. The rainfall in June was 5.59 inches, the heaviest on record at this Farm. This held up farming operations and checked the growth of the grain and silage crops to some extent, as well as influencing the development of plant diseases, such as smut and rust in grain, apple scab and the various diseases of garden truck. The weather in July was fair but August, September and October were dull and the rainfall in the latter two months was far above average. This made harvesting operations difficult and severe losses were incurred by those who left their marsh hay until late in the season before cutting. The hay and grain crops were above average but damaged by weathering to some extent. Roots were about average in yield and silage crops and tree fruits were below average. Cold weather set in early in December and better weather conditions are hoped for in 1926.

WEATHER OBSERVATIONS AT EXPERIMENTAL FARM, NAPPAN, N.S., 1925

Month	Temperature F.			Precipitation					Sunshine	
	Maximum	Minimum	Mean	Rainfall		Snowfall		Total inches	No. of days	Total hours
				Days	Inches	Days	Inches			
	°	°	°							
January	41	−34	9·66	2	1·18	8	23·0	3·48	27	106·9
February	53	−18	26·34	6	2·18	1	6·0	2·78	20	84·8
March	54	6	34·17	7	2·41	2	6·0	3·01	23	116·7
April	64	15	37·08	5	1·40	1	1·5	1·55	24	145·7
May	73	20	47·85	11	2·09	.....	.....	2·09	25	212·5
June	82	38	59·25	13	5·59	.....	.....	5·59	25	193·0
July	84	41	64·07	7	3·24	.....	.....	3·24	28	206·0
August	84	34	63·78	8	1·54	.....	.....	1·54	26	225·6
September	76	28	52·88	11	5·0	.....	.....	5·0	24	136·7
October	65	10	39·68	14	5·75	.....	.....	5·75	23	135·4
November	58	3	34·58	8	2·99	.....	.....	2·99	23	106·7
December	51	−19	21·50	3	0·58	3	9·25	1·51	24	88·2

Days of rainfall..... 95 Inches of rainfall..... 33·95
Days of snowfall..... 15 Inches of snowfall..... 45·75 equal to 4·575″ rain.
Days of sunshine.....292 Hours of sunshine.....1,758·2
Total precipitation.....38·53 inches.

Sunshine Records Taken at Experimental Farm, Nappan, N.S.

Fourteen Years and Averages

Month	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	Total	Average
January	148·5	86·75	92·40	75·10	108·60	98·7	96·0	86·7	92·1	80·6	123·7	89·0	105·2	106·9	1,390·25	99·3
February	124·0	112·15	138·50	94·70	94·50	122·0	88·9	101·7	70·0	95·5	104·3	154·3	118·9	84·8	1,504·25	107·4
March	117·0	140·0	107·85	75·00	105·35	166·3	140·8	120·9	119·4	106·8	143·6	131·7	81·6	116·7	1,673·0	119·5
April	117·0	132·7	172·05	100·90	142·60	104·9	176·5	94·3	138·9	133·8	96·0	152·8	101·8	145·7	1,809·95	129·3
May	164·0	169·15	147·0	136·15	186·20	97·3	210·4	197·8	249·7	232·0	187·1	170·2	197·9	212·5	2,557·4	182·7
June	242·0	265·9	243·5	195·00	180·50	120·7	212·2	238·2	211·0	189·1	176·2	185·7	218·2	193·0	2,871·2	205·1
July	151·0	226·05	255·0	215·10	217·30	192·7	177·2	206·7	258·2	238·7	180·3	193·4	289·6	206·0	3,007·25	214·8
August	175·8	238·1	210·8	186·6	247·3	204·6	235·2	200·0	205·3	234·0	175·1	238·8	190·9	225·6	2,968·1	212·0
September	149·9	165·95	161·75	175·7	170·8	198·5	165·5	134·0	135·7	202·1	176·9	160·2	171·3	136·7	2,305·0	164·6
October	146·9	71·30	139·35	145·60	132·80	147·0	105·6	127·0	146·6	137·1	107·5	146·1	132·6	135·4	1,820·85	130·1
November	75·45	115·45	85·75	47·90	96·8	90·9	88·2	58·8	111·2	48·7	48·9	70·3	89·4	106·7	1,134·45	81·0
December	81·5	80·20	110·15	64·40	61·60	64·3	57·2	98·3	84·6	71·1	77·1	51·3	79·0	88·2	1,068·95	76·4
Totals	1,693·05	1,803·70	1,864·10	1,512·15	1,744·35	1,607·90	1,753·70	1,664·40	1,822·70	1,769·50	1,596·70	1,743·80	1,776·40	1,758·20	24,110·65	1,722·2

Precipitation Records Taken at Nappan from 1908–1925

Total Precipitation for each month of the year for the past eighteen years, with averages

Month	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	Total for 18 years	Average for 18 years
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January	1·13	3·51	4·76	2·83	1·95	2·92	3·00	3·09	1·30	3·28	2·31	1·56	1·41	1·84	1·70	5·02	3·95	3·48	49·04	2·72
February	3·91	3·85	3·73	1·58	1·76	2·15	2·60	1·31	2·96	2·84	3·02	1·98	4·99	2·57	2·75	1·05	2·20	2·78	48·03	2·67
March	2·86	4·09	2·37	2·27	2·41	6·16	2·13	1·20	3·80	2·10	2·55	2·24	3·58	3·58	1·66	3·14	1·58	3·01	50·73	2·82
April	3·37	3·57	2·92	1·61	2·04	3·46	2·69	3·29	2·13	3·43	1·07	3·26	3·74	3·26	2·02	4·10	1·62	1·55	50·13	2·78
May	3·08	3·06	2·90	0·69	2·74	2·38	0·75	4·43	2·42	3·55	1·40	2·27	1·72	1·09	1·73	1·77	0·88	2·09	38·95	2·16
June	2·41	1·08	3·72	3·17	2·32	1·97	4·23	3·57	4·74	2·72	3·14	2·73	2·68	1·23	3·01	4·12	3·70	5·59	56·13	3·12
July	4·73	2·68	3·13	2·30	6·62	4·98	3·61	1·95	2·60	1·38	3·43	3·88	2·63	0·96	4·23	2·31	0·50	3·24	55·16	3·06
August	5·35	3·66	1·55	2·17	4·82	3·76	2·95	4·67	1·70	5·15	1·33	1·28	5·70	2·17	6·62	2·97	5·19	1·54	62·58	3·48
September	1·65	4·07	3·14	4·74	2·86	2·70	3·05	1·47	1·64	0·90	5·25	3·97	2·21	2·99	2·67	3·21	1·40	5·00	52·92	2·94
October	2·73	4·16	4·14	1·35	1·67	7·83	2·46	4·11	5·55	8·05	5·21	2·50	0·50	2·07	3·50	3·33	2·10	5·75	67·01	3·72
November	1·01	3·34	4·18	3·84	3·70	2·03	2·97	4·63	2·32	3·71	3·86	5·69	2·18	4·73	3·33	4·16	2·29	2·99	60·96	3·39
December	4·24	4·63	2·85	1·62	5·62	4·25	1·46	4·76	3·91	4·40	2·62	2·05	3·48	2·54	4·52	4·45	2·13	1·51	61·04	3·39
Totals	36·47	41·70	39·39	28·17	38·51	44·59	32·90	38·48	35·07	41·51	35·19	33·41	34·82	29·03	37·74	39·63	27·54	38·53	652·68	36·26

SNOWFALL RECORDS TAKEN AT NAPPAN, 1909–1925. (RECORDED IN INCHES)

Month	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	9120	1921	1922	1923	1924	1925	Total for 12 years	Average for 12 years
January	19	9	9	14	5·0	17	14	11	17	15	3¼	12¾	9	12	38	19	23	247·0	14·53
February	14	21	8	16	17·0	23	3	26	14	12	15	21	14	22	10½	22	6	264·50	15·56
March	20	.....	12	11½	41·2	4	12	38	12	23	.....	2	10	3	25	14	6	233·70	13·74
April	12	.....	9	.....	4·5	18	11	5	2	3	.....	18	11	.....	7	4	1·5	106·0	6·24
November	.....	.....	10	.....	4	.....	.....	11	2	12	6	7	15	5	.....	13	.....	85·0	5·0
December	28	10	4½	.....	16	.....	8	12	39	14	8½	5	18	35	19½	.....	9¼	226·75	13·34
Totals	93	40	52½	41½	87·7	62	48	103	86	79	32¾	65¾	77	77	100	72	45¾	1,162·95	68·41

NOTE.—Temperature records for the years 1909–1924 will be found in the report for this Farm for 1924.

ANIMAL HUSBANDRY

The experimental work in the four branches of this division was continued in 1925. This consisted chiefly of maintenance and production costs, feeding, breeding and marketing experiments.

CATTLE

The herd consisted of the following stock on January 1, 1926:—

PURE-BRED BREEDING STOCK

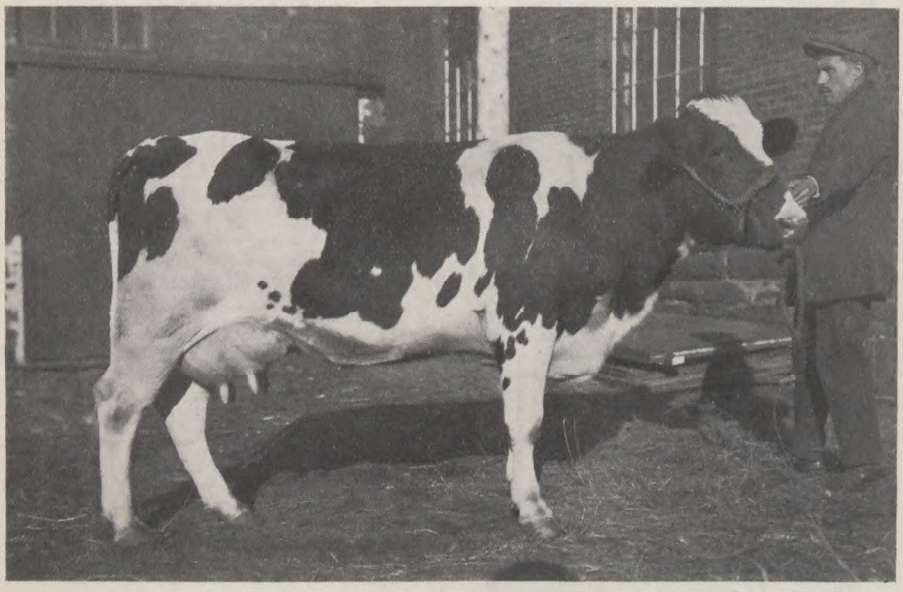
Guernseys.....11 aged cows, 2 three-year-old heifers, 7 two-year-old heifers, 4 yearling heifers, 6 heifer calves and bulls, 2 aged, 5 yearlings and 4 calves.
Ayrshires.....1 aged bull.
Holsteins.....1 two-year-old bull.

GRADE BREEDING STOCK

Ayrshires.....10 aged cows, 3 two-year-old heifers, 5 yearling heifers and 2 heifer calves.
Holsteins.....10 aged cows, 4 two-year-old heifers, 6 yearling heifers and 4 heifer calves.

EXPERIMENTAL FEEDERS

Grade Shorthorns and Herefords	68 steers.
Total breeding cattle	87
Total feeding cattle	68
Total cattle	155



Myrtle 1.H.S.4, second-cross Holstein, winner of the dairy test at Maritime Winter Fair. In the seventy-two-hour test she had 186.4 pounds of milk, 6.85 pounds of fat, 15.57 pounds of solids-not-fat, giving her a total score of 218.59 points.

GUERNSEYS

The increase in the Guernsey herd in 1925 was eight head, five males and three females. Several young bulls were sold during the year. The herd sires now in use are Mixter May Raider —2124—, Glamour's Fisherman of Nappan —2385— and Blanche's Raider of Nappan —3602—.

The following are the individual milk records completed during the year with feeds consumed and costs of same:—

GUERNSEYS—INDIVIDUAL MILK-RECORDS COMPLETED DURING THE YEAR 1925

Name of Cow	Date of dropping calf	Age at beginning period	Number of days in milk	Total pounds milk produced	Daily average yield of milk	Average percent fat	Pounds butter produced, 80 per cent fat	Value of butter at 40 cents per pound	Value of skim-milk at 20 cents per cwt.	Total value of product	Amount of meal eaten at $1.82 per cwt.	Amount of roots eaten at $3.70 per ton	Amount of ensilage eaten at $4 per ton	Amount of hay eaten at $10 per ton	Amount of green feed eaten at $4 per ton	Months on pasture at $2	Total cost for period	Cost of feed to produce 100 pounds milk	Cost of feed to produce 1 pound butter. Skim-milk neglected	Profit on 1 pound butter; skim-milk neglected	Profit on cow for period; labour and calf neglected
				lb.	lb.	%	lb.	$ c.	$ c.	$ c.	lb.	lb.	lb.	lb.	lb.		$ c.	$ c.	cts.	cts.	$ c.
Cabbage Rose of Hillside 1909	June 7, 1924	7	466	7,744·5	16·62	5·43	525·66	210 26	14·65	224 91	3,519	4,622	2,380	4,972	3,375	7	122 97	1 59	23	17	10 94
Cabbage Rose of Nappan–2715	June 3, 1925	3	335	6,915·1	20·64	5·62	485·79	194 31	13 05	207 36	3,056	6,500	1,950	4,312	2,379	3 4/5	105 46	1 53	22	18	101 90
Mixter Glamour–2123	Sept. 24, 1924	12	365	5,985·7	16·40	5·15	385·33	154 13	11 35	165 48	2,590	4,450	1,320	4,046	3,447	5 11/15	96 60	1 61	25	15	68 88
Princess Daisy of Hillside–2039	Aug. 16, 1924	8	351	6,662·8	18·98	5·32	443·08	177 23	12 62	189 85	2,513	2,550	2,380	4,046	2,191	4 1/15	87 96	1 32	20	20	101 89
Princess Daisy L.K. of Hillside 2nd–2041	Nov. 29, 1924	4	365	4,043·9	11·08	6·25	315·93	126 37	7 58	133 95	2,095	3,250	2,380	4,746	2,960	4 2/5	87 35	2 16	28	12	46 60
Princess Dairymaid of L.K. 4th–2044	Nov. 4, 1924	4	330	3,192·6	9·67	6·29	251·02	100 41	5 98	106 39	1,927	2,550	2,380	4,046	2,712	5 1/15	80 34	2 52	32	8	26 05
Princess of Stannox–2120	Oct. 28, 1924	10	380	3,547·1	9·33	5·38	238·54	95 42	6 71	102 13	2,264	5,240	1,320	4,518	3,002	4 4/5	91 73	2 59	38	2	10 40
Princess of Stannox of Nappan–2384	May 7, 1924	3	299	2,937·7	9·82	5·06	185·81	74 32	5 58	79 90	2,122	5,122	.....	3,594	2,183	3 9/10	78 23	2 66	42	−2	1 67
Patricia of Nappan–3086	Dec. 26, 1924	2	212	2,404·8	11·34	5·48	164·73	65 90	4 55	70 45	1,133	2,080	1,300	2,704	.....	1 13/30	43 46	1 81	26	14	26 99
Queen of Sherborn–2121	Nov. 11, 1924	10	365	8,757·7	23·99	4·88	534·22	213 69	16 66	230 35	2,981	4,890	1,320	4,502	3,002	4 4/5	104 09	1 19	19	21	126 26
Queen Sherborn of Nappan–2716	Jan. 5, 1925	3	294	4,173·7	14 19	5·10	266·07	106 43	7 92	114 35	2,265	5,160	1,950	3,714	2,232	3 4/5	85 30	2 04	32	8	29 05
Total for herd, 11 cows	.....	.....	3,762	56,365·6	14·98	5·39	3,796 18	1,518 47	106 65	1,625 12	26,465	46,414	18,680	45,200	27,483	48 4/5	983 49	1 74	26	14	641 63
Average for herd, 11 cows	.....	.....	342	5,124·15	14·98	5·39	345·17	138 04	9 69	147 73	2,406	4,220	1,698	4,109	2,498	4½	89 40	1 74	26	14	58 33

The following is a financial statement of the eleven cows and their progeny for one year:—

TO FEED COST FOR ELEVEN COWS AND THEIR CALVES FOR ONE YEAR

26,465 pounds meal at $36.40 per ton	$ 481 66	
46,414 pounds roots at $3.70 per ton	85 87	
18,680 pounds sileage at $4 per ton	37 36	
45,200 pounds hay at $10 per ton	226 00	
27,483 pounds green feed at $4 per ton	54 97	
48¾ month's pasture at $2 per month	97 60	
15 tons straw at $4 per ton	60 00	
11 bull services at $5	55 00	
Cost of feed for 9 calves to 1 year of age	504 41	
Cost of feed for 1 bull calf for 142 days	31 19	
Loss of 1 heifer calf at birth	100 00	
		$1,734 06

CREDIT FROM 11 COWS

3,796·18 pounds butter at 40 cents per pound	$1,518 47	
53,325 pounds skim-milk at 20 cents per cwt	106 65	
5 heifer calves 1 year old	750 00	
4 bull calves 1 year old	400 00	
1 bull calf 4½ months old	55 00	
150 tons manure at $2 per ton	300 00	
		$3,130 12
Credit balance from 11 cows		$1,396 06

A summary of the financial statement of the Guernsey cows and their calves for the past four years is given in the following table:—

Year	Number of cows	Dr.	Cr.	Credit balance
		$ cts.	$ cts.	$ cts.
1922	6	1,042 19	2,118 29	1,076 10
1923	9	1,350 02	2,825 51	1,475 49
1924	9	1,402 14	3,069 99	1,667 85
1925	11	1,734 06	3,130 12	1,396 06
Total	.....	5,528 41	11,143 91	5,615 50

GRADE DAIRY HERD

The fourteenth year of the grading-up experiment has been completed and the detailed results of this experiment will shortly be available in bulletin form.

The individual records completed by the grade cows in 1925 are given in the following table:—

Lactation periods completed in 1925

Name of Cow	Date of dropping calf	Number of lactation period	Number of days in milk	Total pounds of milk for period	Daily average yield of milk	Average per cent fat in milk	Pounds of butter produced in period	Value of butter at 30 cents per pound	Value of skim-milk at 20 cents per cwt.	Total value of product	Amount of milk eaten at 1¢ cents per pound	Amount of roots and ensilage eaten at $2 per ton	Amount of hay eaten at $7 per ton	Amount of green feed eaten at $3 per ton	Months on pasture at $1 per month	Total cost of feed for period	Cost of feed to produce 100 pounds milk	Cost of feed to produce 1 pound butter, skim-milk neglected	Profit on 1 pound butter, skim-milk neglected	Profit on cow for period, labour and calf neglected
				lb.	lb.	%	lb.	$ c.	$ c.	$ c.	lb.	lb.	lb.	lb.		$ c.	cts.	cts.	cts.	$ c.
Ayrshires—																				
Bell 1AS11	Mar. 7, 1924	4	330	7,315·7	22·17	4·25	365·79	109 74	14 01	123 75	2,565	6,351	4,389	2,183	3 29/30	61 02	0 83	17	13	62 73
Bell 1AS12	Jan. 26, 1925	4	266	5,931·2	22·30	4·89	341·22	102 37	11 28	113 65	1,898	4,625	3,280	1,790	3 4/5	46 31	0 78	14	16	67 34
Jessie 1A51	May 27, 1924	3	413	7,978·9	19·32	5·04	473·10	141 93	15 15	157 08	2,802	7,161	4,997	2,183	5	67 95	0 85	14	16	89 13
Jessie 1A52	Feb. 20, 1925	3	242	5,504·2	22·74	4·27	276·51	82 95	10 54	93 49	1,671	3,995	3,196	1,810	3 4/5	42 58	0 77	15	15	50 91
Jessie 1A121	Mar. 2, 1924	4	398	7,341·9	18·39	4·50	388·69	116 61	14 02	130 63	2,787	7,606	5,451	2,183	3 29/30	68 76	0 94	18	12	61 87
Jessie 1A122	April 19, 1924	3	427	8,480·1	19·86	4·47	445·95	133 79	16 20	149 99	3,305	9,181	6,047	2,183	4 1/5	79 13	0 93	18	12	70 86
Jessie 1A1221	Dec. 29, 1924	1	302	6·021·4	19·94	4·67	330·82	99 25	11 48	110 73	1,606	3,810	2,880	1,894	3 4/5	40 61	0 67	12	18	70 12
Myrtle 1A112	April 23, 1924	4	346	6,149·4	17·77	4·33	313·26	93 98	11 77	105 75	2,611	6,756	4,942	2,183	3 29/30	63 93	1 04	20	10	41 82
Myrtle 1A1122	Dec. 6, 1924	1	327	6,169·3	18·87	4·39	318·63	95 59	11 80	107 39	1,768	4,410	3,276	1,939	3 4/5	44 68	0 72	14	16	62 71
Myrtle 1A113	Mar. 7, 1925	4	292	5,927·0	20·30	4·43	308·90	92 67	11 33	104 00	1,832	5,005	3,656	1,984	3 4/5	47 48	0 80	15	15	56 52
Myrtle 1A115	April 15, 1925	1	220	4,096·8	18·62	4·65	224·12	67 24	7 81	75 05	880	1,740	1,560	1,984	3 4/5	24 98	0 61	11	19	50 07
Spot 1A42	Mar. 1, 1925	4	298	6,606·7	22·17	4·61	358·32	107 50	12 60	120 10	1,862	5,245	3,736	1,984	3 4/5	48 37	0 73	13	17	71 73
Spot 1A45	Jan. 16, 1925	1	253	3,854·5	15·23	4·39	199·07	59 72	7 37	67 09	1,262	3,275	2,384	1,270	3 13/30	32 73	0 85	16	14	34 36
Holsteins—																				
Jessie 1H4	May 7, 1924	4	487	15,684·4	32·21	3·91	721·48	216 44	30 14	246 58	4,061	8,637	5,108	2,823	6 22/30	88 25	0 56	12	18	158 33
Jessie 1H41	Mar. 17, 1925	2	289	6,047·5	20·93	3·69	262·53	78·76	11 65	90 41	1,712	5,030	3,384	1,984	3 4/5	45 05	0 74	17	13	45 36
Jessie 1HS2	June 8, 1924	4	481	9,198·9	19·12	4·03	436·14	130 84	17 65	148 49	2,979	6,001	4,732	3,613	7 3/5	72 82	0 79	17	13	75 67
Myrtle 1HS2	Feb. 27, 1924	4	583	10,564·5	18·15	4·33	538·17	161 45	20 21	181 66	3,877	9,486	6,912	3,613	7 3/5	95 16	0 90	18	12	86 50
Myrtle 1HS21	Mar. 29, 1924	2	290	5,003·6	17·25	3·95	232·52	69 76	9 61	79 37	1,973	4,796	3,532	2,183	3 29/30	49 06	0 98	21	9	30 31
Myrtle 1HS3	Feb. 16, 1925	4	271	4,907·0	18·11	3·54	204·36	61 31	9 47	70 78	2,032	5,360	3,752	1,984	3 4/5	50 67	1 03	25	5	20 11
Myrtle 1HS31	May 2, 1925	2	216	4,996·6	23·13	3·63	213·38	64 01	9 63	73 64	1,212	3,250	2,504	1,984	3 4/5	34 31	0 69	16	14	39 33
Myrtle 1HS32	Dec. 24, 1924	1	335	4,225·0	12·61	3·90	193·85	58 16	8 12	66 28	1,772	4,210	3,400	1,984	3 4/5	45 01	1 07	23	7	21 24
Myrtle 1HS4	April 23, 1924	2	473	8,633·9	18·25	3·90	396·14	118 84	16 59	135 43	3,660	8,281	5,948	2,333	5 5/6	84 18	0 97	21	9	51 25
Myrtle 1H43	Mar. 19, 1924	1	360	5,695·9	15·82	3·80	254·64	76 39	10 96	87 35	3,119	7,781	5,422	2,183	3 29/30	72 99	1 28	29	1	14 36
Spot 1H32	May 30, 1924	3	436	8,137·6	18·89	3·95	378·16	113 45	15 63	129 08	3,054	6,571	5,036	2,333	5 5/6	71 70	0 88	19	11	57 38
Spot 1H34	May 10, 1924	1	564	7,532·1	13·35	3·69	326·98	98 09	14 51	112 60	3,295	7,161	5,608	4,157	7 23/30	81 98	1 09	25	5	30 62
Vera 1H43	Mar. 30, 1924	1	336	5,749·6	17·11	3·88	262·45	78 74	11 05	89 79	2,200	4,761	3,580	2,183	3 29/30	52 03	0 95	29	10	37 76
Vera 1H411	June 18, 1924	1	408	7,523·8	18·44	3·75	331·93	99 58	14 48	114 06	2,963	7,069	5,400	2,183	5 8/15	71 81	0 95	22	8	42 25

Prices used in the above table are not in keeping with present-day prices. These prices are kept constant from year to year, in order that a fairer comparison may be made of progeny with their dams at same age.

The comparative production of the cows completing their periods in 1925 with that of their dams at the same age is given in the following summary:—

GRADE HERD—COMPARISON OF DAMS AND PROGENY AT SAME AGE

—	Ayrshires		Holsteins	
	Dam	Progeny	Dam	Progeny
Number of cows	13	13	13	13
Lactation period	.....	1925	.....	1925
Average days in milk	290	316	318	394
Pounds of milk	5,013·70	6,259·8	6,341·2	7,413·6
Daily average pounds	17·3	19·8	19·9	18·8
Average test per cent	4·44	4·54	3·72	3·9
Pounds of butter	261·72	334·18	277·75	340·06
Feed cost $	52 66	51 43	56 92	64 86
Profit over feed $	35 42	60 78	38 60	51 40
Average increase in milk over dams in pounds	.....	1,246·1	.....	1,072·4
Per cent increase in milk over dams in pounds $	.....	24 85	.....	16 91
Average increase in butter in pounds	.....	71·46	.....	62·31
Per cent increase in butter	.....	27·69	.....	22·4
Increase in profit per cow $	.....	25 36	.....	12 80
Per cent progeny superior to dam	.....	92·3	.....	61·5

The table shows that the majority of the progeny are superior to dams at the same age and the average increase in milk and butter-fat production is very satisfactory. The progeny of the Ayrshire bull, Ottawa Statesman, is responsible for a large share of the increase over dams of the Ayrshires.

COST OF MILK PRODUCTION—GRADE HERD

The following table gives the feed cost of milk production weekly for 1925. It shows the amounts of the different feeds consumed per 100 pounds milk. These figures are all based on the production of the grade herd. The cost was very low in June and July when the cows were on pasture alone. This indicates the advantage of having good pasturage during the summer months or a good supply of green feed to supplement the pastures if they are dry or over-stocked.

WEEKLY FEED COST OF MILK PRODUCTION, 1925

Feeds required for 100 pounds Milk

Week ending	Cows	Meal	Roots	Hay	Ensilage	Pasture	Feed cost per 100 pounds milk
	No.	lb.	lb.	lb.	lb.	days	$ cts.
Jan. 3	23	59·0	164·69	123·68	.....	.....	2 12
Jan. 10	21	50·33	139·87	104·39	.....	.....	1 76
Jan. 17	21	51·92	145·13	108·36	.....	.....	1 82
Jan. 24	21	48·81	139·79	103·23	.....	.....	1 72
Jan. 31	22	46·61	134·79	98·68	.....	.....	1 65
Feb. 7	20	44·30	125·75	91·45	.....	.....	1 56
Feb. 14	20	44·38	126·76	92·18	.....	.....	1 57
Feb. 21	21	43·24	126·04	89·15	.....	.....	1 52
Feb. 28	23	41·84	119·0	84·7	.....	.....	1 45
March 7	22	50·46	109·82	74·85	.....	.....	1 53
March 14	23	38·06	92·84	76·97	.....	.....	1 28
March 21	22	38·31	108·55	75·00	.....	.....	1 31
March 28	22	38·02	61·15	74·77	54·77	.....	1 32
April 4	23	39·23	62·86	77·67	56·53	.....	1 36
April 11	21	37·90	93·50	73·0	34·80	.....	1 33
April 18	22	46·15	.....	77·0	96·25	.....	1 44
April 25	24	38·45	.....	73·39	91·75	.....	1 27
May 2	24	36·43	.....	69·06	86·33	.....	1 20

WEEKLY FEED COST OF MILK PRODUCTION, 1925—*Concluded*

Feeds required for 100 pounds Milk

Week ending	Cows	Meal	Roots	Hay	Ensilage	Pasture	Feed cost per 100 pounds milk
	No.	lb.	lb.	lb.	lb.	days	$ cts.
May 9	25	37·89	.....	71·16	88·95	.....	1 25
May 16	25	38·11	.....	71·23	89·03	.....	1 25
May 23	25	39·45	.....	73·75	92·18	.....	1 30
May 30	25	39·07	.....	73·03	91·29	.....	1 28
June 6	25	40·0	.....	74·63	93·46	.....	1 32
June 13	25	40·0	.....	77·31	96·64	.....	1 34
June 20	25	.....	.....	.....	.....	4·4	0 29
June 27	24	.....	.....	.....	.....	4·4	0 29
July 4	24	.....	.....	.....	.....	4·6	0 31
July 11	24	.....	.....	.....	.....	5·16	0 34
July 18	24	.....	.....	.....	.....	5·70	0 38
July 25	23	.....	.....	.....	Green	6·00	0 40
Aug. 1	22	.....	.....	.....	feed	6·6	0 44
Aug. 8	22	.....	.....	.....	139·25	6·5	0 71
Aug. 15	20	.....	.....	.....	131·07	6·5	0 69
Aug. 22	21	.....	.....	.....	161·69	7·5	0 82
Aug. 29	20	.....	.....	.....	211·60	6·4	0 85
Sept. 5	20	14·30	.....	.....	140·95	7·8	1 06
Sept. 12	19	16·35	.....	.....	189·01	8·53	1 25
Sept. 19	19	28·25	.....	.....	227·22	9·99	1 63
Sept. 26	19	51·61	.....	.....	255·00	10·2	2 13
Oct. 3	18	38·07	.....	.....	185·24	6·34	1 48
Oct. 10	19	41·5	.....	50·00	170·80	4·17	1 57
Oct. 17	20	46·00	.....	90·49	161·58	.....	1 52
Oct. 24	22	46·25	.....	103·22	163·27	.....	1 58
Oct. 31	21	37·16	.....	76·39	123·94	.....	1 24
Nov. 7	21	31·04	74·51	69·55	.....	.....	0 95
Nov. 14	21	34·42	206·09	73·66	.....	.....	1 33
Nov. 21	20	37·00	163·30	70·90	.....	.....	1 24
Nov. 28	20	36·76	196·08	69·93	.....	.....	1 29
Dec. 5	18	35·00	181·80	63·70	.....	.....	1 24
Dec. 12	18	33·60	163·90	60·30	.....	.....	1 17
Dec. 19	18	35·10	173·30	64·10	.....	.....	1 23
Dec. 26	18	35·34	175·44	65·00	.....	.....	1 27

The following tables show the feed cost of milk and butter-fat production for both the Guernsey and grade herds for 1925, also a four-year average for both herds and a thirteen-year average for the grades:—

COST OF PRODUCTION OF MILK AND BUTTER-FAT FOR GUERNSEY HERD IN 1925 AND FOUR-YEAR AVERAGE

Amount of feed per 100 lb. milk	Price of feed	Cost of feed
(1925)	$ cts.	$ cts.
Meal—46·9 lb	1 82 per cwt.	0 854
Roots and silage—115·5 lb	3 85 " ton	0 222
Hay—80·2 lb	10 00 " ton	0 401
Green feed—48·8 lb	4 00 " ton	0 098
Pasture—2·6 days	2 00 " month	0 173
		1 748
(Four-year average)		
Meal—51·7 lb	1 97 per cwt.	1 018
Roots and silage—106·8 lb	3 60 " ton	0 192
Hay—63·8 lb	9 66 " ton	0 308
Green feed—27·2 lb	3 70 " ton	0 050
Pasture—2·3 days	2 00 " month	0 153
		1 721

In 1925 the average percentage of butter-fat was 5.39, the feed cost per pound being 32.4 cents calculated on 11 lactation periods while the average production of milk was 5,124 pounds. For the four-year average the percentage of butter-fat was 5.6, the feed cost per pound being 30.7 cents, calculated on 35 lactation periods while the average production of milk was 6,224 pounds.

COST OF PRODUCTON OF MILK AND BUTTER-FAT FOR A GRADE HERD OF HOLSTEINS AND AYRSHIRES IN 1925 ALSO 4- AND 13-YEAR AVERAGES

Amount of feed per 100 lb milk	Price of feed	Cost of feed
(1925)	$ cts.	$ cts.
Meal—35·0 lb	1 82 per cwt.	0 638
Roots and silage—85·0 lb	3 85 " ton	0 164
Hay—61·6 lb	10 00 " ton	0 308
Green feed—33·0 lb	4 00 " ton	0 066
Pasture—2 days	2 00 " month	0 133
		1 308
(4-year average)		
Meal—37·3 lb	1 97 per cwt.	0 735
Roots and ensilage—86·8 lb	3 60 " ton	0 156
Hay—59·5 lb	9 66 " ton	0 287
Green feed—24·0 lb	3 70 " ton	0 044
Pasture—2·2 days	2 00 " month	0 147
		1,369
(13-year average)		
Meal—37·1 lb	2 34 per cwt.	0·868
Roots and ensilage—105 lb	3 11 " ton	0 163
Hay—73·7 lb	11 28 " ton	0 416
Green feed—31·6 lb	3 22 " ton	0 051
Pasture—3·7 days	2 00 " month	0 247
		1 745

In 1925 the average per cent butter-fat was 4.2, the feed cost per pound being 31.1 cents, calculated on 27 lactation periods while the average production of milk was 6,862 pounds. For the four-year average, the average percentage of butter-fat was 4.15, feed cost per pound being 33 cents figured on 105 lactation periods while the average milk production was 6,213 pounds. For the thirteen-year-average, the average percentage of butter-fat was 4, feed cost per pound being 43.6 cents, figured on 346 lactation periods while the average milk production for the period was 5,227 pounds.

In 1925, the Guernseys show a higher cost per pound of butter-fat than the grades but for the past four years the average cost is lower, namely 30.7 cents per pounds for the Guernseys and 33 cents for the grades, while the milk production is almost equal. The feed cost for the grade herd for the past thirteen years is increased by the high prices of feeds during the war years but the price of butter-fat was also higher then, which helps to counterbalance the cost.

FEEDING METHODS

The meal mixtures used in feeding the dairy cows vary somewhat according to the availability of the different feeds. Oats in the summer and mixed grain in the winter are the basis of all our mixtures. The one used in 1925 and found to be very satisfactory was mixed grain (or oats if the former is not available) 1 part, bran 1½ parts, oil-meal 1 part, shorts ½ part. The cows also received salt and a mineral mixture daily consisting of 100 pounds calcium phosphate, 100 pounds sodium phosphate, 120 pounds Epsom salts, 40 pounds Glauber salts, 100 pounds sulphur, 2 pounds potassium iodine. This is fed at the rate of a tablespoon per cow per day. The average cow weighing 1,000 pounds and producing 25 pounds 4 per cent milk will receive about 8 pounds of the above

meal mixture together with 40 pounds roots and 16 pounds of hay. The nutritive ratio of this ration works out at 1:5.65. The digestible crude protein supplied by this ration is 2,377 pounds and the total digestible nutrients 15.81 pounds. The requirements according to the Savage standard are 2.325 pounds protein and 16.68 pounds digestible nutrients with a nutritive ratio of 1:5.6. The meal is fed to the cows at approximately the ratio of 1 pound to every 3 pounds of milk produced, for the grade Ayrshires and Holsteins, and 1 pound for every $2\frac{1}{4}$ to $2\frac{3}{4}$ pounds that the Guernseys produce. The higher the butter-fat content of the milk, the narrower the ratio between milk produced and meal fed. The dairy calves receive a mixture of 4 parts bran, 2 parts oats, 1 part oil-meal, and 1 pound bone meal per 100 pounds meal fed for the first year. Whole milk is fed until the calf is about six to eight weeks old, then a gradual change is made to skim-milk. At this time a small amount of flax seed jelly is fed, starting with about one quarter pound and increasing gradually to one pound per day. The amount of dry grain fed increases as the calf grows older, as does the hay and roots. The main thing is to keep the animal from getting a set-back when changing from whole to skim-milk and to keep it in a good growing condition. The average weight of the heifers at this Farm is 600 pounds at one year of age.

FEED COSTS

Cost of Rearing Dairy Calves to One Year of Age

	Guernseys		Grade heifers
	Bulls	Heifers	
Number of animals	4	5	13
Pounds whole milk consumed per head	1,637	1,562	874
Pounds skim-milk consumed per head	3,279	4,478	3,872
Pounds meal consumed per head	580	595	718
Pounds roots and ensilage consumed per head	637	593	1,073
Pounds hay consumed per head	1,430	1,382	1,543
Pounds green feed consumed per head	637	270	344
Average cost	$ 55 86	56 20	43 22
Feed Prices			
Whole milk, per cwt.	$	1 75	1 30
Skim-milk, per cwt.	$	0 20	0 20
Meal, per cwt.	$	1 90	1 90
Roots and silage, per ton	$	3 85	3 85
Hay, per ton	$	10 00	10 00
Green feed, per ton	$	4 00	4 00

Cost of Rearing Yearling Heifers

	Guernsey heifers	Grade heifers
Number of animals	1	13
Average number days fed	653	347
Pounds meal consumed per head	2,182	857
Pounds roots and ensilage consumed per head	6,475	2,450
Pounds hay consumed per head	5,725	2,517
Months pasture per head	$4\frac{7}{12}$	$4\frac{1}{2}$
Cost per head	$ 89 73	41 27

Feed Prices

Meal, per cwt.	$ 1 82
Roots and ensilage, per ton	3 85
Hay, per ton	10 00
Pasture, per month	2 00

COST OF REARING GRADE DAIRY CALVES TO ONE YEAR OF AGE—SIX-YEAR AVERAGE

—	1920	1921	1922	1923	1924	1925	Totals	Averages
Number animals	19	5	9	8	13	13	67	1
Pounds whole milk consumed per head	772	663	1,089	827	695	874	54,871	819
Pounds skim-milk consumed per head	1,395	4,420	2,527	3,191	3,214	3,872	188,994	2,821
Pounds meal consumed per head	599	889	712	774	931	718	49,863	744
Pounds roots and silage consumed per head	759	561	600	873	1,063	1,073	57,378	856
Pounds hay consumed per head	1,226	1,945	1,196	1,275	1,567	1,543	94,413	1,409
Pounds green feed consumed per head	361	.....	482	296	158	344	20,091	300
Cost of feed per head	60 45	56 65	46 45	40 50	39 63	43 22	3,250 90	48 52

COST OF REARING GRADE DAIRY HEIFERS FROM ONE TO TWO YEARS OF AGE—FOUR-YEAR AVERAGE

—	1921	1922	1924	1925	Totals	Averages
Number of animals	11	11	17	13	52	1
Pounds meal consumed per head	706	948	1,090	857	47,865	920
Pounds roots consumed per head	1,442	2,411	2,035	2,450	108,828	2,093
Pounds hay consumed per head	2,655	2,409	1,840	2,517	119,705	2,302
Pounds skim-milk consumed per head	.....	240	.....	.....	2,640	51
Days pasture consumed per head	141	133	140	118	6,928	133
Cost per head $	36 77	39 94	41 85	41 27	2,091 77	40 23

COST OF MAINTAINING DAIRY BULLS FOR ONE YEAR

Name of bull	Age in years	Grain consumed	Roots consumed	Silage consumed	Hay consumed	Green feed consumed	Total cost of feed for 1 year
		lb.	lb.	lb.	lb.	lb.	$ cts.
Glamour's Fisherman of Nappan (Guernsey)	5	1,884	2,860	2,150	4,962	1,566	73 34
Mixter May Raider (Guernsey)	6	1,884	2,860	2,150	4,960	1,560	73 31
Ravenwood Royal (Ayrshire)	3	1,825	2,860	1,840	5,554	1,436	74 22
Johanna Perfect Posch (Holstein)	2	1,915	2,860	1,840	4,350	1,436	69 91

Feed prices—

Grain, per cwt	$ 1 90
Roots, per ton	3 70
Silage per ton	4 00
Hay per ton	10 00
Green feed per ton	4 00

CORN SILAGE, SUNFLOWER SILAGE AND ROOTS FOR MILK PRODUCTION

To ascertain the feeding value in milk production of the three main succulents, corn silage, sunflower silage and roots, two feeding tests were conducted during the winter of 1924-25. Four cows were used in the tests comparing corn silage with turnips and with sunflower silage. Each feeding period lasted three weeks but the production of the third week only was used. The hay and meal rations were kept constant for all groups, while equal amounts of dry matter were supplied by each of the succulents fed. The following table gives the results and cost of production of milk and butter-fat for each period, when corn silage and turnips were compared:

CORN SILAGE VERSUS TURNIPS

—	Period 1 corn silage	Period 2 Turnips	Period 3 corn silage	Average of periods 1 and 3
Number of cows in test	4	4	4	4
Pounds of milk produced	403·9	405·5	372·0	388·0
Average pounds milk per cow per day	14·4	14·5	13·3	13·8
Average per cent butter-fat	5·8	5·7	5·7	5·75
Total pounds fat produced	23·43	23·11	21·2	22·31
Average pounds fat per cow per day	0·85	0·83	0·76	0·80
Total pounds meal consumed	196	196	196	196
Total pounds hay consumed	448	448	448	448
Total pounds roots consumed	.....	840	.....	.....
Total pounds corn silage consumed	420	.....	420	420
Pounds meal consumed per 100 pounds milk produced	48·5	48·3	52·7	50·5
Pounds silage consumed per 100 pounds milk produced	104	.....	112·9	108·2
Pounds roots consumed per 100 pounds milk produced	.....	207	.....	.....
Findings from experiment				
Cost of meal mixture at $1.82 per cwt.	$ 3 57	3 57	3 57	3 57
Cost of hay at $10.75 per ton	$ 2 41	2 41	2 41	2 41
Cost of roots at $4.20 per ton	$	1 76	.....	.....
Cost of silage at $4.40 per ton	$ 0 92	.....	0 92	0 92
Total cost of feed	$ 6 90	7 74	6 90	6 90
Cost of feed to produce 100 lb. of milk	$ 1 71	1 91	1 85	1 78
Cost of feed to produce 100 lb. butter-fat	$ 29 45	33 49	32 55	31 00

Taking the average of the two corn-silage periods, one fed previous to and one following turnips, we have a daily average production of 13.8 pounds per cow, while with turnips it was 14.5 pounds, an increase of 0.7 pounds per cow per day in favour of turnips. The fat was practically the same. The cost to produce 100 pounds milk was 13 cents less with corn than turnips. This was due in part to the fact that in order to supply an equal amount of dry matter during the root period, twice the weight was necessary, as the roots average 11 per cent dry matter as compared with corn silage at 22 per cent. It will also be noted that it cost $2.49 more to produce 100 pounds butter-fat with roots than with corn. In this test, 840 pounds turnips were found to be equal to 9 pounds meal, 20 pounds hay, and 439 pounds corn silage, which at prices charged for other feeds give roots a valuation of $2.95 per ton. In the two previous tests made under similar conditions, roots gave the cheaper production but it may be well to state that the corn silage harvested in the fall of 1924 was much superior to any we have fed heretofore as nearly 70 per cent of the cobs had passed the milk stage and therefore had a higher feeding value.

The following table gives the results of the second experiment, corn ensilage versus sunflower silage:—

CORN VERSUS SUNFLOWER SILAGE

—	Period 1 Corn silage	Period 2 Sunflower silage	Period 3 Corn silage	Average of periods 1 and 3
Number of cows in test	4	4	4	4
Pounds of milk produced	372·0	347·8	352·4	362·2
Average pounds milk per cow per day	13·3	12·4	12·6	12·9
Average per cent butter-fat	5·7	6·0	6·2	5·95
Total pounds fat produced	21·2	20·86	21·85	21·55
Average pounds fat per cow per day	0·76	0·74	0·78	0·76
Total pounds meal consumed	196	196	196	196
Total pounds hay consumed	448	448	448	448
Total pounds corn silage consumed	420	.....	420	420
Total pounds sunflower silage consumed	.....	420	.....	.....
Pounds meal consumed per 100 pounds milk produced	52·7	56·4	55·6	54·1
Pounds silage consumed per 100 pounds milk produced	112·9	120·8	119·1	116·0
Findings from experiment				
Cost of meal mixture at $1.82 per cwt.	$ 3 57	3 57	3 57	3 57
Cost of hay at $10.75 per ton	$ 2 41	2 41	2 41	2 41
Cost of sunflower silage at $4.75 per ton	$	1 00	.....	.....
Cost of corn silage at $4.40 per ton	$ 0 92	.....	0 92	0 92
Total cost of feed	$ 6 90	6 98	6 90	6 90
Cost of feed to produce 100 lb. milk	$ 1 85	2 01	1 96	1 91
Cost of feed to produce 100 lb. butter-fat	$ 32 55	33 48	31 58	32 02

Taking the average of the two corn-silage periods, the one previous to and the one following the sunflower period, we have a daily average production of 12.9 pounds milk per cow, while the sunflower test shows an average of 12.4 pounds per cow. An increase of 0.5 pounds per cow per day in milk and 0.02 pounds fat in favour of corn silage will be noted. The cost to produce 100 pounds of milk was 10 cents less with corn silage than with sunflowers. Both of these silage crops were grown in 1924. In this test, 420 pounds corn silage proved equal to 8 pounds meal, 19 pounds hay and 437 pounds sunflower silage, which at prices charged for other feeds gives corn silage a value of $6.14 per ton. The deduction taken from both these feeding tests cannot be regarded as conclusive as they are for only one year. These feeding tests will be continued until five year averages from each may be summarized.

BEEF CATTLE

The herd of Shorthorns at this Farm has been disposed of and the experimental work with beef cattle consists entirely of the feeding and marketing of beef steers.

DEHORNING EXPERIMENTS

Dehorning experiments have been carried on at this Farm for a number of years and the following figures show the results of these. In tests conducted from 1899 to 1902 the loss per steer dehorned was 25 pounds and the average time taken to regain this loss was two weeks. From 1914 to 1922 a total of 216 steers were dehorned. The average shrinkage in three weeks was 39.7 pounds. These steers were taken in from pasture and part of this shrinkage is no doubt due to the change in conditions. In 1914, twenty-four steers which were housed for two weeks before dehorning showed an average gain of 41 pounds in three weeks after dehorning. In 1922, nine heifers and steers were dehorned and the average

loss per head was only 15 pounds in the first two weeks. In 1923, twenty steers showed a gain of 16.6 pounds per head in two weeks after dehorning and eleven heifers showed a gain of 3 pounds per head. In 1924, fourteen heifers were dehorned and the loss in three weeks was only 1.8 pounds per head. In six feeding tests covering 150 days each, the average daily gain made by horned steers was 1.96 pounds as compared with 2.16 pounds for dehorned steers. From these experiments we may conclude that the loss from dehorning is practically nil. The advantages of feeding dehorned steers are the ease in handling, quietness of the steers and the prevention of loss both in the feeding-yard and in transit to market. The buyers of Canadian cattle in Great Britain discriminate very strongly against horned steers.

SECOND SHIPMENT TO GREAT BRITAIN

RESULTS OF SECOND TRIAL SHIPMENT OF TWENTY EXPORT STEERS SHIPPED FROM NAPPAN FARM ON APRIL 2, 1925

DR.

Transportation charges:—		
Total charges on 20 steers, Nappan to Halifax, freight and yardage		$ 76 24
Tags and tagging, 20 steers at 5c		1 00
Ropes, roping, branding and foreman's wages		17 78
Handling and loading, 20 steers at 70c		14 00
Expenses on ship:—		
Hay, straw, feed, etc		$ 112 14
Cattleman's supplies, pails, etc		4 89
Boat freight:—		
Halifax to Manchester, 20 steers at $20		$ 400 00
Insurance, 20 steers at $130 each at ¾ per cent		16 25
Excise stamps		18
Commission charges in Manchester		84 00
Total charges		$ 726 48
Less one day demurrage at Halifax		10 00
Net charges on shipment		$ 716 48
Net charge per steer		$ 35 82

CR.

Sale of steers in England:—		
20 steers at £27 14s. ($4.86⅔ per £)		$ 2,696 13
Less transportation charges, etc		716 48
Net returns for 20 steers		$ 1,979 65
Net returns per steer		98 98
Net returns per 100 pounds at Nappan average weight, 1,245 pounds on full feed		7 95
Net returns on 20 steers	$ 1,979 65	
Original cost of 20 steers at $50·875 per head	1,017 50	
Increased value	962 15	
Feed cost for 20 steers for winter	629 85	
Profit on 20 steers over feed cost	$ 332 30	
Profit per steer over feed cost	16 62	
Shrinkage en route to British market:—		
Average weight in feed lot at Nappan	1,245 pounds	
Average weight in Manchester Market	1,161 "	
Loss per steer en route	84	
Percentage loss per steer	6·74	

The transportation charges on this shipment were higher by 57 cents per steer than in 1924 but the returns were higher and the rate of exchange had increased so that the returns per hundred pounds at Nappan were increased by $1.06. The steers shipped were about average for the district, being selected Shorthorn grades, although several showed some dairy blood. The average price offered on the local market ranged from $6 to $6.50 per hundred, so that the returns on the shipment showed a substantial increase over local prices.

Mr. Charles Logan, of Amherst Point, again shipped with the Experimental Farm and he realized $8 per hundred f.o.b. car at Nappan. In the fall of 1925, forty-five head of western steers, twenty-five Herefords and twenty Shorthorns, were purchased and are being fed through the winter together with twenty-three local steers. These will be shipped in the spring of 1926. The object in feeding the western steers is to determine the advisability of bringing steers east in the fall and carrying them over the winter on our home-grown feeds plus a small amount of concentrates, then shipping to Great Britain in the spring before the St. Lawrence ports are open. We have a large amount of hay raised in this province every year and can also raise roots, silage and grain feeds cheaper than the market price as will be noted later in the Field Husbandry section of this report. If we can market these products through steers and bring outside capital into the country instead of marketing locally it will go a long way towards making farming more successful in the Maritime Provinces.

This is the type of feeder that will make profitable returns.

HAY FOR STEER-FEEDING

The following table contains the results of the steer-feeding experiment conducted in 1924-25:—

STEER-FEEDING EXPERIMENT 1924–25 WITH BROADLEAF VERSUS ENGLISH HAY

—	Pen 1 Broadleaf	Pen 2 English
Number of steers in test	12	12
Initial weight, December 2, 1924, gross pounds	12,250	12,740
Initial weight, average pounds	1,021	1,062
Finished weight, March 27, 1925, gross, pounds	14,523	15,142
Finished weight, March 27, 1925, average pounds	1,210	1,262
Total pounds gain in 115 days	2,273	2,402
Average pounds gain in 115 days	189	200
Average pounds gain per day	1·64	1·74
Total pounds hay consumed per pen	19,320	18,630
Average pounds hay consumed per steer per day	14	13·5
Total pounds roots consumed per pen	41,400	41,400
Total pounds grain consumed per pen	10,104	10,104
Total pounds molasses consumed per pen	90	90
Average pounds grain consumed per steer per day	7·32	7·32
Total cost of broadleaf hay at $7 per ton	$ 67 62	.....

STEER-FEEDING EXPERIMENT 1924-25 WITH BROADLEAF VERSUS ENGLISH HAY—*Concluded*

—	Pen 1 Broadleaf	Pen 2 English
Total cost of English hay at $10 per ton....$	.....	93 15
Total cost of roots at $4.20 per ton....$	86 94	86 94
Total cost of grain at $1.98 per cwt....$	200 06	200 06
Total cost of molasses at $1.55 per cwt....$	1 39	1 39
Total cost of feed for period....$	356 01	381 54
Total cost of feed per pound gain....cts.	15 7	15 9
Initial cost of steers at $5.11 per cwt....$	625 98	651 01
Final value of steers at $7.95 per cwt....$	1,154 58	1,203 79
Value of spread plus gain....$	528 60	552 78
Increase over cost of feed, total....$	172 59	171 24
Increase over cost of feed, average....$	14 38	14 27
Increased return per steer in favour of Pen 1....cts.	11	

The results of this experiment differ but slightly from that of 1923-24. The latter showed a difference of 49 cents per steer in favour of the English hay while this year it is 11 cents in favour of Broadleaf. The average gain on English hay was 11 pounds per steer higher than on Broadleaf but the difference in the feed cost more than offset this increase. The profit over feed cost shows up well, averaging $14.33 per steer for both lots. The steers received 30 pounds roots per day for the period and 14 pounds Broadleaf and 13.5 pounds of English hay for the two lots respectively. The meal mixture fed the first half of the period was bran 1½ parts, oats 1 part, oil-meal 1 part, shorts ½ part. The nutritive ratio of this ration is 1:6.5. The finishing ration was bran 1 part, oats 2 parts, oil-meal ¾ parts, corn meal 1 part, nutritive ratio 1:6.2. The steers were started off at 2 pounds of meal and gradually increased to 10 pounds per day. A small amount of molasses was fed the last part of the period.

SWINE

The swine herd at this Farm on January 1, 1926, consisted of 59 Yorkshires and 17 Berkshires, a total of 76 head. As the popularity of the latter is decreasing in this province and as the Yorkshire is one of the outstanding bacon breeds and well suited to our conditions we are disposing of the Berkshires and turning our whole attention in this line to the development of a high-class strain of bacon-type Yorkshires. With this in view, we obtained from the Experimental Station at Fredericton, N.B., the imported boar, Rogerfield Wonder —88844—recognized as one of the best Yorkshire sires in Eastern Canada. This boar was bred by McNaughton Brothers, Rogerfield, Baillieston, Scotland, and imported in 1923 by the Director of Experimental Farms. The past year has been a much better one for the swine breeders than was 1924. The demand for breeding stock has been greater and the price of pork higher than has been experienced since 1921. The number of young pigs sold in 1925 was 53 compared with 29 in 1924 and the average price of dressed pork for the two years was 15.4 cents and 11 cents respectively. The average cost of pork production in the past five years is 12.3 cents and the market price 14.2 cents. A study of the following figures will show that profitable returns were obtained from pork production. At the same time it is well to bear in mind that we were marketing at good prices many home-grown products, some of which would not

be marketable otherwise; such as small potatoes, poor apples, skim-milk and roots. The following is a summary of the financial statement of the fifteen brood sows kept on this Farm in 1925:—

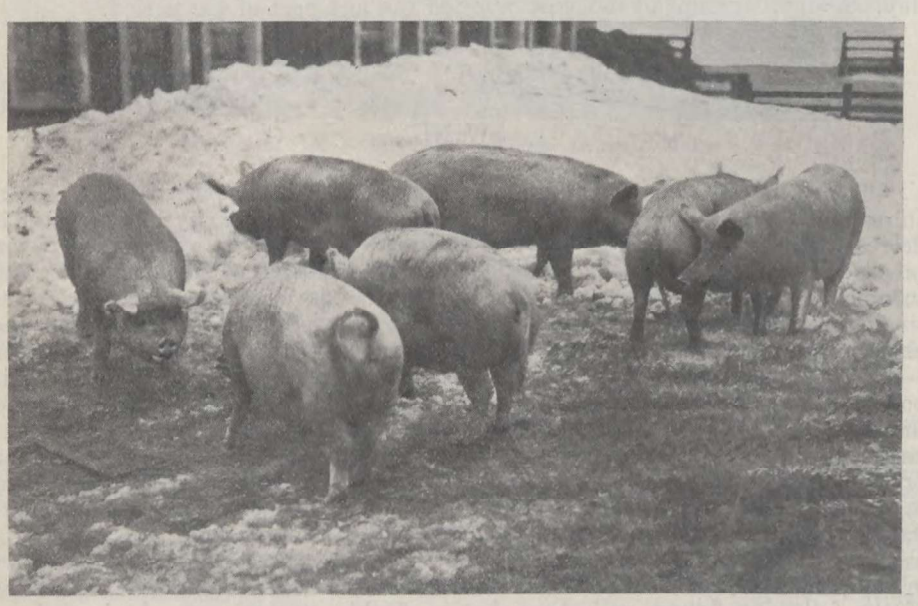
FINANCIAL STATEMENT OF BROOD SOWS

Number of sows and average pounds of meal consumed per day	Average cost of feed for 1 sow for one year	Average number of pigs per litter	Average number raised to six weeks	Average per cent raised	Average cost at six weeks	Average value of litter at six weeks
	$ cts.				$ cts.	$ cts.
12 Yorkshires—5·5	41 86	10·8	7·0	64·08	3 64	44 53
3 Berkshires—5·8	42 64	8·8	8·25	94·3	2 99	49 50

—	Twelve Yorkshires	Three Berkshires
Average value per pig at six weeks	$ 6 36	6 00
Average profit per pig over feed cost	$ 2 72	3 01
Number of pigs raised per sow in the year	11	11
Average profit per sow over feed cost	$ 29 92	33 11
Total profit over feed cost	$ 359 04	99 33

The grain mixture feed to these sows was:—

	Winter	Summer
Oats	200	200
Bran	100	100
Shorts	100	200
Oil-meal	75	75



A group of Yorkshire sows used at the Experimental Farm, Nappan for breed improvement. Note the uniformity and smoothness.

The prices used in determining the feed costs were: grain, $1.90 per cwt.; skim-milk, 20 cents per cwt.; roots, $3.50 per ton; and pasture, 50 cents per month. The sows are fed from 6 to 8 pounds of roots during the winter with

5 to 6 pounds of grain. In the summer they are pastured on rape and O.P.V. with no grain unless they are down in condition. When suckling a litter they receive from 7 to 9 pounds grain per day with skim-milk and roots or green feed. The average weight at birth of the Yorkshire pigs farrowed in 1925 was 2.43 pounds and Berkshires 2.9 pounds. The following is a financial statement of swine herd for 1925.

FINANCIAL STATEMENT OF THE SWINE HERD, 1925

(Fifteen brood sows, 1 boar, and progeny)

Feed Cost

Debit

To 30,148 lb. grain to sows and boar at $1.90 per cwt.		$ 572 81
40,000 lb. grain to experimental feeders at $2.30		920 00
1,500 lb. grain to increased stock at $1.90		28 50
17,024 lb. grain to aged stock sold for slaughter at $2		340 48
15,000 lb. grain to feeders not on experimental feeding at $2.30		345 00
1,080 lb. tankage at $53 per ton		28 62
1,546 lb. "Protan" feed at $80 per ton		61 84
937 lb. bone meal at $53 per ton		24 83
204 lb. blood meal at $110 per ton		11 22
200 lb. charcoal at $60 per ton		6 00
2,689 lb. whole milk at $30 per ton		40 34
57,353 lb. skim-milk at $4 per ton		114 71
15,672 lb. roots at $3 per ton		23 51
42,497 lb. garden refuse at $1 per ton		21 25
24,000 lb. straw at $4 per ton		48 00
Pasture—16 head, 40 months at 50 cents per month		20 00
		$ 2,607 11

Credit

By sale of 140 carcasses of pork:—		
1,582 pounds dressed at 12 cents per pound		$ 189 84
2,641 pounds dressed at 12½ cents per pound		330 13
728 pounds dressed at 13 cents per pound		94 64
658 pounds dressed at 15 cents per pound		98 70
7,719 pounds live weight at 11 cents per pound		849 09
1,521 pounds live weight at 10 cents per pound		152 10
4,940 pounds live weight at 12½ cents per pound		617 50
3,031 pounds live weight at 12 cents per pound		363 72
810 pounds live weight at 7 cents per pound		56 70
1,200 pounds live weight at 4 cents per pound		48 00
14 registered boars and sows at $10		140 00
35 non-registered boars and sows at $6		210 00
4 non-registered boars and sows at $8		32 00
Young feeders on hand, 60 at $6		360 00
80 tons manure at $2 per ton		160 00
Profit over feed cost for one year, $1,095.31		$ 3,702 42

The market price of pork ranged from 12 to 17 cents per pound dressed weight while the cost of production was 12 cents, showing a good profit for the year.

FEED COST OF RAISING PIGS TO SIX WEEKS OF AGE AND OF PRODUCING PORK

To feed for 15 sows, average yearly cost of feed $42.02	$ 630 24		
23 boar services at $1 per service	23 00		
7,500 lb. straw at $4 per ton	15 00		
		$	668 24
By 15 tons manure at $2 per ton			30 00
Total feed cost of 165 pigs at six weeks		$	638 24
Total feed cost of 1 pig at six weeks			3 87
Feed cost to produce 1 pound of pork:—			
To cost of 104 pigs at six weeks at $3.87	$ 402 48		
Feed for 104 pigs—169 days	1,461 75		
5 tons straw at $4	20 00		
		$	1,884 23
By 18 tons manure at $2			36 00
Total feed cost to produce 14,309 pounds pork		$	1,848 23
Total feed cost to produce 1 pound pork			0 12

EXPERIMENTS IN FEEDING

Experiment No. 1 was a combination of three feeding tests conducted to determine the relative value of concentrates when fed singly and in combination to young growing pigs. Pen 1 was fed a combination of crushed oats, middlings and barley (2 parts each by weight of oats and middlings and 1 part barley) up to 14 weeks of age. From 14 to 20 weeks the mixture was equal parts of oats, barley and middlings. The finishing ration was equal parts by weight of oats and middlings and 2 parts barley. Pen 2 received crushed oats until 20 weeks of age and were finished on equal parts of oats and barley. Pen 3 received middlings up to 20 weeks of age and were finished on equal parts by weight of middlings and barley. All pens received 3 per cent oil-meal in their mixture. The following table gives a record of these feeding tests:—

A Comparison of Oats and Middlings Alone and in Combination

Items		Pen 1 — Crushed oats and Middlings	Pen 2 — Crushed oats	Pen 3 — Middlings
Hogs in test		5	6	5
Initial weight, gross	lb.	219	229	178
Initial weight, average	"	44	38	35
Finished weight, gross	"	982	972	785
Finished weight, average	"	196·4	162	157
Days on test		156	158	158
Total gain for period	lb.	763	743	607
Average gain for period	"	152·6	123·8	121·4
Average daily gain per hog	"	0·98	0·783	0·768
Crushed oats consumed	"	802	2,310	
Middlings consumed	"	802	.....	1,924
Barley consumed	"	1,112	945	788
Oil-meal consumed	"	84	101	84
Skim-milk consumed	"	500	600	500
Green feed consumed	"	440	528	440
Meal consumed per pound gain	"	3·67	4·52	4·6
Total cost of feed	$	67 64	82 49	62 00
Cost of feed per hog	$	13 53	13 75	12 40
Cost of feed per hog per day	cts.	8·67	8·7	7·86
Cost of feed per pound gain	"	8·86	11·1	10·2

In comparing the three tests it will be noted that lot 1 on mixed grain consumed 0.85 pounds of grain less per pound gain than lot 2 on crushed oats and 0.93 pounds less than lot 3 on middlings; also that they made an average daily gain of 0.197 pounds more than lot 2 and 0.212 pounds more than lot 3, and that they produced their gains 2.24 cents per pound less than lot 2 and 1.34 cents less than lot 3. The hogs in lot 1 were more uniform and of better bacon type than either lot 2 or lot 3. The oat-fed hogs did not develop as uniformly as those fed on middlings and were never as thrifty in appearance.

Experiment 2 was a comparison of the self-feeder versus heavy and light hand-feeding for growing and finishing bacon hogs. The following table gives the results of the experiment:—

EXPERIMENT 2.—SELF-FEEDING VERSUS HEAVY AND LIGHT HAND-FEEDING

Items		Pen 1 — Self-fed	Pen 2 — Heavy hand-fed	Pen 3 — Light hand-fed
Hogs in test		6	8	7
Initial weight, gross	lb.	206	247	247
Initial weight, average	"	34	31	35
Finished weight, gross	"	1,033	1,456	1,219
Finished weight, average	"	172	182	174
Days on test, average		143	143	143
Total gain for period	lb.	827	1,209	972
Average gain per hog for period	"	138	151	139
Average daily gain per hog	"	0·965	1·06	0·972
Crushed oats consumed for period	"	1,089	1,379	903
Middlings consumed for period	"	1,089	1,379	903
Barley consumed for period	"	1,348	1,766	1,159
Oil-meal consumed for period	"	109	140	92
Skim-milk consumed for period	"	450	600	525
Green feed consumed for period	"	550	735	644
Pounds of grain consumed per pound gain	"	4·4	3·86	3·15
Total cost of feed	$	86 71	111 62	73 76
Cost of feed per hog	$	14 45	13 95	10 54
Cost of feed per hog per day	cts.	10·1	9·7	7·37
Cost of feed per pound gain	"	10·49	9·23	7·59

Comparing the three lots in the experiment it will be noted that pen 3, light hand-fed, consumed 0.71 pounds of grain less per pound gain than pen 2, heavy hand-fed, and 1.25 pounds less than pen 1, self-fed; also that they made an average daily gain of 0.088 pounds less than pen 2 and 0.007 pounds more than pen 1. They produced their gains 1.64 cents per pound less than pen 2. and 2.9 cents less than pen 1. All the hogs in pen 1, developed either into shop hogs or thick smooths. Pen 2 were of the same type, thick and heavy-shouldered while pen 3 made the best bacon-type hogs in the test.

Experiment 3 was a comparison of animal protein feeds, "Protan", tankage and skim-milk. Four pens were used, one on each of these feeds and one check pen. The following table gives the results of this test:—

SOURCES OF ANIMAL PROTEIN

Items		Pen 1 — Protan	Pen 2 — Tankage	Pen 3 — Skim-milk	Pen 4 — Check
Hogs in test		7	7	7	7
Initial weight, gross	lb.	522·0	408·0	414·0	387·0
Initial weight, average	"	74·6	58·3	59·1	55·3
Finished weight, gross	"	1,367·0	1,235·0	1,265·0	1,105·0
Finished weight, average	"	195·0	176·0	180·7	158·0
Days on test, average		107	107	107	107
Total gain for period	lb.	845·0	827·0	851·0	718·0
Average gain for hog for period	"	120·7	118·1	121·6	102·6
Average daily gain per hog	"	1·128	1·10	1·137	0·96
Meal consumed per pen	"	2,989·0	2,989·0	2,989·0	2,989·0
Animal protein feed consumed	"	700·0	234·0	3,705·0	
Roots consumed	"	1,496·0	1,496·0	1,496·0	1,496·0
Meal consumed per pound gain	"	3·54	3·61	3·51	4·16
Total cost of feed	$	103 30	81 50	82 73	75 32
Average cost of feed per hog	$	14 76	11 64	11 82	10 76
Average cost of feed per hog per day	cts.	13·8	10·9	11·04	10·05
Average cost of feed per pound gain	"	12·22	9·85	9·72	10·49

Comparing the results, it will be noted that pen 3 on skim-milk consumed 0.65 pounds grain less per pound gain than pen 4 check pen, 0.1 pound less than pen 2 on tankage, and 0.03 pounds less than pen 1 on "Protan"; also the cost per pound gain for this pen was 0.77 cents less than for the check pen, 0.13 cents less than pen 2 and 2.5 cents less than pen 1. Pen 3 made an average daily gain of 0.177 pounds more than the check pen, 0.037 pounds more than pen 2 and 0.009 pounds more than pen 1. The costs per pound of digestible protein were 5.3 cents for skim-milk, 4.4 cents for tankage and 19.9 cents for "Protan". These pigs were shipped to St. John and graded there by a member of the Dominion Live Stock Branch as follows:—

Pen	Selects	Thick Smooths	Shops	Unfinished
1	6	1	.....	
2	4	2	1	
3	3	1	1	2
4	2	2	2	1

The hogs in pen 1 were slightly heavier than the other pens which may account for the larger number of selects in that lot.

The feed prices per ton used for these three experiments were as follows:—oats, $45; middlings, $38; barley, $55; oil-meal, $45; tankage, $75; "Protan," $80; skim-milk, $4; and green feed, $4.

Experiment 4 was a continuation of experiment 3, comparing skim-milk with "Protan" and both with a check lot. The following are the results:—

SOURCES OF ANIMAL PROTEIN FOR FEEDING HOGS

Items		Pen 1 — Protan	Pen 2 — Skim-milk	Pen 3 — Check
Number of hogs in test		4	4	4
Initial weight, gross	lb.	96·0	99·0	96·0
Initial weight, average	"	24·0	25·0	24·0
Finished weight, gross	"	841·0	817·0	726·0
Finished weight, average	"	210·0	204·0	182·0
Days on test		172	172	172
Total gain for period	lb.	745·0	718·0	630·0
Average gain for period	"	186·0	179·5	157·5
Average daily gain per hog	"	1·08	1·04	0·92
Total barley consumed	"	899·0	899·0	899·0
Total oats consumed	"	717·0	717·0	717·0
Total middlings consumed	"	718·0	718·0	718·0
Total Protan consumed	"	560·0	.....	
Total skim-milk consumed	"	.....	3,210·0	
Total green feed consumed	"	705·0	705·0	705·0
Meal consumed per pound gain	"	3·0	3·25	3·7
Total cost of feed	$	76 83	60 85	54 43
Cost of feed per hog	$	19 21	15 21	13 61
Cost of feed per hog per day	cts.	11·1	8·8	7·9
Cost of feed per pound gain	"	10·3	8·47	8·6

Prices used:—

Barley, per cwt., $2.75
Oats, per cwt., $2.07
Middlings, per cwt., $1.90
Protan, per cwt., $4.00
Skim-milk, per cwt., 20 cents
Green feed, per ton, $3.50 (O.P.V.)

The results show that pen 2 on skim-milk consumed 0.45 pounds grain less per pound gain than pen 3, check, and 0.25 pounds more than pen 1 on "Protan", while the average daily gain for that lot was 0.12 pounds more than pen 3, and 0.04 pounds less than pen 1, and the cost of feed per pound gain was 0.13 cents less for the skim-milk pen than the check, and 1.83 cents less than the "Protan" lot. The high cost of "Protan" makes it almost prohibitive as a skim-milk substitute although in gains it shows up exceptionally well. Pens 1 and 2 each received 115 pounds digestible animal protein with a cost per pound of 5.6 cents for the skim-milk and 19.5 cents for the "Protan".

Experiment 5 was a comparison of corn and barley as finishing grains, also green feed and meal versus meal for finishing bacon hogs. The following are the results:—

EXPERIMENT 5. CORN VERSUS BARLEY. GREEN FEED VERSUS NO GREEN FEED

—		Pen 1 Barley, no green feed	Pen 2 Corn, no green feed	Pen 3 Barley and green feed	Pen 4 Corn and green feed
Number of hogs in test		7	7	7	6
Initial weight, gross	Pounds	510	378	278	200
Initial weight, average	"	72·9	54	39·7	33·3
Finished weight, gross	"	1,499	1,408	1,272	1,046
Finished weight, average	"	214·1	201·1	181·7	174·3
Days on test		117	117	117	117
Total gain for period	Pounds	989	1,030	994	846
Average gain for period	"	141·3	147·1	142	141
Average daily gain per hog	"	1·2	1·25	1·21	1·2
Total barley consumed	"	1,217	.....	1,110	.....
Total corn consumed	"	.....	1,157	.....	881
Total oats consumed	"	1,213	1,107	1,023	806
Total middlings consumed	"	1,213	1,107	1,023	806
Total tankage consumed	"	197	193	186	144
Total skim-milk consumed	"	2,961	2,355	2,255	1,733
Total green feed consumed	"	.....	.....	713	632
Meal consumed per pound grain	"	3·68	3·27	3·18	2·95
Total cost of feed	$	94 93	89 44	83 71	67 36
Cost of feed per hog	$	13 56	12 78	11 96	11 23
Cost of feed per hog per day	cts.	11·6	10·9	10·2	9·6
Cost of feed per pound gain	cts.	9·6	8·7	8·4	8

Prices used:—

Barley	per cwt.	$ 2 75	Tankage	per cwt.	$ 3 75
Corn	"	2 90	Skim-milk	"	0 20
Oats	"	2 07	Green feed	per ton	3 00
Middlings	"	1 90	(O.P.V. and potatoes).		

A study of this table shows the following points: (1) Pen 4, on corn and green feed consumed 0.23 pounds grain less per pound gain than pen 3 on barley and green feed; 0.32 pounds less than pen 2 on corn alone, and 0.73 pounds less than pen 1 on barley alone. (2) There was very little difference between the average daily gain, but in cost per pound gain pen 4 was 0.4 cents less than pen 3, 0.7 cents less than pen 2, and 1.6 cents less than pen 1. The average cost per pound gain of the two corn-fed pens was 8.36 cents and the barley-fed pens 9 cents; of the two green-feed pens 8.2 cents and 9.1 cents for the pens receiving no green feed, a gain of 0.90 cents in favour of the green-feed pens. The meal mixture fed was the same as for pen 1, experiment 1, except that corn replaced barley in pens 2 and 4.

The following table is a summary of the previous tables, comparing the summer- and winter-fed hogs. The average costs per pound gain were much higher in winter than in summer:—

SUMMER VERSUS WINTER FEEDING FOR PORK PRODUCTION

—		Summer Fed	Winter Fed
Hogs in test		39	65
Initial weight, gross	Pounds	1,657	3,057
Initial weight, average	"	42·5	47
Days on test		134	131
Finished weight, gross	Pounds	7,609	11,419
Finished weight, average	"	195·1	175·7
Total gain for period	"	5,952	8,362
Average gain for period	"	152·6	128·6
Average daily gain per hog	"	1·14	0·98
Meal consumed for period	"	19,665	32,264
Milk consumed for period	"	12,514	6,880
Tankage consumed for period	"	720	234
Protan feed consumed for period	"	560	700
Green feed consumed for period	"	3,460	9,321
Meal consumed per pound gain	"	3·3	3·9
Total cost of feed	$	527 55	827 07
Total cost of feed per head	$	13 54	12 72
Total cost of feed per head per day	cts	10·1	9·7
Total cost of feed per pound gain	cts	8·8	9·9

Prices used:—As in other feeding experiments conducted in 1925—

WINTERING BROOD SOWS—HEAVY AND LIGHT GRAIN FEEDING

Six sows were used in this experiment, three groups of two each. Two were fed a heavy grain ration outside, two a light grain ration outside and two a heavy grain ration inside. The heavily-fed sows were fed 7 pounds grain per head per day during the entire gestation period. The lightly fed sows received 5 pounds per day. All were fed green feed. The heavily fed sows farrowed lighter pigs than the lightly fed sows, but raised a higher average to six weeks of age. The following table gives the results of the experiment:—

HEAVY AND LIGHT GRAIN FEEDING FOR SOWS OUT-OF-DOORS AND IN PENS

Group	Number of pigs farrowed	Average weight per pig	Number raised to six weeks	Percentage raised to six weeks
		lb.		
Heavily fed. Outside	19	2·8	13	68·4
Lightly fed. Outside	20	2·9	15	75·0
Heavily fed. Inside	19	2·8	17	89·5

DEDUCTIONS FROM 1925 FEEDING EXPERIMENTS

1. It is more economical to feed a mixture of concentrates for pork production than to feed any one of them alone.

2. The use of the self-feeder increases the meal consumption per pound gain thus increasing the cost.

3. Heavy hand-feeding during the developing stage is not advisable as it produces rapid growth but increases the mortality and tends to make short thick hogs of an undesirable bacon type.

4. "Protan" is a good substitute for skim-milk but the high cost makes it prohibitive to use except when pork can be sold at a high price.

5. Skim-milk and tankage are both valuable sources of animal protein, the former being the one recommended if available.

6. Corn gave cheaper gains than barley but the hogs fed on corn were not as good bacon type. Green feed is a necessity in economical production of pork.

7. Under average conditions, the summer-fed hogs will make the cheaper gains.

SHEEP

The flock of pure-bred Shropshires on this Farm on January 1, 1926, consisted of twenty aged ewes, eight shearling ewes, ten ewe lambs and two rams. The imported ram, Buttar 332/38074, is at the head of the flock and is leaving some very typy progeny. At the Maritime Winter Fair, Amherst, in 1925, in the strongest competition for years, the following prizes were won on this ram's progeny:—Shearling ewe third and fourth, ewe lamb third, wether lamb second and fourth, ram lambs first and third, lamb carcass first, group of five lambs ninth and second on fleece of wool. The twenty-five ewes bred in 1924 dropped 40 lambs and raised 33, or 132 per cent. The wool clip for 1925 averaged 7.1 pounds from the aged ewes and 8.6 from the shearlings. The financial statement of the pure-bred flock is as follows:—

FINANCIAL STATEMENT FOR THE PURE-BRED FLOCK OF SHROPSHIRES

Dr.

To feed for 25 ewes and ram—		
3,629 pounds meal at $2 per cwt	$ 72 58	
8,051 pounds roots at $3.50 per ton	14 09	
5,247 pounds hay at $10 per ton	26 24	
3,674 days pasture at 2 cents per day	73 48	
		$ 186 39
To feed for 9 shearlings—		
582 pounds meal at $2 per cwt	11 64	
3,178 pounds roots at $3.50 per ton	5 56	
1,905 pounds hay at $10 per ton	9 53	
1,332 days pasture at 2 cents per day	26 64	
		53 37
To feed for 33 lambs—		
1,373 pounds meal at $2 per cwt	27 46	
2,764 pounds roots at $3.50 per ton	4 84	
853 pounds hay at $10 per ton	4 27	
4,521 days pasture at 1 cent per day	45 21	
		81 78
Total feed cost		$ 321 54
To loss of 1 mature ewe		25 00
		$ 346 54

Cr.

By—		
Sale of 260 pounds wool at 32 cents per pound	$ 83 20	
Sale of 2 sheep skins at $1.12½	2 25	
Sale of 109 pounds mutton at 12 cents	13 08	
Sale of 669 pounds lamb (8 head) at 10 cents	66 90	
Sale of 382 pounds lamb (5 head) at 9 cents	34 38	
Sale of 549 pounds mutton (4 head) at 4 cents	21 96	
Sale of 1 shearling ram at $22	22 00	
Sale of 3 ram lambs at $25	75 00	
Sale of 5 ram lambs at $20	100 00	
Sale of 2 ram lambs at $18	36 00	
Sale of 1 shearling ewe	10 00	
Increased stock, 2 ewes at $15	30 00	
30 tons manure at $2	60 00	
		$ 554 77
Profit over feed cost		208 23
Total cost of feeds for 35 sheep for 1925	$ 239 76	
Total cost of feeds for 1 sheep for 1925	6 85	
Total cost to raise pure-bred lambs—		
To feed cost for 25 ewes and ram	$ 186 39	
To feed cost for 33 lambs	81 78	
		$ 268 17
LESS—		
178 pounds wool at 32 cents per pound	56 96	
24 tons manure at $2 per ton	48 00	
		$ 104 96
Total feed cost for 33 lambs		$ 163 21
Total feed cost for 1 lamb		4 95

GRADE SHEEP

The work with grades at present consists of the testing of the Multi-nipple strain started by the late Dr. Alexander Graham-Bell of Baddeck, Cape Breton, These sheep are supposed to be a high-milking strain, having four to six teats. Our experience in 1925 was that they were no heavier milkers than the pure-bred Shropshires, as they only produced milk from two teats. The four ewes bred dropped five lambs, raising three, all rams, so there was no increase in the flock. The wool clip from the four aged ewes, two shearlings and one ram averaged 6.4 pounds per head.

FINANCIAL STATEMENT OF GRADE FLOCK, 1925

Dr.

To feed 4 ewes and 1 ram—		
689 pounds meal at $2 per cwt.	$ 13 78	
1,742 pounds roots at $3.50 per ton	3 05	
1,200 pounds hay at $10 per ton	6 00	
592 days pasture at 2 cents per day	11 84	
		$ 34 67
To feed 2 shearlings for—		
129 pounds meal at $2 per cwt.	2 58	
742 pounds roots at $3.50 per ton	1 30	
415 pounds hay at $10 per ton	2 08	
296 days pasture at 2 cents per day	5 92	
		$ 11 88
To feed for 3 lambs—		
45 pounds meal at $2 per cwt.	0 90	
40 pounds roots at $3.50 per ton	0 07	
13 pounds hay at $10 per ton	0 07	
303 days pasture at 1 cent per day	3 03	
		$ 4 07
Total feed cost		$ 50 62

Cr.

By—		
Sale of 41 pounds wool at 32 cents per pound	13 12	
Sale of 82 pounds lamb at 13 cents	10 66	
Sale of 120 pounds lamb at 10 cents	12 00	
5 tons manure at $2	10 00	
		$ 45 78
Loss for year		4 84

HORSES

There were twenty-two horses in stock on January 1, 1926, including (pure-bred Clydesdales), one stallion, four aged mares, one aged gelding, one four-year-old mare, one two-year-old mare, one two-year-old stallion, one yearling stallion, one yearling mare, two colts, and (grades), three aged mares, four aged geldings, one express mare and one driver. The following are data collected on the cost of raising colts and maintaining work-horses:—

FEED COST TO RAISE A COLT TO ONE YEAR OF AGE

Feed for dams for six months—		
63·6 bushels oats at 70 cents per bushel	$ 44 52	
549 pounds bran at $32 per ton	8 78	
5,760 pounds hay at $8 per ton	23 04	
2 months pasture at $2 per month	4 00	
		$ 80 34
Feed for two colts for year—		
20·5 bushels oats at 70 cents per bushel	14 35	
487 pounds bran at $32 per ton	7 79	
3,600 pounds hay at $8 per ton	14 40	
1,538 pounds roots at $4 per ton	3 08	
		39 62
Total feed cost		$ 119 96
By—		
300 hours work of dams at 10 cents per hour		30 00
Total feed cost for 2 colts for year		$ 89 96
Total feed cost for 1 colt for year		44 98

FEED COST TO RAISE A COLT FROM ONE TO TWO YEARS OF AGE

Feed for two colts for year—		
38·4 bushels oats at 70 cents per bushel	$ 26 88	
708 pounds bran at $32 per ton	11 33	
7,620 pounds hay at $8 per ton	30 48	
95 days pasture at $2 per month	6 33	
		$ 75 02
Total feed cost for 2 colts		$ 75 02
Total feed cost for 1 colt		37 51

MAINTENANCE COST OF EIGHT HEAVY HORSES

To—		
23 tons, 720 pounds hay at $8 per ton		$ 186 88
852 bushels oats at 70 cents per bushel		596 40
1 ton, 1965 pounds bran at $32 per ton		63 44
400 pounds oil meal at $45 per ton		9 00
2 tons, 984 pounds roots at $4 per ton		9 97
Total cost of feed		$ 865 69
Total feed cost for one horse		108 21
By—		
14,724 hours work at 10 cents per hour		$ 1,472 40
Average hours work per horse, 1,840·5 at 10 cents		184 05
Profit over feed cost for labour for eight horses		606 71
Profit over feed cost for labour for one horse		75 84
Average feed consumed by a 1,500 pound horse for one year:—		
Hay	5,840 pounds	
Oats	106·5 bushels	
Bran	496 pounds	
Roots	623 pounds	

FIELD HUSBANDRY

The work in this department was continued in 1925, consisting of various cultural experiments, rotations, production costs, marsh renewal and treatment, and farm manure experiments.

The yields of corn; oats, peas, and vetches; and barley were below average, while hay, oats, wheat, roots and sunflowers were above. Grain lodges badly, due to the continued wet weather, making harvesting difficult. Pastures were excellent throughout the season. Taken on the whole the season was below average as regards the accomplishment of farm work, although prices of farm commodities were somewhat higher than in 1924.

The cultural experiments started in 1922 were continued as outlined in the report for that year. A detailed account of these will be given after more data are collected.

The rotation experiments, comparing three-, four- and five-year rotations, also manure and fertilizers in the rotation, were carried on as in former years.

The following table shows the cost of production of the various farm crops in the four-year rotation. For the items of expense, see the report for 1924, as these conform very closely with the 1925 costs.

COST OF PRODUCTION OF FARM CROPS, 1925

Crop	Yield per acre	Cost per acre	Cost per ton	Cost per bush.
	bushels			
Wheat	24·80	$33 63	.....	$1·36
Oats	64·43	30 03	.....	·466
Barley	31·80	29 83	.....	·938
Mixed grain	57·00	34 24	.....	·600
	tons			
Sunflowers	18·055	63 70	$ 3 53	.....
Corn	10·840	55 91	5 16	.....
O.P.V.	4·826	46 71	9 68	.....
Turnips	19·680	66 84	3 40	·085
Hay, 1st year	2·780	24 97	8 98	.....
Hay, 2nd year	2·700	18 09	6 70	.....

AVERAGE YIELDS AND COSTS OF FARM CROPS AT NAPPAN

Crop	Number of years	Yield per acre	Cost per acre	Cost per bushel	Cost per ton
		bushels			
Oats	11	46·01	$28 92	$0·629	.....
Wheat	11	21·34	29 14	1·37	.....
Barley	11	27·07	27 13	1·00	.....
Mixed grain	11	37 55	29 91	0·796	.....
		tons			
Turnips	6	17·74	72 35	0·102	$4 08
Corn	6	12·68	58 18	.....	4 59
Sunflowers	5	16·29	63 33	.....	3 88
O.P.V.	4	6·46	44 05	.....	6 82
Hay	10	2·4	21 86	.....	9 11

TOP-DRESSING HAY LAND WITH BARNYARD MANURE

One-half of the 5-acre field D2, was manured in the spring of 1921, with 20 tons of manure, the other half was not treated. This manured area was again treated in the fall of 1925, with 16 tons of manure per acre.

BARNYARD MANURE ON HAY LAND

Treatment	Yield per acre in tons					
	1921	1922	1923	1924	1925	5 year average
Manured	2·26	2·68	3·05	2·47	1·90	2·47
Unmanured	2·09	2·34	2·32	1·87	1·69	2·06

We would recommend lighter and more frequent applications of manure as top-dressing on hay land, to get the best results.

RENEWING MARSH LAND

This project was started in 1922 and is being continued from year to year. The 1925 block was ploughed partly in the fall of 1924 and the balance in the spring of 1925. The following are the receipts and expenditures in the different blocks:—

RENEWING MARSH LAND

Year renewed	Area	Expenditure to 1925	Returns to 1925
	acres		
1922	10	$788 10	$704 26
1923	13·6	883 02	954 31
1924	7·75	659 93	553 71
1925	11·193	967 39	285 14

NOTE.—The average yield of hay on the renewed marsh in 1925 was 2·59 tons per acre; on the old marsh 1·45 tons.

LIME TREATMENT ON MARSH LANDS

An experiment was started in 1922 comparing ground limestone, basic slag and wood ashes on marsh land. This was continued in 1924 and 1925. While no definite deductions can be made as yet, there is a substantial increase over the untreated land, with all applications, especially in the third and fourth years. This experiment was continued in 1926.

A four-year rotation was started in 1926 on the marsh as follows: sunflowers, manured at the rate of 16 tons of barnyard manure per acre, oats clover, and timothy. This will be compared with two four-year rotations of oats, and three years of hay, one fertilized with 100 pounds of nitrate of soda, and 150 pounds 8 per cent slag, and the other a check rotation receiving neither manure nor fertilizers.

DIFFERENT DATES OF SEEDING SUNFLOWERS

The following are the results obtained in 1925 with sunflowers seeded at different dates, also a five-year average:—

Date of seeding	Stage of maturity	Yield per acre	5-year average
		tons. lb.	tons lb.
May 29	30 per cent bloom	28 1,660	27 665
June 5	30 " "	19 1,330	24 1,328
Rain prevented seeding on June 12			26 1,080
			(4-year average)
June 20	5 per cent bloom	12 1,000	24 1,120

The earlier seeding, over an average of five years, has given the best results.

DISTANCE APART FOR SEEDING SUNFLOWERS

The following are the 1925 results and a five-year average: Rows 445 feet long.

Distance	Area of plot	Stage of maturity	Yield per acre 1925	5-year average
			tons lb.	tons. lb.
2½ feet	1/40 acre	30 per cent bloom	27 –	23 758
3 feet	31/1000 "	30 " "	24 710	23 288
3½ feet	9/250 "	30 " "	27 167	22 1,701

While the narrow row gives slightly the highest yield, we recommended the three-foot row, when considering ease in cultivation, together with quality of product. The wider row gives a coarse growing plant, making poorer ensilage.

HORTICULTURE

The season of 1925 was fairly satisfactory from a horticultural standpoint, more particularly perhaps from the standpoint of flowers and vegetables that do best under cool climatic conditions. The season throughout was rather cool. While spring opened fairly early, and work began on the soil during the first part of May, the cool weather prevented rapid germination, and those varieties or strains of flowers or vegetables that require considerable heat came on slowly. And during the latter part of June the continuous wet weather prevented proper cultivation, and due to these facts the yields were not above average. Possibly the tree fruits suffered most from unfavourable weather conditions, in that these conditions were ideal for the development of scab and fungous diseases. Lack of sunshine prevented the fruit from maturing properly, and also prevented the proper colouring of fruit. The small fruits made very satisfactory progress—black currants yielding better than any previous year. The conditions were very unsatisfactory for potato seed growing throughout the entire section, particularly on the heavier soils, and on fields that lacked drainage. A very high percentage of dry rot was recorded.

Strawberries were good at the Farm, but the average yield from the growers was only fair, and the market demand was very slow locally. Owing to the continuous rains berries were frequently marketed in poor condition, which resulted in many growers receiving the average price. But taking it altogether, the season might be termed an average one.

TREE FRUIT

COMMERCIAL ORCHARD

The majority of the trees in the orchard came through the winter in good condition; a few replacements were necessary, but nearly all were trees that had suffered from injuries of previous years.

The apple crop was very disappointing, the fruit was small and very spotted. The continuous rainy weather, followed by dull, muggy periods made ideal conditions for the development of apple scab, which was general throughout this district. McIntosh Red, Baxter, and Northern Spy were the varieties most seriously affected. The demand for apples was light, and prices paid low throughout this district last year.

Three sprayings did not prove sufficient to control scab in a season like the past one, and it would have paid well to have made the fourth or even the fifth spraying. This shows one cannot make any hard and fast rules regarding the number of times to spray, but to spray just as often as one feels that the trees require it. Should a rain come shortly after the spray has been applied, it will pay to go over the trees again, just as soon as the weather clears.

The strips between the rows were again sown to different cover-crops as follows: common red clover, white clover, alsike, sweet clover rape and vetch, in the same order as previous years, and on the same areas. Fair growth was received from all.

Of the many different varieties tested at this Farm the following may be recommended for this district: Duchess, Pewaukee, Tolman Sweet, Wealthy, Charlamoff, Arabka Winter, and Golden Russet. The Grimes Golden does very well and is an excellent apple, even though it is not very attractive.

The following table gives the cost of production from the commercial orchard:—

COMMERCIAL ORCHARD, 1925

March 27, 2 men, 8 hours pruning at 28 cents	$	2 24
March 28, 2 men, 3 hours pruning at 28 cents		0 84
April 1, 2 men, 4 hours pruning at 28 cents		1 12
April 2, 2 men, 3 hours spraying at 28 cents		0 84
April 6, 2 men, 4 hours gathering limbs at 28 cents		1 12
April 6, 1 team, 2 hours gathering limbs at 52 cents		1 04
April 7, 1 team, 7 hours gathering limbs at 52 cents		3 64
April 7, 2 men, 14 hours gathering limbs at 28 cents		3 92
April 21, 2 men, 4 hours removing trees at 28 cents		1 12
May 18, 2 men, 10 hours replacing trees at 28 cents		2 80
June 9–12, Tractor, 13½ hours ploughing at $1		13 50
June 11, 1 man and 1 horse, 5 hours ploughing at 42 cents		2 10
June 17, 2 men, 4 hours spraying at 28 cents		1 12
June 15–18, tractor, 9 hours cultivating at $1		9 00
June 29, 2 men, 10 hours mowing grass at 28 cents		2 80
July 6, 2 men, 10 hours mowing grass at 28 cents		2 80
August 1, tractor, 5 hours harrowing at $1		5 00
August 3, tractor, 5 hours harrowing at $1		5 00
August 14, 2 men, 6 hours shoreing limbs		1 68
August 17, 1 man, 5 hours sowing cover crop at 28 cents		1 40
August 17, tractor, 2 hours harrowing at $1		2 00
August 17, 1 man, 3 hours shoreing limbs at 28 cents		0 84
August 17, 1 team, 8 hours spraying at 52 cents		4 16
Spray material		3 95
Seed for cover-crop		12 65
Manure, 16 tons 2nd year at $2		32 00
Picking, 60 hours at 28 cents		16 80
93 empty barrels at 25 cents		23 25
Total cost for year	$	158 73
By 93 barrels apples at $3		279 00
Profit over cost of production	$	120 27

VARIETY TEST ORCHARD

Many of the varieties in this orchard have proven that they have no real commercial value for this district, and during the year much of the fruit harvested was only fit for stock food. True the season was not favourable to the development of good fruit, but such varieties as the following are not worth planting in this district: Titovka, Gypsy Girl, Hibernal, Keswick, Coddling, Rhode Island Greening, Blackwood, Mattison, Ostrakoff, Borovinka, Mendel, Pensaukee Russet, Noel, Gano, Newton, Crimean Bogdanoff, Summer Paradise, Peck Pleasant, Carolina Strawberry, Haas, Late Strawberry, Boys' Delight, Red Sweet, Cooper Market, Golden Ball, Buckingham, Scott Winter, Royal Table, Ruby Gem, Peter, McMahon White.

SMALL FRUITS

STRAWBERRIES

Some sixty varieties were tested during the year and the following table gives the average yield of the varieties which have been tested for thirteen years, or over.

STRAWBERRY VARIETIES

Variety	Years tested	Average yield per acre in pounds, calculated from plots returns
St. Antoine de Padue	14	8,324
Seedling No. 12	14	8,223
Dunlap	13	8,057
Seedling No. 15	14	8,002
Michel Early	14	7,836
Equinox	14	7,765
Swindle	14	7,401
Jeanne D'Arc	14	7,375
G. H. Coughill	14	7,372
Crescent	14	7,342
Barton	14	7,227
Bisel	14	7,174
Haverland	14	7,073
Thompson Late	14	7,017

The single hedge row was adopted this year for the first time and while it has only been tested for one year, yet results would indicate that the method is superior to the double matted row method. Less winter-killing was noted and the plantation was very much more easily kept clean and free from weeds and grass. It makes the picking easier and possibly there is not as much loss from tramping by children, as they can easily reach the centre of the row.

RASPBERRIES

This plantation came through the winter in average condition. Some breaking down was experienced from the drifted snow. The results of the past six years would indicate that the hedge row system for raspberries was not a good method to adopt in this section, for the loss from breaking down has been far too great, and where single rows are planted it pays to stake them. The following varieties were tested, and yields per acre in pounds are given: King, 5,019; Newman, 4,730; Ruby Red, 4,290; Eaton, 2,970; St. Regis, 2,860; Count, 2,640; Herbert, 2,420; Loudon, 1,980; Brighton, 1,650; Hebner, 1,430; Cuthbert, 990; Columbian Red, 330.

BLACK CURRANTS

All bushes came through the winter in good condition and made a strong growth during the season. A good yield of fruit was harvested. The berries were of good size and uniformly ripened, thus facilitating the picking. Some white pine blister rust was noted on a few of the varieties, but no appreciable damage done. The following varieties were tested, and yields per acre in pounds given (4-year average): Kerry, 14,719; Eagle, 13,750; Climax, 10,230; Saunders, 9,988; Topsy, 11,875; Magnus, 12,832; Climax (1,373), 8,085; Buddenborg, 11,770; Victoria, 7,480; Boskoop Giant, 3,828.

RED CURRANTS

This plantation came through the winter in good condition and all bushes made a strong growth during the season. Five varieties tested will yield per acre in pounds, four-year average: London Market, 8,058; Perfection Red, 8,394; Wilder, 5,404; Cherry, 4,290; Fay Prolific, 2,764.

GOOSEBERRIES

Ten varieties are on test at this Farm, and although covered with snow during the entire winter very little damage was recorded. Practically all bushes have overcome the setback received during the winter of the deep snow, 1922-23. The yield was very good, and quality above the average. There was less mildew than in previous years, although a few varieties, such as Alma, ran very high with 100 per cent, Deacon 40 per cent, and Barrett only 10 per cent. The following are the varieties and their yields in pounds per acre: Pearl, 25,080; Charles, 15,840; Rideau, 15,400; Silvia, 14,960; Duncan, 14,520; Deacon, 12,320; Red Jacket, 11,000; Barrett, 6,160; Alma, 2,640; Mabel, 440.

VEGETABLE VARIETIES

CABBAGE

Seventeen varieties were tested in 1925. The seed was started in the hotbeds April 13, and transplanted to the open from flats June 5, in plots 1/484 of an acre, using twenty plants in each case. The following varieties are named in order of yields, which ranged from 76,956 down to 10,648 pounds: Copenhagen Market (James), Succession, Glory of Holland, Fottlers Imp. Brunswick, All Seasons, Glory of Inkhuyen, All Head Early, New Flat Swedish, Danish Ballhead (Intermediate), Copenhagen Market (Graham), Marblehead Mammoth, Danish Ballhead (SB), Bruce Winter, Danish Ballhead (Harris), Summer Ballhead, Ex. Am. Danish Ballhead, and Danish Ballhead (short stem).

Owing to the prevalence of cutworm many of the first plants set out had to be replaced, and in some instances the club-root reduced the yield. The garden was free from cabbage root maggot and the cabbage worm was controlled by two applications of salt and lime. Harvesting was completed September 22, 1925.

TOMATOES

Thirty-seven varieties were tested in 1925. The seed was sown in flats in the hotbeds April 13, and germination was good, with the exception of a few Novelty varieties, which were planted for the first time. They were pricked off into individual pots April 30, and remained in cold frames until June 9, when they were transplanted to the open, using six plants of each variety, making a plot 1/290 of an acre. The very heavy foliage which developed necessitated severe pruning to insure good fertilization, and the development of ripe fruit.

The following ten varieties gave the best yields, which are given in bushels per acre: Alacrity X Hipper, 662; Alacrity X Earlibell, 659; Livingston Manifold, 647; Alacrity Ottawa, 623; North Dakota Earliana, 599; Pink, 560; First of All, 553; Early Mascot, 512; Golden Queen, 461; Wayahead, 459.

CELERY

Nine varieties were tested in 1925. The seed was sown in the hotbeds April 6, germination was fair but growth slow, until pricked off May 11. Transplanted to the open June 14 to trenches previously prepared, by adding 6 inches of well-rotted manure, and tramped firmly in the bottom of the trench, and covered with 3 inches of good loose loam, in which the plants were set. Twenty plants of each variety make the plot, which was 1/726 of an acre. The following varieties are given in order of yields, which ranged from 67,518 to 38,478 pounds per acre: Giant Pascal, 67,518; Winter King, 60,258; Fordhook, 58,080; Rose Ribbed, 58,080; Golden Plume, 52,272; Easy Blanching, 50,820; Fordhook Selected, 48,642; White Plume, 38,478; Paris Golden Yellow, 38,478.

GARDEN BEANS

Twenty-one varieties of beans were tested in 1925, including two poled varieties. These were planted on May 30 in plots 1/484 of an acre each, and germination was exceptionally good, the twenty varieties averaging 90.7 per cent. The following five varieties were affected with anthracnose: Refugee or 1,000 to 1, 75 per cent; Round pod Kidney Wax, 40 per cent; Wardwell's Wax, 25 per cent; Stringless Green Pod, 20 per cent, and Interloper Challenge Black Wax, 10 per cent. Varieties tested, ranging in yields from 524 bushels 12 pounds, down to 107 bushels 20 pounds, are given in order of yield: Masterpiece, Hodson Long Pod, Wardwell Kidney Wax, Plentiful French, Round Pod Kidney Wax, Interloper Challenge Black Wax, Hodson Long Pod, Jones White, Giant S., Green Pod, Davis White Wax (McD.), Stringless Green Pod, Davis White Wax, Bountiful, Henderson Bountiful. Extra Early Red Valentine, Yellow Eye, Stringless Green Pod (Graham), Challenge Black Wax, Round Pod Wax (McD.), Wardwell Wax (Graham), Refugee 1,000 to 1.

GARDEN PEAS

Twenty-five varieties were grown in 1925, all planted May 20, in plots 1/363 of an acre each. The average germination was 96.6 per cent, and a very strong growth was made during the summer, which on account of the heavy foliage had a tendency to cause uneven ripening. The varieties that were staked showed no marked increase in the yield over those unstaked. The only advantage noted was in the ease of harvesting. This alone would hardly warrant staking, unless one only had a small area, and time did not count. The varieties tested are given in order of yields, which ranged from 161 bushels 12 pounds to the acre, down to 30 bushels 9 pounds: Telephone, Imp. Stratagem, Laxtonian, Gradus, Lincoln, Seedling No. 3, Seedling No. 6, American Wonder, McLean Advancer, English Wonder, Gradus x American Wonder, Gregory Surprise x English Wonder, Gradus x English Wonder, Danby Stratagem, Alaska, Blue Bantam, Thomas Laxton, Gradus, Seedling No. 1, Bromfield Early Six Weeks, Regal, Seedling No. 2, Extra Early Pedigree, and Sutton Excelsior.

GARDEN BEETS

Seven varieties were tested in 1925. Seed was planted May 21 in duplicate plots 1/581 of an acre. Germination was fairly uniform, the average for al varieties being 87.9 per cent.

Splendid growth was made during the summer, and beets of good quality were harvested, especially was this true of the turnip varieties, Early Model and Eclipse being a little too large for domestic use in winter. Yields ranged from 761 bushels 6 pounds per acre to 569 bushels 19 pounds in the following order: Early Model Detroit Dark Red (McD.), Detroit Dark Red (O 6050), Black Red Ball, Eclipse, Crimson Globe, Cardinal Globe.

GARDEN CARROTS

Nine varieties were grown in 1925. The seeds were sown May 21 in duplicate plots. The average germination was 91.7 per cent. The growth was very rapid, and a high percentage were rough and split, making them undesirable for market purposes. Market Garden and one strain of Chantenay from Ottawa were badly split. Yields from varieties, which are given in order, ranged from 720 bushels 22 pounds to the acre, down to 429 bushels 47 pounds: Selected Chantenay (McD.), Market Garden, Red St. Valery (R.), St. Valery (G.) Chantenay (03423), Chantenay (06049), Nantes, St. Valery (D. & F.), St. Valery (E.).

GARDEN CORN

Ten varieties were grown in 1925. Seed was planted on May 30. Germination was good but growth was slow for the first few weeks, but very good during June and July, with a fair number of ears developed; the latter were undersized. Yields per acre in pounds ranged from 16,940 to 4,114, and varieties are given in order: Early Mayflower, Buttercup, Early Cory, Golden Giant, Selected Golden Bantam, The Burbank, Golden Bantam (J), Alpha, Country Gentleman, Banting.

LETTUCE

Six varieties were grown in 1925. Seed was sown May 21 in plots 1/581 of an acre each. All varieties showed good germination and made a strong growth during the summer months. The plants were thinned leaving fifty heads to the plot of each variety. Yields per acre ranged from 17,430 pounds per acre to 11,620 pounds, and varieties in order of yield are: Grand Rapids, All Heart, New York Market, All Seasons, New York, Black Seeded Simpson (D).

CUCUMBERS

Six varieties were planted in 1925 on June 8, in beds prepared as for squash and pumpkins, two beds 2 x 3 feet, making the plots 1/202 of an acre each. Germination was fairly uniform. The growth during the summer was very rapid, giving a good crop of green cucumbers. Especially was this true of the following varieties: XXX Table, Davis Perfect, and Improved Long Spine, which yielded 47,571, 51,308 and 42,218 pounds per acre respectively. Early Frame gave a good crop, 42,733 pounds, but has a tendency to ripen very quickly. Arlington Early Spine yielded 46,864 pounds, and Giant Pera 42,218 pounds.

PUMPKINS

Four varieties were planted in 1925, only three germinating. Large Cheese or Kentucky was a failure. The seed was planted June 8 in beds prepared as for squash, the size of the plots were 3 x 5 feet each, making 1/182 of an acre.

There was a strong growth of vines and a fair set of fruit, and some excellent specimens were produced from Connecticut Field and Small Sugar, giving 43,680 and 25,662 pounds to the acre respectively. King of the Mammoth gave a good yield but did not reach full maturity, and decayed very quickly.

SQUASH

Eight varieties were grown in 1925. The seed was sown on June 8 in beds prepared as follows: all earth was removed to a depth of ten inches, and well tramped. This was again covered with rich top loam level with the surrounding soil, making it ready for the seed. All the Hubbard varieties were of good quality and fair size, but Delicious, White Bush Marrow, and Perfect Gem do not do well in this district. Yields ranged from 21,715 pounds per acre to 4,747 pounds, and varieties in order were: Kitchenette, Golden Hubbard, Warty Hubbard, Long White Bush Marrow, Delicious, Green Hubbard, Perfect Gem and Table Queen.

PARSNIP

Three strains of hollow crown were tested during 1925. Germination was uniformly good in all strains. The plants were thinned out to 4 inches apart in the rows. The growth was good, but no records were made of yield, as all plants were left in the ground during the winter, and records will be taken in the spring of 1926.

PARSLEY

Two varieties of parsley were tested during 1925. Both varieties made good strong growth throughout the entire season. Champion Moss is superior to Triple Curled in texture, especially is this true during the latter part of the season.

SWISS CHARD

Three varieties were tested during 1925. Seed was sown on May 21. The varieties were Lucullus, Spinach Best, and Fordhook Giant. All made good growth but the first two were superior in quality being very tender and crisp.

RADISH

Five varieties were tested in 1925. Seed was sown May 20 in plots $\frac{1}{681}$ of an acre each. Germination was good and splendid growth was made. The following are the varieties grown in order of their merits: Scarlet Turnip, White Tipped, XXX Scarlet Oval, Improved French Breakfast, French Breakfast, and Icicle.

ONIONS

Seven varieties were grown in 1925. The seed was sown in the hot-beds April 3. Germination was slow and one variety, Japanese or Ebenezer failed to germinate. They were transplanted from the cold-frame to the open May 19, in plots 1/726 of an acre each. Rapid growth was made during the summer, and gave promise of a good crop, but during the early fall a large percentage developed thick-neck, which reduced the yield of marketable stuff. Breaking down did not check this to any extent. Yields ranged from 31,218 pounds per acre down to 11,253 pounds, and varieties in order of merit were: Large Red Wethersfield (G), Large Red Wethersfield (O), Extra Selected Large Red Wethersfield (Mc), Prize Yellow Globe, Yellow Globe Danvers (O), Yellow Globe Danvers (SB).

CULTURAL TESTS WITH VEGETABLES

DIFFERENT DATES FOR PLANTING POTATOES

This test is to determine the relative merits of early versus late planting of potatoes. Two varieties were used in the test, namely Green Mountain and Irish Cobbler. All plots were harvested on October 13, 1925. The following table gives results of the past year's planting:—

Date	Variety	Yield per acre	Average of both plots
		bush.	bush.
May 27....	Irish Cobbler	288	
	Green Mountain	346	317
June 5....	Irish Cobbler	100	
	Green Mountain	213	156
June 13....	Irish Cobbler	225	
	Green Mountain	247	236
June 27....	Irish Cobbler	175	
	Green Mountain	54	114

These results indicate that early planting is preferable; that is, if the soil conditions are favourable for planting.

HOTBED VERSUS OPEN SEEDING FOR CABBAGE

To determine the relative merits of starting the cabbage plants in hotbeds and transplanting to the open versus the plan of seeding in the open. Twenty plants of each of the following varieties, Copenhagen, Market and Danish Ballhead were used. Seed was sown for the first lot in the hotbeds, on April 13, then transplanted in the open on May 19, and harvested on September 22. The seed for lot two were seeded in the open on May 19, and harvested on September 22. The following table gives the yield for twenty plants in each lot:—

Variety	Method	Yield of 20 heads
		lb.
Copenhagen Market	Hotbed, transplanted to open	121·0
Danish Ballhead	" " "	59·5
Copenhagen Market	Open seeding	83·0
Danish Ballhead	"	65·0

Where soil and climatic conditions are favourable there does not seem to be very much to be gained from hotbed planting. But where seasons are late and soil heavy it is advantageous to plant in hotbeds. Danish Ballhead showed some club-root.

THICKNESS OF PLANTING BEANS

This experiment is to determine the relative merits of different distances apart in planting beans. The two varieties used were Hodson Long Pod and Masterpiece. The distances planted were 2, 4 and 6 inches. The seed was sown on May 30, in rows thirty feet long, and the following table gives the results:—

Variety	Distance apart	Ready for use	Length of pod	Height of bush	Yield per plot
	ins.		ins.	ins.	lb.
Hodson Long Pod	2	Augusr 15	8·5	20	20
Masterpiece	2	" 15	9·5	24	39
Hodson Long Pod	4	" 13	8·5	20	18
Masterpiece	4	" 5	9·5	24	18
Hodson Long Pod	6	" 13	8·5	20	20
Masterpiece	6	" 5	9·5	24	19

NOTE.—Hodson Long Pod is a yellow bean, while Masterpiece is a green bean.

There appears to be very little difference between the 4-inch and 6-inch planting, so far as earliness of ripening is concerned, but there was a slight increase in yield from the latter. The 2-inch planting was somewhat later in ripening, but gave the heaviest yield.

THICKNESS OF PLANTING PEAS

This experiment is to determine the relative merits of different distances apart in the planting of peas. Three varieties were used in the test and each was planted 1, 2 and 3 inches apart. Seed was sown on May 31, in thirty-foot rows.

The following results were obtained during 1925:—

Variety	Distance apart	Ready for use	Weight per plot
	ins.		lb.
English Wonder	1	August 26	8·0
Thomas Laxton	1	" 26	10·0
Stratagem	1	" 6	8·0
English Wonder	2	" 20	7·0
Thomas Laxton	2	" 20	16·0
Stratagem	2	" 3	7·5
English Wonder	3	" 16	6·5
Thomas Laxton	3	" 16	5·0
Stratagem	3	" 3	11·0

Two inches gave the best results, and matured very uniformly. One inch was too close, many of the pods never reached maturity.

DATES FOR SEEDING BEETS

This experiment is to determine the relative effect of planting at different dates on earliness, quality and yield of beets. Detroit Dark Red was the variety used, and each planting was made in a thirty-foot row. The first seeding was made on May 21. The following table gives the data collected for 1925:—

Variety	Date of seeding	Mid-season weights ½ plot	Fall weight ½ plot	Total yield
		lb.	lb.	lb.
Detroit Dark Red	May 21	15·0	34	49·0
	" 28	15·0	35	50·0
	June 5	6·0	54	60·0
	" 13	6·5	31	37·5
	" 19	.....	29	29·0

NOTE.—Fall harvesting October 10.

One-half of each plot was harvested at mid-season and weights recorded; the balance of plot was harvested in the fall. The early planting naturally gave the greatest yield at mid-season, but the beets left for fall storage from the early planting grew too large and coarse for table use. The third planting gave the best results so far as yield and quality are concerned for winter vegetables.

DIFFERENT DATES FOR PLANTING CARROTS

This test is to determine the relative effect of various dates of sowing on earliness, quality and yield of carrots. The same method of planting was followed as for beets, and the following results were recorded:—

Variety	Dates of seeding	Dates of harvesting	Mid-season harvest	Fall harvest	Total harvest
			lb.	lb.	lb.
Chantenay	May 21	Aug. 19	4·0	40	44·0
	" 28	Sept. 10	9·5	22	31·5
	June 6	" 15	2·0	69	71·0
	" 13	Oct. 9	3·0	56	59·0
	" 19	" 9	5·0	42	47·0

The early planting is favoured only for early marketing. If the early planted vegetables are left in the soil until fall, they grow too large and coarse for winter use.

SUCKERING EXPERIMENT WITH CORN

This experiment is to determine the relative effect on ear development and yield when all suckers are removed, versus allowing suckers to grow. Three stalks were allowed to grow to the hill; one half of each variety grown had the suckers removed; on the remaining half the suckers were allowed to grow. The following table gives the results obtained for 1925:—

Variety	Date seeded	Dates ready for use	Number of ears	Pounds per plot	Remarks
Early Malcolm	May 30	Aug. 8	92	50	Suckers removed.
Golden Bantam	" 30	" 5	101	47	" "
Early Malcolm	May 30	Aug. 16	50	26	Suckers allowed to grow.
Golden Bantam	" 30	" 8	52	24	

Where the suckers were removed not only was there a better development of ears, but the corn was more uniformly matured and the yield was heavier.

METHOD OF PRUNING TOMATOES

This experiment is to study the relative merits of different methods of pruning tomatoes to single stems. Two varieties were used in the test, Bonny Best and Alacrity. The seed was sown in the hotbed on April 13 and transplanted to the open on June 9, using twenty plants of each variety. The following table gives the data collected for 1925:—

Variety	Method	Date fruit ripe	Weight of ripe fruit	Weight of green fruit	Total weight
			lb.	lb.	lb.
Bonny Best	Single stem, not headed back.	Aug. 25	13·0	14	27·0
Alacrity	" "	" 22	11·0	30	41·0
Bonny Best	Single stems, stopped at third truss.	Aug. 22	25·0	14	39·0
Alacrity	" "	" 22	27·0	0	27·0
Bonny Best	Single stem, stopped at second truss.	Aug. 23	29·0	0	29·0
Alacrity	" "	" 22	33·0	0	33·0
Bonny Best	Single stem, stopped at first truss.	Aug 22	27·5	2	29·5
Alacrity	" "	" 22	35·0	6	41·0

METHODS OF BLANCHING CELERY

This experiment is to ascertain the relative merits of different methods of blanching celery, as to its effect on earliness, crispness, and flavour. Only one variety was used in this test, and seed was sown in the hotbeds April 6, and transplanted to the open on June 14.

The following table gives the results obtained under the different methods:

Methods	Date of harvest	Length of stalk	Weight including roots
		ins.	lb.
Planted on the level and earthed up	Oct. 28	7·5	50
Two rows planted alternately and blanched with roofing paper	" 28	11·0	30
Planted in trench 6 inches deep and gradually earthed up	" 25	9·0	57
Planted on the level and blanched by the use of wide boards	" 28	10·0	43

Method No. 1.—The celery developed large bunches with fair quality, lacking in crispness, was somewhat green and muddy.

Method No. 2.—Developed medium-sized bunches, stalky in the stem, but clean and tender. Nicely blanched but developed some rot in the heart.

Method No. 3.—Developed large bunches with good-sized stalks of good quality, and flavour, particularly inside stalk. Outside a little coarse but well blanched.

Method No. 4.—Developed medium-sized heads with small, spindly stalks, which were very tender and crisp, and very attractive for fall market.

POTATOES—TEST OF CERTIFIED SEED-STOCK STRAINS

A strain test of certified seed-stock of potatoes was continued from 1924 seed, namely two strains of Green Mountains and four of Irish Cobbler, in addition to two new varieties or strains known as Hoben and McCain, the latter being classed as a Green Mountain, the Hoben having too many types to classify at all.

The test was conducted on land that had been in grain the previous year, and was heavily manured the previous fall.

All seed were planted by hand on May 27, in quadruplicate plots of one-twenty-ninth of an acre each. Splendid growth was recorded in most plots, and the tops remained green until harvest time. The yields as will be noted from the following table were good, but owing to the continuous wet weather, there was a loss from rot, especially with the Green Mountains.

POTATOES, CERTIFIED STOCK

Variety	Strain	Size	Diseases		Average marketable	Average unmarketable	Average weight per plot	Bushels per acre
			p.c. scab	p.c. rot				
					lb.	lb.	lb.	
Irish Cobbler	N	Large	43	.....	429	244	673	325
Irish Cobbler	W.S.	Medium to large	4	6	504	126	630	305
Green Mountain	McC	Large	31	87	30	572	602	291
Green Mountain	J.H.M.	Large	16	69	51	558	609	294
Irish Cobbler	W.W.F.	Medium	26	.....	377	222	599	290
Irish Cobbler	McG	Large	32	4	369	197	566	274
Green Mountain	W.S.	Large	17	49	24	512	536	259
Hoben	H	Large	9	52	.....	419	419	203

NOTE.—All plots were harvested between September 29 and October 3, 1925.

FLORICULTURE

From the standpoint of floriculture the season was very satisfactory. Most of the anuals were started in the hotbeds in April, and transplanted into the open between the 10th and 15th of June. The weather conditions were ideal for growth, and there was an abundance of bloom throughout the season. The perennials came first, and just as blooms began to fade, the annuals were ready to fill their places in beautifying the lawns.

There was no late spring frost to do any damage to young plants. The lowest temperature recorded at this farm in June was on the 18th, 35° Fahr. and the mean temperature for June was 59.25° Fahr. and the first killing frost was recorded on October 2, when the temperature was 25° Fahr.

ASTERS

Thirty-five varieties or strains of asters were tested, and in most cases they made a splendid showing, but a few varieties, such as Perfect Upright Shell Pink, King of the Belgians, Snow Queen, Salmon Pink, Giant Anemone Mauve, Imperial Blue Bird, Silvery Rose, Rochester Dark Violet, Late Branching Rosy Carmine, and Late Branching Snow White were badly damaged by blight early in the season. The following are a few of the outstanding varieties: Imperial Giant Daybreak, King Violet, Late Branching, Late Branching Purple, Late Branching Lavender, Late Branching Dark Violet, Early Branching Velvet, Early Branching Rose, King Upright Lavender King, and Perfect Upright White.

ANTIRRHINUM

Thirteen varieties or strains of antirrhinums were tested. Seed was sown in the hotbed in April and transplanted to the open between June 10 and 12. Germination was poor, and the plants never made a satisfactory growth at any time during the whole season. The following is a list of the leading varieties: Intermediate Yellow, Pale Apricot, Fire King, Giant Flowered Rose, Giant Flowered Bright Crimson.

OTHER ANNUALS

The following annuals were tested in small lots of one or more: ageratum, sweet alyssum, amaranthus, balsam, clarkia elegans, candytuft, chrysanthemum, cobaea scandens, castor-oil bean, carnation, cosmia, canna, coreopsis, cacalia coccinea, celosia plumosa, calendula dianthus, dahlia, larkspur, godetia, gypsophila, golden feather, gaillardia, helichrysum, helianthus, hibiscus africanus, jacobæa, kochia, lavatera, lobelia ramosa, linaria, malope, marvel of Peru, mathiola, bicornis, matricaria eximia, moon flower, nemesia, nigella, nicotiana, phlox drummondii, petunia, pansy, poppy, portulaca, rhodanthe, salvia, scabious salpiglossis mixed, ten-weeks stocks, tagetes, verbena, whitlavia, zinnia.

SWEET PEAS

Sweet peas made a splendid growth during the past year; in fact the best for some years. The bloom was excellent from all varieties or strains, and carried well on until frost cut them down. The following is a list of a few of the outstanding varieties or strains, with their colour in brackets: Daisybud (light rose-pink), Elfrida Pearson (salmon-pink), The President (light-scarlet), Florence Nightingale (lavender), Maud Holmes (crimson), Royal Scott (scarlet), Charity (crimson), Matchless (cream), Royal Purple (purple), Elegance (light-pink), George Sawyer (orange and rose), Hawlmark Pink (pink), Hawlmark lavender (buff).

The home-grown seed made a better showing each year than the commercial varieties.

DAHLIA

Eighteen varieties or strains were grown in 1925, and all made an excellent showing, with abundance of bloom. The following are a few of the leading varieties: Pierrot, Double Violet, Diadem, Longworth, Soude Chabanne, Papa Chomit, Premier, Countess of Lonsdale.

TULIPS

Nine varieties of early tulips were planted out the fall of 1923, and left in the ground continually. All made a good strong growth and gave an abundance of early bloom. Sixteen varieties of Darwin tulips made a very nice showing in the beds. They came through the winter with very few misses.

DAFFODILS

The ten varieties of daffodils were tested during 1925. Good growth and bloom was recorded from the following: Golden Spur, Sis Watkins, Victoria, Emperor.

PERENNIALS

The perennial border made an excellent showing during the early part of the season. Phlox, Larkspur, Peonies, Aquilegia, Irises, Golden Glow, and White Rocket were among the best bloomers.

CEREALS

CHARACTER OF SEASON

The spring of 1925 opened early. The total precipitation for March, April and May was 6.65 inches. During May, 2.09 inches fell, June had 5.59 inches and July 3.24 inches, the total for the year being 38.53 inches. The average for the last eighteen years was 36.26 inches, this year being 2.27 inches above the average. Seeding was started on May 7. Germination was good but the excessive rainfall during June seemed to retard growth considerably. During June rain was recorded on thirteen out of the thirty days. Through July and August the rainfall was lighter and growth was much better. Good average yields of grain were recorded while the crop of straw was considerably above the average. The weight per measured bushel was below average. Unsettled weather and heavy winds caused considerable lodging the latter part of July and early in August. Harvesting was accomplished under very unfavourable conditions and a great deal of grain sprouted and was badly weathered. The rod-row method of studying and comparing the relative merits of the different varieties was again carried on and in all 915 rod-rows were seeded during 1925, including 22 varieties of wheat, 28 of oats, 20 of barley and 8 of peas. The work on head selection and development of new strains was still further carried on.

VARIETY TESTS OF GRAIN

The variety tests were cut down to the leading varieties of economic importance and all varieties seeded in triplicate plots of one sixtieth of an acre each.

SPRING WHEAT

Five varieties were tested in 1925. The seed was sown on May 13 and 14 and the wheat harvested when ripe. Huron and White Russian compare very favourably in yield, but Huron is said to be quite superior in milling qualities and has always been one of our heaviest producers. The following table gives the number of years tested with the average number of days ripening and the average yields along with the yields for 1925:—

SPRING WHEAT—AVERAGE AND 1925 YIELDS

Variety	Years tested	Number days maturing	Average yield per acre	Yield per acre in 1925
			bush. lb.	bush. lb.
White Russian	11	111·1	35 5·5	29 40
Huron, Ottawa 3	13	108·7	34 20·6	30 —
Early Red Fife, Ottawa 16	13	111·8	32 54·4	33 40
Marquis, Ottawa 15	13	109·3	32 26·2	31 20
Red Fife, Ottawa 17	11	113·0	32 18·0	— —
Bishop, Ottawa 8	11	108·8	29 23·0	— —
Ruby, Ottawa 623	8	101·9	27 21·6	24 40
Marquis, Ottawa 15, Ottawa seed 1925	1	107·0	30 20·0	30 20

BARLEY

Three varieties of six-rowed and two of two-rowed were tested in 1925. Seed was sown on May 13 and 14. The following table gives the average number of days ripening together with the average yields of the various varieties. The last column gives the 1925 results:—

BARLEY—AVERAGE AND 1925 YIELDS

Variety	Years tested	Number days maturing	Average yield per acre	Yield per acre in 1925
			bush. lb.	bush. lb.
(Six-rowed)				
Manchurian, Ottawa 50	10	98·5	41 17·8	— —
O. A. C. No. 21	12	97·0	41 16·2	38 36
Stella, Ottawa 58	10	99·8	40 43·5	— —
Albert, Ottawa 54	5	85·4	30 3·0	— —
*Himalayan, Ottawa 59 (hulless)	5	86·2	46 19·6	40 20
Chinese, Ottawa 60	4	91·0	47 16·5	37 44
(Two-rowed)				
Charlottetown, No. 80	8	97·0	55 44·4	44 8
French Chevalier	10	100·6	48 44·5	— —
Duckbill, Ottawa 57	8	97·8	45 33·5	38 26

*Hulless figured at 48 pounds per bushel.

Chinese, Ottawa 60 one of our newer varieties, is not only giving good yields but is proving one of our earliest ripening varieties. Himalayan Ottawa 59 is a hulless variety and a splendid producer. Charlottetown No. 80 is the highest yielder of all varieties on test. Chinese, O.A.C. No. 21, and Duckbill contained some smut but did not have enough materially to affect the yield.

OATS

Six varieties of oats were tested in 1925, seeding taking place on May 13 and 14. The following tables gives the results of average yields and 1925 yields:—

OATS—AVERAGE AND 1925 YIELDS

Variety	Years tested	Number days maturing	Average yield per acre	Yield per acre in 1925
			bush. lb.	bush. lb.
Victory	13	105·1	75 22·3	81 26
Banner, Ottawa 49	13	104·7	74 24·5	65 10
Lincoln	11	106·0	73 7·1	— —
O. A. C. No. 72	10	103·6	70 21·4	68 28
Danish Island	11	105·8	70 8·6	— —
Gold Rain	13	104·0	69 33·2	68 8
Ligowo	11	104·7	67 32·0	— —
Pioneer	10	103·0	67 17·3	— —
Daubeney, Ottawa 47	10	.....	64 14·0	— —
Alaska	3	91·7	71 32·7	— —
*Liberty, Ottawa 480 (hulless)	4	92·5	59 15·3	— —
*Laurel, Ottawa 477 (hulless)	2	95·5	60 30·0	56 16

*Hulless figured at 34 pounds per bushel.

Victory was the highest yielder in 1925 and now leads in average yield over a thirteen-year period. Gold Rain while not as heavy a yielder as some of the other varieties is undoubtedly an exceptionally good one, running high in weight per measured bushel and having a low percentage of hull. Alaska is a new oat, ripens early, gives a good yield and is well suited to sowing with six rowed barley as a mixed grain. This year it was so badly destroyed by birds that no yields were recorded. Laurel is a new hulless variety and is showing up very well.

BUCKWHEAT

Twelve varieties and selections of buckwheat were tested out in one-eightieth acre plots in 1925. They were seeded on July 14 and ripened between September 26 and October 1. The following tables gives the number of days maturing and the yields:—

BUCKWHEAT—1925 YIELDS

Variety	Days maturing	Yield per acre
		bush. lb.
Japanese M	89	56 12
Japanese J	89	54 18
Russian H	89	49 33
Grey F	89	47 39
Tartarian D	89	45 —
Tartarian G	89	44 3
Petrograd	89	44 3
Grey D	89	43 6
Silverhull J	89	42 9
Rye F	84	40 15
Rye A	84	38 21
Rye H	84	33 36

FLAX

During the seasons of 1924 and 1925 three varieties of flax were tested for seed production with the following results:—

AVERAGE FLAX YIELDS 1924 AND 1925

Variety	1924 yield	1925 yield	Average
	bush. lb.	bush. lb.	bush. lb.
Novelty	22 19·0	13 37·0	18 ——
Premost	21 10·0	10 40·0	15 53·0
Longstem	13 12·0	8 9·5	10 38·75

REGISTERED SEED GRAIN

Eight acres were sown to registered Banner oats in 1925. The total production was 515.5 bushels or an average of 64.44 bushels per acre. Four acres were sown to Extra No. 1 Huron wheat (Ottawa 3) yielding 99.1 bushels or an average of 24.78 bushels per acre. Four acres were sown to registered Charlottetown No. 80 barley, yielding 127.2 bushels or an average per acre of 31.5 bushels. The major part of this stock will be for sale during the spring of 1926 as it has passed inspection and will be registered under the Canadian Seed Growers' Association.

FORAGE CROPS

CHARACTER OF SEASON, 1925

Ideal weather conditions prevailed during the early part of seeding and the major part of the crops went in in good condition. Spring opened early and the soil was ready to work by May 7. Excessive rainfall throughout the summer months made cultivation very difficult and weed control almost an impossibility. Germination of all forage plants was good, and although excessive moisture during the late summer and fall months retarded growth to a certain extent, good average yields were recorded. Only fair weather was experienced in October and November for the harvesting of forage crops as a partial freeze-up came very early and weather conditions in general continued unsettled.

SOIL AND CULTURAL METHODS

The variety test plots of corn, sunflowers and roots were seeded with a "Planet Junior" drill in triplicate plots of one one-hundredth of an acre each. The soil was a medium clay loam, summer-ploughed from sod in 1924, manured early in the spring of 1925 and ploughed a second time in order to get a good seed-bed. This field was remarkably free from couch grass and the wet weather did not seem to materially affect the crop, as excellent yields were obtained.

CROPS FOR ENSILAGE

INDIAN CORN

Twenty-three varieties of corn were tested in 1925. The seed was sown on May 25 and the crop harvested on September 16 and 17. An analysis of the data so far collected would indicate that Longfellow, the Northwestern Dents and certain hybrids or cross-bred varieties are the most suitable for Maritime conditions. Due to the fact that they reach a greater stage of maturity they are able to produce a heavier yield of dry matter per acre. The accompanying table gives the yields as recorded from the 1925 and previous tests.

CORN—VARIETY TEST—1925 AND AVERAGE YIELDS

Variety and Source	Yield per acre 1925	Three-year average yield per acre	% dry matter in crop		Pounds dry matter per acre	
			1925	Three-year average	1925	Three-year average
	tons lb.	tons lb.				
Longfellow-Disco	22 1,000	20 138·7	12·42	13·247	5,589·0	5,377·3
Longfellow-Duke	19 1,000	19 1,916·7	11·02	13·367	4,297·8	5,290·6
90 Day White Dent-Disco	19 1,333	18 972·0	13·87	13·797	5,455·5	5,104·6
Leaming-Duke	16.....	16 1,722·0	13·71	14·157	4,387·2	4,806·9
North Dakota-Steele Briggs	17 667	16 1,583·3	13·79	15·040	4,780·6	5,136·2
Wisconsin No. 7—Parks	12 1,500	16 1,416·7	12·66	13·797	3,228·3	4,709·2
Golden Glow-Duke	18 1,000	16 1,361·0	15·20	14·690	5,624·0	4,997·9
Comptons Early-Duke	16 333	16 1,138·7	11·41	13·387	3,689·2	4,626·7
Wisconsin No. 7-Duke	15 833	16 388·7	12·42	13·777	3,829·5	4,477·2
White Cap Yellow Dent-Steele Briggs	13 167	14 416·7	14·18	14·900	3,710·5	4,249·1
Quebec 28, J. L. Todd, subst. 1925. McDonald Coll	13 1,000	13 1,944·3	12·97	14·360	3,501·9	4,106·4
**Hybrid-Wimple	22 1,000	22 1,166·5	11·60	13·865	5,220·0	6,266·1
**Burr Leaming-Carter	21 333	21 1,499·5	12·77	14·670	5,405·9	6,403·6
**Yellow Dent-Wimple	20.....	19 1,833·0	12·19	14·610	4,876·0	5,815·6
**Northwestern Dent, Nebraska-grown-McKenzie	21.....	18 1,666·5	13·09	16·125	5,497·8	5,942·2
**Bailey-Duke	17 667	17 1,833·5	13·09	15·490	4,537·9	5,578·6
**Northwestern Dent-Brandon	16 1,333	17 1,166·5	14·88	15·665	4,960·0	5,523·3
**Amber Flint-Wimple	15 1,667	17.....	11·02	15·460	3,489·7	5,360·0
**Leaming Improved-Parks	.....	16 1,375·0	.....	15·165	.....	4,948·9
**Northwestern Dent-Disco	15 1,500	16 250·0	14·92	16·590	4,699·8	5,362·8
**Northwestern Dent, N. Dakota-grown, McKenzie	14 333	15 999·5	14·61	16·545	4,139·5	5,180·5
**Pride Yellow Dent-Disco	.....	13 1,541·5	.....	16·730	.....	4,828·9
*Twitchels Pride, Wisconsin No. 7 Harrow	27 1,667	27 1,667·0	13·09	13·090	7,286·8	7,286·8
*Leaming-Parks	21.....	21.....	12·30	12·300	5,166·0	5,166·0
*Canada Yellow Flint-Dupuis & Ferguson	16 667	16 667·0	15·78	15·780	5,154·9	5,154·9
*Twitchels Pride-E.S. Fredericton	.....	13 750·0	.....	15·350	.....	4,106·1
*Northwestern Red Dent-Disco	.....	12 1,250·0	.....	13·910	.....	3,512·3
*Northwestern Dent-McKenzie	.....	11 250·0	.....	13·700	.....	3,048·3

** Tested two years only.
* Tested one year only.

SUNFLOWERS

Ten varieties of sunflowers were tested in 1925. The seed was sown on May 25 and the crop harvested when each variety ran from 75 to 100 per cent in bloom. For the past three years the Russian Giant and Mammoth Russian varieties have been the highest producer both of green forage and dry matter, Russian Giant (Disco) having an average yield of 26 tons, 1,861.0 pounds per acre with 8,013.8 pounds dry matter and Mammoth Russian (McDonald) 25 tons, 1,194.3 pounds per acre with 7,815.3 pounds dry matter. Mixed Mennonite (Rosthern) matures very early but is a very low yielder. The following table gives the yields of the 1925 and previous tests:—

SUNFLOWERS—VARIETY TEST—1925 AND AVERAGE YIELDS

Variety and source	Yield per acre in 1925	Three-average yield per acre	% dry matter in crop		Pounds dry matter per acre	
			1925	Three year average	1925	Three-year average
	tons lb.	tons lb.				
Russian Giant-Disco	30 1,500	26 1,861·0	14·29	14·985	8,788·4	8,013·8
Mammoth Russian-K. McDonald	30 667	25 1,194·3	14·68	15·780	8,905·9	7,815·3
Manteca-Canadian Pacific Ry	24 167	22 305·7	12·43	12·797	5,987·2	5,828·8
Black " "	19 667	21 150·0	13·54	13·090	5,235·5	5,505·8
Mixed " "	21 1,667	20 1,694·3	12·82	12·577	5,598·1	5,236·1
Ottawa 76-C.E.F. Ottawa	17 833	17 1,999·7	13·80	12·585	4,807·0	4,519·1
Manchurian-McKenzie	19 333	16 1,222·0	14·00	13·383	5·366·6	4·253·8
Mennonite-Rosthern	13 1,333	11 399·7	12·60	13·053	3,444·0	2,847·9
Manchurian-Canadian Pacific Ry	21 1,667	22 166·5	13·67	12·685	5,969·3	5,597·6
**Russian Giant "	.....	17 125·0	.....	13·265	.....	4,128·2
*Mammoth Russian "	25 667	25 667·0	11·07	11·070	5,608·8	5,608·8

** Tested two years only.
* Tested one year only.

ROOTS

MANGELS

Thirty-three varieties or strains of mangels were tested in 1925. These were seeded on May 21 and harvesting was completed on October 28. Germination was rapid and growth was excellent during the early part of the growing season. It will be noticed that the same varieties are leading although their relative positions are somewhat changed. Jumbo Sugar Beet, the leading variety in 1924, is third taking a two-year average. This is a very uniform sugar mangel, running high in its dry-matter content. Green Top White Sugar (Ewing) is a variety that possibly should receive more attention than it has due to its exceedingly high dry-matter content. On a dry-matter basis, it leads all the varieties tested and its performance will be closely watched in the next few years. The yields recorded in the 1925 and previous tests are given in the accompanying table:—

MANGELS—VARIETY TEST—1925 AND AVERAGE YIELD

Variety and source	Yield per acre in 1925 on corrected yield basis	Two-year average yield per acre on corrected yield basis	Per cent dry matter in crop		Pounds dry matter per acre	
			1925	Two-year average	1925	Two-year average
	tons lb. bush.	tons lb. bush.				
Stryno Barres-Hjalmar Hartmann	32 648 1,293	30 1,090·0 1,222·0	8·71	9·815	5,630·8	5,956·7
Rosted Barres-Hjalmar Hartmann	31 169 1,243	29 1,847·0 1,197·0	10·31	11·800	6,409·6	7,027·4
Jumbo Sugar Beet-Rennie	26 853 1,057	29 351·5 1,167·0	11·25	10·965	5,946·0	6,382·6
Danish Sludstrup-McDonald	26 635 1,053	28 1,494·5 1,150·0	10·04	9·880	5,284·6	5,672·7
Fjerritslev Barres-Hjalmar Hartmann	26 815 1,056	28 297·0 1,125·0	10·98	11·460	5,799·1	6,468·4
Yellow Eckendorfer-Hjalmar Hartmann	29 1,782 1,196	27 1,630·5 1,113·0	9·34	10·695	5,583·6	5,893·4
Taaroje Barres-Hjalmar Hartmann	29 1,954 1,199	27 1,471·0 1,109·5	9·34	10·345	5,589·7	5,688·4
Barres Oval-General Swedish Seed Company	24 400 968	27 341·0 1,087·0	11·52	11·310	5,575·7	6,133·5
Red Eckendorfer-General Swedish Seed Co	27 1,236 1,105	26 1,492·5 1,070·0	10·47	11·125	5,783·2	5,939·6
Long Red Mammoth-Ewing	25 1,052 1·021	26 1,439·5 1,069·0	12·03	11·825	6,141·6	6,314·4

MANGELS—VARIETY TEST—1925 AND AVERAGE YIELD—*Concluded*

Variety and source	Yield per acre in 1925 on corrected yield basis			Two-year average yield per acre on corrected yield basis			Per cent dry matter crop		Pound dry matter per acre	
							1925	Two-year average	1925	Two-year average
	tons	lb.	bush.	tons	lb.	bush.				
Eckendorfer Red-Hjalmar Hartmann	29	1,572	1,191	26	260·0	1,045·0	8·16	10·100	486·1	5,136·4
Giant Yellow Globe-Ewing	24	392	968	26	28·5	1,040·5	8·52	9·340	4,123·0	4·889·3
Selected Giant Rose Intermediate Sugar-Ewing	24	1,340	987	25	1,980·5	1,039·5	14·73	14·235	7,267·8	7,386·4
Danish Sludstrup-Ewing	23	597	931	25	1,729·0	1,034·0	13·52	13·465	6,299·9	6,962·5
Barres Half Long-General Swedish Seed Co	25	575	1,012	25	1,465·0	1,029·5	11·21	11·355	5,669·5	5,819·0
Perfection Mammoth Long Red-Rennie	24	194	964	25	1,334·5	1,027·0	11·41	12·080	5,498·9	6,222·3
Leviathan-Rennie	26	344	1,047	25	1,203·0	1,024·0	9·45	8·995	4,946·5	4,610·9
Elvetham Mammoth-Hjalmar Hartmann	26	319	1,046	25	304·0	1,006·0	12·85	12·510	6,723·0	6,299·9
Red Globe-Dupuis and Ferguson	24	1,663	993	25	66·5	1,001·0	11·17	11·105	5,547·4	5,559·7
Yellow Leviathan-Rennie	22	1,740	915	25	5·5	1,000·0	9·96	10·855	4,555·7	5,466·3
Yellow Eckenforder-General Swedish Seed Co	24	484	970	24	1,301·0	986·0	10·90	11·590	5·284·8	5·719·7
Svalof Original Alfa-General Swedish Seed Co	24	583	972	24	761·5	975·5	10·16	10·955	4,936·0	5,343·3
Yellow Intermediate-C.E.F. Ottawa	23	1,917	958	24	624·5	972·0	13·12	12·325	6,286·7	5,986·8
Giant Yellow Globe-Rennie	26	266	1,045	24	610·5	972·0	7·81	9·335	4,082·0	4·482·1
Long Yellow-Ewing	24	35	961	24	394·5	968·0	13·12	12·875	6,302·2	6,229·9
Red Globe-Ewing	23	318	926	24	375·5	967·5	11·01	11·960	5,516·5	5,786·8
Golden Tankard-Ewing	22	162	883	23	1,740·0	954·5	9·80	11·000	4,327·9	5,294·4
White Red Top Half Sugar-Hjalmar Hartmann	23	729	935	23	838·5	937·0	12·23	11·520	5,715·0	5,395·1
White Green Top Half Sugar-Hjalmar Hartmann	23	1,273	945	22	1,248·5	904·5	13·05	12·100	6,169·1	5,494·3
Golden Tankard-Rennie	21	1,158	863	21	1,633·0	872·5	12·89	13·340	5,563·1	5,822·8
Green Top White Sugar-Ewing	16	336	647	17	628·5	692·5	23·44	23·180	7·579·6	8·021·0
*Svalof Red-General Swedish Seed Co	..	.....	.....	27	1,347·0	1,107·0	.....	12·170	.....	6,735·7
*Barres Sludstrup-General Swedish Seed Co	.....	.....	.....	27	875·0	1,098·0	.....	12·730	.....	6,985·6
*Giant Intermediate Yellow-Halifax Seed Co	26	315	1,046	26	315·0	1,046·0	10·39	10·390	5,435·5	5,435·5
Barres Sludstrup-Hjalmar Hartmann	..	.....	.....	26	242·0	1,045·0	.....	10·900	.....	5,694·4
*Svalof Original Rubra-General Swedish Seed Co	23	256	925	23	256·0	925·0	12·23	12·230	5,657·1	5,657·1

* Tested one year only.

TURNIPS

Thirty varieties or strains of Swedes were tested in 1925. These were seeded on May 22 and harvesting was completed on November 2. Hall's Westbury (Ewing), the leading variety for the past two years, was second this year but is still in first place on average yield. On a dry-matter basis, Invicta Bronze Top (Ewing) leads Hall's Westbury (Ewing) and it is closely followed by Best of All (Rennie) and Bangholm (Nappan). There was no club-root infection in 1925 and all varieties were exceptionally clean and free from other diseases. No fall turnips were tested this year but previous tests have shown that they are a profitable crop where roots are wanted for early autumn feeding either for dairy cows or for fattening stock. The following table gives the yields to date:—

TURNIPS—VARIETY TEST—1925 AND AVERAGE YIELDS

Variety and source	Yield per acre in 1925 on corrected yield basis			Two-year average yield per acre on corrected yield basis			Per cent dry matter in crop		Pounds dry matter in crop	
							1925	Two-year average	1925	Two-year average
	tons	lb.	bush.	tons	lb.	bush.				
Hall's Westbury-Ewing	35	936	1,419	39	1,121·0	1,582·5	8·09	8·975	5,738·7	7,173·6
Invicta Bronze Top-Rennie	31	333	1,247	36	1,348·0	1,467·0	9·14	8·635	5,697·2	6,278·0
Invicta Bronze Top-Ewing	35	94	1,402	36	821·0	1,456·5	7·77	10·270	5,446·3	7,546·9
Ditmars-McNutt	31	300	1,246	36	370·0	1,447·5	8·24	7·685	5,133·5	5,505·8
Best of All-Ewing	32	1,743	1,315	36	286·0	1,446·0	8·28	8·505	5,443·5	6,162·7
Best of All-Rennie	30	1,430	1,229	35	1,238·5	1,425·0	10·04	9·565	6,167·6	6,767·4
Olsgaard Bangholm-Hjalmar Hartmann	36	1,467	1,469	34	1,651·5	1,393·0	8·24	8·390	6,053·7	5,838·1
Bangholm-Ewing	30	973	1,219	33	1,216·0	1,344·0	9·57	9·750	5,835·1	6,564·8
Shepherd 1283-Trifolium	34	695	1,374	33	446·5	1,329·0	8·87	9·065	6,093·2	6,019·0
Selected Hazard's Improved-Rennie	31	1,054	1,261	32	1,928·5	1,318·5	8·48	9·220	5,347·0	6,099·9
Improved Jumbo or Elephant-Rennie	32	304	1,286	32	1,284·0	1,305·5	7·85	8·460	5,047·9	5,529·0
Kangaroo Bronze Green Top-Rennie	30	1,688	1,234	32	730·5	1,294·5	9·80	9·220	6,045·4	5,950·5
Improved Yellow Swedish-General Swedish Co	34	1,966	1,399	32	322·0	1,286·5	8·75	9·770	6,122·0	6,226·7
Bangholm-McKenzie	29	1,539	1,191	32	281·5	1,285·5	10·94	9·725	6,513·6	6,193·8
Sutton's Champion Purple Top-Rennie	29	1,396	1,188	31	778·5	1,255·5	9·53	9·990	5,660·4	6,287·1
Kangaroo-Ewing	29	1,411	1,188	31	359·5	1,247·0	8·83	8·535	5,246·0	5,313·7
Shepherd Golden Glow-Hjalmar Hartmann	31	1,594	1,272	30	1,572·5	1,231·5	7·85	9·025	4,992·1	5,533·2
Bangholm Purple Top-Rennie	31	1,614	1,272	30	463·0	1,209·0	8·79	9·460	5,591·7	5,698·7
Elephant or Monarch Improved-Ewing	30	623	1,212	29	1,691·0	1,193·5	8·01	7·095	4,855·9	4,243·6
Bangholm-Nappan	29	688	1,174	29	1,441·0	1,189·0	11·76	11·285	6,901·7	6,704·4
Sutton's Champion Purple Top-Ewing	30	713	1,214	29	1,426·0	1,188·5	9·96	10·925	6,047·0	6,479·9
Bangholm-General Swedish Seed Co	27	1,666	1,113	28	544·5	1,130·5	9·37	9·650	5,215·9	5,459·0
*Bangholm 116-Trifolium	..	.....	.....	35	1,306·0	1,426·0	.....	10·330	.....	7,365·9
*Westbury Purple Top-Rennie	..	.....	.....	34	1,401·0	1,388·0	.....	10·140	.....	7,037·3
*Bangholm-Trifolium	..	.....	.....	33	1,964·0	1,359·0	.....	9·560	.....	6,497·4
*Hall's Westbury-Rennie	33	1,432	1,349	33	1,432·0	1,349·0	8·09	8·090	5,455·2	5,455·2
*Selected Magnum Bonum-Rennie	33	1,309	1,346	33	1,309·0	1,346·0	7·42	7·420	4,994·3	4,994·3
*Magnum Bonum-Ewing	..	.....	.....	33	581·0	1,332·0	.....	9·150	.....	6,092·2
*Bangholm Swede Turnip-Halifax Seed Co	32	1,453	1,309	32	1,453·0	1,309·0	11·13	11·130	7,284·9	7,284·9
*Bangholm 1322-Trifolium	32	349	1,287	32	349·0	1,287·0	9·65	9·650	6,209·7	6,209·7
*Canadian Gem-Rennie	31	1,606	1,272	31	1,606·0	1,272·0	8·67	8·670	5,514·6	5,514·6
*Kangaroo-Graham Bros	30	87	1,202	30	87·0	1,202·0	9·53	9·530	5,726·3	5,726·3
*Bangholm 1029-Trifolium	29	842	1,177	29	842·0	1,177·0	10·00	10·000	5,884·2	5,884·2
*Bangholm-Charlottetown	28	1,090	1,142	28	1,090·0	1,142·0	11·05	11·050	6,308·4	6,308·4

* Tested one year only.

CARROTS

Fifteen varieties of carrots were seeded on May 22 and harvesting was completed on October 19. Improved Intermediate White (Ewing) and Mammoth White Intermediate (Rennie) stand first and second respectively in average total yield per acre, and Improved Intermediate White (Ewing) stands first in average dry matter yield per acre. These two varieties are intermediate in type, very uniform and easily harvested. The following table gives the results to date:—

CARROTS—VARIETY TEST—1925 AND AVERAGE YIELDS

Variety and source	Yield per acre in 1925 on corrected yield basis			Two-year average yield per acre on corrected yield basis			Per cent dry matter in crop		Pounds dry matter per acre	
							1925	Two-year average	1925	Two-year average
	tons	lb.	bush.	tons	lb.	bush.				
Improved Intermediate White-Ewing	19	111	762	17	1,969·0	719·5	11·45	10·120	4,323·7	3,648·6
Mammoth White Intermediate-Rennie	19	293	766	17	1,813·5	716·5	10·39	9·390	3,978·6	3,387·7
White Belgian-Dupuis & Ferguson	18	1,109	742	16	593·5	652·0	11·76	10·490	4,364·0	3,476·4
Danish Champion-Hjalmar Hartmann	17	1,386	708	16	285·5	646·0	11·95	11·775	4,228·6	3,807·1
Danish Champion-C.E.F. Ottawa	16	1,233	665	16	179·0	643·5	11·41	11·135	3,791·9	3,586·1
Large White Belgian-Rennie	16	978	660	16	2·0	640·0	10·94	9·690	3,607·8	3,113·2
White Belgian-Hjalmar Hartmann	18	739	735	15	1,959·5	639·5	11·41	10,825	4,191·9	3,487·6
Mammoth Short White-Rennie	16	1,243	665	15	1,742·5	635·0	11·60	10·130	3,856·2	3,237·6
New Yellow Intermediate-Ewing	16	373	647	14	1,644·5	592·5	11·02	10·225	3,567·5	3,052·9
Yellow Belgian-Ewing	16	734	655	14	1,552·0	591·0	10·66	12·260	3,489·4	3,572·2
Half Long White-General Swedish Seed Co	16	1,266	665	14	1,378·0	587·5	11·95	10·845	3,975·3	3,310·0
Large White Vosges-Dupuis & Ferguson	16	1,275	666	14	1,373·0	587·5	11·56	10·710	3,846·6	3,179·0
*White Belgian-Ewing	18	882	738	18	882·0	738·0	10·74	10·740	3,961·1	3,961·1
*White Belgian 9008-Trifolium	15	90	602	15	90·0	602·0	11·21	11·210	3,373·1	3,373·1
*French White Belgian-Ewing	..	.....	.....	13	1,907·0	558·0	.....	9·420	.....	2,628·8
*Champion-General Swedish Seed Co	..	.....	.....	13	1,435·0	549·0	.....	9·640	.....	2,644·7
*White Belgian No. 1207-Trifolium	..	.....	.....	13	1,033·0	541·0	.....	14·070	.....	3,803·5
*New Yellow Intermediate-Halifax Seed Co	11	219	444	11	219·0	444·0	13·40	13·400	2,977·3	2,977·3
*James B.L. 781-DLF	..	.....	.....	10	690·0	414·0	.....	12·950	.....	2,679·4

* Tested one year only.

TURNIP SEED PRODUCTION

One hundred and sixty bushels of Bangholm club-root-resistant Swede turnips were pitted during the fall of 1924. They did not have sufficient covering and when the pit was opened on May 6 fifty per cent were unfit for planting. The remainder were set out on May 8 in rows three feet apart and three feet in the rows, making one quarter acre. The area was cultivated four times and an excellent growth with exceptionally strong top development was made. The 263 pounds of seed produced was uniformly ripened and of good quality. The average yield per acre was 1,052 pounds. Due to heavy winds and wet weather, considerable loss occurred in harvesting the seed. The following is a summary of the cost of production for 1925:—

COST TO PRODUCE TURNIP SEED, 1925

Area—1 acre.	
Rent of land	$ 4 00
Use of machinery	3 00
Manure, 8 tons at $2	16 00
Pitting (fall 1924) 1 man, 26 hours at 27 cents	7 02
Ploughing, 3·63 hours tractor at $1	3 63
Disking, 4·50 hours tractor at $1	4 50
Smoothing, 0·50 hours tractor at $1	0 50
Planting, 1 man, 94 hours at 27 cents	25 38
2 horses, 16 hours at 52 cents	8 32
Cultivating, 6 hours at 42 cents	2 52
Hoeing, 20 hours at 27 cents	5 40
Harvesting, 228 hours at 27 cents	61 56
Cleaning, 28 hours at 27 cents	7 56
320 bushels lost in pit, 320 bushels planted, 640 bushels at 10·5 cents	67 20
Total cost	$ 216 59

Yield per acre, 1,052 pounds.
Cost per acre, $216.59.
Cost per pound, 20·59 cents.

SUGAR BEETS

Eight approved factory varieties were under trial in 1925, the seed being furnished by the Dominion Sugar Co., Chatham, Ont. The analysis, consisting of the sugar content and co-efficient of purity was made by the Division of Chemistry at Ottawa. The following table gives the 1925 and the average results for the past two years:—

SUGAR BEET—VARIETY TEST

Variety	Corrected yield per acre 1925		Two-year average corrected yield per acre		Analysis of Dominion Chemist							
					Per cent sugar in juice 1925	Two-year average per cent sugar in juice	Co-efficient of purity 1925	Two-year average co-efficient of purity	Average weight of one root 1925		Two-year average weight of one root	
	tons	lb.	tons	lb.			%	%	lb.	oz.	lb.	oz.
Henning & Harving, Dom. Sugar Co...	15	1,848	17	1,793	17·76	17·56	85·51	85·95	1	9	1	14·5
Horning	13	1,768	17	1,389	18·79	18·18	88·04	89·04	1	1	1	11·5
Schreiber & Son	16	616	17	966	18·41	17·50	87·38	87·54	1	5	1	11·0
Dr. Burgman	13	1,597	16	1,303	19·50	16·50	89·60	85·01	–	14	1	6·5
Vilmorin Imp. B.	15	52	16	874	19·21	18·39	89·86	90·41	1	6	1	8·0
Dieppe	14	1,146	15	1,088	18·57	18·46	87·10	88·73	1	3	1	11·0
Rabbethge & Giesceke	15	198	.....		18·61	.....	87·06	.....	1	12	.....	
Home Grown	13	184	.....		18·88	.....	88·76	.....	1	..	.....	

The average per cent of sugar is good and the co-efficient of purity is high. The yields are most encouraging.

Considerable interest has been evinced in the sugar beet industry in Pictou County, Nova Scotia and fifty tests were carried on in co-operation with the farmers in that district. Each trial was conducted in duplicate, on plots of $\frac{1}{100}$ of an acre each. The variety of seed used was "Home Grown" (Canadian) supplied by the Dominion Sugar Company. Samples of the harvested roots were sent to the Division of Chemistry, Ottawa, for analysis. Due to very unfavourable weather at harvesting time only twenty-nine of these tests were harvested and the results recorded are shown in the following table:—

CO-OPERATIVE SUGAR-BEET TESTS, 1925, PICTOU COUNTY

Name and Locality	Average weight of one root		Per cent sugar juice	Co-efficient of purity	Yield per acre	
	lb.	oz.			tons	lb.
Rev. D. J. Rankin, Arisaig	1	3	18·73	87·52	26	1,150
John J. Chisholm, R.R. No. 1, New Glasgow	—	14	17·10	87·26	14	100
Lyons Fraser, R. R. No. 4, New Glasgow	—	10	18·88	90·86	14	–
W. H. McKay, R.R. No. 1, West River Station	—	8	19·14	90·28	13	1,770
R. W. McQueen, Kings Head	—	14	19·41	89·08	13	1,350
W. A. McDonald, R.R. No. 1, Pictou	—	12	18·06	88·67	13	1,050
Calvin M. Langille, R.R. No. 3, River John	—	9	18·74	89·97	13	500
D. McDougald, R.R. No. 1, Pictou	—	14	18·84	91·14	12	1,500
A. McG. Fraser, Acadia Farm, Pictou	1	7	17·87	87·62	11	1,475
R. A. Tattrie, River John	—	13	19·70	90·10	11	650
A. D. McKay, Pictou	1	—	20·18	95·50	11	250
W. D. Grant, R.R. No. 3, Pictou	1	9	17·95	83·90	11	200
Amos Tattrie, River John	.....		.....	.....	10	1,650
Dan McDonald, Sylvester	..	8	18·75	90·03	9	1,950
John McDonald, Egerton	1	2	19·70	85·27	9x	1,700
James R. McLean, R.R. No. 2, Pictou	..	11	18·91	90·16	9	1,600
J. A. Grant, Bridgeville	..	11	19·10	85·65	9x	100

CO-OPERATIVE SUGAR-BEET TESTS 1925, PICTOU COUNTY—*Concluded*

Name and Locality	Average weight of one root		Per cent sugar juice	Co-efficient of purity	Yield per acre	
	lb.	oz.			tons.	lb.
William McGee, Big Island	..	15	20·84	87·96	8	1,800
Joseph Robertson, R.R. No. 1, Pictou	..	10	16·67	90·78	7	1,800
John McKiel, R. No. 1, Pictou	..	9	18·56	88·49	7	1,800
John D. Henderson, R.R. No. 4, River John	..	7	19·37	91·81	7	1,450
W. O. Creighton, R.R. No. 1, West River Station	..	6	20·02	88·45	7	700
G. A. Milne, Woodburn	..	8	18·97	89·37	7	450
A. C. McDonald, R.R. No. 1, Eureka	..	7	19·23	90·59	6	1,200
J. R. Reid, Little Harbour	..	7	19·31	89·80	5	1,700
J. Milligan & Sons, Westville	..	11	18·10	88·16	5	1,250
H. K. Munro, R.R. No. 1, River John	..	5	18·24	91·79	5	500
Rev. J. R. McDonald, Georgeville, Antigonish Co.	1	3	17·66	85·84	5	500
Dan Munro, R.R. No. 1, River John	..	5	18·47	90·22	3	300
Average	11·93		18·80	89·15	10	468

xThese yields were estimated from percentage stand as taken in field notes and were not used in making up averages.

COST TO PRODUCE SUGAR BEETS

Due to the fact that considerable interest is being taken in the sugar beet industry in certain parts of the province it was thought advisable to collect some data on the cost of production. The following is a summary of the cost for 1925:—

Area—1 acre.		
Rent of land	$	4 00
Use of machinery		3 00
Manure, 8 tons at $2		16 00
Ploughing, 3·63 hours, tractor at $1		3 63
Disking, 4·50 hours, tractor at $1		4 50
Smoothing, 0·50 hours, tractor at $1		0 50
Running drills, 2 horses, 8 hours at 52 cents		4 16
Seeding, 1 horse, 1·5 hours at 42 cents		0 63
Cultivating, 1 horse, 6 hours at 42 cents		2 52
Hoeing, 1 man, 50 hours at 27 cents		13 50
Harvesting, 1 man, 128 hours at 27 cents		34 56
1 horse, 20 hours at 42 cents		8 40
Seed, 10 pounds at 70 cents		7 00
Total cost	$	102 40

Yield per acre, 23·46 tons.
Cost per acre, $102.40.
Cost per ton, $4.36.

NOTE:—Owing to lack of space, detailed information on the foregoing experiments is not given here, but anyone wishing to can get the same by writing to the Superintendent, Experimental Farm, Nappan.

The low cost per ton is due in part to the exceptionally good yield which is about 6 tons above our general averages. The cost of harvesting could be lowered on a commercial basis by the use of proper machinery.

GRASSES AND CLOVERS

GRASSES WITH CLOVERS AND ALONE

The object of this experiment is to ascertain the production of the various grasses when sown alone and in combination with red clover, alsike and red clover, and alsike as a leguminous base. A mixture of 8 pounds timothy, 8 pounds red clover, and 2 pounds alsike per acre has, from a two-year average, given the highest number of pounds dry matter per acre. Timothy was the only grass, when sown alone, that compared at all favourably in yield with this mixture, and it was outyielded by 147 pounds of dry matter per acre.

EARLY AND LATE RED CLOVER WITH EARLY AND LATE GRASSES

An analysis of the data collected from these experiments shows the superiority of either the early or late red clover with timothy over either the early or late red clover with meadow fescue. The late red clover with timothy has considerably outyielded the early red clover with timothy, having a two-year average yield of 6,695.6 pounds of dry matter per acre.

MEADOW FESCUE IN HAY AND PASTURE MIXTURES

The object of this experiment is to test the value of meadow fescue in hay and pasture mixtures. From the data already collected it would appear that by reducing the timothy in a mixture of 8 pounds red clover, 2 pounds alsike and 8 pounds timothy by one pound, and substituting from 2 to 6 pounds of meadow fescue, a slight increase in dry matter per acre is obtained. Any further decrease in timothy and substitution with meadow fescue results in a decreased yield of dry matter. However, as there are only two-year average results the deductions are only tentative and would have to be substantiated by further data before making a positive recommendation.

ALFALFA

Alfalfa has not proven a very satisfactory crop, as it is almost impossible to secure a good stand. Seeding broadcast without a nurse-crop has given the most satisfactory results to date.

TIMOTHY—VARIETY TEST

A variety test of timothy has been conducted for the past three years but nothing definite can be reported at the present time. A change was made in the varieties and only a few of them were carried for the full period.

NOTES—Owing to lack of space, detailed information on the foregoing experiments is not given here, but anyone wishing to can get the same by writing to the Superintendent, Experimental Farm, Nappan.

EXPERIMENTS WITH FERTILIZERS

Six experiments with fertilizers are being carried on at the present time, and while space will not permit of detailed results a brief outline of each will be given.

FERTILIZER FORMULAE FOR POTATOES

Applications of 1,000, 1,500 and 2,000 pounds per acre of each of the following mixtures were made:, viz., 6-6-6, 5-6-6, 4-6-6, 3-6-6, 5-8-6, 4-8-6 3-8-6, 4-8-10, 4-8-8, and 4-8-4. In each case the potato crop followed a timothy sod.

The profits over fertilizer costs indicate that the 1,000-pound application is the most profitable when applied to soils of average fertility. For the potato crop alone, our results show that on a moderately heavy clay loam in good tilth and of average fertility, a fertilizer which is not too high in nitrogen and medium to high in phosphoric acid and potash will give the greatest profit over cost of fertilizer, for example, a 3-6-6, a 3-8-6, or a 4-8-8 mixture.

BASIC SLAG EXPERIMENT

Six brands of slag are being tested and compared with ground natural rock phosphate and superphosphate. P_2O_5 is applied at the rates of 70 and 140 pounds per acre.

A careful study of the three years' results shows that it requires carefully collected data over a period of years before any conclusive deduction may be drawn. It is sufficient to say that no one brand has been outstanding to date.

MALAGASH SALT

Two experiments with Malagash salt and common salt have been carried on for two years as follows: Section 1—To determine the effect of application of Malagash salt and common salt when applied to the root crop at different rates per acre. Section 2—To determine the effect of applications of Malagash salt and common salt when applied to the grain crop alone at different rates per acre and in conjunction with nitrate of soda and superphosphate. As has been stated, this experiment has only been running for two years, and it is sufficient to say that under our soil conditions very little benefit, if any, was noted from the use of the salt.

EPHOS BASIC PHOSPHATE EXPERIMENT

The object of the experiment is to determine the value of "Ephos"—a ground Egyptian rock phosphate containing 27.5 per cent phosphoric acid—in comparison with basic slag and superphosphate in a four-year rotation of roots, grain, clover hay, and timothy hay. This year's results indicate that as a source of phosphoric acid for the turnip crop, Ephos used in conjunction with nitrogen and potash has proven equal to superphosphate and basic slag.

POULTRY

Satisfactory progress has been made along all lines of poultry work during 1925. Dull, stormy weather throughout the breeding season affected somewhat the activity of the breeding stock. The vitality of the birds was somewhat lowered, and the hatches were not up to the average.

The high prices of feed during the year increased the feed cost of production but was partially off-set by a corresponding increase in the price of eggs, leaving a reasonably fair margin between cost of production and selling price, sufficient at least to warrant still greater progress in poultry work.

The requests for bred-to-lay stock showed a marked increase over the previous year.

PEDIGREE BREEDING

Pedigree breeding work at this Farm was continued and some excellent production has resulted from various matings, but greater thought is now being given to the egg weight and careful selections are being made for our pedigree breeding work with hens that have fairly high production and are, at the same time, producing eggs of standard weight or better. All cockerels selected for mating are being selected from hens with 24-ounce or more eggs and having a production of at least 175 eggs and more. Some two hundred and twenty-four matings were made during 1925, and of these thirteen were registered hens. The following table gives a summary of production by years:—

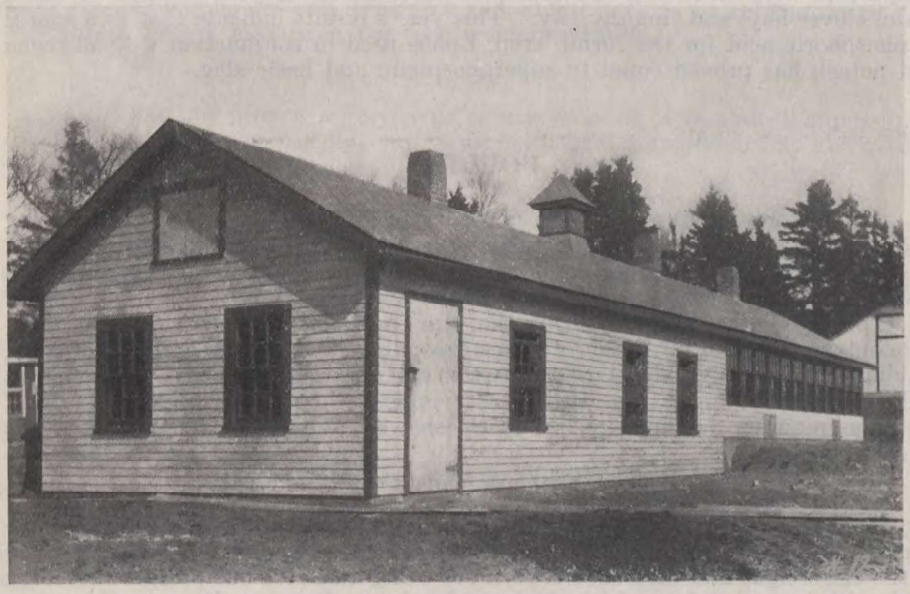
SUMMARY OF PRODUCTION BY YEARS

Year	Number of birds	Average egg production	Number of birds	Average egg production	Number of birds	Average egg production
1919–20	6	208·3	4	184	17	159·8
1920–21	11	218·0	13	187·1	16	164·3
1921–22	16	218·9	8	181·4	14	159·3
1922–23	8	275·9	19	223·3	14	174·1
1923–24	3	281·0	23	226·5	46	170·7
1924–25	4	208·5	6	184	6	162·2

From the table it will be noted that a very marked increase in average production was obtained from 1920 to 1924, but due to the heavy culling, on account of egg weight, only sixteen pullets were able to finish their year's production, out of some sixty-eight put into winter quarters. It is hoped the next few years will show a marked improvement in this work.

HOUSING

The plant consists of one new breeding-house, 16 by 120 feet, affording accommodation for 300 birds; a shed-roof house, old style, 16 by 32 feet, capacity 100 birds; twenty-six colony-houses, 10 by 12 feet, capacity 20 birds each; and one incubator and brooder-house, 16 by 67 feet, divided off into four brooder-rooms, 8 by 16 feet, one incubator-room, 18 by 16 feet, and an office room 14 by 15 feet. This makes a very complete and up-to-date plant, affording plenty of room for experimental work.



A very serviceable combination of incubator- and brooder-house now in use at the Experimental Farm, Nappan.

BEEF-SCRAP VERSUS SKIM-MILK

In order to determine the relative value of beef-scrap versus skim-milk in supplying animal protein to the laying hens, a test was started in 1922, and two pens of birds have been selected each year. The pens were made up of ten birds each, as uniform in breeding and type as it was possible to obtain. Pen number 1 received beef-scrap in hoppers which were before them all the time. The following are the grain and dry mash mixtures fed throughout the period. Grain mixture: 100 pounds wheat, 100 pounds cracked corn, 100 pounds oats. Dry mash: 100 pounds bran, 100 pounds shorts, 100 pounds corn meal, 50 pounds oil cake, 15 pounds charcoal. In addition they received 13 pounds of beef-scrap, valued at $6.75 per hundredweight.

Pen 2 received the same grain and dry mash as pen 1, but in place of the beef-scrap they received 101 pounds of skim-milk, valued at 20 cents per hundredweight. Both pens received all the water they would take.

The following is a summary of the 1924-25 feeding test, also a four-year average:—

BEEF-SCRAP VERSUS SKIM-MILK

Pens	Total eggs	Total feed cost	Value of eggs	Average eggs per bird	Cost per dozen	Cost per bird	Profit over feed cost	Profit per bird over feed cost
		$ c.	$ c.		cts.	$ c.	$ c.	$ c.
Pen 1, beef-scrap	688·0	13 16	26 05	68·8	23·0	1 31	12 89	1 28
Pen 2, skim-milk	742·0	12 45	29 81	74·2	20·0	1 25	17 36	1 74
Four-year Average—								
Pen 1, beef-scrap	641·0	12 97	24 29	64·1	22·6	1 29	11 32	1 13
Pen 2, skim-milk	741·3	14 41	28 87	74·0	19·8	1 22	16 72	1 67

Note.—10 birds in each test.

The average amount of beef-scrap consumed by pen 1 was 26.75 pounds, at an average cost of $6.35 per hundredweight, amounting to $1.70. The average amount of skim-milk consumed by pen 2 was 400 pounds at an average price of twenty cents per hundredweight, amounting to 80 cents.

The results from the feeding test carried on for 1924-25 coincide with those of previous tests, showing a decided gain over feed cost in favour of the milk-fed pen, of $4.47, or 45 cents per bird. Taking the average of four years the increased profit over feed cost was $5.40 or 54 cents per bird for the skim-milk pen. Assuming that it is fair to credit the increased profit to the value of skim-milk when fed to hens, means that one has marketed through the egg, his skim-milk at $1.317 per hundredweight. Certainly the past four years feeding test show that skim-milk has a very high feeding value when fed to hens.

HOME-MIXED VERSUS COMMERCIAL FEEDS

This is the fourth year for this test, which has been carried on at this farm to ascertain the relative value of home-mixed versus commercial feeds. Two pens of pullets have been fed each year with ten birds in each. The pens have been selected as carefully as possible in order to get uniformity in breeding strain, age and size.

Pen 3 was fed the following home-mixed grain: 100 pounds wheat, 100 pounds corn, 100 pounds oats. Dry mash: 100 pounds bran, 100 pounds shorts, 100 pounds corn meal, 100 pounds crushed oats, 50 pounds oil-cake, 50 pounds blood meal, 50 pounds tankage, and 15 pounds charcoal. The grain mixture was worth $2.73 and the dry mash $2.47 per hundredweight.

Pen 4 was fed a commercial mixture, the scratch-grain cost $3 per hundredweight, and the dry mash cost $4 per hundredweight. The scratch-grain was fed twice each day in the litter, and the dry mash was fed from hoppers, which were before the birds at all times. Grit, shell, and green feed in the form of cabbage, mangels or turnips were fed to both pens alike.

The following table gives a summary of the 1925-26 feeding test, also a four-year average:—

HOME-MIXED VERSUS COMMERCIAL FEEDS

Pens	Total eggs laid	Total feed cost	Value of eggs	Average eggs per bird	Cost per dozen	Cost per bird	Profit over feed cost	Profit per bird over feed cost
		$ c.	$ c.		cts.	$ c.	$ c.	$ c.
Pen 3. Home-mixed	618	13 17	24 01	61·8	26	1 32	10 84	1 08
Pen 4. Commercial	666	14 46	25 64	66·6	26	1 45	11 18	1 12
Four-year Average—								
Pen 3. Home-mixed	665	12 63	24 92	66·5	24	1 26	12 29	1 22
Pen 4. Commercial	622	13 55	23 40	62·2	28	1 35	9 85	0 99

NOTE.—Ten birds were used in each test.

In comparing the results obtained from the two tests conducted during 1925-26 it will be seen that the birds fed on the home-mixed feeds made 34 cents less profit than those on the commercial mixtures. But in analysing the average results for the four years the profits are reversed, being $2.44 or 24 cents per bird in favour of the pen fed on home-mixed feeds. These feeding tests are only conducted over a six-months period. Certainly the preceding results are indicative of the fact that poultry breeders may well afford, where possible, to grow and mix their own feed mixtures.

METHODS OF FEEDING

In feeding poultry for results it has been found by our experience, that first of all it pays well to have good clean grains properly mixed, and carefully fed in a good, deep, dry litter twice a day, paying strict attention to quantities fed. If the birds are found to be leaving any in the litter, cut down the amount given. Be sure that the dry-mash hoppers have plenty of dry mash in them, and that it is well mixed, and that the hoppers are working properly, to prevent the birds going a whole day without a sufficient quantity of meal. Water is a very important factor. Plenty of fresh water should be available at all times, and if the weather is cold it is well to take the chill off the water, otherwise the birds will not drink their full requirements. During the very long, cold period last year, it was noted that none of the pens were drinking the usual amount of water, and during this period practically every hen dropped in her weight of egg. This would indicate the importance of seeing that warm water be supplied twice daily during very cold weather. Green feed, in the form of cabbage, mangels or turnips is essential to the health and productiveness of the flock.

When these are gone it will pay to use sprouted oats. Moist mashes are good during the winter months, but do not make the mashes too sloppy. The feeding of Epsom salts once or twice per month is advisable, feeding at the rate of one pound to one hundred birds. A slight change in the feed occasionally is advisable, but do not make radical changes either in quantity or mixtures. Be regular in your attention to feeding and care, as the birds will respond to such care.

WINTER PRODUCTION

Reasonably early hatches should be the objective of every breeder, for it is the early, well-matured pullets that make our winter producers; and it is the winted producers that lower the unit cost of production; which in turn means a greater profit from the poultry plant. All laying stock should be ready for winter quarters by the last week in October. For instance, in 1923-24 the pullets at this farm were well matured and in winter quarters early. In 1924-25 the pullets were a little later, and not quite so well-matured when put into winter quarters. In 1923-24 the pullets showed a profit over cost of feed during November and December; last year the birds showed an average loss per bird of 11 cents for November and 5 cents for December. Notwithstanding the fact that the selling price was five cents per dozen higher during 1924-25, the average profit per bird per month for the first five months was 12 cents less than that for the previous year. This shows fairly well the importance of early-hatched, well-matured pullets, over late-matured pullets.

YEARLY STATEMENT OF BARRED ROCK PULLETS FROM NOVEMBER 1, 1924 TO OCTOBER 31, 1925

Month	Number of birds	Pounds feed	Cost	Eggs	Market price	Value	Loss or profit	Cost per bird	Eggs per bird	Cost per dozen	Loss or profit per bird
			$ cts.		cts.	$ cts.	$ cts.	cts.		$ cts.	cts.
1924											
November	68	583	10 80	74	50	3 08	— 7 72	15·8	1·0	1·751	—11·4
December	66	775	14 79	224	60	11 20	— 3 59	22·4	3·3	0·794	— 5·4
1925											
January	62	748·5	12 11	520	65	28 17	16 06	19·5	8·3	0·279	25·9
February	61	644	11 98	511	65	27 68	15 70	19·6	8·3	0·281	25·7
March	61	626·5	11 85	792	42	27 72	15 87	19·4	12·9	0·179	26·0
April	60	593·5	12 73	790	32	21 07	8 34	21·2	13·1	0·193	13·9
May	55	559	11 35	657	32	17 52	6 17	20·6	11·9	0·207	11·2
June	41	531	12 17	563	32	15 01	2 84	29·7	13·7	0·259	6·9
July	36	457	6 58	410	35	11 96	5 38	18·3	11·3	0·192	14·9
August	28	257	6 75	128	40	4 27	— 2 48	24·1	4·5	0·632	— 8·9
September	23	240	6 57	181	42	6 34	— 0 23	28·5	7·8	0·972	— 1·0
October	14	76	2 09	92	48	3 68	1 59	14·9	6·5	0·272	11·3
	48	6,090·5	119 77	5,042	44	177 70	57 93	20·8	.....	0·285	.....

YEARLY STATEMENT OF BARRED ROCK HENS, FROM NOVEMBER 1, 1924 TO OCTOBER 31, 1925

Month	Number of birds	Pounds of feed	Cost	Eggs	Market	Value	Profit or loss	Cost per bird	Eggs per bird	Cost per dozen	Profit per bird
			$ cts.		cts.	$ cts.	$ cts.	cts.		$ cts.	cts.
1924											
November	211	1,943	36 03	354	50	14 75	— 21 28	17·0	1·6	2 05	— 10·0
December	206	2,505	43 66	290	60	14 50	— 29 16	21·0	1·4	2 54	— 14·1
1925											
January	200	2,870	43 13	487	65	26 38	— 16 75	14·3	2·4	1 06	— 8·3
February	193	1,840	34 50	747	65	40 46	5 96	17·8	3·8	0 55	0·3
March	189	2,712	51 65	2,000	42	70 00	18 35	27·3	10·5	0 30	9·7
April	186	1,947	46 21	2,217	32	59 12	12 91	24·8	11·9	0 25	6·9
May	178	2,013	42 92	2,140	32	57 06	14 14	24·0	12·0	0 24	7·9
June	170	1,505	31 10	1,763	32	47 01	15 91	18·2	10·3	0 21	9·3
July	127	1,898	34 63	1,662	35	48 48	13 85	10·0	10·9	0 25	10·9
August	109	678	18 64	1,455	40	48 50	29 86	17·1	13·3	0 15	27·4
September	87	636	17 49	700	42	24 50	7 01	20·1	8·0	0 30	8·0
October	87	475	12 98	245	48	9 80	— 0 18	14·9	2·8	0·64	— 0·4
	162	21,022	412 95	14,060	45 25	460 56	50 62	21·3	88·9	0 35	55·6

In comparing the two previous tables, it will be noted that the pullets showed an average of 54 cents more profit per bird over feed than did the hens, thus again demonstrating the value of pullets as egg producers and money makers.

COST OF PRODUCING CHICKS

The following is a summary of the cost per period with the average cost per chick alive at the end of each period up to five months of age.

This cost covers the cost of the eggs for incubation at 3 cents each, the cost of the fuel for incubation and brooding, and the cost of feed, but does not include the cost for labour.

COST OF PRODUCING CHICKS

Period	Total cost	Average cost per live chick
	$ cts.	cts.
Incubation	155 55	19·0
Brooding	58 36	08·8
June	32 30	05·0
July	82 24	12·9
August	83 90	13·3
September	81 41	17·0
Total outlay for 480 live chicks	493 76	76·0

NOTE.—Starting with the month of September, cockerels unsuited for breeding purposes were fattened and put on the market. It pays to market the birds as soon as they can be prepared for the market; in this way the flock is reduced in size and greater care and attention may be given to the smaller birds.

EGG-LAYING CONTEST

The sixth Dominion Egg-laying Contest conducted at Nappan was completed on October 31, 1925. The increase in entries and enquiries for bred-to-lay stock, along with requests for the egg-laying reports, is a good indication that these contests are playing a very important part in the development of the poultry industry. There was an increase of four pens over the previous year's entry, making a total of 240 birds in the 1924-25 contest. Unfortunately, the birds took a bad cold just after they were entered and this spread throughout the whole contest and naturally cut down the year's production very materially. The 240 birds laid a total of 39,967 eggs or an average per bird of 166.53 eggs, against the previous year's total of 35,371 eggs from 200 birds, or an average of 176.9 eggs per bird.

Out of the 240 birds, five laid over 250 eggs, eight birds averaged over 225 eggs, and forty-four birds were over 200 eggs. Fifty-seven ranged between 175 and 200; fifty-three birds ranged between 150 and 175 eggs each; with seventy-three birds dropping below 150 eggs.

The highest pen in the contest was owned by W. E. B. Tait, Dorchester, pen No. 10, with a production of 2,173 eggs or an average of 217.3 eggs per bird. The second highest was pen 9, owned by E. N. Smith, Shinimicas Bridge, Barred Rocks, 2,089 eggs, or an average of 208.9 per bird. The third highest pen was owned by Mrs. John Simpson, Wallace Bridge, 2,053 eggs or an average of 205.3 eggs. The fourth pen, No. 4, owned by R. A. Snowball, Chatham, N.B., had 2,024 eggs, or an average of 202.4 to their credit. Pen 12 owned by B. M. Smith Wallace Bridge, had 1,936 or an average of 193.6, and was closely followed by pen 21, whose total was 1,909, or an average per bird of 190.9 and owned by W. C. Black, Amherst, N.S.

The highest bird in the contest was No. 2 in pen 4, with a total of 291 eggs, owned by R. A. Snowball, Chatham, N.B.

The birds were all housed in good shed-roofed colony-houses 10 by 12 feet, divided into two pens each. Two-thirds of the fronts of these houses are glass and cotton, providing lots of sunlight and fresh air.

A grain mixture of 100 pounds wheat, 100 pounds cracked corn, 100 pounds oats was fed twice daily in the litter. A dry-mash mixture of 100 pounds bran, 100 pounds shorts, 100 pounds corn meal, 100 pounds crushed oats, 50 pounds oil-cake, 50 pounds blood meal, 50 pounds tankage, and 10 pounds charcoal was before the birds at all times, being fed from hoppers. A moist mash of this mixture was fed for the noon daily meal. All pens are provided with hoppers for shell, charcoal, grit and beef scrap. Green feed is supplied each day in the form of mangels, cabbage, turnips or cut clover. Every attention is given to the health of the birds, with the object of keeping down the mortality as low as possible. Plenty of fresh water is supplied each day, and during the winter months the chill is taken off, so that the birds will take all they require. This is very important factor, and has considerable influence on the egg weight.

The following table is a summary of the number of birds entered in each contest since 1921, and the average production. It will be noted that last year is the first year that an increase was not made over the previous year—this is attributed to two factors, the colds, and the increase in the number of birds entered.

Average for each year of contest	Number of birds	Average production of eggs
1919–1920	200	121·1
1920–1921	220	127·8
1921–1922	200	138·3
1922–1923	200	143·3
1923–1924	200	176·9
1924–1925	240	166·5

PEN SUMMARY OF EGG PRODUCTION AND FEED CONSUMED. NOVA SCOTIA EGG-LAYING CONTEST, NAPPAN, N.S. 1924-25

Owner	Pen	Breed	Total eggs	Feed cost per doz.	Market value	Grain	Mash	Scrap	Grit	Shell	Miscellaneous feed	Green feed	Cost	Profit over feed
				cts.	$ cts.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	$ cts.	cts.
Mrs. George Stewart, Pugwash, N.S.	1	B.R.	1,452	19·5	56 54	595	149	28	16	47	15	321	23 71	26 83
W. L. Lowe, Amherst, N.S.	2	B.R.	1,421	19·9	48 98	605	124	40	9	27	15	321	23 67	25 31
Alice Black, Amherst, N.S.	3	B.R.	1,546	18·7	54 51	590	124	46	15	49	15	321	24 13	30 38
R. A. Snowball, Chatham, N.B.	4	B.R.	2,024	15·2	73 80	625	176	39	11	40	15	321	25 74	48 06
David Bacon, Nappan, N.S.	5	B.R.	1,446	21·3	49 86	580	179	52	16	54	15	321	25 76	24 10
F. A. Cochrane, Amherst, N.S.	6	B.R.	1,613	19·3	58 95	600	204	39	12	49	15	321	25 98	32 97
Mrs. F. Chapman, Amherst, N.S.	7	B.R.	1,749	16·7	59 73	625	176	39	19	48	15	321	26 02	33 71
Mrs. J. Simpson, Wallace Bridge, N.S.	8	B.R.	2,053	15·3	71 13	615	217	45	9	51	15	321	27 13	44 00
E. N. Smith, Shinimicas Bridge, N.S.	9	B.R.	2,089	15·5	73 54	640	165	50	18	54	15	321	26 92	46 62
W. E. B. Tait, Dorchester, N.B.	10	B.R.	2,173	16·1	80 59	615	289	45	12	57	15	321	29 19	51 40
B. M. Smith, Wallace Bridge Station.	11	W.W.	1,639	17·4	58 77	610	159	18	13	51	15	321	23 79	34 98
B. M. Smith, Wallace Bridge Station.	12	B.R.	1,936	16·1	70 12	620	204	31	15	49	15	321	26 06	44 06
McFarlane Bros. Fox Harbour, N.S.	13	B.R.	1,531	18·6	56 60	597	147	29	14	47	15	321	23 76	32 84
Winchester Poultry Farm, Deep Brook	14	W.L.	1,596	17·5	55 14	525	222	27	12	29	15	321	23 33	31 81
Experimental Station, Charlottetown	15	W.L.	1,317	20·1	43 65	535	155	29	11	38	15	321	22 06	21 59
W. H. C. Chambre, Cody's, N.B.	16	W.L.	1,672	15·9	55 32	547	170	21	11	37	15	321	22 29	33 03
C. M. Peart, Lewisville, N.B.	17	W.L.	1,876	14·7	66 65	546	163	36	13	35	15	321	23 03	43 62
W. T. Kelly, River Hebert, N.S.	18	W.L.	1,553	16·6	50 54	522	158	21	13	47	15	321	21 53	29 01
Logan Bros, Amherst, N.S.	19	W.L.	1,470	17·1	48 92	537	148	18	8	27	15	321	21 03	27 89
Logan Bros, Amherst, N.S.	20	W.R.	1,265	25·9	43 49	650	188	43	20	54	15	321	27 40	16 09
W. G. Black, Amherst, N.S.	21	W.L.	1,909	13·7	66 02	550	165	15	10	43	15	321	21 91	44 11
Bruce Langille, Nappan, N.S.	22	B.R.	1,356	18·9	50 56	557	118	23	11	45	15	321	21 46	29 10
Frank Brown, Wallace Bridge Station	23	W.L.	1,444	18·3	47 90	545	158	24	15	32	15	321	22 05	25 85
Experimental Farm, Nappan, N.S.	24	B.R.	1,837	15·5	64 07	580	148	42	11	20	15	321	23 75	40 32
Totals	.....	.....	39,967	17·0	1,399 38	14,011	4,106	800	314	1,030	360	7,704	581 70	817 68

BEES

The season of 1925 was below average from a bee-keeper's point of view. The exceptionally heavy rainfall and long periods of dull weather during June, July and August prevented the bees from making use of the abundant clover bloom and the result was a comparatively low production of clear clover honey. Over 30 per cent of the honey produced was medium and dark honey from dandelion and fruit bloom in early June and golden rod and fall flowers in September.

Twenty-two colonies were packed for winter in the fall of 1924. The first examination was made on April 27. One colony was dead and three had to be united with queen-right colonies. The remaining eighteen colonies had an average strength of six frames of bees. Spring feeding was necessary as the latter part of the winter of 1924-25 was very open. Frames of honey were used for this purpose. The total production for the season was 1,443 pounds of extracted honey and 65 sections of comb honey. The highest production from one colony was 146 pounds. An increase of four colonies was made during the season.

WINTERING, 1925

Twenty-two hives were packed for winter in two-colony wintering-cases with planer shavings for protection. These were fed sugar syrup, two parts of sugar to one of water from ten-pound honey-pails with perforated tops. The average strength when packed was 9.4 frames of bees and the average weight 80 pounds per colony after feeding.

FINANCIAL STATEMENT

To	1,443 pounds extracted honey at 20 cents		$ 288 60
	65 sections at 35 cents		22 75
	4 colonies increase at $7		28 00
By	1 colony died at $7	$ 7 00	
	3 colonies united at $7	21 00	
	280 hours labour at 27 cents	75 60	
	Supplies purchased	175 81	
	Profit	59 94	
		$ 339 35	$ 339 35

WINTERING WEAK AND STRONG COLONIES

Data were collected on the relative value of wintering weak versus strong colonies with the following results:—

Number and Type of Colony	Average frames covered in November, 1924	Average frames covered in April, 1925	Average honey crop, 1925
			lb.
Weak—6	5·9	3·4	35·35
Strong—16	10·0	6·6	83·0

Of the six weak colonies packed for winter in 1924, one died after the first spring examination and three others were united to form one strong colony. The remaining three produced an average of 70.7 pounds honey in 1925 or an average of 35.35 pounds for six colonies wintered. One of the strong colonies died during the winter, while the remaining fifteen averaged 88.5 pounds honey for the season or an average of 83 pounds for the sixteen wintered. From the preceding results one can see how important it is to have good strong colonies packed away for winter.

JUMBO AND TEN-FRAME LANGSTROTH HIVES

The following data were collected in comparing Jumbo and ten-frame Langstroth hives:—

Type of Hive	Number of hives	Average frames covered in November, 1924	Average frames covered in April, 1925	Honey produced in 1925
				lb.
Jumbo	4	10·0	7·3	75·3
Langstroth, 10 frame	18	8·6	5·4	68·8

DETECTION OF QUEEN-CELLS

Shallow supers were placed on four colonies and during the swarming season queen-cells were observed on the lower edge of all these by tipping from the rear. All were examined and other cells were found in the lower brood-chamber. These were treated for swarming.

PREVENTION OF SWARMING

Two methods were used for the prevention of swarming, (1) By de-queening and re-queening, (2) The separation of queen and brood. Seven colonies were treated by the first method and only one swarmed, due to a queen-cell being missed in examination. Five were treated by the second method and three of these swarmed. So far our results have shown strongly in favour of the de-queening and re-queening method. The procedure of this method is as follows: Colonies are examined every nine days after clover flow starts. As soon as larvæ are found in queen-cells the old queen is removed to form a nucleus or is destroyed. All queen-cells except one are destroyed at this examination or if young fertile queens are available all are destroyed. After nine days, they are examined again and all queen-cells destroyed except the one previously left, or all evidences of queen-cells are destroyed and a young fertile queen is introduced.

FIBRE DIVISION

FLAX

The usual experiments with flax were carried on in 1925. Seeding was done on May 9. The experiments carried on were: variety tests, rates of seeding, and dates of harvesting. Weather conditions were such that the crop was almost a total failure, and it was impossible to get any records that could be used in making a comparison, as to the relative values of the various practices.

HEMP

Twenty-one plots of hemp were seeded in 1925. Seeding was done on May 9, except for the dates of seeding experiment. The following experiments were conducted: variety test, dates of seeding, and dates of harvesting. Germination was good, and very good growth was recorded through the growing season. Due to the wet weather during the fall months, it was impossible to get the crop dry enough for baling and no records were taken.

MISCELLANEOUS

The number of visitors to the farm was much above the average. Seven or eight groups of farmers' clubs visited the farm at intervals during the growing season. The following field days were held during the year, and proved very successful: poultry and bees on July 8, and field husbandry on July 22.

The Cumberland County Farmers' Annual Picnic was held on July 15. The speakers were Professor Blair, Mr. Samuel Freeman, Mr. W. W. Baird, and Mr. Lalacheur. Besides the interesting talks that were put on during the afternoon, motor-busses were used to take the visitors over the farm, and stops were made opposite each experiment field, and the work being carried on was explained in detail by the Superintendent and his two assistants, Mr. Hilton and Mr. Cox. This day proved a very successful one.

A number of agricultural meetings were attended by the staff during the year, and the Superintendent and assistants also judged at a number of fall exhibitions and fairs. An exhibit was arranged at the Maritime Winter Fair, and a very successful exhibit of sheep and dairy cattle made.

OTTAWA: Printed by F. A. ACLAND, Printer to the King's Most Excellent Majesty, 1926.