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 1926

The above cows are grade Holsteins which have been bred up from common cows by the use of pure-bred sires. Their average production for 1926 was 7,719.2 pounds milk with an average test of 3.8 per cent butter-fat.

Printed by authority of the Hon. W. R. Motherwell, Minister of Agriculture, tawa, 1927

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DOMINION EXPERIMENTAL FARM, NAPPAN, N.S.

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THE SEASON

The winter of 1925-26 was characterized by a great deal of zero weather with heavy falls of snow accompanied by heavy winds. The first snow flurry was recorded on November 10 and the first zero weather on December 20. The first real snowfall was on December 21 when 6 inches was recorded. The lowest temperature recorded before the New Year was 19 degrees below zero on December 31. During January the mercury dropped below zero on six different occasions. The lowest was 14 degrees on the 26th. From January 23 to February 13 snow fell on twelve different dates, reaching a total of 51.5 inches. Very high gales were experienced during this period which caused a complete tie-up on all public highways and the railroad experienced great difficulty in keeping the trains going. The temperature dropped below zero on seven different dates during February, the lowest being 20 degrees below on the 10th. March for the most part was a very cold month and from the 11th until the 22nd the thermometer was never very far from the zero mark, dropping to 10 below on the 13th and 14th and 17 degrees below on the 15th. The remainder of the month was milder and this continued throughout the month of April. The deep snow settled gradually during the mild weather and no serious freshets were experienced in this section and with the exception of a few heavy banks the snow was fairly well gone from the fields by the first week in May but in sheltered spots and in the woods snow could be found as late as the last week in May. This retarded early seeding and very little work was accomplished until the last of May and the first week of June. The precipitation during May was heavier than the average, being 3.18 inches as compared with an 18-year average of 2.16 inches. From the first of June until the last of September the rain-fall was very much lighter than the average for the period, it being 7.10 inches as compared with an 18-year average of 12.60 inches. All crops suffered from lack of moisture and most grains ran light per measured bushel. The harvest weather during August, September and the first six days of October was ideal and all early seeded grain was harvested in good condition but the late seeded grain was harvested in only fair condition. November was a very seasonable month and farmers were able to get the fall work well in hand before winter set in. December was very wintry-like throughout, a heavy blizzard being recorded on the 6th which tied up traffic for a few days but was not serious. Very little frost entered the ground before the snow fell which made the season unfavourable for lumbering operations.

WEATHER OBSERVATIONS AT EXPERIMENTAL FARM, NAPPAN, N.S., 1926*

Month	Temperature F.			Precipitation					Sunshine	
	Maximum	Minimum	Mean	Rainfall		Snowfall		Total inches	No. of days	Total hours
				Days	Inches	Days	Inches			
	°	°	°							
January	44	−14	17·79	2	1·25	8	38·0	5·05	18	73·7
February	42	−20	15·84	2	1·76	9	36·5	5·41	14	105·0
March	45	−17	21·24	2	1·41	5	16·0	3·01	23	125·8
April	53	14	33·10	5	1·53	7	15·5	3·08	27	170·4
May	74	27	46·81	10	3·18	.....	.....	3·18	24	151·1
June	81	38	58·02	7	1·58	.....	.....	1·58	27	217·9
July	88	41	63·82	12	2·28	.....	.....	2·28	27	227·7
August	85	34	60·97	5	2·09	.....	.....	2·09	29	205·8
September	78	28	52·82	6	1·15	.....	.....	1·15	25	151·4
October	79	25	46·60	11	4·85	.....	.....	4·85	24	108·6
November	67	10	36·97	8	2·11	.....	.....	2·11	24	106·5
December	44	−5	19·26	4	0·69	5	27·0	3·39	16	84·6

Days of rainfall..... 74 — Inches of rainfall..... 23·88
Days of snowfall..... 34 — Inches of snowfall..... 133·00 equal to 13·3″ rain.
Days of sunshine.....278 — Hours of sunshine.....1,728·5
Total precipitation.....37·18 inches.

*Records covering 15 years will be found in the 1925 Report of this Farm.

ANIMAL HUSBANDRY

The progress made in all four branches of the animal husbandry work conducted at this Farm during 1926 was very satisfactory. The experimental work consists chiefly of collecting data on maintenance, cost of production, feeding, breeding and marketing.

CATTLE

The herd consisted of the following stock on January 1, 1927:—

PURE-BRED BREEDING STOCK

Guernseys .....12 aged cows, 6 three-year-olds, 4 two-year-old heifers, 6 yearling heifers, 4 heifer calves, 2 aged bulls, 1 three-year-old, 1 yearling, and 8 bull calves.
Ayshires .....1 aged bull.
Holsteins .....1 three-year-old bull.

GRADE BREEDING STOCK

Ayrshires .....7 aged cows, 2 three-year-olds, 5 two-year-olds, 1 heifer calf.
Holsteins .....7 aged cows, 3 three-year-olds, 6 two-year-olds, 4 yearlings, 3 heifer calves.

EXPERIMENTAL FEEDERS

Grade Shorthorns .....42 steers

Total breeding cattle	84
Total feeding cattle	42
	126

GUERNSEYS

The natural increase in the Guernsey herd in 1926 was eleven head, seven males and four females. A number of young males were sold during the year for breeding purposes and numerous inquiries were received for females. The herd sires now in use are Mixter May Raider —2124—, Glamour's Fishermen of Nappan —2385— and Blanche's Raider of Nappan —3602—.

In the accompanying table are the individual milk records of the 10 cows which completed a lactation during 1926:—

GUERNSEYS—INDIVIDUAL MILK RECORDS COMPLETED DURING THE YEAR 1926

Name of Cow	Date of dropping calf	Age at beginning of period	Number of days in milk	Total pounds milk produced	Daily average yield of milk	Average per cent fat in milk	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 $1.90 per cwt.	Amount of roots eaten at $4.20 per ton	Amount of hay eaten at $8.90 per ton	Amount of ensilage eaten at $4.50 per ton	Amount of green feed eaten at $6.80 per ton	Months on pasture at $2 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.	$ cts.	$ cts.	$ cts.	lb.	lb.	lb.	lb.	lb.		$ cts.	$ cts.	cts.	cts.	$ cts.
Cabbage Rose of Hillside—1909	Nov. 25, 1925	8	374	8,219·3	21·98	5·32	546·58	218 63	15 56	234 19	2,900	8,570	4,508	1,108	3,697	5½	118 62	1 44	22	18	115 57
Princess Daisy of Hillside—2039	Oct. 2, 1925	9	400	8,362·9	20·91	5·32	556·13	222 45	15 84	238 29	2,886	9,050	4,144	1,108	4,462	6⅔	123 28	1 47	22	18	115 01
Princess Dairymaid of L. K. 4th—2044	Nov. 18, 1925	5	265	3,324·9	12·55	5·79	240·64	96 26	6 26	102 52	2,049	6,370	3,808	1,287	1,100	2⅔	80 69	2 43	34	6	21 83
Patricia of Stannox—2125	Mar. 5, 1925	5	387	7,272·0	18·79	5·48	498·13	199 25	13 75	213 00	2,871	8,200	5,208	1,950	2,379	3½	115 02	1 58	23	17	97 98
Princess Stannox of Nappan—2384	June 3, 1925	4	418	6,488·8	15·52	5·12	415·28	166 11	12 31	178 42	2,472	6,530	5,456	2,587	2,447	5½	110 10	1 70	27	13	68 32
Patricia of Nappan—3086	Dec. 9, 1925	3	360	3,934·0	10·93	5·52	271·45	108 58	7 43	116 01	2,338	5,800	4,508	927	3,217	5½	100 09	2 54	37	3	15 92
Princess Daisy of Nappan—3395	Jan. 30, 1926	2	309	3,630·4	11·75	4·86	220·55	88 22	6 91	95 13	1,760	3,020	2,788	927	2,503	4½	71 78	1 98	33	7	23 35
Queen Sherborn of Nappan—2716	Dec. 24, 1925	4	345	5,416·5	15 70	5·07	343·27	137 31	10 28	147 59	2,563	7,100	4,298	927	2,617	4½	102 72	1 90	30	10	44 87
Queen of Nappan—3600	Feb. 23, 1926	2	257	2,339·5	9·10	5·64	164·93	65 97	4 41	70 38	1,436	1,920	2,096	927	2,268	4½	59 44	2 54	36	4	10 94
Nappan Daisy L. K.—2998	Aug. 9, 1925	2	264	2,622·4	9·93	5·47	179 31	71 72	4 96	76 68	1,508	5,510	3,176	320	2,134	2 7/30	66 80	2 55	37	3	9 88
Total for herd 10 cows			3,379	51,610·7	15·27	5·28	3,436·27	1,374 50	97 71	1,472 21	22,783	62,070	39,990	12,068	26,824	44·5	948 54	1 84	28	12	523 67
Average for herd 10 cows			337·9	5,161·07	15·27	5·28	343·63	137 45	9 77	147 22	2,278·3	6,207	3,999	1,206·8	2,682·4	4 45	94 85	1 84	28	12	52 37

To Feed Cost for Ten Guernsey Cows and their Progeny for One Year

22,783 pounds meal at $38 per ton	$432 85	
62,070 pounds roots at $4.20 per ton	130 36	
12,068 pounds silage at $4.50 per ton	27 14	
39,990 pounds hay at $8.90 per ton	178 00	
26,824 pounds green feed at $6.80 per ton	91 20	
44½ month's pasture at $2 per month	89 00	
15 tons straw at $4 per ton	60 00	
10 bull services at $5	50 00	
Cost of feed for 4 calves to 1 year of age	223 29	
Cost of feed for 4 calves to date of sale	140 75	
Loss of 2 heifer calves at birth	150 00	
		$1,572 59

Credit from Ten Cows

3,436.27 pounds butter at 40 cents per pound	1,374 50	
48,885.7 pounds skim milk at 20 cents per cwt	97 77	
3 heifer calves 1 year old	450 00	
3 bull calves 7 months old	220 00	
1 bull calf sold for beef, 485 pounds at 3 cents per pound	14 55	
1 bull calf 1 year old	100 00	
102 tons manure at $2 per ton	204 00	
		$2,460 82
Credit balance from 10 cows		888 23

Guernsey Cows and Progeny—Financial Statement for Five-year Period

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
1926	10	1,572 59	2,460 82	880 23

GRADE DAIRY HERD

This completes the fifteenth year of the grading-up experiment The details of this experiment will be issued shortly in bulletin form. The following table gives the individual records of all cows competing their period in 1926:—

GRADE HERD PRODUCTION—LACTATION PERIODS COMPLETED IN 1926

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 meal eaten at 1½ 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.	lb.		$	$	cts.	cts.	$
Ayrshires—																				
Bell 1AS11	April 16, 1925	5	303	7,342·4	24·23	4·29	370·58	111 17	14 05	125 22	1,991	6,290	4,232	2,054	3½	52 87	0 72	14	16	72 35
Jessie 1A51	Sept. 22, 1925	4	351	8,541·5	24·33	4·65	467·27	140 18	16 29	156 47	2,394	8,437	3,827	2,012	5⅝	60 31	0 71	13	17	96 16
Jessie 1A512	Feb. 7, 1926	1	318	6,578·0	20·69	4·12	318 84	95 65	12 61	108 26	2,048	4,967	2,915	2,265	4 11/20	48 53	0 74	15	15	59 73
Jessie 1A52	Feb. 2, 1926	4	224	5,067·2	22·62	4·18	249·19	74 76	9 71	84 47	1.714	7,107	3,687	1,167	3⅜	46 35	0 91	19	11	38 12
Jessie 1A54	Oct. 1, 1925	1	321	6,292·8	19·60	4·54	336·11	100 83	12 01	112 84	2,163	8,087	3,827	839	2½	52 28	0 83	16	14	60 56
Jessie 1A121	Oct. 28, 1925	5	265	7,514·6	28·36	4·30	380·15	114 05	14 38	128 43	2.686	10,937	4,947	889	5½	68 33	0 91	18	12	60 10
Jessie 1A1213	Jan. 27, 1926	1	288	4,958·2	17·22	4·33	252·58	75 77	9 49	85 26	1,707	4,297	2.535	2,010	4 11/20	41 89	0 84	17	13	43·37
Myrtle 1A112	Oct. 12, 1925	5	375	7,153·0	19·07	4·51	379·53	113 86	13 66	127 52	2,517	9.177	5,103	2,519	8½	70 44	0 98	19	11	57 08
Holsteins—																				
Jessie 1HS2	Mar. 20, 1925	5	317	8.016·2	25·29	3·89	366·86	110 06	15 41	125 47	2,567	8,627	3,827	2,076	3 23/20	61 19	0 76	17	13	64 28
Jessie 1HS3	May 13, 1924	2	717	14,908·0	20·79	4·04	708·57	212 57	28 61	241 18	4.550	12,131	8,322	4,167	8	112 38	0 75	16	14	128 80
Myrtle 1HS2	Dec. 5, 1925	5	308	8.946·2	29·05	3·97	417·84	125 35	17 18	142 53	2,830	8,227	3,827	2,184	4⅛	64 44	0 72	15	15	78·09
Myrtle 1HS21	Feb. 25, 1925	3	327	5,340·0	16·33	3·74	234·96	70 49	10 28	80 77	1,836	5,390	3,960	1,984	3½	48 98	0 92	21	09	31 79
Myrtle 1HS4	Oct. 19, 1925	3	308	7,081·7	22·99	3·75	312·43	93 73	13 63	107 36	2,453	8,077	3,827	2,223	4 3/20	59 90	0 85	19	11	47 46
Myrtle 1H43	April 19, 1925	2	272	4,270·4	15·70	3·65	183·38	55 01	8 23	63 24	1,388	4,110	2,968	1,984	3¼	38 62	0 90	21	09	24 62
Myrtle 1H45	Feb. 28, 1926	1	278	4,693·3	16·88	3·50	193·25	57 98	9 06	67 04	1,584	3,617	2,313	2,265	4 11/20	39 28	0 84	20	10	27 76
Spot 1H32	Oct. 20, 1925	4	322	8,701·5	27·02	4·00	409·48	122 84	16 71	139 55	2,725	8,537	3,827	1,802	4 9/10	63 60	0 73	16	14	75 95
Vera 1H44	Jan. 15, 1926	1	317	6,932·0	21·87	4·01	327·03	98 11	13 31	111 42	2,080	4,857	2,947	2,265	4 11/20	48 94	0 71	15	15	62 48
Vera 1H411	Sept. 27, 1925	2	317	8,302·7	26·19	3·80	371·18	111 35	15 97	127 32	2,437	8,787	3,827	1,364	4 4/15	58 96	0 71	16	14	68 36

Prices used in 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.

GRADE HERD—COMPARISON OF DAMS AND PROGENY AT SAME AGE

Cows completing a production period in 1926

	Ayrshires		Holsteins	
	Dam	Progeny	Dam	Progeny
Number of cows	8	8	8	8
Lactation period	.....	1926	.....	1926
Average days in milk	287	306	332	356
Pounds of milk	5,393·9	6,681·0	6,609·8	7,609·1
Daily average pounds	18·79	21·83	20·49	21·37
Average test per cent	4·48	4·37	3·86	3·83
Pounds of butter	283·92	344·28	309·74	348·37
Feed cost $	50 32	55 13	62 42	59 52
Profit over feed cost $	45 16	60 93	43 60	59 62
Average increase in milk over dams in pounds	.....	1,287·1	.....	999·3
Per cent increase in milk over dams in pounds	.....	23·86	.....	15·12
Average increase in butter in pounds	.....	60 36	.....	38·63
Per cent increase in butter	.....	21·26	.....	12·47
Increase in profit over feed cost per cow $	.....	15 77	.....	16 02
Percentage of progeny superior to dams	.....	62·5	.....	62·5

The preceding figures show that the majority of the progeny were superior to their dams at the same age, and while not to quite the same extent as was shown last year, yet their average increase in milk and butter-fat over dam indicates very satisfactory progress. As in all previous years, this herd betterment goes to show that a pure-bred sire from a good milking dam is a very important factor in the improvement of a dairy herd and with judicious management will undoubtedly play a leading part in increasing the standard of production.

COST OF MILK PRODUCTION—GRADE HERD

The following table gives the feed cost of milk production for 1926. It shows the amounts of the different feeds consumed per 100 pounds of milk, the figures being all based on the production of the grade herd. It is interesting to note the very low cost to produce 100 pounds milk for the months of June and July when the cows were on pasture alone. This is a point well worth noting and it will be to the advantage of a farmer to provide plenty of good pasture for the number of milch cows kept per farm as it is a valuable factor in lowering the unit cost of production.

WEEKLY FEED COST OF MILK PRODUCTION, 1926

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. 2	16	34·1	161·3	60·0	.....	.....	1 17
" 9	16	33·7	156·3	58·8	.....	.....	1 15
" 16	14	30·7	113·6	50·76	15·6	.....	1 02
" 23	16	30·9	117·7	54·6	12·8	.....	1 04
" 30	16	30·3	92·6	53·0	21·6	.....	0 99
Feb. 6	1	31·7	141·0	55·6	.....	.....	1 07
" 13	20	30·6	139·0	54·6	.....	.....	1 04
" 20	20	31·0	133·3	51·0	.....	.....	1 03
" 27	21	32·3	128·2	53·2	.....	.....	1 05
Mar. 6	22	33·6	116·0	55·0	15·6	.....	1 09
" 13	23	34·7	121·0	57·5	16·0	.....	1 13
" 20	23	31·4	143·0	55·0	.....	.....	1 07
" 27	23	33·55	142·85	55·55	.....	.....	1 11
April 3	24	32·3	139·0	54·6	.....	.....	1 07
" 10	24	31·0	137·0	54·0	.....	.....	1 05
" 17	24	32·6	142·8	57·0	.....	.....	1 10

WEEKLY FEED COST OF MILK PRODUCTION, 1926—*Concluded*

Feeds required for 100 pounds of milk

Week ending	Cows	Meal	Roots	Hay	Ensilage	Pasture	Feed cost per 100 pounds milk
	No.	lb.	lb.	lb.	lb.	days	$ cts.
April 24	24	43·8	192·0	77·0	.....	.....	1 48
May 1	23	34·2	84·7	59·0	40·0	.....	1 28
" 8	23	36·2	.....	62·5	88·0	.....	1 16
" 15	24	35·2	.....	62·0	87·0	.....	1 14
" 22	24	36·4	.....	62·5	83·3	.....	1 15
" 29	24	36·1	.....	62·5	87·0	.....	1 15
June 5	24	37·8	.....	71·0	91·0	.....	1 23
" 12	21	26·2	.....	46·7	48·1	1·9	0 94
" 19	21	17·8	.....	.....	.....	3·6	0 58
" 26	21	18·11	.....	.....	.....	3·7	0 59
July 3	21	.....	.....	.....	.....	4·05	0 27
" 10	21	.....	.....	.....	.....	4·4	0 29
" 17	22	.....	.....	.....	.....	4·8	0 32
" 24	24	15·6	.....	.....	Green	5·1	0 64
" 31	23	22·7	.....	.....	feed	7·3	0 92
Aug. 7	23	24·0	.....	.....	91·7	5·5	0 98
" 14	23	26·5	.....	.....	153·8	6·0	1 17
" 21	22	28·3	.....	.....	157·2	6·1	1 23
" 28	20	31·3	.....	.....	158·7	6·2	1 29
Sept. 4	20	38·8	.....	.....	195·3	7·6	1 58
" 11	20	42·55	.....	.....	218·8	8·5	1 76
" 18	18	51·9	.....	.....	217·4	8·5	1 93
" 26	17	51·8	.....	.....	213·0	8·2	1 90
Oct. 2	17	55·5	.....	.....	152·0	8·5	1 81
" 9	17	55·6	.....	.....	156·0	8·7	1 91
" 16	16	48·3	.....	90·0	.....	7·0	1 84
" 23	18	42·2	.....	79·0	.....	3·0	1 40
" 30	20	35·2	.....	66·0	110·0	.....	1 22
Nov. 6	21	33·8	.....	63·0	104·0	.....	1 17
" 13	22	34·1	.....	63·0	105·0	.....	1 17
" 20	22	33·2	.....	59·0	250·0	.....	1 43
" 27	22	34·0	108·0	70·0	19·0	.....	1 22
Dec. 4	22	34·0	175·0	74·0	.....	.....	1 32
" 11	20	33·1	161·0	74·0	.....	.....	1 23
" 18	19	37·2	172·0	57·0	.....	.....	1 29
" 25	19	38·8	179·0	77·0	.....	.....	1 44

The following tables show the feed cost of milk and butter-fat production for both the Guernsey and grade herds for 1926, also a five-year average for both herds and a fourteen-year average for the grades:—

COST OF PRODUCTION OF MILK AND BUTTER-FAT FOR GUERNSEY HERD IN 1926 AND FIVE-YEAR AVERAGE

Amount of feed per 100 lb. milk	Price of feed	Cost of feed
	$ cts.	$ cts.
(1926)		
Meal—44·1 lb.	1 90 per cwt.	0 838
Roots—120·3 lb.	4 20 " ton	0 253
Hay—77·5 lb.	8 90 " ton	0 345
Ensilage—23·4 lb.	4 50 " ton	0 053
Green feed—52·0 lb.	6 80 " ton	0 177
Pasture—2·6 days	2 00 " month	0 173
		1 839
(Five-year average)		
Meal—50·1 lb.	1 98 per cwt.	0 992
Roots and ensilage—113·7 lb.	3 52 " ton	0 200
Hay—66·4 lb.	9 51 " ton	0 316
Green feed—32·2 lb.	4 32 " ton	0 070
Pasture—2·3 days	2 00 " month	0 153
		1 731

In 1926 the average percentage of butter-fat was 5.28, the feed cost per pound being 34.8 cents, calculated on 10 lactation periods while the average production of milk was 5,161.07 pounds. For the five-year average the percentage of butter-fat was 5.53, the feed cost per pound being 31.6 cents, calculated on 45 lactation periods, while the average production of milk was 5,988 pounds.

COST OF PRODUCTION OF MILK AND BUTTER-FAT FOR A GRADE HERD OF HOLSTEINS AND AYRSHIRES IN 1926 ALSO 5-YEAR AND 14-YEAR AVERAGES

Amount of feed per 100 lb. milk	Price of feed	Cost of feed
	$ cts.	$ cts.
(1926)		
Meal—31·9 lb	1 90 per cwt.	0 606
Roots and ensilage—100·8 lb	4 25 " ton	0 214
Hay—54·1 lb	8 90 " ton	0 241
Green feed—27·6 lb	6 80 " ton	0 094
Pasture—1·9 days	2 00 " month	0 127
		1 282
(5-year average)		
Meal—36·2 lb	1 98 per cwt.	0 717
Roots and ensilage—89·6 lb	3 52 " ton	0 158
Hay—58·4 lb	9 51 " ton	0 278
Green feed—24·7 lb	4 32 " ton	0 053
Pasture—2·16 days	2 00 " month	0 144
		1 350
(14-year average)		
Meal—36·7 lb	2 31 per cwt.	0 848
Roots and ensilage—104·6 lb	3 19 " ton	0 167
Hay—72·3 lb	11 11 " ton	0 402
Green feed—31·3 lb	3 47 " ton	0 054
Pasture—3·5 days	2 00 " month	0 233
		1 704

In 1926 the average percentage of butter-fat was 4.09, the feed cost per pound being 31.3 cents, calculated on 18 lactation periods, while the average production of milk was 7,258 pounds. For the five-year average the average percentage of fat was 4.14, the feed cost per pound being 32.6 cents figured on 123 lactation periods while the average milk production was 6,366 pounds. For the fourteen-year average the average percentage of butter-fat was 4, feed cost per pound being 42.6 cents, figured on 364 lactation periods, while the average milk production for the period was 5,327 pounds. In 1926 the Guernseys show a cost of 3.5 cents per pound of butter-fat more than the grades but in the five-year average they show 1 cent less per pound of fat produced.

FEEDING METHODS

The meal mixture used at this Farm for the dairy cows varies somewhat from season to season depending on the supply of available feeds obtainable at reasonable figures. The mixture used the first half of 1926 was as follows: 2 parts oats, 1 part bran, 1 part middlings, 1 part oil meal. The latter half of the year they received a mixture of 2 parts oats or mixed grain, 1½ parts bran, 1 part gluten meal, 1 part oil meal and 1 part middlings. In addition to the meal mixture fed, each cow received one tablespoon of the following salt and mineral mixture per day: 100 pounds calcium phosphate, 100 pounds sodium phosphate, 120 pounds Epsom salts, 100 pounds sulphur, 40 pounds of Glauber salts and 2

pounds potassium iodide. The nutritive ratio of the last meal mixture given is 1:6.7, which is one point wider than the ration fed for 1925. The meal is fed to the grade herd at approximately 1 pound meal to every 3.1 pounds milk produced and 1 pound to every 2¼ pounds for the Guernseys. It naturally follows that the higher butter-fat content, the narrower the ratio between milk and meal. The calves were fed on the following meal ration: 100 pounds crushed oats, 50 pounds bran, 25 pounds oil meal and 10 pounds bone meal. Whole milk is fed until the calves are from six to eight weeks of age when a gradual change is made from whole milk to skim milk. Skim-milk is usually fed until the calf is very well developed. One must be guided by the growth of the individual as to how long to continue the use of skim-milk. Flax-seed jelly is fed to all calves, starting with a very small amount and gradually increasing same up to 1 pound per day per calf. Properly grown dairy heifers of the grade Holstein and Ayrshire type should weigh between 500 and 600 pounds at one year of age.

COST OF REARING HEIFERS FROM ONE TO TWO YEARS OF AGE

—	Guernsey heifers	Grade heifers
Number of animals	5	11
Average number days fed	365	365
Pounds meal consumed per head	932	847
Pounds roots and ensilage consumed per head	2,272	2,509
Pounds hay consumed per head	2,654	2,683
Pounds green feed consumed per head	598	
Months pasture per head	2	4 [1]
Cost per head $	40 36	41 51

FEED PRICES

Meal, per cwt	$1 90
Roots and ensilage, per ton	4 25
Hay, per ton	8 90
Green feed, per ton	6 80
Pasture, per month	2 00

COST OF REARING DAIRY CALVES TO ONE YEAR OF AGE

—	Guernseys		Grade heifers
	Bulls	Heifers	
Number of animals	1	4	6
Pounds whole milk consumed per head	1,216	1,955	1,361
Pounds skim-milk consumed per head	3,378	2,799	2,889
Pounds meal consumed per head	600	573	607
Pounds roots and ensilage consumed per head	526	602	887
Pounds hay consumed per head	1,203	1,233	1,078
Pounds green feed consumed per head	1,011	674	825
Average cost $	51 05	62 07	44 81
FEED PRICES			
Whole milk, per cwt $	.....	1 84	1 28
Skim-milk, per cwt $	.....	0 20	0 20
Meal, per cwt $	.....	2 00	2 00
Roots and ensilage, per ton $	.....	4 25	4 25
Hay, per ton $	.....	8 90	8 90
Green feed, per ton $	.....	6 80	6 80

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

—	1920	1921	1922	1923	1924	1925	1926	Totals	Averages
Number of animals	19	5	9	8	13	13	6	73	1
Pounds of whole milk consumed per head	772	663	1,089	827	695	874	1,361	62,963	863
Pounds skim-milk consumed per head	1,395	4,420	2,527	3,191	3,214	3,872	2,889	206,328	2,826
Pounds meal consumed per head	599	889	712	774	931	718	607	53,502	733
Pounds roots and silage consumed per head	759	561	600	873	1,063	1,073	887	62,700	859
Pounds hay consumed per head	1,226	1,945	1,196	1,275	1,567	1,543	1,078	100,878	1,382
Pounds green feed consumed per head	361	.....	482	296	158	344	825	25,043	343
Cost of feed per head	$ 60 45	56 65	46 45	40 50	39 63	43 22	44 81	3,519 78	48 22

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

—	1921	1922	1924	1925	1926	Totals	Averages
Number of animals	11	11	17	13	11	63	1
Pounds meal consumed per head	706	948	1,090	857	847	57,179	908
Pounds roots consumed per head	1,442	2,411	2,035	2,450	2,509	136,422	2,165
Pounds hay consumed per head	2,655	2,409	1,840	2,517	2,683	149,216	2,369
Pounds skim-milk consumed per head	.....	240	.....	.....	.....	2,640	42
Days pasture consumed per head	141	133	140	118	122	8,272	131
Cost per head	$ 36 77	39 94	41 85	41 27	41 51	2,548 34	40 44

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.
Blanche's Raider of Nappan (Guernsey)	3	1,856	3,025	225	3,506	1,678	63 43
Glamour's Fisherman of Nappan (Guernsey)	6	1,550	2,110	1,140	3,850	1,840	59 84
Mixter May Raider (Guernsey)	7	1,550	2,110	1,140	3,850	1,840	59 84
Ravenwood Royal (Ayrshire)	4	1,825	2,400	1,558	3,274	2,150	65 11
Johanna Perfect Posch (Holstein)	3	1,825	2,400	1,558	3,274	2,150	65 11
Total	23	8,606	12,045	5,621	17,754	9,658	313 33
Average	4·6	1,721	2,409	1,124·2	3,550·8	1,931·6	62 66

FEED PRICES

Grain, per cwt	$1 90
Roots, per ton	4 20
Silage, per ton	4 50
Hay, per ton	8 90
Green feed, per ton	6 80

CORN SILAGE, SUNFLOWER SILAGE AND ROOTS FOR MILK PRODUCTION

To ascertain the feeding value in milk production of three common succulent roughages—corn silage, sunflower silage and roots—two feeding tests were conducted during the winter of 1925-26. Ten cows were used in comparing turnips with corn silage while six were used in comparing turnips with sunflower silage. Each feeding period lasted three weeks but the production of the third week only was used in computing data. The hay and meal rations were kept constant for the three periods in each experiment 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:—

TURNIPS VERSUS CORN SILAGE

—	Period 1 ending January 9	Period 2 ending January 30	Period 3 ending February 20	Average of periods 1 and 3
	Turnips	Corn Silage	Turnips	Turnips
Number of cows in test	10	10	10	10
Total pounds milk produced in 7 days	1,410·2	1,162·5	1,130·8	1·270·5
Average pounds milk produced per cow in 7 days	141·02	116·25	113·08	127·05
Average daily yield of milk	20·15	16·66	16·15	18·15
Average per cent fat in milk	5·19	5·02	4·89	5·11
Total pounds fat produced in 7 days	73·19	58·56	56·77	64·98
Average pounds fat per cow per day	1·05	0·84	0·81	0·93
Total pounds meal consumed	546	546	546	546
Total pounds hay consumed	1,120	1,120	1,120	1,120
Total pounds roots consumed	2,730	.....	2,730	2,730
Total pounds corn silage consumed	.....	1,365	.....	.....
Pounds meal consumed per 100 pounds milk produced	38·7	46·8	48·3	43·5
Pounds turnips consumed per 100 pounds milk produced	193·6	.....	241·4	217·5
Pounds silage consumed per 100 pounds milk produced	.....	117	.....	.....
FINDINGS FROM EXPERIMENT				
Cost of meal consumed at $1.90 per cwt.	$ 10 37	10 37	10 37	10 37
Cost of hay consumed at $8 per ton	$ 4 48	4 48	4 48	4 48
Cost of turnips consumed at $3.50 per ton	$ 4 78	.....	4 78	4 78
Cost of corn silage consumed at $5.16 per ton	$	3 52	.....	.....
Total cost of feed	$ 19 63	18 37	19 63	19 63
Cost of feed to produce 100 pounds milk	$ 1 39	1 58	1 74	1 55
Cost of feed to produce 100 pounds butter fat	$ 26 82	31 37	34 58	30 70

Taking the average of the two "turnip periods," the one previous to and the one following corn silage, a daily average production of 18.15 pounds per cow is shown while with corn silage it was 16.66 pounds giving a yield of 1.49 pounds per cow per day in favour of turnips. The cost per 100 pounds of milk was 2 cents less for turnips than corn silage, while the cost of butter-fat per 100 pounds was 67 cents in favour of turnips. It is also found in this test that 2,730 pounds of roots proved equal to 49 pounds meal, 100 pounds hay and 1,487 pounds corn silage which at prices charged for other feeds, gives roots a valuation of $3.79 per ton.

The following table gives the results of the second experiment of turnips versus sunflower silage:—

TURNIPS VERSUS SUNFLOWER SILAGE

—	Period 1 — Turnips	Period 2 — Sunflower Silage	Period 3 — Turnips	Average of periods 1 and 3
Number of cows in test	6	6	6	6
Total pounds milk produced in 7 days	890·4	757·3	822·9	856·7
Average pounds milk produced per cow per day	21·20	18·03	19·6	20·4
Average per cent fat in milk	4·2	4·47	4·5	4·35
Total pounds fat produced in 7 days	37·4	33·85	37·03	37·22
Average pounds fat produced per cow per day	0·89	0·81	0·88	0·885
Total pounds meal consumed	343	343	343	343
Total pounds hay consumed	672	672	672	672
Total pounds turnips consumed	1,610	.....	1,610	1,610
Total pounds sunflower silage consumed	.....	1,015	.....	.....
Pounds meal consumed per 100 pounds milk produced	38·5	45·3	41·7	40·0
Pounds turnips consumed per 100 pounds milk produced	180·8	.....	195·6	187·9
Pounds sunflower silage consumed per 100 pounds milk produced	.....	134·0	.....	.....
FINDINGS FROM EXPERIMENT				
Cost of meal consumed at $1.90 per cwt.	$ 6 52	6 52	6 52	6 52
Cost of hay consumed at $8 per ton	$ 2 69	2 69	2 69	2 69
Cost of turnips consumed at $3.50 per ton	$ 2 82	.....	2 82	2 82
Cost of sunflower silage consumed at $3.50 per ton	$	1 78	.....	.....
Total cost of feed	$ 12 03	10 99	12 03	12 03
Cost of feed to produce 100 pounds milk	$ 1 35	1 45	1 46	1 40
Cost of feed to produce 100 pounds butter fat	$ 32 16	32 47	32 48	32 32

Taking the average of the two "turnip periods", the one previous to and the one following the "sunflower period", a daily average production per cow of 20.4 pounds is shown, while the sunflower period shows an average of 18.3 pounds per cow, an increase of 2.37 pounds of milk per cow per day and 0.075 pounds of fat in favour of turnips. The cost to produce 100 pounds milk was 5 cents less with turnips than sunflowers. In this test it was found that 1,610 pounds turnips were equal to 45 pounds meal, 88 pounds hay and 1,149 pounds sunflower silage which, at prices charged for other feeds, gives turnips a value of $4 per ton. The results given from both of these tests cannot be taken as conclusive as they are for only one year. These tests will be continued until five-year averages from each may be obtained.

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

The dehorning of all grade stock on the farm is an economical factor, as from all tests conducted at this Farm the loss from such an experiment has proved to be practically nil. Three heifers were dehorned on March 17, 1926, their weights at that date being 533, 702 and 620 pounds or an average of 618 pounds. They were weighed again on April 9, 1926, and their weights were 560, 750 and 685 or an average of 665 pounds, showing an average gain per heifer of 16 pounds in the 23 days. By having all stock dehorned the chance of injury is reduced to a minimum.

THIRD SHIPMENT OF STEERS TO GREAT BRITAIN

Sixty-eight steers were fed for export trade during the winter of 1925-26. In an accompanying table will be found the results of the experiment. Twenty of the sixty-eight steers were well-bred, three-year-old Shorthorns purchased at the Calgary Stock Yards at $5.10 per hundredweight. They were very uniform in breeding and size and in fact were an excellent bunch of feeders. Twenty-five were two-year-old Herefords very uniform in size and breeding. Twenty were purchased at $5.80 and five at $5.70 per hundred, live weight, at Calgary. The remaining twenty-three steers were just an average lot of eastern Shorthorn grades with some dairy blood in evidence. They were divided into six lots and fed as follows:—

Lot 1.—Thirteen western Herefords, fed 2 pounds meal, 20 pounds roots, and 20 pounds silage per steer per day for the entire period.

Lot 2.—Twelve western Herefords, started at 2 pounds meal and gradually increased to 10 pounds, 15 pounds roots, and 15 pounds silage per steer per day.

Lot 3.—Ten western Shorthorns, started on 2 pounds and gradually increased until they were receiving 12 pounds meal per day and in addition they received 20 pounds roots and 20 pounds silage per steer per day.

Lot 4.—Eleven eastern Shorthorn grades, fed the same as Lot 3.

Lot 5.—Ten western Shorthorns, fed 1 pound less meal and 5 pounds less of both roots and silage per steer per day than Lot 3 until the last two weeks of the period, when they were brought up to the full ration.

Lot 6.—Twelve eastern steers fed the same as Lot 5.

STEER-FEEDING EXPERIMENT

(108-day feeding)

—		Lot 1	Lot 2	Lot 3	Lot 4	Lot 5	Lot 6
Number of steers	No.	13	12	10	11	10	12
Gross weight at beginning	lb.	11,650	10,630	11,800	11,550	11,410	11,690
Average weight at beginning	"	896	886	1,180	1,050	1,141	974
Gross weight at finish	"	12,590	12,180	13,350	12,820	12,320	13,110
Average weight at finish	"	968	1,015	1,335	1,165	1,232	1,093
Total gain for 108 days	"	940	1,550	1,550	1,270	910	1,420
Average gain for 108 days	"	72·3	129·2	155·0	115·5	91·0	118·3
Average daily gain per steer	"	0 67	1·196	1·435	1·069	0·843	1·095
Hay consumed per pen	"	21,060	20,736	17,280	19,008	17,820	21,384
Hay consumed per steer per day	"	15	16	16	16	16·5	16·5
Turnips consumed per pen	"	27,170	18,810	19,900	21,890	15,670	18,810
Silage consumed per pen	"	27,170	18,810	19,900	21,890	15,670	18,810
Grain consumed per pen	"	2,808	9,876	9,260	10,254	8,450	10,140
Grain consumed per steer per day	"	2	7·6	8·6	8·6	7·8	7·8
Grain consumed per pound gain	"	2·99	6·37	5·97	8·07	9·29	7·14
Total cost of feed consumed	$	238·87	358 15	335 08	370 03	305 27	366 34
Average cost of feed	$	18 37	29 93	33 51	33 64	30 53	30 53
Cost of feed per pound gain	$	0·254	0·231	0·216	0·291	0·335	0·258

Prices used:—Hay, per ton $8 00
Turnips, per ton 3 50
Silage, per ton 3 50
Meal, per ton 42 40

Meal mixture:—At the beginning, 100 pounds crushed oats, 100 pounds bran, 100 pounds oil cake, 100 pounds cotton seed. Mixture at finish, 100 pounds crushed oats, 100 pounds oil meal, 50 pounds bran, 50 pounds corn meal, 50 pounds cotton seed meal.

Severe winter weather conditions prevented maximum gains being made for the amount of feed consumed. The roots and ensilage were frozen hard when feed, and as a result were less palatable.

A comparison of Lots 1 and 2, which were in fairly good flesh at the beginning of the test, shows that the heavily fed lot made the largest and also the most economical gains. The western Shorthorns in Lot 3 gave more rapid and

more economical gains than did the eastern Shorthorns in Lot 4, but these results were reversed with Lots 5 and 6. This may be explained in part at least, by the fact that Lots 5 and 6 obtained their drinking water from a spring and the Western steers may have suffered more from a lack of water, as they objected more strenuously to going out in severe, stormy weather than did the Eastern steers.

The accompanying table gives a complete statement of all charges and costs up to the date of shipping the steers from Nappan to Great Britain together with total weights, average weight and cost per hundredweight.

FINANCIAL STATEMENT OF STEERS DURING ENTIRE FEEDING PERIOD AND UP TO DATE OF SHIPMENT

——		Western Herefords	Western Shornhorns	Eastern Shorthorns
Steers purchased in fall, 1925	$	25	20	23
Weight of steers when purchased	lb.	23,380	24,750	23,330
Cost per hundred weight at buying period	$	5 75	5 07	5 64
Original cost of steers at buying point	$	1,344 54	1,254 93	1,316 08
Original cost per steer	$	53 78	62 75	57 22
Freight charges, Calgary to Nappan	$	268 65	275 98	.....
Running charges (feed, straw, etc.)	$	66 05	66 38	.....
Total freight and running charges	$	334 70	342 36	.....
Total freight and running charges per steer	$	13 39	17 12	.....
Total cost at Nappan, November 6/25	$	1,679 24	1,597 29	1,316 08
Average cost at Nappan, per head	$	67 17	79 86	57 22
Cost per hundred weight at Nappan on buying weights	$	7 18	6 45	5 64
Feed cost prior to feeding test	$	54 00	48 00	55 20
Feed cost during feeding test	$	597 02	640 35	736 37
Total feed cost	$	651 02	688 35	791 57
Average feed cost per steer	$	26 04	34 42	34 42
Total cost at Nappan, March 26/26	$	2,330 26	2,285 64	2,107 65
Average cost at Nappan, March 26/26	$	93 21	114 28	91 64
Total weight at Nappan, March 26/26	lb.	24 770	25,670	25,930
Average weight at Nappan, March 26/26	"	990·8	1,284	1,127
Cost per hundred weight at Nappan, March 26, 1926	$	9 41	8 90	8 13

NOTE.—As sheds had to be erected at Nappan to take care of these steers, they were fed out in the field for three weeks or more before they could be put on their regular feeding test.

COMPLETE FINANCIAL STATEMENT OF STEERS SHIPPED TO GREAT BRITAIN

——		Lot 1	Lot 2	Lot 3	Lot 4	Lot 5	Lot 6
Number of steers		13	12	10	10	9	12
Original cost, average	$	54 08	53 46	63 80	59 46	61 69	55 17
Freight and running charges, Calgary to Nappan, average	$	13 39	13 39	17 12	.....	17 12	.....
Feed costs for winter, average	$	20 53	32 01	35 91	36 04	32 93	32 93
Transportation charges to Great Britain—							
Freight, Nappan to St. John, average	$	2 73	2 73	2 73	2 73	2 73	2 73
Yardage charges at St. John, handling and loading, ropes, tools, tagging, men, insurance, ocean feed, excise stamps, average	$	8 01	8 01	8 01	8 01	8 01	8 01
Ocean freight and charges at Glasgow, average	$	27 91	27 91	27 91	27 91	27 91	27 91
Total cost per steer	$	126 65	137 51	155 48	134 15	150 39	126 75
Total returns per steer	$	96 06	99 43	126 83	102 82	115 19	95 35
Loss per steer	$	30 59	38 08	28 65	31 33	35 20	31 40

From the preceding table it will be noted that the shipment of cattle sold at Merklands, Glasgow, was not very encouraging. There are several factors it might be well to mention which will explain in part the exceedingly poor showing. First, the western steers were high in cost at point of purchase. Second, they were used as a demonstration at the Maritime Winter Fair for two weeks before shipping to Nappan. Third, they could not be properly housed for

three weeks after this, which undoubtedly caused a heavy shrinkage, for the day the 45 steers went into the feed lot at Nappan they were 2,640 pounds lighter than the day they were purchased at Calgary. Fourth, the winter was a very severe one and none of the steers responded to the feed as they should have done. Fifth, they had a most unfavourable trip to the British market. Sixth, they were sold on an adverse market; for instance, the choice car-lot in this shipment only sold for £26 17s. 10d. against the choice car of 1925 selling for more than £32 per head, a difference of nearly $30 per steer less in 1926. Seventh, the very fact of the market being poor would increase the possibilities of a poor sale of steers which were not up to the mark in finish, type and breed. From the report of this sale, and also by comparing one year with another, it is obvious that there is no place on the British market for a poor type of beef steer. They must be breedy or the Scotch or English farmer will not pay the price.

EXHIBITING LIVE STOCK

The Farm exhibited at the Nova Scotia Provincial Exhibition held at Amherst, N.S., from August 28 to September 4, 1926. Among the Guernseys, five first, four second, three third and two fourth prizes were obtained on individual animals and on groups, first for junior herd, third for aged herd, third for get of sire. Princess Daisy L.K. of H. 2nd, which won in the four-years-and-over dry-cow class, was also Reserve Champion female.

On grade cows three-years-and-over in milk, first, second, and fourth prizes were obtained and also first on group of three cows in milk.

SWINE

The swine herd at this Farm on January 1, 1927, consists of 52 Yorkshires of which 37 are for experimental feeding work, 12 are brood sows, 1 is an aged boar and 2 are young boars. The demand for young stock was very good throughout the entire year; likewise the demand for finished hogs of the bacon type. The number of young pigs sold during the year was 43 as compared with 53 for 1925. The prices offered for hogs on the average was more stable than for 1925. Most of the hogs from this section were sold on the hoof during the spring and early summer months. The price was 13½ cents per pound but toward fall the price dropped to 12½ cents for selects and 11½ cents for thick-smooths. In December they were worth 10 to 11½ cents per pound. These prices are equivalent to a range of from 14 to 18 cents dressed weight, or an average of 16 cents against 15 cents for 1925. The average cost of producing a pound of finished pork at this Farm during the past five years was 10 cents live weight, and the average market value for the same period was approximately 12 cents live weight, showing a very satisfactory margin over cost of production. Furthermore it should always be borne in mind that where only a few hogs are kept on the farm, these prices for hogs are realized when feeding many by-products that would not be marketed unless in the form of bacon, eggs, etc. Therefore the full value of feeding a few pigs each year can hardly be appreciated. The following is a summary of the financial statement of the 12 brood sows kept at this Farm in 1926:—

FINANCIAL STATEMENT OF BROOD SOWS

Number of sows and average pounds of meal consumed per day	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.
12 sows..... 4·7.	12·9	7·86	60·9	4 99	51 64

Had all pigs been sold at six weeks of age, the following returns would have been realized:—

—		Yorkshires
Average value per pig at six weeks	$	6 57
Average profit per pig over feed cost	$	1 58
Number of pigs raised per sow in the year	No.	9 17
Average profit per sow over feed cost	$	14 49
Total profit from 12 sows over feed cost	$	173 88

Crushed oats	200	pounds at	$1.80	per cwt.
Shorts	200	"	1.80	"
Bran	100	"	1.75	"
Feed flour (spoiled)	83	"	1.75	"

The average price of the grain mixture was $1.78 per hundred-weight; the skim-milk fed was valued at $4 per ton and the roots at $4.20 per ton. Pasture was charged at 50 cents per month. The following is a financial statement of the Yorkshire swine herd for 1926:—

FINANCIAL STATEMENT OF THE SWINE HERD, 1926

(Twelve sows, boar and progeny)

Feed Cost—Debit

To—		
23,597	pounds crushed oats at $36 per ton	$ 424 75
10,234	pounds shorts at $36 per ton	184 21
11,806	pounds middlings at $50 per ton	295 15
12,247	pounds barley at $51 per ton	312 30
6,996	pounds bran at $35 per ton	122 43
4,450	pounds buckwheat at $50 per ton	111 25
3,535	pounds feed flour at $36 per ton	63 63
2,358	pounds oil meal at $59.60 per ton	70 27
116,700	pounds skim-milk at $4 per ton	233 40
1,488	pounds whole milk at $25.60 per ton	19 05
14,237	pounds small potatoes at $6.66 per ton	47 41
26,735	pounds roots at $4.20 per ton	56 14
13,755	pounds green feed at $3 per ton	20 63
580	pounds wheat at $60 per ton	17 40
422	pounds corn meal at $42 per ton	8 86
207	pounds tankage at $78 per ton	8 07
742	pounds fish meal at $36 per ton	13 36
720	pounds bone meal at $80 per ton	28 80
672	pounds "Protan" feed at $80 per ton	26 88
196	pounds flax seed at $60 per ton	5 88
70	pounds salt at $16.60 per ton	0 58
50	pounds charcoal at $60 per ton	1 50
3,210	pounds apples, etc., at $4.20 per ton	6 74
16.5	months pasture at 50 cents per month	8 25
10	tons straw at $5 per ton	50 00
		$2,136 94

Credit

By sale of pork:		
500	pounds heavy pork at 5½ cents per pound, live weight	$ 27 50
435	pounds heavy pork at 7½ cents per pound, live weight	31 54
565	pounds heavy pork at 7¼ cents per pound, live weight	40 96
220	pounds heavy pork at 8 cents per pound, live weight	17 60
241	pounds heavy pork at 9 cents per pound, live weight	21 69
185	pounds light pork at 9½ cents per pound, live weight	17 58
275	pounds light pork at 10¼ cents per pound, live weight	28 19
2,251	pounds pork at 10½ cents per pound, live weight	236 35
871	pounds pork at 11 cents per pound, live weight	95 81
2,572	pounds pork at 11½ cents per pound, live weight	295 78
240	pounds pork at 11⅞ cents per pound, live weight	28 20
180	pounds pork at 12¾ cents per pound, live weight	22 95
501	pounds pork at 13 cents per pound, live weight	65 13
7,710	pounds pork at 13½ cents per pound, live weight	1,040 85
26	non-registered sows and barrows at $6	156 00

FINANCIAL STATEMENT OF THE SWINE HERD, 1926—*Concluded*

Credit

By sale of pork:	
6 non-registered sows at $8	48 00
1 registered boar	75 00
1 registered boar	18 00
1 registered boar	15 00
8 registered boars and sows at $10	80 00
1 registered sow	30 00
1 young sow	20 00
Young feeders on hand, 37 at $6	222 00
62 tons manure at $2	124 00
Profit over feed cost for one year, $621.19	$2,758 13

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

To feed for 12 sows	$544 26	
14 boar services at $1	14 00	
3 tons straw at $5 per ton	15 00	
		$ 573 26
By 12 tons manure at $2 per ton		24 00
Total feed cost of 110 pigs at six weeks		$ 549 26
Total feed cost of 1 pig at six weeks		4 99
To cost of 66 pigs at six weeks at $4.99	$329 34	
Feed for 66 pigs—142 days	835 14	
3 tons straw at $5 per ton	15 00	
		$1,179 48
By 10 tons manure at $2 per ton		20 00
Total feed cost to produce 12,583 pounds pork		$1,159 48
Total feed cost to produce 1 pound pork		0 092

The average feed cost live weight was $9.20 per hundred-weight for the 66 hogs ready for market and they sold for an average of $12.80 per hundred-weight, F.O.B. Station, leaving a profit over feed cost of $3.60 per hundred-weight.

The following table gives the live weight, dressed weight, percentage dressed weight and percentage yield of the 42 hogs shipped to Swift Canadian Company, Ltd., Moncton, N.B., during the spring of 1926:—

YIELDS OF HOGS SHIPPED TO SWIFT CANADIAN CO., LTD., MONCTON, N.B.

—	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
	Flaxseed, Oil meal, Jelly	Skimmed milk	Fish meal	Check	Potatoes	Check	Berks on Potatoes	Miscellaneous
Number of hogs	4	5	6	2	7	5	4	9
Live weight, lb	635	885	1,354	328	1,415	979	893	1,661
Dressed weight, lb	465	692	1,046	242	1,076	752	705	1,284
Yield, per cent	70·39	75·14	74·22	72·86	73·00	73·74	75·81	74·23
Hams, per cent	20·86	21·39	22·94	19·75	19·51	20·08	19·14	20·40
Shoulders, per cent	18·71	17·77	17·49	17·74	19·05	18·41	18·44	21·49
Bellies, per cent	10·53	11·27	11·37	10·08	11·52	12·10	12·76	12·38
Loins, per cent	19·14	19·36	19·21	19·35	20·35	19·81	22·12	19·31
Spare ribs, per cent	2·36	2·31	2·29	2·01	2·41	2·39	2·27	2·49
Fats to tank, per cent	9·68	7·94	10·04	7·66	9·85	9·70	6·09	8·95
Trimmings, per cent	5·38	3·03	2·39	2·82	3·25	2·76	2·98	1·90
Leaf lard, per cent	1·94	2·02	2·48	2·42	1·85	1·92	3·51	1·92
Heads, per cent	6·90	6·50	5·92	7·66	6·36	6·71	6·27	6·77
Miscellaneous, per cent	4·30	3·61	3·15	4·03	3·62	3·59	3·12	1·87
Hocks, per cent	.....	.....	.....	.....	.....	.....	.....	0·58
Shrinkage, per cent	0·20	4·80	2·71	6·48	2·23	2·53	3·30	1·92
	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

Note on hogs shipped to Swift Canadian Company, Ltd.

Number of hogs	42
Live weight, pounds	8,150
Dressed weight, pounds	6,268
Yield, per cent	73.84

44035—3½

EXPERIMENT IN FEEDING

An experiment was conducted during the winter of 1925-26 with flax-seed jelly, versus skim-milk versus fish meal. Pen 1 received flax-seed jelly, pen 2 was given skim-milk, pen 3 received fish meal while pen 4 was a check. The following table gives a record of this feeding test:—

FLAX-SEED JELLY VERSUS SKIM-MILK VERSUS FISHMEAL

Items		Pen 1 Flaxseed jelly	Pen 2 Skim-milk	Pen 3 Fish-meal	Pen 4 Check
Hogs in test	No.	7	7	6	5
Initial weight, gross	lb.	228·0	233·0	299·0	207·0
Initial weight, average	"	32·6	33·3	50·0	41·4
Days on test	No.	140	140	140	140
Finished weight, gross	lb.	975·0	1,221·0	1,354·0	742·0
Finished weight, average	"	139·3	174·4	225·7	148·4
Total gain for period	"	747·0	988·0	1,055·0	535·0
Average gain for period	"	106·7	141·1	175·8	107·0
Average daily gain per hog	"	0·76	1·01	1·26	0·76
Meal consumed	"	2,820·0	3,063·0	3,265·0	2,015·0
Green feed consumed	"	1,540·0	1,540·0	1,320·0	1,100·0
Hay consumed	"	490·0	490·0	420·0	350·0
Flax-seed consumed	"	655·0	.....	.....	.....
Milk consumed	"	.....	3,812·0	.....	.....
Fish meal consumed	"	.....	.....	676·0	.....
Meal consumed per pound gain	"	3·78	3·1	3·09	3·77
Total cost of feed	$	81 17	74 07	96 98	43 95
Average cost of feed per hog	$	11 60	10 58	16 16	8 79
Cost of feed per hog per day	cts.	8 29	7·56	11·54	6·28
Cost of feed per pound gain	"	10·87	7·5	9·19	8·21

Prices:—

Meal, per cwt	$ 2 03
Green feed, per ton	3 00
Hay, per ton	8 00
Flax-seed, per ton	60 00
Skim-milk, per ton	4 00
Fish-meal, per ton	80 00

Pen 1 was fed oil-meal jelly the latter part of period and made better gains than when on flaxseed, and it will be noted that this pen made 0.25 pounds less gain than Lot 2 on skim-milk, 0.50 pounds less than Lot 3 fed on fish meal and further that the cost per pound gain was very much greater, being 3.37 cents more than for the skim-milk and 1.68 cents more per pound than those on fish meal and that the skim-milk fed lot showed the most economical gains, being 7.5 cents for cost of feed per pound gain.

An experiment was also conducted with three pens of pigs with potatoes as a succulent feed in winter months for bacon hogs. The following table gives a record of this test:—

POTATOES AS A GREEN FEED IN WINTER MONTHS FOR BACON HOGS

—		Pen 1	Pen 2	Pen 3, Berks
		Potatoes	Check	Potatoes
Hogs in test	No.	7	6	4
Initial weight, gross	lb.	331·0	267·0	222·0
Initial weight, average	"	47·3	44·5	55·5
Days on test	No.	140	140	140
Finished weight, gross	lb.	1,415·0	1,088·0	893·0
Finished weight, average	"	202·1	181·3	223·3
Total gain for period	"	1,084·0	821·0	671·0
Average gain for period	"	154·8	136·8	167·8
Average daily gain per hog	"	1·11	0·98	1·2
Meal consumed	"	3,527·0	3,008·0	2,322·0
Potatoes consumed	"	1,540·0	.....	880·0
Hay consumed	"	490·0	420·0	280·0
Skim-milk consumed	"	4,397·0	3,835·0	2,520·0
Meal consumed per pound gain	"	3·25	3·66	3·46
Total cost of feed	$	84 66	70 41	54 62
Average cost of feed per hog	$	12 09	11 74	13 66
Cost of feed per hog per day	cts.	8·64	8 39	9·76
Cost of feed per pound gain	"	7·81	8·58	8·14

In comparing the figures in the preceding table it will be noted that in both cases the potato-fed lots made more economical gains than the check lot.

In a comparison of animal protein feeds as supplements to the meal ration, a further experiment was conducted with five pens, one fed on tankage and green feed, one on fish meal and green feed, one on skim-milk and green feed, and one on skim-milk and no green feed and the fifth on green feed alone. The following table gives the result of this test:—

TANKAGE VERSUS FISH-MEAL VERSUS SKIM-MILK VERSUS GREEN FEED VERSUS NO GREEN FEED

—		Pen 1	Pen 2	Pen 3	Pen 4	Pen 5
		Tankage 8 per cent and green feed	Fish-meal and green feed	Skim-milk and green feed	Skim-milk no green feed	Green feed
Hogs in test	No.	5	5	5	5	4
Initial weight, gross	lb.	187·0	189·0	178·0	183·0	148·0
Initial weight, average	"	37·4	36·0	35·6	36·6	37·0
Days on test	No.	142	142	142	142	142
Finished weight, gross	lb.	950·0	1,058·0	1,050·0	1,041·0	796·0
Finished weight, average	"	190·0	211·6	210·0	208·2	199·0
Total gain for period	"	763·0	878·0	872·0	858·0	648·0
Average gain for period	"	152·6	175·6	174·4	171·6	162·0
Average daily gain per hog	"	1·075	1·237	1·229	1·208	1·141
Total meal consumed	"	2,788·0	2,788·0	2,788·0	2,788·0	2,568·0
Total green feed consumed	"	509·0	509·0	509·0	.....	418·0
Total tankage consumed	"	225·0	.....	.....	.....	.....
Total fish-meal consumed	"	.....	709·0	.....	.....	.....
Total skim-milk consumed	"	.....	.....	3,487·0	3,487·0	.....
Meal consumed per pound gain	"	3·65	3·18	3·20	3·25	3·97
Total cost of feed	$	68 65	72 63	66 84	66 08	55 07
Average cost of feed per hog	$	13 73	14 53	13 37	13 22	11 01
Cost of feed per hog per day	cts.	9·7	10·2	9·4	9·3	7·8
Cost of feed per pound gain	"	9·0	8·3	7·7	7·7	8·5

The prices used in experiment "tankage versus fish meal versus skim-milk versus green fed versus no green feed" were as follows:—

Meal mixture, per cwt	$2 12
Tankage, per cwt	3 90
Fish meal, per cwt	1 80
Skim-milk, per cwt	0 20
Green feed, per cwt	0 15

DEDUCTIONS FROM 1926 FEEDING TESTS

(1) In all cases where skim-milk was used to supply animal protein, the cheapest gains were made and reasonably good daily gains were recorded.

(2) In all cases where fish meal was added to the ration, the best daily gains were recorded.

(3) Where tankage was used to supply the animal protein the gains were not as good and naturally more expensive.

(4) Flax-seed jelly did not show up very well at all, only fair gains were made and these gains were too expensive.

(5) There was practically no difference in cost between the green feed lot and those not receiving green feed but the hogs that were fed on green feed were much more thrifty looking and made slightly better daily gains.

WINTERING BROOD SOWS—HEAVY AND LIGHT FEEDING

Six sows were divided into two lots of three sows each and one lot was fed 2 pounds of meal more than the others. Pen No. 1 of three sows received an average of 7 pounds of meal per sow per day. Pen No. 2 of three sows received an average of 5 pounds of meal per sow per day. The following table gives the results of the feeding for 1926:—

Pen	Sow Number	Pigs farrowed	Pigs raised	Per cent raised	Total weight at birth	Average weight at birth
					lb.	lb.
1	316	13	8	61·5	27	2·08
	555	15	9	60·0	34	2·27
	200	14	11	78·5	40	2·86
2	119	11	8	72·7	28	2·55
	7	14	12	85·7	35	2·93
	18	8	7	87·5	31	3·88

Our experience is that brood sows do not do so well when over-fat as when they are in good thriving condition to raise good strong healthy litters. The over-fat sows will produce fairly good-size litters but the young pigs are soft and fewer are raised to six weeks of age.

SHEEP

The flock of pure-bred Shropshires maintained at this Farm on January 1, 1927, consisted of twenty-two ewes, seven yearlings, twenty-one lambs and two breeding rams. The imported ram, Buttar 332/38074 still heads the flock of mature ewes. The twenty-nine breeding ewes dropped 48 lambs and raised 42 or in other words the lamb crop raised was 144.8 per cent. The average wool clip for the spring of 1926 was for the mature ewes 7.6 pounds, for the two-shear 9.5 pounds, for the shearling 7.4 pounds, for the aged ram 9 pounds and the shearling 13.5 pounds per fleece. Eighty-three per cent of this wool graded medium staple. The following is a financial statement of the pure-bred flock for 1926:—

FINANCIAL STATEMENT FOR THE PURE-BRED FLOCK OF SHROPSHIRES

Dr.

To feed for 28 ewes and ram—		
5,812 pounds meal at $1.88 per cwt	$109 27	
18,437 pounds roots at $4.20 per ton	38 72	
14,596 pounds hay at $8.90 per ton	64 95	
4,002 days on pasture at 2 cents per day	80 04	
		$292 98
To feed for 10 yearlings—		
5,019 pounds meal at $1.88 per cwt	94 36	
3,874 pounds roots at $4.20 per ton	8 14	
4,499 pounds hay at $8.90 per ton	20 02	
1,044 days on pasture at 2 cents per day	20 88	
		$143 40
To feed for 42 lambs—		
1,290 pounds meal at $1.88 per cwt	24 25	
2,952 pounds roots at $4.20 per ton	6 20	
1,460 pounds hay at $8.90 per ton	6 50	
5,308 days on pasture at 1 cent per day	53 08	
		$ 90 03
Total feed cost		$526 41

Cr.

By—		
Sale of 257 pounds wool at 28 cents per pound	$ 71 96	
Sale of 26.5 pounds wool at 27 cents	7 16	
Sale of 16 pounds wool at 28 cents	4 48	
Sale of 297 pounds lamb at 10 cents	29 70	
Sale of 28 pounds lamb at 11 cents	3 08	
Sale of 222 pounds lamb at 12 cents	26 64	
Sale of 38 pounds lamb at 20 cents (dressed)	7 60	
Sale of 9 lambs at $8 per lamb	72 00	
Sale of 6 lambs at $8.50 per lamb	51 00	
Sale of 2 lambs at $6.443 per lamb	12 89	
Sale of 1 registered ram	25 00	
Sale of 1 registered ram	20 00	
Sale of 1 registered ram	18 00	
Increased stock, 13 ewe lambs at $15	195 00	
8 rams carried over at $18	144 00	
37 tons manure at $2 per ton	74 00	
		$762 51
Profit over feed cost		$236 10
Total cost of 39 sheep for 1926 (feed)	436 38	
Total cost of 1 sheep for 1926 (feed)	11 18	
Total cost to raise pure-bred lambs		
To feed cost for 28 ewes and ram	292 98	
To feed cost for 42 lambs	90 03	
		$383 01
Less		
199 pounds wool at 28 cents per pound	55 72	
26.5 pounds wool at 27 cents	7 16	
29 tons manure at $2 per ton	58 00	
		$120 88
Total feed cost for 42 lambs		$262 13
Total feed cost for 1 lamb		$ 6 24

The average weight of 23 lambs born between March 3 and 12 was 7.5 pounds and when weighed again on April 15 they showed an average gain of 15.3 pounds. The average weight of 21 lambs born between March 14 and 26 was 7.6 pounds and when weighed again on April 15 they showed an average gain of 11.7 pounds. There were sixteen sets of twins dropped, two sets of triplets while the balance were born singly.

GRADE SHEEP

The work with grade stock has been with a Multi-nipple strain started by the late Dr. Alexander Graham Bell of Baddeck, Cape Breton. It is supposed to be very prolific and the ewes, having four to six teats, are looked to as greater milkers. Unfortunately, our experience with this strain of sheep does not bear out this fact as the following figures show. This Multi-nipple strain is compared with the pure-bred Shropshire flock kept at this Farm under the same care and treatment:—

Year	Breed	Number of ewes bred	Lambs dropped	Per cent lambs dropped
1925	Shropshire	25	40	160·0
	Multi-nipple	4	5	125·0
1926	Shropshire	29	48	165·5
	Multi-nipple	5	5	100·0

From the records of the past two years it will be noted that the Multi-nipple ewes have not proven as prolific as the Shropshires and while they raised good grade market lambs, yet the ewes do not appear to be any better milkers than the Shropshire ewes. As this Multi-nipple flock does not appear to have any economic value, it will be disposed of at the end of the year. The following is a financial report for the past year of the grade flock:—

FINANCIAL STATEMENT OF GRADE FLOCK, 1926

Dr.

To feed for 6 ewes and 1 ram—		
1,041 pounds meal at $1.88 per cwt	$19 58	
3,547 pounds roots at $4.20 per ton	7 45	
2,770 pounds hay at $8.90 per ton	12 33	
674 days on pasture at 2 cents per day	13 48	
		$52 84
To feed for 5 lambs—		
210 pounds meal at $1.88 per cwt	3 95	
514 pounds roots at $4.20 per ton	1 08	
439 pounds hay at $8.90 per ton	1 95	
690 days on pasture at 1 cent per day	6 90	
		$13 88
Total cost of feed		$66 72

Cr.

By—		
Sale of 35 pounds wool at 27 cents per pound	9 45	
Sale of 5 lambs at $7.866	39 33	
5 tons manure at $2 per ton	10 00	
		$58 78
Loss for year		$ 7 94

HORSES

There were twenty-one horses in stock on January 1, 1927. Of these, eleven are pure-bred Clydesdales consisting of five aged mares and a stallion, one four-year-old mare and gelding, one three-year-old mare and gelding, one two-year-old mare and gelding. Of the remaining nine, seven are grade Clydes-

dales, one is an express mare and one a driving mare. The following are data collected on the cost of raising colts from one to two years of age and on maintaining work-horses:—

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

32 bushels oats at 66 cents per bushel	$21 12
0.54 tons bran at $35 per ton	18 90
0.76 tons roots at $4.20 per ton	3 19
262 days on pasture at $2 per month	17 46
7,020 pounds hay at $8.90 per ton	31 24
Total feed cost for 2 colts	$91 91
Total feed cost for 1 colt	45 95

MAINTENANCE COST OF SIX HEAVY HORSES

To—	
558.5 bushels oats at 66 cents per bushel	$368 61
3.07 tons bran at $35 per ton	107 45
1.78 tons roots at $4.20 per ton	7 48
18 tons hay at $8.90 per ton	160 20
Total feed cost for 6 horses	$643 74
Total feed cost for 1 horse	107 29
By—	
10,033 hours work at 10 cents per hour	1,003 30
Average hours work per horse, 1,672 hours at 10 cents	167 20
Profit over feed cost for labour for six horses	359 56
Profit over feed cost for labour for one horse	59 93
Average feed consumed per horse for one year—	Pounds
Hay	6,000
Oats	3,165
Bran	1,023
Roots	592

FIELD HUSBANDRY

The work in this division, consisting of various cultural experiments, rotations, production costs, marsh renewal and treatment, and farm manure experiments was continued in 1926. The yields of most farm crops were slightly below average although sunflowers, corn and barley were above. A late spring, together with an exceptionally dry summer, reduced yields to a considerable extent. Grain stood up well and for the most part was harvested in good shape. Considerable difficulty was experienced in some localities where the grain was sown very late. Pastures suffered from the lack of moisture. Taken on the whole the season was above the average as regards the accomplishment of farm work. Although spring was late the weather was good throughout the summer and remained open late in the fall. The cultural experiments started in 1922 were continued, as outlined in the report for that year. A detailed account of these will be given just as soon as the experiments have run for a sufficient number of years to give comparative data. The rotation experiments, comparing three, four, and five-year rotations, also manure and fertilizers in the rotation, were carried on and records kept as in former years. The following table shows the costs of production of the various farm crops in 1926 in the four-year rotation. The area from which these costs were collected is fairly heavy clay with practically no underdrainage system. A few low spots have been underdrained but this is not sufficient to make them dry enough for very early farming operations in the spring. For the items of expense see the report for 1924. The costs vary but the items are practically the same.

COST OF PRODUCTION OF FARM CROPS, 1926

Crop	Yield per acre	Cost per acre	Cost per ton	Cost per bushel
	bush.	$ cts.	$ cts.	$ cts.
Wheat	12·4	28 93	.....	2 330
Oats	41·40	25 09	.....	0 606
Barley	33·2	27 76	.....	0 836
Mixed grain	35·8	28 68	.....	0 800
	tons			
Sunflowers	19·06	76 55	4 02	.....
Corn	13·09	66 10	5 05	.....
Turnips	17·16	85 35	4 97	0 120
Hay, first year	1·829	21 14	11 56	.....
Hay, second year	2·160	17 83	8 25	.....

AVERAGE YIELDS AND COSTS OF FARM CROPS

Crop	Number of years	Yield per acre	Cost per acre	Cost per bushel	Cost per ton
		bush.	$ cts.	$ cts.	$ cts.
Oats	12	45·63	28 60	0 627	.....
Wheat	12	20·60	29 12	1 450	.....
Barley	12	27·58	27 18	0 986	.....
Mixed grain	12	37·40	29 81	0 796	.....
		tons			
Turnips	7	17·66	74 21	0 105	4 21
Corn	7	12·74	59 31	.....	4 66
Sunflowers	6	16·75	65 53	.....	3 90
O.P.V.	4	6·46	44 05	.....	6 82
Hay	11	2·36	21 64	.....	9 18

DIFFERENT DATES OF SEEDING SUNFLOWERS

The object of this experiment is to determine the most suitable time for seeding sunflowers. Due to seasonal conditions it is impossible to have them seeded on the same dates each year, thus making it hard to secure average yields over a period of years for any particular date. Our results indicate that the most satisfactory yields are secured from the earlier seedings. They also show that good yields may be expected even when sown quite late. The following tables give the results of this experiment to date:—

DATES OF SEEDING SUNFLOWERS, 1926

Date of seeding	Stage of maturity	Yield per acre	
		tons	lb.
June 12	Just beginning to flower	15	1,113
June 19	" "	17	897
June 26	" "	13	1,833

DATES OF SEEDING SUNFLOWERS, AVERAGE 1921-26

Range of seedings	Number of years tested	Average yield per acre	
		tons	lb.
Average of first seeding each year ranging from May 20 to June 12	6	25	740
Average of second seeding each year ranging from May 27 to June 19	6	23	923
Average of third seeding each year ranging from June 3 to June 26	5	24	1,444
Average of fourth seeding each year ranging from June 10 to June 20	4	23	1,200

DISTANCE APART FOR SEEDING SUNFLOWERS

For the past six years sunflowers have been seeded with different distances between rows, viz. 2½, 3 and 3½ feet. Our results favour the 3-foot rows when considering yield, ease of cultivation and quality of product. The wider row gives a coarse-growing plant, making poor ensilage, while the narrow row is harder to cultivate and means more rows per acre with a corresponding increase in the amount of hand hoeing necessary. The following are the 1926 and six-year average results:—

DISTANCE APART FOR SEEDING SUNFLOWERS

Distance between rows	Stage of maturity	Yield per acre 1926		Six-year average yield per acre	
		tons	lb.	tons	lb.
2½ feet	Just beginning to flower	13	809	21	1,433
3 "	" "	15	128	21	1,595
3½ "	" "	13	1,370	21	646

TOP-DRESSING HAY LAND WITH BARNYARD MANURE

One half of the 5-acre field D 2 was manured in the spring of 1921 with 20 tons manure per acre and the other half was not treated. This manured area was again treated in the fall of 1925 with 16 tons manure per acre. The object of this experiment is to determine whether hay land can be kept up by the application of barnyard manure without breaking and re-seeding the land. The following table gives the results to date:—

BARNYARD MANURE ON HAY LAND

Treatment	Yield per acre in tons						
	1921	1922	1923	1924	1925	1926	Six-year average
Manured	2·26	2·68	3·05	2·47	1·90	2·61	2·50
Unmanured	2·09	2·34	2·32	1·87	1·69	1·47	1·96

LIME TREATMENT OF MARSH LAND

An experiment was started in 1922 comparing ground limestone, basic slag and wood ashes on marsh land. 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, fourth and fifth years. The following table gives the results:—

LIME TREATMENT OF MARSH LAND

Treatment	Oats, 1922	Yield of hay per acre in tons				
		1923	1924	1925	1926	Four-year average
	bush.					
½ ton slag per acre, 18 per cent P_2O_5	33·9	2·19	1·509	2·045	2·572	2·079
Check	25·3	1·92	1·366	1·664	2·335	1·821
1½ tons limestone per acre	29·5	2·32	1·898	2·102	2·772	2·273
2½ tons limestone per acre	31·7	2·43	1·795	2·164	2·836	2·306
Check	22·6	2·04	1·545	1·855	2·377	1·954
½ tons slag per acre, 18 per cent P_2O_5	26·8	2·25	1·844	2·268	2·637	2·250
1,400 lbs. wood ashes per acre	25·8	1·97	1·968	2·384	2·750	2·268

RENEWING MARSH LAND

In order to collect data on the cost of renewing marsh lands connected with the Experimental Farm, Nappan, an area is being treated each year. All the figures are kept in connection with the various operations, as well as the value of the returns. The following table gives a summary of the total cost of each area up-to-date and also the returns obtained from each. If more details are desired, they may be obtained from the superintendent on application for same:—

RENEWING MARSH LAND

Year renewed	Area	Expenditure to date	Returns to date
	A.	$ cts.	$ cts
1922	10·0	842 60	885 25
1923	13·0	940 77	1,146 10
1924	7·73	722 88	762 78
1925	11·19	1,104 99	579 25
1926	4 70	474 95	151 49

The average yield per acre in 1926 from the renewed area was 2.20 tons per acre as compared with an average yield per acre of 1.51 tons off the old marsh.

HORTICULTURE

The spring of 1926 was too late and cold and the summer too dry for the production of a maximum crop of outstanding merit. The apple trees were late coming into bloom and while there was a good setting of fruit it did not develop, consequently in this section the apples were small but clean. Strawberries wintered well, the deep snow affording splendid protection throughout the entire winter. There was a good setting of fruit and while 2.28 inches rain fell during July, it fell in light showers which were followed by very warm days, therefore the precipitation was not very beneficial to the ripening crop. From July 27 until October 6 it was extremely dry, less than 1¼ inches rain falling. Bush fruits gave an average yield but were under size. Potatoes were an average crop and were very clean and free from rot. All crops suffered more or less from the extremely dry season.

TREE FRUIT

COMMERCIAL ORCHARD

Aside from a few trees suffering from slight snow injuries all apple trees came through the winter in very good shape. The crop was below average in size but exceptionally clean and free from spot. Duchess, McIntosh Red and Bethel were all above the average in production and of splendid quality. This orchard received an application of manure during July and clean cultivation was followed throughout the season. The following table gives the cost of production for 1926:—

COMMERCIAL ORCHARD, 1926

May, 2 men. 20 hours pruning at 30 cents	$ 6 00
May, 2 men, 12 hours spraying at 30 cents	3 60
May, 1 team, 7 hours spraying at 20 cents	1 40
May, 1 man, 5 hours gathering limbs at 30 cents	1 50
May, 1 team, 5 hours gathering limbs at 52 cents	2 60
May, 1 team, 38 hours drawing manure at 52 cents	19 76
June, 2 men, 20 hours mowing grass at 30 cents	6 00
June, 2 men, 24 hours spraying at 30 cents	7 20
June, 1 team, 14 hours spraying at 20 cents	2 80
July, tractor, 20 hours ploughing and harrowing at $1	20 00
July, 1 man. 3 hours removing trees at 30 cents	0 90
August, tractor, 10 hours harrowing at $1	10 00
October, 1 man, 55 hours picking fruit at 30 cents	16 50
Spray material	19 64
Manure, 46 tons at $2, 40 per cent first year	36 80
85 empty barrel's at 50 cents	42 50
Total cost for year	$197 20
By 85 barrels apples at $2.50	212 50
Profit over cost of production	$ 15 30

VARIETY-TEST ORCHARD

As mentioned in our previous report the variety test orchard at this farm has out-lived its usefulness and as many of the varieties now on test have proven that they have no real commercial value for this district the trees will be removed and newer varieties tested in their place. Of the many varieties grown 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, though lacking in appearance and attractiveness, is an excellent apple both for eating and cooking; it has proven a splendid keeping apple and grows very well under our conditions.

SMALL FRUITS

STRAWBERRIES

Sixty-six varieties were tested in duplicate plots of 1/484 of an acre each. The following table gives a list of fourteen varieties tested for 15 years and their average yield per acre:

STRAWBERRY VARIETIES TESTED—15 YEARS

Variety	Average yield per acre	Description
	lb.	
*Senator Dunlap	8,558·3	Rich red, large, conical to pointed.
Seedling No. 15	8,418·6	Light colour, medium size, good quality.
Michel Early	8,378·4	Light red, large, pointed, rough.
Seedling No. 12	8,273·4	Dark red, large, uniform, good quality.
G. H. Coughill	8,219·6	Dark red, large, uniform, conical.
Jeanne D'Arc	8,022·8	Dark red, medium, firm.
Crescent	7,971·8	Dark red, medium, firm.
Equinox	7,828·1	Rich red, medium, uniform.
Thompson Late	7,716·9	Dark red, large, conical, good quality.
Bisel No. 1	7,609·0	Rich colour, medium, pointed, firm.
Barton	7,416·8	Dark red, large, uniform, good quality.
Cole Seedling	7,354·6	Dark red, medium, uniform, firm.
Joe	7,089·2	Light red, large, rough, pointed, soft.
Nick Ohmer	6,982·2	Rich red, medium, rough, round.
Haverland	6,944·3	Dull red, small, pointed, poor quality.

*14 years only.

The single hedge-row method of growing strawberries seems to be superior to the double matted row previously practised at this Farm, especially where small children are doing the picking, as they can reach the centre of the row more easily and there is less waste.

RASPBERRIES

Twelve varieties were tested in 1926 and the records are poor from these as the bushes were badly broken by the deep snow. In fact, we have found that, for small plantations at least, it will pay to stake each group or run the single hill system. The following are the yields per acre obtained from the leading varieties (in pounds): Newman, 2,926; King, 2,904; Count, 2,310; Herbert, 2,134; and Cuthbert, 1,650.

GOOSEBERRIES

Ten varieties were tested in 1926 and all made splendid growth but the yields were below those obtained in 1925. The powdery mildew which is usually very prevalent was not in evidence this year. The yields obtained per acre for some of the leading varieties were as follows (in pounds): Silvia, 16,720; Rideau, 14,080; Deacon, 13,200; Charles, 11,880; Red Jacket, 10,120; Alma, 9,240; Pearl, 8,360; Duncan, 4,400; Barrett, 4,400; and Mabel, 2,200.

BLACK CURRANTS

Ten varieties were tested in 1926 and while the bushes made splendid growth of wood, the dry weather prevented the proper development of the fruit and this resulted in a lower yield being recorded. The following are a few of the leading varieties and their production per acre over a period of five years (in pounds): Kerry, 13,843; Magnus, 13,566; Eagle, 12,188; Topsy, 11,964; Buddenborg, 10,824; Saunders, 9,970; Victoria, 8,360; Climax (O. 1373), 7,260; and Boskoop Giant, 3,458.

RED CURRANTS

Only five varieties are on test at this Farm and these bushes seem to withstand the unfavourable weather conditions better than the black currants, for the bushes not only gave a splendid yield but the fruit was a good size and of excellent quality. The following is a list of the leading varieties with average production per acre of each covering a period of five years (in pounds): Perfection, 11,555; London Market, 11,066; Fay Prolific, 8,943; Wilder, 8,635; and Cherry, 8,404.

VEGETABLE VARIETIES

CABBAGE

The following varieties are recommended for this district: Copenhagen Market, Succession, Improved Brunswick, Flat Swedish, Danish Ballhead, Glory of Holland, Enkhuizen Glory.

TOMATOES

The following varieties are recommended for this district: Bonny Best, Alacrity, Earliana, John Baer, First of All, Early Mascot, Danish Export.

GARDEN BEANS

Thirty varieties or strains were planted in 1926. The seed was sown June 4 in duplicate plots of 1/968 of an acre. Germination was exceptionally good followed by vigorous growth during the season. The following table gives the yields of each variety in order of production with date ready for use, length of pod, height of vine and weight of plot designated:—

VARIETY TEST, BEANS. (GREEN)

Variety and Source	Ready for use	Colour of pod	Length of pod	Height of vine	Weight per plot	Weight per acre
			ins.	ins.	lb.	lb.
Selection*(Freeman)	5, VIII	G.	6·5	24	16·5	15,972
Sutton Masterpiece (Vaughan)	"	G.	6·0	20	14·25	13,794
Plentiful (Sutton)	"	G.	5·0	20	14·25	13,794
Scarlet Flageolet Wax (McDonald)	"	Y.	5·0	21	13·75	13,310
Masterpiece (O. 1562)	"	G.	6·0	18	13·5	13,068
Challenge Black Wax-Interloper (O. 6876)	"	G.	5·5	25	13·0	12,584
Yellow Eye Yellow Pod (O. 2733)	11, VIII	Y.	5·0	18	12·75	12,342
Davis White Wax (McDonald)	5, VIII	Y.	6·0	20	12·50	12,100
Round Pod Kidney Wax (McDonald.	"	Y.	5·0	20	12·25	11·858
Bountiful (Will)	"	G.	5·0	20	12·25	11·858
Selection* (Freeman)	"	G.	5·5	18	12·25	11,858
Imp. Golden Wax (Rennie)	"	Y.	4·0	18	12·0	11,616
Hodson Long Pod (Rennie)	21, VIII	Y.	5·0	20	12·0	11,616
Selection (Freeman)	5, VIII	G.	4·5	20	11·5	11,132
Refugee or 1000 to 1 (Burpee)	10, VIII	G.	5·0	22	11·5	11,132
Hendersons Bountiful (D. & F.)	5, VIII	G.	6·0	22	11·25	10,890
Wardwell Kidney Wax (O. 1516–65)	"	Y.	5·0	22	11·25	10,890
Davis White Wax (O. 1636)	"	Y.	6·0	26	11·0	10,648
Round Pod Kidney Wax (O. 6875)	"	Y.	4·5	22	10·5	10,164
Selection *(Freeman)	"	G.	6·0	22	10·5	10,164
Extra Early Round Pod Valentine (Steele Briggs)	"	G.	3·5	21	10·25	9,922
Wardwell Wax (Graham)	"	Y.	5·5	19	10·0	9,680
Challenge Dwarf Black Wax (Ferry)	"	Y.	4·5	20	9·5	9,196
Canadian Wonder (D. & F)	11, VIII	G.	5·5	18·5	9·25	8,954
Stringless Green Pod (O. 5405)	5, VIII	G.	4·5	16·5	8·5	8,228
Hodson Long Pod (O. 2748)	18, VIII	Y.	6·0	20·0	8·25	7,986
Princess of Artois (O. 9388)	5, VIII	G.	5·0	13·5	8·0	7,744
Stringless Green Pod Valentine (Burpee)	5, VIII	G.	5·0	18·0	7·25	7,018
Yellow Eye Yellow Pod (O. 1529)	8, VIII	G.	5·0	22·0	5·5	5,324
Stringless Green Pod (Graham)	5, VIII	G.	4·5	20·0	5·5	5,324

* Selections from samples supplied by George Freeman, Amherst, N.S.

BEANS (SHELLED)

Thirty varieties were experimented on for the production of seed. All varieties were planted in duplicate plots of 1/968 of an acre on June 4. These were pulled and staked in the field as soon as they were matured and threshed when dry. The following is the yield of the different varieties:—

VARIETY TEST, BEANS (SHELLED)

Variety and Source	Yield per plot	Yield per acre
	lb.	lb.
Plentiful (Sutton)	2·844	2,753
Selection *(Freeman)	2·688	2,602
Extra Early Round Pod Valentine (Steele Briggs)	2·538	2,457
Davis White Wax (McDonald)	2·344	2,269
Masterpiece (O. 1562)	2·281	2,208
Sutton Masterpiece (Vaughan)	2·25	2,178
Yellow Eye Green Pod (O. 1529)	2·25	2,178
Yellow Eye Yellow Pod (O. 2733)	2·25	2,178
Princess of Artois (O. 9388)	1·906	1,845
Scarlet Flageolet Wax (McDonald)	1·906	1,845
Selection *(Freeman)	1·875	1,815
Wardwell Kidney Wax (O. 1516-65)	1·841	1,782
Wardwell Kidney Wax (Graham)	1·781	1,724
Bountiful (Will)	1·656	1,603
Canadian Wonder (D. & F.)	1·656	1,603
Stringless Green Pod Valentine (Burpee)	1·594	1,5431
Davis White Wax (O. 1636)	1·468	1,421

VARIETY TEST, BEANS (SHELLED)—*Concluded*

Variety and Source	Yield per plot	Yield per acre
	lb.	lb.
Selection *(Freeman)	1·406	1,361
Selection *(Freeman)	1·406	1,361
Henderson Bountiful (D. & F.)	1·375	1,331
Challenge Dwarf Black Wax (Ferry)	1·344	1,301
Stringless Green Pod (O. 5405)	1·188	1,150
Stringless Green Pod (Graham)	1·125	1,089
Challenge Black Wax-Interloper (O. 6876)	1·125	1,089
Round Pod Kidney Wax (O. 6875)	1·094	1,059
Imp. Prolific Golden Wax (Rennie)	1·094	1,059
Round Pod Kidney Wax (McDonald)	1·094	1,059
Refugee or 1,000 to 1 (Burpee)	0·844	817
Hodson Long Pod (Rennie)	Did not mature	
Hodson Long Pod (O. 2748)	"	

* Selections made from sample supplied by Mr. George Freeman, Amherst, N.S.

PEAS (GREEN)

Seventeen varieties were planted in 1926 on June 3 in plots of 1/968 of an acre. Germination was very uniform with the exception of McLean Advancer, Improved Stratagem and Telephone, which were cut down in percentage stand by cutworm and poor germination. The following table gives the results of the various kinds:—

PEAS (GREEN)

Variety and Source	Per cent stand	Length of pod	Height of vine	Ready for use	Weight per plot	Corrected weight per plot	Weight per acre
		in.	in.		lb.	lb.	lb.
McLean Advancer (Livingston)	12·75	3·0	23	11, VIII	2·25	17·647	17,082·3
Extra Early Pedigree (Gregory)	74·7	2·5	24	25, VII	9·5	12·718	12,311·0
Telephone (D. & F.)	46·35	3·5	36	11, VIII	5·25	11·327	10,964·5
Lincoln (Invermere)	74·25	3·5	27	"	7·75	10·438	10,104·0
Gradus x American Wonder (O. 3584)	75·6	2·5	38	"	6·75	8·929	8·643·3
Blue Bantam (Graham)	92·78	3·0	16	4, VIII	8·0	8·62	8,344·2
Lincoln (Sharpe)	67·75	3·0	25	11, VIII	5·0	7·380	7,134·8
Thomas Laxton (McDonald)	92·78	2·75	18	4, VIII	6·25	6·74	6,524·3
Sutton Excelsior (Harris)	94·45	3·0	18	5, VIII	6·0	6·35	6,146·8
Early Six Weeks (Childs)	90·78	2·5	11	"	5·75	6·33	6,127·4
Imp. Stratagem (Rennie)	28·1	3·5	28	11, VIII	1·75	6·228	6·028,7
English Wonder (O.8822)	90·0	2·0	13	5, VIII	5·5	6·11	5,914·5
Gregory Surprise x English Wonder (O. 6471)	74·7	2·5	37	11, VIII	4·5	6·024	5,831·2
Gradus (Andrews)	89·45	3·0	22	4, VIII	4·5	5·03	4,869·0
Laxtonian (Graham)	86·67	3·0	12	5, VIII	4·75	5·48	5,304·6
American Wonder (McDonald)	92·78	3·0	13·5	4, VIII	3·75	4·04	3,910·7
Dwarf Telephone (Rennie)	82·78	2·5	20·0	11, VIII	2·5	3·02	2,923·4

PEAS (SHELLED)

Seventeen varieties were planted June 3 in duplicate plots of 1/968 of an acre. None of the varieties were picked, all being allowed to ripen on the vines. The following table gives the actual and corrected yield from each variety:—

PEAS (SHELLED)

Variety and Source	Per cent stand	Size	Weight per plot	Corrected weight per plot	Weight per acre
			lb.	lb.	lb.
Imp. Stratagem (Rennie)	28·1	Medium	1·188	4·228	4,092·7
McLean Advancer (Livingstone)	12·75	Small	0·469	3·678	3,560·3
Telephone (D. & F.)	46·35	Large	1·406	3·034	2,936·9
Lincoln (Invermere)	74·25	Medium	2·219	2·989	2·893,3
Dwarf Telephone (Rennie)	82·78	Large	1·875	2·265	2,192·5
Lincoln (Sharp)	67·75	Medium	1·375	2·030	1,965·0
Extra Early Pedigree (Gregory)	74·7	Small	1·188	1·590	1,539·1
Gradus (Andrews)	89·45	Large	1·375	1·537	1,487·8
Laxtonian (Graham)	96·67	Large	1·375	1·422	1,376·5
Gregory Surprise x English Wonder (O. 6471-3)	74·7	Medium	1·125	1·506	1,457·8
Early Six Weeks (Childs)	90·78	Large	1·344	1·481	1,433·6
English Wonder (O. 8822)	90·00	Medium	1·22	1·356	1,312·6
Sutton Excelsior (Harris)	94·45	Large	1·25	1·323	1,280·7
American Wonder (McDonald)	92·78	Small	1·031	1·111	1,075·4
Gradus x American Wonder (O. 3584)	75·6	Large	0·656	0·868	840·2
Thomas Laxton (McDonald)	92·78	Large	0·75	0·809	783·1
Blue Bantam (Graham)	92·78	Medium	0·75	0·809	783·1

GARDEN BEETS

The following varieties are recommended for this district: Detroit Dark Red, Black Red Ball, Eclipse.

CARROTS

The following varieties are recommended for this district: Chantenay, Nantes Half Long, St. Valery.

GARDEN CORN

Fifteen varieties or strains were tested during the year. Seed was planted June 4 in plots 1/484 of an acre but only ten of the varieties had ears that reached maturity. All varieties made strong growth during the season and the following is a list of the leaders with their corrected yield per acre in pounds: Banting, 7,357, Alpha, 7,018; Pickaninny, 6,467; Early Malcolm, 5,324; Early Mayflower, 5,082; Sweet Squaw, 5,585; Golden Bantam (Moore), 3,291; Buttercup, 2,094; Golden Bantam (James), 1,694 and Early White Corey, 1,573.

LETTUCE

The following varieties are recommended for this district: Grand Rapids, Black Seeded Simpson, New York.

PARSNIP

The Hollow Crown variety is recommended for this district.

CUCUMBER

The following varieties are recommended for this district: Davis Perfection, XXX Table, White Spine.

SQUASH

The following varieties are recommended for this district: Hubbard Green, Kitchenette, Warty Hubbard.

RADISH

Six varieties were grown in 1926. Seed was sown June 5 and all varieties made a very rapid growth, the following being a list of the varieties grown and in order of merit: French Breakfast (Graham), XXX Scarlet Oval, French Breakfast (Rennie), French Breakfast (Patmore), Sparkler or Perfection and French Breakfast (Madsen).

CAULIFLOWER

Three varieties were tested in 1926. Seed was planted in hills on June 2. All varieties made a satisfactory germination but growth was slow until it was too late to develop good heads. Early Snowball had four heads averaging 2.25 pounds, Extra Early Dwarf Erfurt had seven heads averaging 1.71 pounds and Danish Drought Resisting had not one fully developed head.

SPINACH

Four varieties were planted June 5 and of the four, King of Denmark was not only a vigorous grower, but remained tender throughout the season. New Zealand made a poor growth and went to seed early. Broadleaved Victoria and Long Standing Bloomsdale made splendid growth and were tender during the early part of the season but got fairly tough later on.

SWISS CHARD

Two varieties only were tested the seed of which was sown June 3. Both varieties made strong vigorous growth during the summer. Lucullus from Ewing grew to a height of 24 inches with a smooth 10-inch stalk which remained very crisp all season, while Spinach Beet from Rennie attained a height of 18 inches with a 7-inch stalk which was inclined to be stringy.

PARSLEY

Champion Moss Curled was the only variety tested. It proved a very vigorous grower and produced an abundance of fresh garnishing foliage throughout the whole season.

SUMMER SAVORY

One variety was grown from Steele Briggs which made a very poor germination but fair growth during the summer.

SAGE

English Broadleaf was the only variety tested in 1926. The germination was poor and the growth was very slow and poor throughout the season.

ONION

Wethersfield and Yellow Globe are the two varieties recommended for this district.

CULTURAL TESTS WITH VEGETABLES

THICKNESS OF PLANTING BEANS

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

THICKNESS OF PLANTING BEANS (GREEN)

Variety	Distance apart	Ready for use	Per cent stand	Actual yield per plot	Corrected yield per plot	Yield per acre	Average
	in.			lb.	lb.	lb.	lb.
Round Pod Kidney Wax	2	5, VIII	91·11	11	12·07	11,684	
" "	4	"	88·88	10	11·25	10,890	9,425
" "	6	"	93·33	5·5	5·89	5,702	
Stringless Green Pod	2	"	92·22	9·5	10·30	9,970	
"	4	"	93·33	7·5	8·04	7,783	7,889
"	6	"	90·00	5·5	6·11	5,914	
Masterpiece	2	11, VIII	95·55	13	13·60	13,165	
"	4	"	100·00	16	16·00	15,488	13,423
"	6	"	100·00	12	12·00	11,616	
Hodson Long Pod	2	24, VIII	90·00	9·5	10·56	10·222	
"	4	"	88·88	7·5	8·44	8,170	7,947
"	6	6, IX	80·00	4·5	5·63	5,450	

THICKNESS OF PLANTING BEANS (RIPE)

Round Pod Kidney Wax	2	.....	91·11	0·25	0·274	265	
" "	4	.....	88·88	1·00	1·13	1,094	821
" "	6	.....	93·33	1·06	1·14	1,104	
Stringless Green Pod	2	.....	92·22	0·688	0·746	722	
"	4	.....	93·33	1·25	1·34	1,297	941·7
"	6	.....	90·00	0·75	0·833	806	
Masterpiece	2	.....	95·55	1·56	1·63	1,578	
"	4	.....	100·00	1·94	1·94	1,878	1,920
"	6	.....	100·00	2·38	2·38	2,304	

In the test with the green beans the average of the four varieties at 2 inches was 11,260 pounds per acre, at 4 inches, 10,538 pounds and at 6 inches, 7,164 pounds per acre. The 2-inch planting gave the heaviest yield and from a production stand would appear to be the most satisfactory. In the test with the ripe beans the fourth variety (Hodson Long Pod) did not mature for seed and the average of the three remaining varieties at 2 inches was 855 pounds per acre; at 4 inches, 1,423 pounds; and at 6 inches, 1,404.7 pounds per acre.

THICKNESS OF PLANTING PEAS

This experiment is to determine the relative merits of different distances apart in planting peas, namely 1, 2 and 3 inches. Three varieties were used and seed was sown on June 3. The following table give the results of both the plot picked as green peas and the plot allowed to ripen:—

THICKNESS OF PLANTING PEAS (GREEN)

Variety	Distance apart	Ready for use	Per cent stand	Yield per plot	Corrected yield per plot	Yield per acre	Average
	in.			lb.	lb.	lb.	lb.
English Wonder	1	4, VIII	91·67	8	8·73	8,451	
"	2	5, VIII	89·45	11	12·30	11·906	11,145
"	3	5, VIII	92·5	12·5	13·51	13,078	
Thomas Laxton	1	4, VIII	94·72	15	15·84	15,333	
"	2	5, VIII	77·78	14	18·00	17,424	15,220
"	3	5, VIII	97·5	13	13·33	12,903	
Stratagem	1	11, VIII	94·17	7·5	7·96	7,705	
"	2	"	66·12	5	7·56	7,318	6,493·7
"	3	"	83·34	5	6·00	5,808	

THICKNESS OF PLANTING PEAS (RIPE)

Variety	Distance apart	Ready for use	Per cent stand	Yield per plot	Corrected yield per plot	Yield per acre	Average
	in.			oz.	lb.	lb.	lb.
English Wonder	1		91·67	15	1·023	990	
"	2		89·45	10	0·699	677	795·7
"	3		92·5	11	0·744	720	
Thomas Laxton	1		94·72	1·8	1·584	1,532	
"	2		77·78	7	0·563	545	940·7
"	3		97·5	12	0·769	744	
Stratagem	1		94·17	12	0·796	770	
"	2		66·12	10	0·945	915	851·0
"	3		83·34	12	0·900	871	

The results of this experiment do not coincide with all varieties but in most cases the closer planting gave the heaviest yield.

DATES FOR SEEDING BEETS, CARROTS AND PARSNIPS

This experiment is to determine the relative merits of different dates of seeding beets, carrots and parsnips. Half of each row was used to determine the relative earliness, quality and yield as a green table vegetable, the yields being computed on the basis of number of bunches (five to a bunch) with unmarketable tabulated, the other half of the row to be left until the end of the season then harvested. The following table gives the results obtained for 1926:—

DATES FOR SEEDING BEETS, CARROTS AND PARSNIPS

Variety	Date of seeding	Yield of mid-season	Weight of green vegetables	Unmarketable vegetables		Yield at end of season		Unmarketable		Total weight at end of season of yield
		bunches	lb.	bunches	lb.	No.	lb.	No.	lb.	lb.
Beets—										54
Detroit Dark Red	June 5	7·4	16·0	1·2	3·5	47	54	.....	.....	53
" "	" 11	7·0	12·0	1·0	1·5	34	23	20	30	42
" "	" 19	11·6	13·5	.....	.....	64	42	.....	.....	39
" "	" 26	12·5	12·0	.....	.....	43	39	.....	.....	
Carrots—										23
Chantenay	" 5	5·0	2·0	3·0	0·5	.....	28	.....	.....	29
"	" 11	7·6	3·0	4·0	1·0	.....	23	.....	.....	29
"	" 19	10·0	5·0	.....	.....	.....	29	.....	.....	18
"	" 26	.....	.....	.....	.....	.....	19	.....	.....	
								Condition		
Parsnips—										32
Hollow Crown	5	Not harvested at mid-season				78	32	Large, prongy		48
" "	11	.....	.....	.....	.....	122	48	Medium, smooth.		31
" "	" 19	.....	.....	.....	.....	160	31	Small, smooth.		27
" "	" 26	.....	.....	.....	.....	102	27	Too small...		

The vegetables were planted in 30-foot rows and the results would indicate that they should be sown for early markets or for mid-season as early as the condition of the soil will permit but for winter storage it is best to sow them at a later date as they will in this case not grow so large, rough or coarse.

SUCKERING EXPERIMENT WITH CORN

This experiment is to test the relative merits of suckering corn. Two varieties were used namely Early Malcolm and Golden Bantam. In Lot 1 all suckers were removed as they appeared, in Lot 2 half the suckers were removed while in the third lot all suckers were left on. There were twenty hills of each and three plants left to the hill. The season was too short to gather very much data but the following results were recorded:—

CORN SUCKERING

Variety	Treatment	Yield	
		No. ears	lb.
Early Malcolm	Suckers removed	26	13
Golden Bantam	" "	21	10
Early Malcolm	Half suckers removed	9	7
Golden Bantam	" "	11	4
Early Malcolm	Suckers not removed	None matured	
Golden Bantam	" "	"	

A short season such as 1926 brings out the value of suckering the garden corn.

HOTBED VERSUS OPEN SEEDING FOR CABBAGE

The object of this experiment is to determine the relative merits of starting cabbage in hotbeds and transplanting to the open versus the planting of the seed in the open. Twenty plants each of Copenhagen Market and Danish Ballhead were used. Seed was sown for the first lot in hotbeds on April 24 and transplanted to the open on June 1. The seed for second lot was sown in the open on June 1 and the following table gives the results:—

CABBAGE—CULTURAL

Variety	Method	Yield per plot of 20 heads
		lb.
Copenhagen Market	Hotbed, transplanted to open	73·33
Danish Ballhead	" "	61·25
Copenhagen Market	Seeded in the open	49·41
Danish Ballhead	" "	None matured

A late season such as 1926 demonstrates the fact that it is much better to start the plants in hotbeds.

METHODS OF PRUNING TOMATOES

This experiment is to study the relative merits of different methods of pruning tomatoes to single stem. Two varieties were used, Bonny Best and Alacrity. The seed was sown in hotbeds on April 23 and transplanted to the open on June 14 using twenty plants of each variety. The following table gives the results for 1926:—

DIFFERENT METHODS OF PRUNING TOMATOES

Variety	Method	Date of ripe fruit	Weight of ripe fruit	Weight of green fruit	Total weight
			lb.	lb.	lb.
Bonny Best	Single stem, not headed back	Sept. 6	63·0	51	114·0
Alacrity	" "	Aug. 23	51·0	27	78·0
Bonny Best	Single stem, stopped 3rd truss	Sept. 6	56·0	44	100·0
Alacrity	" "	Aug. 23	56·0	24	89·0
Bonny Best	Single stem, stopped 2nd truss	Sept. 6	54·0	32	86·0
Alacrity	" "	Aug. 23	43·0	18	61·0
Bonny Best	Single stem, stopped 1st truss	Sept. 6	48·0	7	56·0
Alacrity	" "	Aug. 23	46·5	10	56·5

The results indicate that the method of single stem and stopped at second truss gave the heaviest picking of ripe fruit in the first picking from the variety Bonny Best while with Alacrity the plants not headed back gave the heaviest yield.

POTATOES—EFFECT OF SPROUTING

This test was continued in order to collect more data on the relative merits of planting potatoes (1) that have been exposed to subdued light for four weeks at a temperature of from 40 to 50 degrees F.; (2) that have been kept as dormant as possible; (3) that have been taken from the ordinary cellar bin, the latter sort serving as a check. All sets were planted on June 9 in duplicate plots of 1/62.23 of an acre each and harvested on September 30 and October 2. The following table gives the results obtained for the season of 1926:—

POTATOES—EFFECT OF SPROUTING

Variety	Procedure	Average yield of marketable		Average yield of unmarketable		Total yield per acre
		Per plot	Per acre	Per plot	Per acre	
		lb.	bush.	lb.	bush.	bush.
Green Mountain	Subdued light	165·0	171·13	5·0	5·19	176·3
"	Dormant	171·5	177·87	3·0	3·11	180·98
"	Taken from cellar	140·0	145·2	4·0	4·15	149·4
Irish Cobbler	Subdued light	149·0	154·54	13·0	13·48	168·02
"	Dormant	160·5	166·47	6·5	6·74	137·21
"	Taken from cellar	133·5	138·46	9·5	9·85	148·3

From the preceding figures it may be noted that potatoes kept as near dormant as possible gave the highest yields. These results coincide with those of previous years, therefore it would appear to be more profitable to keep the seed stock as dormant as possible before planting.

POTATOES—DIFFERENT DATES OF PLANTING

Two varieties were used in this test in 1926, Irish Cobbler as the early field crop and Green Mountain as the later variety. All sets were carefully planted by hand on four different dates, and they were all harvested on October 1. The following table gives the results obtained from the various dates of planting for the year:—

POTATOES—DIFFERENT DATES OF PLANTING

Variety	Date of planting	Average yield of marketable		Average yield of unmarketable		Total yield per acre
		Per plot	Per acre	Per plot	Per acre	
		lb.	bush.	lb.	bush.	bush.
Irish Cobbler	June 9	59	171·34	4	11·62	182·96
"	" 19	79	229·42	4	11·62	241·04
"	" 26	91	264·26	11	31·94	296·20
"	July 3	51	148·10	5	14·52	162·62
Green Mountain	June 9	78	226·51	2	5·81	232·32
"	" 19	86	249·74	2	5·81	255·55
"	" 26	70	203·28	9	26·14	229·42
"	July 3	73	211·99	11	31·94	243·93

POTATOES—STRAIN TESTS

Four strains of Irish Cobbler were planted by hand on June 9 in quadruplicate plots of 1/99.57 of an acre. All were harvested between October 2 and 5. The plots were inspected at different times during the summer and were passed as disease-free or Certified stock. A slight scab infection was noted in spots where brush piles were burned some year previous. The following table gives the results:—

POTATOES—STRAIN TEST

Variety and source	Condition	Disease		Yield of marketable	Yield of unmarketable	Average weight per plot	Average yield per acre
		Per cent scab	Per cent rot	lb.	lb.	lb.	bush.
Irish Cobbler, W. Steel.	Medium size, good type.	2·94	1·08	130·2	7·7	137·9	228·8
Irish Cobbler, Nappan.	Large size, rough.....	.....	.....	145·4	12·0	157·4	261·2
Irish Cobbler, Fawcett.	Medium size, very uniform.	.....	.....	114·4	12·8	127·2	211·1
Irish Cobbler, McGregor.	Large size.....	1·84	.....	126·2	10·2	136·4	226·4

Twenty tubers were selected from each line of 1925 unit stock seed. The sets from each tuber were evenly spaced in the rows and marked in order to permit of the removal of all, if not satisfactory or if they showed signs of disease. Only one plant in the whole plantation gave any evidence of disease; this one showed signs of Black Leg and was removed while the balance passed as Certified Seed. The following table gives the yield per plot also per acre of each line or strain:—

POTATO—STRAIN TEST

Line	Yield per plot		Total yield per plot	Total yield per acre
	Marketable	Unmarketable		
	lb.	lb.	lb.	bush.
No. C	86·5	5	91·5	324·5
E	118·0	8	126·0	446·9
G	137·0	9	146·0	517·8
H	90·5	2	92·5	328·1
J	113·0	6	119·0	422·05
K	132·5	12	144·5	512·5
M	167·0	4	171·0	606·5
N	116·0	10	126·0	446·9
O	97·0	8	105·0	372·4
P	113·5	7	120·5	427·4
Q	130·5	6	136·5	484·12
R	114·0	7	121·0	429·14
S	107·5	6	113·5	402·6
U	122·0	8	130·0	461·07
V	129·5	7	136·5	484·12
W	123·5	8	131·5	466·39
X	113·5	8	121·5	430·92
Y	124·0	6	130·0	461·07
Z	136·5	7	143·5	508·95
A	105·5	16	121·5	430·92
B	83·0	5	88·0	312·1
D	111·5	4	115·5	409·64
F	117·0	7	124·0	439·8
I	103·0	8	111·0	393·7
L	66·5	4	70·5	250·04
T	103·0	2	105·0	372·4
WK	110·0	8	118·0	418·5

FLORICULTURE

The season was only fair for floriculture work. Good weather was experienced during the hotbed season and the percentage germination was high in nearly all cases. The growth in the hotbeds was excellent and all plants were well developed by transplanting time. Even though the spring was late and cold the annuals were transplanted to the open only a few days later than those of 1925. In 1925 transplanting took place betwen June 10 and June 15 and in 1926 it was started on June 17. The precipitation was very light during June, July, August and September, and therefore the flowers suffered more or less from lack of moisture. The blooming season was about one month shorter than usual which was due to a late spring combined with an early killing frost of 3 degrees which came on the night following September 26. This frost did much damage to the more tender varieties.

ASTERS

Thirty-eight varieties or strains were tested, the majority of which made strong growth until blooming time when practically all varieties were subject more or less to a blight or yellows which affected the plants. Another drawback to aster culture was noted during the year which was the destruction of the buds at blooming time. This may have been caused by the Tarnished Bug, although none were noted, but a large number of buds were destroyed and it appeared like the work of this insect. Of varieties grown it was noted that the purples, mauves and whites were the least affected by the infections. Vick Late Branching was the most outstanding variety with Vick Crego as second best. Perfection, Violet King and Comet were also good varieties.

ANTIRRHINUM

Ten varieties or strains were tested, seed being sown in the hotbeds on May 1 and transplanted to the open on June 17. In most cases strong growth was made with abundance of bloom during the summer. The following varieties were exceptionally good: Intermediate Deep Crimson, Intermediate Carmine Pink, Intermediate Fire King and Tom Thumb.

OTHER ANNUALS

From one to two strains of the following varieties were grown and in most cases very satisfactorily: Ageratum, alyssum, balsam, amaranthus, clarkia, chrysanthemum, candytuft, castor-oil plant, calendula, cockscomb, celosia plumosa, cosmea, coreopsis, cornflower, dahlia collarette, dianthus, gaillardia, godetia, helichrysum, hibiscus major, jacobea, kochia, lavatera, larkspur, linareia, marvel of Peru, nemesia, nemophila, nigella, phlox drummondii, petunia, pansy, perilla, portulaca, rhodanthe, salvia, salpiglossis, scabious, tagetes, verbena and zinnia. The following did not prove very satisfactory during the season: carnation, dimorphotheca, lobelia and whitlavia.

SWEET PEAS

Ninety-four varieties or strains were tested, the first seed being planted on May 7 and a second planting made on May 14, the latter seeding making as good growth as the earlier. Germination was good and splendid growth was recorded during the early part of the season but the lack of moisture restricted it later on, the stalks being shorter than usual. There was a fair amount of bloom but it lacked that vigorous and lusty appearance for which the sweet pea is so much admired. No doubt this was chiefly due to insufficient moisture when bloom was commencing as they require an abundance of moisture at that time. The

following are a few of the outstanding varieties: Mrs. Tom Jones (blue), Bunty (salmon pink), Dobbie Orchid (mauve), Bridesmaid (pink), Le Mahdi (blue), Annie Ireland (mauve), Picture (pink), Giant White (white), Royal Scott (scarlet), Elegance (pink), Hawlmark Pink, Hawlmark Lavender and Elfrida Pearson (salmon pink).

DAHLIAS

Fourteen varieties or strains were tested which were planted to the open on May 20 in specially prepared beds. They lacked their usual height this year but the bloom was quite heavy, especially with the following varieties: Papa Chomit, Double Violet, Pierrot, Guardian and Dr. Van Gorkrum.

TULIPS

Nine varieties of Darwin and four varieties of early tulips were planted on November 1, 1925. The early varieties namely Vermilion Brilliant, Pottebakker Scarlet, Chrysolora and Joost Van Vondel wintered in good condition and made a splendid showing from May 26 to June 12. The Darwin varieties are somewhat slower in coming into bloom but are richer and have more delicate colours than the others and fill in nicely between the tulips and the annuals. The first bloom was noted on June 5 and ended June 24. The following are a few of the most prominent varieties: Europe, Edmée, Farcombe, Sanders, Bartigon, La Tulipe Noire, and Prof. Rauwenhof.

PERENNIALS

As most of the varieties are now well established in the perennial border and the plants were well covered throughout the winter with snow there was no winter killing recorded. All varieties made a very good growth during the first part of the season and along with the annuals gave a continual bloom until struck down by frost. A few new perennials were started in 1925 and these were set out in nursery rows this spring. All made very satisfactory growth and will next year make an excellent addition to the perennial border. The following are a few of the most hardy and best blooming varieties we have in the border this year: Phlox, Irises, Paeonies, Larkspur, Sweet William, White Rocket, Golden Glow and Dianthus.

CEREALS

CHARACTER OF SEASON

The spring of 1926 was cold and late. Seeding operations were held up until late in May or early in June. During May the rainfall was 3.18 inches, June 1.58 inches, and July 2.28 inches. The total rainfall from June 1 to September 30 was 7.10 inches, considerably less than is required for ideal growing conditions. Germination was very slow at first but later with a higher temperature growth was rapid and fair yields were harvested. With the exception of the wheat very little lodging occurred, and harvesting was completed under ideal weather conditions.

VARIETY TESTS OF GRAIN

The leading varieties were tested in quadruplicate plots of one-one hundred and twentieth acre each. In addition to these, twenty-four varieties of wheat, thirty of oats, twenty of barley and eight of peas were tested in rod-row plots. The work with head selections and hybrid material was continued.

SPRING WHEAT

Eight varieties were tested in 1926. The seed was sown on May 22 and 29, and the wheat harvested when ripe. Rust infection was severe and very materially reduced the yields. White Russian and Huron are still leading in average yield per acre with their relative positions unchanged. The following table gives the number of years tested, the average number of days ripening, and the average yields along with the yields for 1926:—

SPRING WHEAT—AVERAGE AND 1926 YIELDS

Variety	Years tested	Average number days maturing	Average yield per acre		Yield per acre, 1926	
			bush.	lb.	bush.	lb.
White Russian	12	111·9	33	56·7	21	20
Huron Ottawa 3	14	109·2	33	30·6	22	40
Early Red Fife, Ottawa 16	14	111·9	32	21·6	25	15
Red Fife, Ottawa 17	11	113·0	32	18·0	..	..
Marquis, Ottawa 15	14	109·4	31	45·8	23	..
Bishop, Ottawa 8	11	108·8	29	23·0	..	..
Ruby, Ottawa 623	9	102·6	27	8·1	25	20
Huron (bald)	1	110·0	28	....	28	..
White Russian, Fredericton	1	121·0	26	....	26	..
Garnet, Ottawa 652	1	106·0	16	....	16	..

BARLEY

Three varieties of six-rowed and three of two-rowed were tested in 1926. Seed was sown on May 31, and the different varieties were harvested as they ripened.

BARLEY—AVERAGE AND 1926 YIELDS

Variety	Years tested	Average number days maturing	Average yield per acre		Yield per acre, 1926	
			bush.	lb.	bush.	lb.
Six-rowed—						
Chinese, Ottawa 60	5	90·4	46	3·0	40	45
O.A.C., No. 21	13	96·3	41	25·1	43	36
Manchurian, Ottawa 50	10	98·5	41	17·8	—	—
Stella, Ottawa 58	10	99·8	40	43·5	—	—
Albert, Ottawa 54	5	85·4	30	3·0	—	—
*Himalayan, Ottawa 59 (hulless)	6	85·8	45	18·8	40	15
Two-rowed—						
Charlottetown, No. 80	9	97·4	54	22·5	42	39
French Chevalier	10	100·6	48	4·5	—	—
Duckbill, Ottawa 57	9	98·2	46	0·1	48	21
Gold	1	100·0	44	3·0	44	3

*Hulless, figured at 48 pounds per bushel.

Chinese Ottawa 60, one of our newer varieties, leads the six-rowed varieties in yield and is proving one of our earliest ripening varieties. Charlottetown No. 80 leads the two-rowed sorts, and is also the highest yielding variety on test. Himalayan, Ottawa 59, a hulless variety, is a very good producer, but is short and weak in the straw. All varieties were particularly free from smut and other diseases.

OATS

Six varieties of oats were tested in 1926. Seeding was done on May 29 and 31. The following table gives the results of average and 1926 yields.

OATS—AVERAGE AND 1926 YIELDS

Variety	Years tested	Average number days maturing	Average yield per acre	Yield per acre 1926
			bush. lb.	bush. lb.
Victory	14	105·4	74 31·1	65 10
Lincoln	11	106·0	73 7·1	.....
Banner Ottawa 49	14	104·9	72 22·5	45 30
Danish Island	11	105·8	70 8·6	.....
Gold Rain	14	104·2	68 22·6	51 21
O.A.C. No. 72	11	104·0	68 14·3	46 11
Ligowo	11	104·7	67 32·0	.....
Pioneer	10	103·0	67 17·3	.....
Daubeney Ottawa 47	10	100·2	64 14·0	.....
Alaska	4	90·8	65 30·0	47 22
*Liberty Ottawa 480 (hulless)	4	92·5	59 15·3	.....
*Laurel Ottawa 477 (hulless)	3	97·7	53 33·0	40 5

* Hulless figured at 34 pounds per bushel.

Victory was again the highest yielder and still leads in average yield over a period of fourteen years. Gold Rain while not as heavy a yielder as some is undoubtedly an exceptionally good variety, running high in weight per measured bushel and having a low percentage of hull. Alaska, a comparatively new variety, ripens in about ninety days, gives a good yield and is well suited to a short growing season or for use with six-rowed barleys in mixed grain. Laurel, a new hulless variety, is showing up very well.

BUCKWHEAT

Twelve varieties and selections of buckwheat were tested in one-one hundred and twentieth acre plots. They were seeded on June 23 and ripened between September 18 and 25. The following table gives the number of days maturing and the yields:—

BUCKWHEAT—AVERAGE AND 1926 YIELDS

Variety	Number years tested	Average number days maturing	Average yield per acre	Yield per acre 1926
			bush. lb.	bush. lb.
Japanese M	2	91·5	51 27·0	46 42
Japanese J	2	91·5	50 45·0	47 24
Tartarian D	2	88·0	50 45·0	56 42
Russian H	2	91·5	49 25·5	49 18
Petrograd	2	91·5	48 13·5	52 24
Grey D	2	91·5	46 42·0	50 30
Grey F	2	91·5	46 4·5	44 18
Rye F	2	85·5	45 7·5	50 —
Tartarian G	2	88·0	44 25·5	45 —
Rye A	2	85·5	44 10·5	50 —
Silverhull J	2	91·5	43 28·5	45 —
Rye H	2	85·5	40 15·0	46 42

FLAX

During the past three seasons three varieties of flax have been tested for seed production with the following results:—

FLAX—AVERAGE AND 1926 YIELDS

Variety	Number years tested	Average number days maturing	Average yield per acre	Yield per acre 1926
			bush. lb.	bush. lb.
Novelty	3	132·5	17 10·0	15 30
Primost	3	129·0	16 29·3	17 38
Longstem	3	132·5	11 23·2	12 48

REGISTERED SEED GRAIN

Eight acres were sown to Extra No. 1 Banner oats in 1926. The total production was 331.2 bushels or an average of 41.4 bushels per acre. Four acres were sown to Extra No. 1 Huron wheat (Ottawa 3) yielding 49.5 bushels or an average of 12.4 bushels per acre. Four acres were sown to Extra No. 1 Charlottetown No. 80 barley, yielding 132.7 bushels or an average per acre of 33.2 bushels. The major part of this stock will be for sale during the spring of 1927 for seed.

FORAGE CROPS

CHARACTER OF SEASON, 1926

A late spring retarded seeding operations and the work of this division was held up until June 4. From then until June 11, when seeding was finished, ideal weather conditions prevailed. Germination was good, but growth during the early part of the summer was very slow due to the extremely dry weather. During the latter part of the season the rainfall was heavier and much larger yields were recorded than were at first anticipated. Weather conditions at harvesting time were ideal and all the crops were stored in good condition.

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, and manured in 1925. It was ploughed a second time in the spring of 1926 in order to get a good seed-bed. The land was quite weedy, but the dry summer made weed control comparatively easy.

CROPS FOR ENSILAGE

INDIAN CORN

Twenty-three varieties or strains of corn were tested in 1926. The seed was sown on June 9, and the crop harvested on September 27. Good average yields were recorded and the standing of the various varieties is but little changed. Longfellow, some of the Northwestern Dents and certain hybrids or cross-bred varieties seem the most suitable for our conditions. They reach a greater stage of maturity and produce a heavier yield of dry matter per acre. The accompanying table gives the yields as recorded from the 1926 and previous tests.

CORN—VARIETY TESTS—1926 AND AVERAGE YIELDS

Variety and source	Number of years tested	Yield per acre 1926	Average yield per acre	Per cent dry matter in crop		Pounds dry matter per acre	
				1926	Average	1926	Average
		tons lb.	tons lb.				
Longfellow-Disco	4	23 500	20 1,729·0	12·480	13·055	5,803·2	5,483·8
Compton's Early-Duke	4	26 600	19 4·1	12·190	13·088	6,411·9	5,073·0
Longfellow-Duke	4	14 1,400	18 1,287·5	12·480	13·145	3,669·1	4,885·2
Leaming-Duke	4	22 1,100	18 566·5	10·425	13·224	4,701·7	4,780·6
90 Day White Dent-Disco	4	16 1,500	18 1,040·0	13·950	13·835	4,673·3	4,996·8
North Dakota-Steels Briggs	4	19 800	17 887·5	14·060	14·795	5,455·3	5,216·0
Golden Glow-Duke	4	13 1,200	15 1,820·8	14·455	14·631	3,931·8	4,731·4
Wisconsin No. 7-Duke	4	10 1,400	14 1,641·5	13·160	13·623	2,816·2	4,062·0
White Cap Yellow Dent-Steele Briggs	4	12 400	13 1,412·5	13·420	14·530	3,274·5	4,005·5
Burr Leaming-Carter	3	21 1,200	21 1,399·7	14·725	14·688	6,361·2	6,389·5
Hybrid-Wimple	3	17 1,500	20 1,944·3	14·375	14·035	5,103·1	5,878·4
Northwestern Dent, Nebraska grown-McKenzie	3	21 1,300	19 1,544·3	13·790	15·347	5,971·1	5,951·8
Yellow Dent-Wimple	3	17 1,500	19 388·7	12·810	14·010	4,547·6	5,392·9
Bailey-Duke	3	20 900	18 1,522·3	12·305	14·428	5,032·7	5,396·6
Northwestern Dent-Disco	3	20 1,800	17 1,433·0	12·985	15·388	5,427·7	5,384·4
Wisconsin No. 7-Parks	3	.....	16 1,416·7	.....	13·797	.....	4,709·2
Amber Flint-Wimple	3	13 1,800	15 1,933·3	12·795	14·572	3,557·0	4,759·0
Northwestern Dent-N. Dakota Grown-McKenzie	3	13 1,400	14 1,799·7	15·120	16·070	4,142·9	4,834·6
Northwestern Dent-Brandon	3	7 1,100	14 477·7	13·355	14·895	2,016·6	4,354·4
Pride Yellow Dent-Disco	3	14 1,400	14 161·0	15·250	16·237	4,483·5	4,713·8
Quebec 28-Macdonald College	3	24 —	13 208·3	15·175	15·095	7,284·0	5,367·1
Twitchel's Pride X Wisconsin No. 7-Harrow	2	21 1,100	24 1,383·5	12·285	12·688	5,294·8	6,290·8
Canada Yellow Flint-Dupuy and Ferguson	2	21 —	18 1,333·5	12·575	14·178	5,281·5	5,218·2
Leaming Improved-Parks	2	.....	16 1,375·0	.....	15·165	.....	4,948·9
Quebec 28-Dr. Todd	2	9 1,300	11 1,150·0	12·990	12·980	2,507·1	3,004·5
Leaming-Parks	1	.....	21 —	.....	12·300	.....	5,166·0
Twitchel's Pride-Exp. Sta., Fredericton	1	.....	13 750·0	.....	15·350	.....	4,106·1
Northwestern Red Dent-Disco	1	.....	12 1,250·0	.....	13·910	.....	3,512·3
Northwestern Dent-McKenzie	1	.....	11 · 250·0	.....	13·700	.....	3,048·3

SUNFLOWERS

Five varieties were tested in 1926. The seed was sown on June 5, and the crop harvested on September 22. For the past four years the Russian Giant and Mammoth Russian varieties have been the highest producers, both of green forage and dry matter. Russian Giant (Disco) having an average yield of 26 tons, 1,362.5 pounds per acre, with 7,613.1 pounds dry matter and Mammoth Russian (McDonald) twenty-five tons, 1,670.7 pounds per acre, with 7,728.0

pounds dry matter. Mixed Mennonite (Rosthern) matures very early, but is a very low yielder. The following table gives the yields for the 1926 and previous tests:—

SUNFLOWERS—VARIETY TEST—1926 AND AVERAGE YIELDS

Variety and source	Number of years tested	Yield per acre 1926	Average yield per acre	Per cent dry matter in crop		Pounds dry matter per acre	
				1926	Average	1926	Average
		tons lb.	tons lb.				
Russia Giant, Disco	4	25 1,867	26 1,362·5	12·360	14·329	6,410·8	7,613·1
Mammoth Russian, McDonald	4	26 1,100	25 1,670·7	14·060	15·350	7,465·9	7,728·0
Ottawa 76, C.E.F. Ottawa	4	21 567	18 1,641·5	15·095	13·213	6,425·5	4,995·7
Manchurian, McKenzie	4	19 1,167	17 708·3	14·045	13·549	5,501·0	4,565·6
Mixed Mennonite, Rosthern	4	14 267	11 1,866·5	17·640	14·200	4,986·3	3,382·5
Manteca, Canadian Pacific Railway	3	.....	22 305·7	.....	12·797	.....	5,828·8
Black, Canadian Pacific Railway	3	.....	21 150·0	.....	13·090	.....	5,505·8
Mixed, Canadian Pacific Railway	3	.....	20 1,694·3	.....	12·577	.....	5,236·1
Manchurian, Canadian Pacific Railway	2	.....	22 166·5	.....	12·685	.....	5,597·6
Russian Giant, Canadian Pacific Railway	2	.....	17 125·0	.....	13·265	.....	4,128·2
Mammoth Russian, Canadian Pacific Railway	1	.....	25 667·0	.....	11·070	.....	5,608·8

ROOTS

MANGELS

Thirty varieties or strains of mangels were tested in 1926. These were seeded on June 4, and harvesting was completed on October 22. Germination was good, but the stands were greatly reduced by the very dry weather. The same varieties continue to lead in average production, although their relative positions are somewhat changed. Jumbo (Rennie) although in second place in average yield has been a most consistent producer and is a very uniform sugar mangel with a high dry-matter content. Several varieties from the Hjalmer Hartmann Company have been uniformly good yielders. The yields recorded in the 1926 and previous tests are given in the accompanying table.

MANGELS—VARIETY TEST—1926 AND AVERAGE YIELDS

Variety and source	Number of years tested	Yields per acre on corrected yield basis			Per cent dry matter in crop		Pounds dry matter per acre	
		1926	Average		1926	Average	1926	Average
		tons lb. bush.	tons lb.	bush.				
Yellow Eckendorfer-Hjalmar Hartmann	3	26 9031058	27 721·3	1,094·4	10·235	10·542	5,414·6	5,733·8
Jumbo-Rennie	3	22 1,626 913	27 109·7	1,082·2	11·640	11·190	5,310·9	6,025·4
Stryno Barres-Hjalmar Hartmann	3	17 1,779 716	26 653·0	1,053·1	13·945	11·192	4,989·4	5,634·3
Rosted Barres-Hjalmar Hartmann	3	18 1,733 755	26 475·7	1,049·5	14·120	12·573	5,327·9	6,460·9
Taaroje Barres-Hjalmar Hartmann	3	22 1,143 903	26 28·3	1,040·6	12·715	11·135	5,739·9	5,705·6
Red Eckendorfer-General Swedish Seed Co	3	23 1,086 942	25 1,357·0	1,027·1	12·250	11·500	5,768·0	5,882·4
Ferritslev Barres-Hjalmar Hartmann	3	19 821 776	25 471·7	1,009·4	11·675	11·532	4,532·4	5,823·1
Giant Yellow Globe-Ewing	3	21 1,758 875	24 1,271·7	985·4	11·560	10·080	5,058·4	4,945·7
Leviathan-Rennie	3	22 948 899	24 1,118·0	982·4	12·035	10·008	5,409·5	4,877·1
Barres Half Long-General Swedish Seed Co.	3	21 1,720 874	24 883·3	977·7	12·795	11·835	5,594·0	5,744·0

MANGELS—VARIETY TEST—1926 AND AVERAGE YIELDS—*Concluded*

Variety and source	Number of years tested	Yields per acre on corrected yield basis		Per cent dry matter in crop		Pounds dry matter per acre	
		1926	Average	1926	Average	1926	Average
		tons lb. bush.	tons lb. bush.				
Perfection Mammoth Long Red-Rennie	3	21 1,638 873	24 769·0 975·4	13·495	12·552	5,888·9	6,111·2
Eckendorfer Red-Hjalmar Hartmann	3	19 18 760	23 1,512·7 950·3	12·320	10·840	4,683·8	4,985·5
Yellow Intermediate-C.E.F. Ottawa	3	22 837 897	23 1,362·0 947·2	13·380	12·677	5,999·2	5,990·9
Giant Yellow Globe-Rennie	3	22 199 884	23 1,140·0 942·8	11·545	10·072	5,102·8	4,689·0
Red Globe-Dupuy and Ferguson	3	20 1,100 822	23 1,077·7 941·6	11·155	11·122	4,584·7	5,234·7
Yellow Eckendorfer-General Swedish Seed Co.	3	21 567 851	23 1,056·3 941·1	12·580	11·920	5,354·9	5,598·1
Yellow Leviathan-Rennie	3	20 762 815	23 924·3 938·5	12·225	11·312	4,983·2	5,305·3
Long Red Mammoth-Ewing	3	16 1,710 674	23 863·0 937·3	13·575	12·408	4,576·1	5,735·0
Select Giant Rose Intermediate Sugar-Ewing	3	17 1,934 719	23 631·7 932·6	15·235	14·568	5,474·5	6,749·1
Barres Oval-General Swedish Seed Co	3	15 269 605	23 317·0 926·3	13·045	11·888	3,948·6	5,405·2
Danish Sludstrup-Ewing	3	17 166 683	22 1,874·7 917·5	15·740	14·223	5,377·7	6,434·2
Golden Tankard-Ewing	3	18 1,878 758	22 452·7 889·1	13·280	11·760	5,030·2	5,206·3
Long Yellow-Ewing	3	16 1,239 665	21 1,342·7 866·9	14·860	13·537	4,939·3	5,799·7
Red Globe-Ewing	3	16 198 644	21 983·0 859·7	13·475	12·465	4,338·7	5,304·1
Golden Tankard-Rennie	3	20 979 820	21 748·3 855·0	13·280	13·320	5,442·0	5,695·9
Svalof Original Alfa-General Swedish Seed Co.	3	14 1,368 587	21 297·0 845·9	12·970	11·627	3,809·0	4,831·9
Danish Sludstrup-McDonald	2	.....	28 1,494·5 1,149·9	.....	9·880	.....	5,672·7
Elvetham Mammoth-Hjalmar Hartmann	2	.....	25 304·0 1,006·1	.....	12·510	.....	6,299·9
White Red Top Half Sugar-H. Hartmann	2	.....	23 838·5 936·8	.....	11·520	.....	5,395·1
White Green Top Half Sugar-H. Hartmann	2	.....	22 1,248·5 905·0	.....	12·100	.....	5,494·3
Svalof Original Rubra-General Swedish Seed Co	2	17 532 691	20 394·0 807·9	14·980	13·605	5,172·9	5,415·0
Green Top White Sugar-Ewing	2	.....	17 628·5 692·6	.....	23·180	.....	8,021·0
Svalof Red-General Swedish Seed Co	1	.....	27 1,347·0 1,106·9	.....	12·170	.....	6,735·7
Barres Sludstrup-General Swedish Seed Co	1	.....	27 875·0 1,097·5	.....	12·730	.....	6,985·6
Giant Intermediate Yellow-Halifax Seed Co	1	.....	26 315·0 1,046·3	.....	10·390	.....	5,435·5
Barres Sludstrup-Hjalmar Hartmann	1	.....	26 242·0 1,044·8	.....	10·900	.....	5,694·4
Half Sugar Green Top-Hjalmar Hartmann	1	19 278 766	19 278·0 765·6	13·320	13·320	5,098·6	5,098·6
Giant White Half Sugar-Ewing	1	16 1,261 665	16 1,261·0 665·2	13·985	13·985	4,651·6	4,651·6
Half Sugar Red Top-Hjalmar Hartmann	1	16 1,000 660	16 1,000·0 660·0	15·040	15·040	4,963·2	4,963·2

TURNIPS

Thirty-five varieties or strains of Swedes were tested in 1926. The seed was sown on June 5, and harvesting completed on October 30. Invicta Bronze Top (Rennie) and Invicta Bronze Top (Ewing) stand first and second in average yield, with Hall's Westbury (Ewing) coming third.

There was no club-root infection in 1926, and all varieties were exceptionally clean and free from other diseases. On club-root-infected land the Bangholm varieties show up to good advantage as they are not only club-root resistant, but run high in dry-matter content. The accompanying table gives the data collected to date.

SWEDES—VARIETY TEST—1926 AND AVERAGE YIELDS

Variety and source	No. of years tested	Yield per acre on corrected yield basis						Per cent dry matter in crop		Pounds dry matter per acre	
		1926			Average			1926	Average	1926	Average
		tons	lb.	bush.	tons	lb.	bush.				
Invicta Bronze Top-Rennie	3	35	1,218	1,424	36	638·0	1,452·8	6·640	7·970	4,728·9	5,761·6
Invicta Bronze Top-Ewing	3	32	1,998	1,320	35	546·7	1,410·9	6·130	8·890	4,045·7	6,379·8
Hall's Westbury-Ewing	3	26	1,297	1,066	35	513·0	1,410·3	8·555	8·835	4,559·6	6,302·3
Best of All-Rennie	3	33	1,113	1,342	34	1,863·3	1,397·3	8·945	9·358	6,003·3	6,512·7
Olsgaard Bangholm-Hjalmar Hartmann	3	34	1,977	1,400	34	1,760·0	1,395·2	9·300	8·693	6,507·9	6,061·4
Best of All-Ewing	3	31	1,937	1,279	34	1,503·0	1,390·1	8·145	8·385	5,207·7	5,844·4
Ditmar's-McNutt	3	31	1,357	1,267	34	1,365·7	1,387·3	8·220	7·863	5,207·9	5,406·5
Selected Hazard's Improved-Rennie	3	37	959	1,499	34	938·7	1,378·8	7·540	8·660	5,651·9	5,950·6
Shepherd 1283-Trifolium	3	35	411	1,408	33	1,768·0	1,355·4	7·715	8·615	5,432·2	5,823·4
Bangholm-McKenzie	3	34	162	1,363	32	1,575·0	1,311·5	8·260	9·237	5,630·2	6,005·9
Bangholm-Ewing	3	30	349	1,207	32	927·0	1,298·5	7·755	9·085	4,680·1	5,936·6
Improved Yellow Swedist-General Swedish Seed Co	3	31	1,612	1,272	32	85·3	1,281·7	8·535	9·358	5,429·3	5,960·9
Improved Jumbo or Elephant-Rennie	3	30	1,437	1,229	32	1·7	1,280·0	8·300	8·407	5,099·3	5,385·8
Shepherd's Golden Globe-H. Hartmann	3	32	775	1,296	31	640·0	1,252·8	9·845	9·298	6,377·1	5,814·5
Kangaroo-Ewing	3	28	1,050	1,141	30	589·7	1,211·8	7·680	8·250	4,381·4	5,002·9
Bangholm-Nappan	3	29	1,302	1,186	29	1,394·7	1,188·0	11·860	11·477	7,033·2	6,814·0
Bangholm-General Swedish Seed Co	3	31	998	1,260	29	695·7	1,173·9	7·985	9·095	5,030·4	5,316·1
Sutton's Champion Purple Top-Ewing	3	26	1,855	1,077	28	1,569·0	1,151·4	9·965	10·605	5,366·7	6,108·8
Elephant or Monarch Improved-Ewing	3	26	934	1,059	28	1,438·7	1,148·8	8·575	7·588	4,539·1	4,342·1
Hall'sWestbury-Rennie	2	32	759	1,295	33	95·5	1,321·9	10·020	9·055	6,488·9	5,972·1
Selected Magnum Bonum-Rennie	2	31	1,502	1,270	32	1,405·5	1,308·1	8·200	7·810	5,207·2	5,100·8
Kangaroo Bronze Top-Rennie	2	.....			32	730·5	1,294·6	.....	9·220	.....	5,950·5
Sutton's Champion Purple Top-Rennie	2	.....			31	778·5	1,255·6	.....	9·990	.....	6,287·1
Canadian Gem-Rennie	2	30	1,696	1,234	31	651·0	1,253·0	8·030	8·350	4,954·2	5,234·4
Bangholm Swede Turnip-Halifax Seed Co	2	28	423	1,128	30	938·0	1,218·8	9·455	10·293	5,334·8	6,309·9
Bangholm Purple Top-Rennie	2	.....			30	463·0	1,209·3	.....	9·460	.....	5,698·7
Bangholm-Charlottetown	2	27	10	1,080	27	1,550·0	1,111·0	8·460	9·755	4,569·2	5,438·8
Bangholm 116-Trifolium	1	.....			35	1,306·0	1,426·1	.....	10·330	.....	7,365·9
Westbury Purple Top-Rennie	1	.....			34	1,401·0	1,388·0	.....	10·140	.....	7,037·3
Wilhelmsburger C. R. Resistant, D.L.F	1	34	6	1,360	34	6·0	1,360·1	9·140	9·140	6,215·7	6,215·7
Bangholm-Trifolium	1	.....			33	1,964·0	1,359·3	.....	9·560	.....	6,497·4
Magnum Bonum-Ewing	1	.....			33	581·0	1,331·6	.....	9·150	.....	6,092·2
Kilway's Perfect Model O.A.C	1	32	1,058	1,301	32	1,058·0	1,301·2	7·755	7·755	5,045·2	5,045·2
Bangholm 1322-Trifolium	1	.....			32	349·0	1,287·0	.....	9·650	.....	6,209·7
Bangholm Pajbjerg V-Trifolium	1	31	56	1,241	31	56·0	1,241·1	9·355	9·355	5,805·3	5,805·3
Bangholm Studsgaard Christensen's Selected D.L.F	1	30	1,680	1,234	30	1,680·0	1,233·6	8·850	8·850	5,458·7	5,458·7
Champion Purple Top-Rennie	1	30	1,400	1,228	30	1,400·0	1,228·0	8·085	8·085	4,964·2	4,964·2
Kangaroo-Graham Brothers	1	.....			30	87·0	1,201·7	.....	9·530	.....	5,726·3
Bangholm 1029-Trifolium	1	.....			29	842·0	1,176·8	.....	10·000	.....	5,884·2
Bangholm Studsgaard-Trifolium	1	28	542	1,131	28	542·0	1,130·8	8·595	8·595	4,859·8	4,859·8
Bangholm Klank-Trifolium	1	28	414	1,128	28	414·0	1,128·3	9·645	9·645	5,441·1	5,441·1
Kangaroo Bronze Top-Graham Brothers	1	27	817	1,096	27	817·0	1,096·3	8·930	8·930	4,895·2	4,895·2
Kangaroo-Rennie	1	27	472	1,089	27	472·0	1,089·4	9·320	9·320	5,076·8	5,076·8
Bangholm-Kentville	1	26	247	1,045	26	247·0	1,044·9	10·040	10·040	5,245·6	5,245·6
Laplander-D. C. Hilton	1	24	877	978	24	877·0	977·5	9·605	9·605	4,694·6	4,694·6

CARROTS

Sixteen varieties of carrots were seeded on June 5, and harvesting was completed on October 23. Improved Intermediate White (Ewing) still leads in total average yield per acre. Mammoth White Intermediate (Rennie), the variety standing second last year, was not on test this year, and so cannot be compared with the other varieties that have been tested for three years. The accompanying table gives the results to date.

CARROTS—VARIETY TEST—1926 AND AVERAGE YIELDS

Variety and Source	No. of years tested	Yield per acre on corrected yield basis						Per cent dry matter in crop		Pounds dry matter per acre	
		1926			Average			1926	Average	1926	Average
		tons	lb.	bush.	tons	lb.	bush.				
Improved Intermediate White-Ewing	3	9	1,708	394	15	548·7	611·0	8·770	9·670	1,728·4	3,008·5
White Belgian-Dupuy and Ferguson	3	12	806	496	14	1,997·7	600·0	9·335	10·105	2,315·6	3,089·5
Danish Champion-C.E.F. Ottawa	3	10	166	403	14	174·7	563·5	8·710	10·327	1,756·5	2,976·2
Large White Belgian-Rennie	3	10	90	402	14	31·3	560·6	9·470	9·617	1,902·5	2,709·6
Mammoth Short White-Rennie	3	10	42	401	13	1,842·3	556·8	9·570	9·943	1,918·0	2,797·7
Yellow Belgian-Ewing	3	11	127	443	13	1,077·0	541·5	9·220	11·247	2,040·1	3,061·5
White Belgian-Hjalmar Hartmann	3	8	58	321	13	659·0	533·2	10·720	10·790	1,721·4	2,898·9
New Yellow Intermediate-Ewing	3	10	229	405	13	506·0	530·1	9·450	9·967	1,911·6	2,672·5
Half Long White-General Swedish Seed Co.	3	9	1,168	383	12	1,974·7	519·5	11·600	11·097	2,223·5	2,947·8
Large White Vosges-Dupuy and Ferguson	3	9	369	367	12	1,705·0	514·1	9·650	10·357	1,772·6	2,710·2
Mammoth White Intermediate-Rennie	2	.....			17	1,813·5	716·3	.....	9·390	.....	3,387·7
Danish Champion-Hjalmar Hartmann	2	.....			16	285·5	645·7	.....	11·775	.....	3,807·1
White Belgian-Ewing	2	10	43	401	14	462·5	569·3	10·060	10·400	2,016·3	2,988·7
James B.L. 781-D.L.F.	2	9	1,458	389	10	74·0	401·5	12·105	12·528	2,355·4	2,517·4
White Belgian 9008-Trifolium	1	.....			15	90·0	601·8	.....	11·210	.....	3,373·1
French White Belgian-Ewing	1	.....			13	1,907·0	558·1	.....	9·420	.....	2,628·8
Champion-General Swedish Seed Co.	1	.....			13	1,435·0	548·7	.....	9·640	.....	2,644·7
White Belgian No. 1207-Trifolium	1	.....			13	1,033·0	540·7	.....	14·070	.....	3,803·5
New Yellow Intermediate-Halifax Seed Co.	1	.....			11	219·0	444·4	.....	13·400	.....	2,977·3
White Intermediate-Experimental Station, Summerland	1	10	404	408	10	404·0	408·1	9·065	9·065	1,849·6	1,849·6
Yellow Intermediate-Halifax Seed Co.	1	8	1,262	345	8	1,262·0	345·2	10·820	10·820	1,867·7	1,867·7
White Belgian-Trifolium	1	8	1,204	344	8	1,204·0	344·1	11·485	11·485	1,975·9	1,975·9
Champion-Hjalmar Hartmann	1	8	65	321	8	65·0	321·3	10·955	10·955	1,759·9	1,759·9

TURNIP SEED PRODUCTION

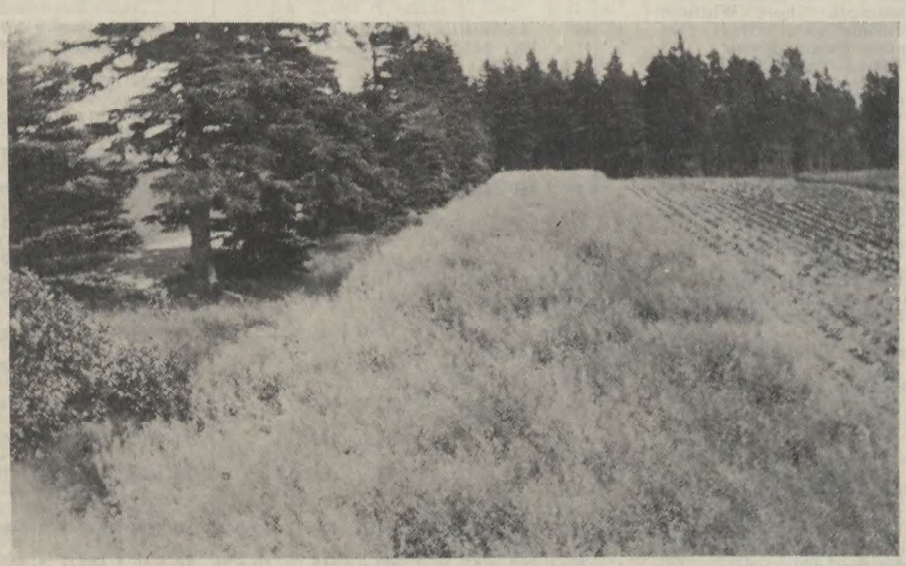
One hundred and sixty bushels of Bangholm club-root-resistant Swede turnips were pitted during the fall of 1925 for use as stecklings the following spring. To all appearances the roots kept well, but when set out 50 per cent of them failed to grow. The ground was unfit for planting until May 29, and it is likely that the crowns were injured by being in the pit too late in the season. Two hundred and fifty pounds of good plump seed were produced on the one-half acre, giving a yield of 500 pounds per acre. This is a low yield, but when

the 50 per cent stand is taken into consideration it would come up to our average production. The yield with a 100 per cent stand would hardly be doubled as allowance must be made for the increased growing and feeding area per plant where the stand is light and there are fewer plants.

COST TO PRODUCE TURNIP SEED—1926

Area—1 acre—	
Rent of land	$ 4 00
Use of machinery	2 85
Manure, 8 tons at $2 per ton	16 00
Pitting (fall 1925), 1 man, 40 hours at 28 cents	11 20
Ploughing, man, 6 hours at 32 cents, and horse, 17 hours at 10 cents	3 62
Disking and smoothing, tractor, 0.7 hours at $1	0.70
Disking and smoothing, 2.6 hours, 2 horses at 52 cents	1 35
Planting, 1 man, 117 hours at 28 cents	32 76
Planting, 19 hours, 2 horses at 52 cents	9 88
Cultivating, 8 hours, 2 horses at 52 cents	4 16
Hoeing, 1 man, 52 hours at 28 cents	14 56
Harvesting and cleaning seed, 1 man, 262 hours at 28 cents	73 36
320 bushels turnips at .085 cents	27 20
Total cost	$201 64

Yield per acre—500 pounds.
Cost per acre—$201.64.
Cost per pound—40.33 cents.



Turnip seed is not a difficult crop to produce. This plot gave an average yield of 1,052 pounds per acre, which valued at 70 cents per pound amounts to $736.40 per acre.

SUGAR BEETS

Fourteen approved factory varieties were under trial in 1926. The seed was sown on June 5 and the crop harvested on October 27. The analysis was made by the Division of Chemistry at Ottawa. The average percentage of sugar is good and the coefficient of purity is high. The yields are most encouraging. The accompanying table gives the 1926 and average results for the past three years.

SUGAR BEET VARIETY TEST—1926

Variety and source	No. of years tested	Corrected yield per acre				Analysis of Chemistry Division							
		1926		Average		Per cent sugar in juice		Coefficient of purity		Weight of one root			
						1926	Average	1926	Average	1926		Average	
		tons	lb.	tons	lb.					lb.	oz.	lb.	oz
Horning, Dominion Sugar Co.	3	13	1,910	16	896·0	18·21	18·19	86·84	88·30	1	8	1	10·3
Schreiber & Son, Dominion Sugar Co.	3	11	1,688	15	1,206·7	18·75	17·92	89·39	88·16	1	8	1	10·0
Dieppe, Dominion Sugar Co.	3	14	41	15	72·3	18·27	18·40	84·68	87·38	1	6	1	9·3
Henning & Harving, Dominion Sugar Co.	2	..	.....	17	1,793·0	.....	17·56	.....	85·95	..	..	1	14·5
D. Burgman, Dominion Sugar Co.	2	..	.....	16	1,303·0	.....	16·50	.....	85·01	..	..	1	6·5
Vilmorin's Imp. B, Dominion Sugar Co.	2	..	.....	16	874·0	.....	18·39	.....	90·41	..	..	1	8·0
Rabbethge & Giesecke, Dominion Sugar Co.	2	12	1,838	14	18·0	19·34	18·98	88·82	87·94	1	7	1	9·5
Ideal, Nova Scotia Agricultural College	1	18	1,621	18	1,621·0	19·34	19·34	87·10	87·10	1	7	1	7·0
Ivanosk R. M. (Russian)	1	14	1,784	14	1,784·0	18·79	18·79	87·82	87·82	1	13	1	13·0
Uladovsk (Russian)	1	14	30	14	30·0	17·98	17·98	85·63	85·63	1	12	1	12·0
Sacharotest Ivanosk R. M., Amtorg Trading Corp.	1	13	1,828	13	1,828·0	19·14	19·14	89·34	89·34	1	2	1	2·0
Kalinki	1	13	1,083	13	1,083·0	18·75	18·75	86·66	86·66	1	10	1	10·0
Ivanosk S. (Russian)	1	13	213	13	213·0	18·79	18·79	88·63	88·63	1	10	1	10·0
Home grown, Dominion Sugar Co.	1	..	.....	13	184·0	.....	18·88	.....	88·76	..	..	1	....
Sacharotest Ivanosk, Amtorg Trading Corp.	1	12	1,960	12	1,960·0	18·99	18·99	88·04	88·04	1	9	1	9·0
Kalinki, Amtorg Trading Corp.	1	12	1,283	12	1,283·0	18·75	18·75	83·41	83·41	1	12	1	12·0
Sacharotest Uladovsk Y. S., Amtorg Trading Corp.	1	12	548	12	548·0	19·17	19·17	88·76	88·76	1	5	1	5·0
Buszczynski	1	8	1,997	8	1,997·0	19·16	19·16	88·00	88·00	..	15	..	15·0

EXPERIMENTS WITH FERTILIZERS

The six experiments with fertilizers were continued and while space will not permit a detailed report on all, the older experiments will be given with results to date.

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 clover sod. The cost of the fertilizers is all charged against the potato crop although the rotation is a three-year one of potatoes, oats and clover hay. The soil is an average clay loam with only fair natural fertility. For the potato crop alone our results indicate that on that type of soil a fertilizer not too high in nitrogen and medium to high in phosphoric acid and potash will give the greatest profit over the cost of fertilizer, for example a 3-6-6, 3-8-6, 4-8-8 or a 4-8-10 mixture. The accompanying table gives the 1926 and average results.

* Owing to lack of space detailed information on the experiments in this section are not given here, but it may be secured by writing to the Superintendent, Experimental Farm, Nappan, N.S.

Formulae	6-6-6			5-6-6			4-6-6			3-6-6			5-8-6		
Application per acre in pounds....	1,000	1,500	2,000	1,000	1,500	2,000	1,000	1,500	2,000	1,000	1,500	2,000	1,000	1,500	2,000
Average yield of duplicate plots in bushels—															
Marketable..... bush.	104·3	122·3	185·3	122·3	151·3	175·7	138·3	172·7	215·3	144·7	116·3	189·3	119·7	140·3	200·3
Unmarketable..... "	28·0	34·0	33·7	27·7	36·0	34·3	25·0	31·0	29·3	23·3	29·0	25·7	40·3	31·0	33·3
Increase over average of checks—															
Marketable..... bush.	50·4	68·4	131·4	68·4	97·4	121·8	84·4	118·8	161·4	90·8	62·4	135·4	65·8	86·4	146·4
Unmarketable..... "	12·1	18·1	17·8	11·8	20·1	18·4	9·1	15·1	13·4	7·4	13·1	9·8	24·4	15·1	17·4
Value of increases..... $	32 66	44 66	82 40	43 40	62 46	76 76	52 46	74 30	99 52	55 96	40 06	83 20	44 36	54 86	91 32
Cost of fertilizer..... $	19 47	29 20	38 93	17 37	26 05	34 73	15 44	23 16	30 88	13 43	20 15	26 86	18 93	28 39	37 85
Profit..... $	13 19	15 46	43 47	26 03	36 41	42 03	37 02	51 14	68 64	42 53	19 91	56 34	25 43	26 47	53 47
Average profit of applications..... $	24 04			34 82			52 27			39 59			35 12		
Four-year average profit.. $	17 89	12 51	10 97	18 16	22 65	17 60	24 05	31 82	36 33	29 28	25 55	35 12	23 35	20 82	23 19
Four-year average profit of applications..... $	13 79			19 47			30 73			29 98			22 45		

Formulae	4-8-6			3-8-6			4-8-10			4-8-8			4-8-4		
Application per acre in pounds....	1,000	1,500	2,000	1,000	1,500	2,000	1,000	1,500	2,000	1,000	1,500	2,000	1,000	1,500	2,000
Average yield of duplicate plots in bushels—															
Marketable..... bush.	115·3	137·3	190·0	134·3	136·7	186·3	136·7	195·3	214·0	133·7	182·0	167·0	128·3	123·3	166·7
Unmarketable..... "	32·7	29·7	28·7	25·0	36·0	38·3	26·0	31·0	33·0	25·3	31·0	38·7	32·3	35·0	32·0
Increase over average of checks—															
Marketable..... bush.	61·4	83·4	136·1	80·4	82·8	132·4	82·8	141·4	160·1	79·8	128·1	113·1	74·4	69·4	112·8
Unmarketable..... "	16·8	13·8	12·8	9·1	20·1	22·4	10·1	15·1	17·1	9·4	15·1	22·8	16·4	19·1	16·1
Value of increase..... $	40 20	52 80	84 22	50 06	53 70	83 92	51 10	87 86	99 48	49 76	79 88	72 42	47 92	45 46	70 90
Cost of fertilizer..... $	17 00	25 50	34 00	14 99	22 49	29 98	18 80	28 20	37 60	17 90	26 85	35 80	16 10	24 15	32 20
Profit..... $	23 20	27 30	50 22	35 07	31 21	53 94	32 30	59 66	61 88	31 86	53 03	36 62	31 82	21 31	38 70
Average profit of applications..... $	33 57			40 07			51 28			40 50			30 61		
Four-year average profit.. $	26 95	27 15	23 28	29 83	27 12	37 04	29 75	37 30	32 80	29 63	35 26	29 42	20 60	25 02	23 22
Four-year average profit of applications..... $	25 79			31 33			33 28			31 44			22 95		

Prices used.—

Nitrate of soda, per ton	$70 00
Sulphate of ammonia, per ton	70 00
Acid phosphate, per ton	25 00
Muriate of potash, per ton	45 00
Marketable potatoes, per bushel	0 60
Unmarketable potatoes, per bushel	0 20

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 results shows that it requires carefully collected data over a period of years before any conclusive deductions 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 are being conducted 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 yet very little benefit, if any, has been noted from the use of the salt on these crops.

EPHOS BASIC PHOSPHATE

The object of this 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. Results indicate that as a source of phosphoric acid for the turnip and oat crop, Ephos when used in conjunction with nitrogen and potash has proven equal to superphosphate and basic slag. The following table gives the results to date:—

EPHOS BASIC PHOSPHATE EXPERIMENT, 1925–26

Fertilizer used and pounds applied per acre	Yield of turnips, 1925	Gain or loss over average of checks	Yield of oats, 1926		Gain or loss over average of checks	
			Straw	Grain	Straw	Grain
	tons	tons	lb.	bush. lb.	lb.	bush. lb.
Ephos, 292 lb. 27½ per cent	12·00	4·56	1,520	40 —	58	−6 14
Superphosphate, 500 lb. 16 per cent	14·12	6·68	1,760	47 2	298	— 22
Basic slag, 500 lb. 16 per cent	14·08	6·64	1,920	54 4	458	7 24
Ephos, 292 lb. Nitrate of soda, 150 lb. Muriate of potash, 100 lb.	16·64	9·20	1,600	54 4	138	7 24
Superphosphate, 500 lb. Nitrate of soda, 150 lb. Muriate of potash, 100 lb.	15·60	8·16	1,840	54 4	378	7 24
Basic slag, 500 lb. Nitrate of soda, 150 lb. Muriate of potash, 100 lb.	16·72	9·28	1,600	49 14	138	3 —
Nitrate of soda, 150 lb. Muriate of potash, 100 lb.	9·48	2·04	1,520	47 2	58	— 22

Average yield of checks, 1925—Turnips, 7·44 tons.
" " 1926—Oats { grain, 46 bush. 14 lb.
straw, 1,462 lb.

CALCITIC VERSUS MAGNESIAN VERSUS GYPSUM VERSUS HYDRATED LIME EXPERIMENT

An experiment with calcitic limestone, magnesian limestone, gypsum and hydrated lime was outlined and started in 1925. The rotation is a four-year one of roots, grain, clover hay and timothy hay. The object is to determine the value of the different forms of lime in correcting soil acidity and their effect on crop yields. No comparison may be drawn at the present time as the duration of the experiment has been too short for comparative data. The following table gives the 1925 and 1926 results:—

CALCITIC VERSUS MAGNESIAN VERSUS GYPSUM VERSUS HYDRATED LIME EXPERIMENT, 1925-26

Form in which lime was applied	Rate of application per acre	Yield of turnips in 1925	Gain or loss over average of checks, 1925	Yield of oats, 1926		Gain or loss over average of checks 1926	
				Straw	Grain	Straw	Grain
	tons	bush.	bush.	lb.	bush. lb.	lb.	bush. lb.
Calcitic limestone	2	749·33	5·33	2,428	40 28	176	2 32
Calcitic limestone	6	842·67	98·67	3,428	41 6	1,176	3 10
Magnesian limestone	2	773·33	29·33	2,628	43 6	376	5 10
Magnesian limestone	6	824·00	80·00	2,532	45 18	280	7 22
Gypsum	0·5	802·67	58·67	2,132	34 16	−120	−3 14
Gypsum	1·5	832·00	88·00	1,960	37 22	−292	— 8
Hydrated lime	1	776·00	32·00	2,428	41 6	176	3 10
Hydrated lime	3	773·33	29·33	2,880	36 16	628	−1 14

Average of checks, 1925 —Turnips, 744 bushels.
" " 1926— Oats {grain, 37 bush. 30 lb.
{straw, 2,252 lb.

POULTRY

The winter of 1925-26 was not conducive to economical chick or egg production. The mercury was below zero too often for one to expect a high egg yield. The heavy wind and snow storms prevented the proper ventilation of the houses and also kept the straw damp, all of these factors tending to reduce egg yields. The deep snow prevented the birds getting out on the ground during the breeding season, therefore one could not hope to maintain the vitality of the breeding stock up to a maximum. Chicken-raising was made more difficult by a late, cold spring, it being very late in the season before the baby chicks could get out on to the soil. However, the major portion of the growing season was very favourable and fair results were obtained. The prices of mill feeds were slightly higher than for 1925 and the average price of eggs was approximately 2.2 cents less, thus reducing the margin between cost of production and market value over 1925. Even then, there was a fair spread for the poultryman to work on and should encourage him to forge ahead. There was a good demand throughout the year for bred-to-lay stock.

PEDIGREE BREEDING

The pedigree breeding work with Barred Rocks was continued and fairly satisfactory progress made. Unfortunately, a number of our highest producers had to be cut out from our breeding pens because of small eggs. The small egg is a very important factor and should be carefully guarded against in our breeding operations. By the selection of cockerels from dams who had a production of over 175 eggs weighing 24 ounces to the dozen a marked improvement has been noted during the past year. During the spring of 1926, 238 matings were made, of which 16 were registered females.

The following table is a summary of production of all birds over 150 eggs per year:—

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	184·0	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	208·0	6	184·0	6	162·2
1925-26	3	204·0	13	183·0	10	161·1

HOUSING

The plant consists of one breeding-house 16 by 120 feet, accommodating 300 breeding birds, one shed-roof house 16 by 32 feet with a capacity of 100 birds, and twenty-six colony houses for the egg-laying contest which are 10 by 12 feet. The new brooder and incubator house, which is 16 by 67 feet, has proven very satisfactory. A photo of this house may be seen on page 56 of the 1925 report from this Farm.

BEEF SCRAP VERSUS SKIM-MILK

This test has been carried on continually since 1922 and the results obtained are not only interesting but should prove valuable, particularly to the dairy farmer for the results indicate conclusively that skim-milk may be marketed through the egg at a very remunerative price. The birds selected for these tests are as uniform in breeding and age as it is possible to get them, in order to reduce experimental errors to a minimum. The following table gives the details and results obtained for 1926:—

SKIM-MILK VERSUS BEEF SCRAP, NOVEMBER 15, 1925, TO MAY 15, 1926

—		Skim-milk	Beef scrap
Number of days in experiment		181	181
Number of birds in experiment		15·5	16·0
Scratch feed consumed	lb.	405	405
Mash consumed	"	106	71
Green feed consumed	"	520	522
Grit consumed	"	7	8
Shell consumed	"	31	27
Skim-milk consumed	"	403	.....
Beef scrap consumed	"	.....	23
Total eggs laid during experiment		817	869
Average eggs laid per bird during experiment		52·7	54·3
Statement of Cost			
Scratch feed at $2.53 per cwt	$	10 25	10 25
Mash at $2.13 per cwt	$	2 26	1 51
Green feed at $0.175 per cwt	$	0 91	0 91
Grit at $1.25 per cwt	$	0 09	0 10
Shell at $1.50 per cwt	$	0 47	0 41
Skim-milk at $0.20 per cwt	$	0 81	.....
Beef scrap at $3.75 per cwt	$	.....	0 86
Total cost of feed	$	14 79	14 04
Cost of eggs per dozen	$	0·217	0·194
Total value of eggs	$	31 86	33 65
Profit on pens over cost of feed	$	17 07	19 61
Profit per bird over cost of feed	$	1 10	1 23
Basis of 10 Birds			
Average cost of feed for period of 5 years	$	13 43	12 13
Average number of eggs laid in 5 years		698·4	621·4
Value of eggs laid, average of 5 years	$	27 21	23 64
Average profit over period of 5 years	$	13 78	11 50
Average cost per dozen	$	0 23	0 23

The birds were fed with grain in the litter, mash in the hoppers and the beef scrap was fed in the mash. The grain mixture was made up of 100 pounds wheat, 100 pounds corn and 50 pounds oats while the mash mixture consisted of (without scrap) 100 pounds bran, 100 pounds shorts, 100 pounds corn meal, 100 pounds crushed oats, 25 pounds oilcake and 10 pounds charcoal. Pen 1, fed on milk, started out with 16 birds and continued so for three months; one bird died, leaving 15 birds for the last three months, or an average of 15.5 birds for the period of the experiment. The average amount of beef scrap consumed over a five-year period was 24 pounds per ten birds per

year at an average cost of $6.52 per hundredweight, amounting to $1.71. The average amount of skim-milk consumed per pen of ten birds was 401 pounds at 20 cents per hundredweight amounting to 80 cents. While the beef scrap shows a slight gain in profit over feed cost for 1926, yet the five-year average shows a gain or profit of $2.28 in favour of the skim-milk and it is only fair to assume the increase is due to the value of the skim-milk as a food for hens.

HOME-MIXED VERSUS COMMERCIAL FEEDS

The feeding of home-mixed and commercial feeds has been carried on continually for the past five years in order to determine the relative value of each when fed to laying stock. Pen 3 of twenty-four birds was fed on the following home-mixed feed: Grain—100 pounds wheat, 100 pounds corn, 50 pounds oats; mash—100 pounds bran, 100 pounds shorts, 100 pounds cornmeal, 100 pounds crushed oats, 145 pounds tankage, 25 pounds oilcake and 10 pounds charcoal. Pen 4 of twenty-four birds was fed on commercial scratch grain and commercial dry mash mixture. The following table gives the results obtained for 1926, also a five-year average.

HOME-MIXED VERSUS COMMERCIAL FEEDS, NOVEMBER 15, 1925, TO MAY 15, 1926

—		Home-mixed Pen 3	Commercial Pen 4
Number of days in experiment		181	181
Number of birds in experiment		24	24
Home-mixed scratch feed consumed	lb.	805	.....
Commercial scratch feed consumed	"	.....	860
Home-mixed mash consumed	"	130	.....
Commercial mash consumed	"	.....	70
Green feed consumed	"	713	713
Grit consumed	"	17	16
Shell consumed	"	33	41
Total number eggs laid		2,062	2,148
Average number of eggs laid per bird		85·9	89·5
Statement of Cost			
Home-mixed scratch feed at $2.53 per cwt	$	20 37	.....
Commercial scratch feed at $3 per cwt	$	.....	25 80
Home-mixed mash at $3.06 per cwt	$	3 98	.....
Commercial mash at $4 per cwt	$	.....	2 80
Green feed at $0.175 per cwt	$	1 25	1 25
Grit at $1.25 per cwt	$	0 21	0 20
Shell at $1.50 per cwt	$	0 50	0 62
Total cost of feed	$	26 31	30 67
Cost of eggs per dozen	$	0·153	0·171
Total value of eggs	$	80 46	84 46
Profit on 24 birds over feed cost	$	54 15	53 79
Profit on 1 bird over feed cost	$	2 26	2 24
Basis of 10 Birds			
Average cost of feed for period of 5 years	$	12 29	13 39
Average number of eggs laid		703·6	676·6
Value of eggs laid, average of 5 years	$	26 64	25 76
Average profit over period of 5 years	$	14 35	12 37
Average cost per dozen	$	0 21	0 24

NOTE.—The grain was fed in litter and mash in hopper.

The lot fed on home-mixed feed show a profit of $2.26 per bird over feed cost as compared with $2.24 for the lot fed on the commercial mixtures. The difference is very small for the past year, but taking the five-year average we find that there is a difference of about 20 cents per bird in favour of the home-mixed feeds.

EXPERIMENTAL FEEDING TEST CARRIED ON WITH BREEDING STOCK

Six pens of fifteen birds each were used in testing different kinds of vitamine foods in order to ascertain their effect, if any, on the fertility and livability of chicks hatched. The following table gives the feeds as fed and results obtained:—

EXPERIMENT COVERING SUPPLEMENTARY FEEDS TO INCREASE FERTILITY

Pen No.	Number of birds	Special feed	Eggs set	Fertile	Blood rings	Dead germs	Dead in shell	Hatched	Per cent fertile	Per cent fertile hatched	Per cent total hatched	Dead in 3 weeks	Per cent mortality in 3 weeks
15	15	Cod-liver oil	190	104	6	23	48	27	54·7	26·0	14·2	0	0
16	15	Check	303	100	15	29	52	4	33·0	4·0	1·3	1	25·0
17	15	Bone meal, raw liver and cod-liver oil	245	134	4	16	61	53	54·7	39·6	21·6	18	34·0
18	15	Bone meal	227	29	.....	3	19	7	12·8	24·1	3·1	3	42·9
	14	Raw liver	190	76	3	7	32	34	40·0	44·7	17·9	4	11·8
	15	Cod-liver oil	376	181	12	24	105	40	48·1	22·1	10·6	11	27·5

Pens No. 16 to 20 on vitamine feeds were kept indoors until the experiment was finished; pen No. 15, when regularly mated, was kept indoors and when alternate males were used was kept outdoors. The grain mixture was made up of 100 pounds wheat, 100 pounds cracked corn and 50 pounds oats, while the dry mash mixture consisted of the following: 100 pounds bran, 100 shorts, 100 crushed oats, 100 corn meal, 145 tankage, 25 of oilcake and 10 pounds charcoal. In the special feeds the cod-liver oil was fed in the wet mash at the rate of 1 ounce per day per ten birds; the raw liver was fed separately at the rate of one-half pound per ten birds; and the bone meal was fed in the dry mash at the rate of 10 per cent.

The special feeds were started on March 2, 1926, and the first eggs set March 17, 1926; the first regular mating period was completed on May 5 and the second period with males alternated was completed on June 9, 1926. While the figures in the table are only the results of one year and do not permit one to draw definite deductions, yet one cannot help being impressed with the excellent showing made by using cod-liver oil and raw liver both in combination and alone.

OYSTER SHELL AND GRIT VERSUS CLAM SHELL AND GRIT VERSUS GYPSUM

Three pens of 14 birds each were used in this feeding test to determine the relative value of oyster shell versus clam shell as a source of lime in the ration, also to determine the value of gypsum as a substitute. The following table gives the results of one year's test:—

OYSTER SHELL AND GRIT VERSUS CLAM SHELL AND GRIT VERSUS GYPSUM

—		Oyster shell	Clam shell	Gypsum
Number of days in experiment	No.	181	181	181
Number of birds in experiment	"	14	14	14
Scratch feed consumed	lb.	405	405	405
Mash consumed	"	100	108	97
Green feed consumed	"	502	502	502
Grit consumed	"	7	7	.....
Gypsum consumed	"	.....	.....	51
Shell consumed	"	20	23	.....
Total eggs laid during experiment	No.	784	812	521
Average eggs laid per bird during experiment	"	56	58	37
Statement of Cost				
Scratch feed at $2.53 per cwt	$	10 25	10 25	10 25
Mash at $3.06 per cwt	$	3 06	3 30	2 97
Green feed at 17½ cents per cwt	$	0 88	0 88	0 88
Grit at $1.25 per cwt	$	0 09	0 09	.....
Shell at $1.50 and $1.10 respectively	$	0 30	0 25	.....
Gypsum at $2 per cwt	$	.....	.....	1 02
Total cost of feed	$	14 58	14 77	15 12
Cost of eggs per dozen	$	0 223	0 218	0 348
Total value of eggs	$	31 92	34 10	20 87
Profit over feed cost for pen	$	17 34	19 33	5 75
Profit over feed cost per bird	$	1 23	1 38	0 41

FISH MEAL VERSUS BEEF SCRAP

Two pens of 16 birds each were used in this test, the object being to study the relative value of fish meal and beef scrap. From the following table, which is the result of only one year, it may be noted that birds receiving beef scrap laid the greater number of eggs, and that they showed a profit 19 cents greater per bird than those receiving fish meal.

FISH MEAL VERSUS BEEF SCRAP

——		Fish meal	Beef scrap
Number of days in experiment	No.	181	181
Number of birds in experiment	"	16	16
Scratch feed consumed	lb.	405	405
Mash consumed	"	82	71
Green feed consumed	"	522	522
Grit consumed	"	8	8
Shell consumed	"	29	27
Scrap consumed	"	.....	23
Fish meal consumed	"	27	.....
Total eggs laid during experiment	No.	822	869
Average number eggs laid per bird	"	51·4	54·3
Statement of Cost			
Scratch feed at $2.13 per cwt	$	10 25	10 25
Mash at $2.13 per cwt	$	1 75	1 51
Green feed at $0.175 per cwt	$	0 91	0 91
Grit at $1.25 per cwt	$	0 10	0 10
Shell at $1.50 per cwt	$	0 44	0 41
Scrap at $3.75 per cwt	$	.....	0 86
Fish meal at $4 per cwt	$	1 08	.....
Total cost of feed	$	14 53	14 04
Cost of eggs per dozen	$	0 212	0 194
Total value of eggs	$	31 13	33 65
Profit on pens over feed cost	$	16 60	19 61
Profit per bird over feed cost	$	1 04	1 23

MANGELS VERSUS EPSOM SALTS VERSUS SPROUTED OATS VERSUS CLOVER

Four pens of 15 birds were used to determine the relative value of Epsom salts as a substitute for green feeds, also to make a comparison of different kinds of green feeds. The following table gives the results obtained for 1926:—

MANGELS VERSUS EPSOM SALTS VERSUS SPROUTED OATS VERSUS CLOVER

——		Mangels	Epsom salts	Sprouted oats	Clover
Number of days in experiment	No.	181	181	181	181
Number of birds in experiment	"	15	15	15	15
Scratch feed consumed	lb.	395	395	395	405
Mash consumed	"	120	125	123	101
Grit consumed	"	10	8	9	7
Shell consumed	"	20	21	29	27
Special feed consumed	"	693	45·5 ozs.	55	109
Total number eggs laid	No.	794	813	1 049	835
Statement of Cost					
Scratch feed at $2.53 per cwt	$	9 99	9 99	9 99	10 25
Mash at $3.06 per cwt	$	3 67	3 83	3 76	3 09
Grit at $1.25 per cwt	$	0 13	0 10	0 11	0 09
Shell at $1.50 per cwt	$	0 30	0 32	0 44	0 41
Mangels at $0.175 per cwt	$	1 21	.....	.....	.....
Epsom salts at $8 per cwt	$	.....	0 23	.....	.....
Sprouted oats at $2.10 per cwt	$	.....	.....	1 16	.....
Clover at $0.45 per cwt	$	.....	.....	.....	0 49
Total cost of feed	$	15 30	14 47	15 46	14 33
Cost of eggs per dozen	$	0 23	0 21	0 18	0 21
Total value of eggs	$	31 16	32 28	41 09	32 70
Profit on pen over feed cost	$	15 86	17 81	25 63	18 37
Profit per bird over feed cost	$	1 06	1 19	1 71	1 22

In comparing the figures in the preceding table it may be noted that sprouted oats gave the best returns, clover second, and Epsom salts third, with mangels last. However, one cannot draw definite conclusions from just one year's work and this work will be continued.

HATCHING RESULTS

The following table gives the data collected during 1926; also a three-year average of the hatchings from pullets as against hens; the hatches from different makes of incubators and from eggs laid in March, April and May.

HATCHING RESULTS, 1926 AND THREE-YEAR AVERAGE

—	Total eggs set	Number fertile	Per cent fertile	Number of chicks	Per cent total eggs hatched	Per cent fertile eggs hatched	Number chicks alive when wing banded	Per cent chicks alive when wing banded	Total eggs for 1 chick hatched	Total fertile eggs for chick hatched	Total eggs for one chick wing banded
1926 totals	3,925	1,925	48·8	484	12·3	25·3	390	80·6	8·1	4·0	10·1
Pullets	2,731	1,430	52·3	375	13·7	26·2	300	80·0	7·2	3·8	9·1
Hens	1,194	485	40·6	109	9·1	22·4	90	82·50	10·9	4·4	13·2
3-year average—											
Pullets	1,457	908	62·3	205	14·1	22·6	129	62·9	7·1	4·4	11·3
Hens	1,728	1,211	70·1	342	19·8	28·2	236	69·0	5·1	3·5	7·3
Prairie State	650	420	64·6	36	5·5	8·5	34	94·4	18·0	11·6	19·1
Buckeye	3,275	1,495	45·6	448	13·6	29·9	356	79·4	7·3	3·3	9·1
3-year average—											
Prairie State	617	464	75·2	139	22.5	30·0	77	55·4	4·4	3·3	8·0
Buckeye	2,513	1,604	63·8	387	15·4	24·1	272	70·3	6·5	4·1	9·2
March	1,166	670	57·4	70	6·0	10·4	70	100·0	16·6	9·5	16·6
April	2,106	857	40·6	321	15·2	37·4	238	74·1	6·5	2·6	8·8
May	653	388	59·4	93	14·2	23·9	82	88·1	7·0	4·1	7·9
3-year average—											
March (2 year)	1,147	755	65·8	132	11·5	17·3	112	84·8	8·7	5·7	10·2
April	1,514	913	60·3	269	17·8	29·5	212	78·8	5·6	3·4	7·2
May	700	532	76·0	122	17·4	22·9	77	63·1	5·7	4·4	9·1

From a study of the preceding table it may be noted that, comparing one year with another, the hens have made a much better showing than pullets. For instance, over a period of three years the average eggs required for one chick raised from pullets was 11.3 whereas it was only 7.3 for the hens. In comparing the incubators, the Prairie State made a slightly better showing than the Buckeye but as there were fewer eggs used the results may not be fairly compared. The eggs from the first hatches showed 5.5 per cent greater fertility than those of the second lot hatched in April but the May eggs showed 16.3 per cent better than April and 10.2 per cent better than March, thus showing the advantage gained when the breeding stock may get out on the soil. The poor showing of the April eggs is probably due to a lowering of the vitality during April, a month that is usually unfit for birds to get outdoors to any extent.

SUMMARY OF STATEMENT OF PRODUCTION

The following is a summarized statement of the cost of production and profits over feed cost from pullets and hens during 1926:—

SUMMARY OF STATEMENT OF PRODUCTION, 1925-26

—		Pullets	Hens
Number of birds, November 1, 1925	No.	255	111
Number of birds, October 31, 1926	"	64	42
Total feed consumed	lb.	25,168	9,691
Total feed cost	$	403 49	169 59
Eggs laid	No.	27,100	4,287
Value of eggs	$	958 52	140 74
Profit over feed cost	$	555 03	−28 85
Cost of eggs per dozen	$	0 18	0 47
Cost per bird	$	2 30	2 00
Eggs per bird	No.	135	52
Profit over feed cost per bird	$	2 49	−0 35

COST OF REARING CHICKS

The following is a statement of the cost of rearing chicks to the end of October for the season of 1926:—

Number of eggs set		6,397
Number of chicks hatched		752
Number of chicks living October 31		366

INCUBATION AND BROODING PERIODS

Statement of cost—		
6,397 eggs at 38 cents per dozen	$202 57	
114 gallons oil at 26 cents per gallon	29 64	
1,800 pounds hard coal at $22.30 per ton	20 07	
1,150 pounds soft coal at $7.50 per ton	4 31	
400 pounds commercial grain at $4.20 per cwt	16 80	
600 pounds home grain at $2.43 per cwt	14 58	
600 pounds mash at $2.60 per cwt	15 60	
200 pounds wheat at $2.75 per cwt	5 50	
120 pounds mangels at 17½ cents per cwt	0 21	
100 pounds sprouted oats at $1.94 per cwt	1 94	
1,200 pounds milk at 20 cents per cwt	2 40	
		$313 62

RANGE PERIOD

7,525 pounds grain at $2.57 per cwt	193 39	
1,931 pounds mash at $2.61 per cwt	50 40	
436 pounds mash at $2.18 per cwt	9 50	
335 pounds fattening mash at $2.10 per cwt	7 04	
39 pounds grit at $1.50 per cwt	0 59	
46 pounds shell at $1.75 per cwt	0 83	
150 pounds roots at 17½ cents per cwt	0 26	
		$262 01
		$575 63
Total cost of 366 chicks, labour neglected	$575 63	
Total cost of one chick (average)	1 57	

From the summary it may be noted that the average cost per chick at the end of approximately six months was $1.57, for 1926. The average for the past five years has been $1.03 per bird. Just as early in the fall as it is possible to do so it is well to cull out all undesirable breeders and fatten same to give the breeding stock a fair chance. Laying pullets should be in their winter quarters by the middle of October at the latest.

EGG-LAYING CONTEST

The seventh Nova Scotia Egg-laying Contest was completed on the 31st day of October, 1926. There were 27 pens or 270 birds in the 1925-26 contest, three more pens (30 birds more) than for 1924-25. While a marked increase in this work has been noted this last year or two, yet it is felt that the full significance of its value has not as yet been fully appreciated by the average young farmer who is interested in developing a bred-to-lay strain of birds, for this work has proven that one method of getting a real start in the pedigree breeding work (a work that is only in its infancy in Canada to-day) is by entering a pen of birds in one of the contests. The 270 birds laid a total of 42,287 eggs or an average per bird of 156.6 eggs. There were 2 birds which laid over 250 eggs each, 16 with over 225 and under 250, 30 with over 200 and under 225, 44 with over 175 and under 200, 55 over 150 and under 175, and 123 with less than 150 eggs.

LEADING PENS IN THE 1925-26 CONTEST

Pen No.	Owner and address	Eggs laid	Points
6	J. R. McMullen, Truro, N.S.	2,117	1,929·8
26	W. R. Retson, Truro, N.S.	1,953	1,924·2
10	W. E. B. Tait, Dorchester, N.B.	1,982	1,870·8
24	Lakewood Poultry Farm, Lakewood, St. John Co., N.B.	1,596	1,801·2
13	G. A. Irvine, Moncton, N.B.	1,856	1,793·2
28	J. S. Cavanagh, Bible Hill, Truro, N.S.	1,643	1,739·0
9	E. N. Smith, Shinimecas Bridge, N.S.	1,804	1,735·1
15	Mrs. Thomas Raymond, Fredericton, N.B.	1,748	1,729·2
4	R. A. Snowball, Chatham, N.B.	1,653	1,705·2
3	Hilton Brothers, Carleton, N.S.	1,780	1,692·3

The highest producer in the contest was bird No. 3 in pen No. 15 with 253 eggs scoring 296.4 points and owned by Mrs. Thomas Raymond, Fredericton, N.B.

Figures covering six years of egg-laying contests show that a reasonably good profit over feed cost may be obtained from a flock of 200 to 300 hens. The average profit over feed cost in the contest has been 16 cents per dozen eggs.

The following table is a summary of the number of birds entered in each Nova Scotia contest and the average production for each year:—

Average for each year of contest	Number of birds	Average production of eggs
1919-20	200	121·1
1920-21	220	127·8
1921-22	200	138·3
1922-23	200	143·3
1923-24	200	176·9
1924-25	240	166·5
1925-26	270	156·6

BEES

The spring of 1926 was late and cold making it necessary to feed the bees later than usual. From May 21 to the last of September the weather was excellent for bees with plenty of sunshine and very moderate rains. Clover though late was good during the major portion of the season. The first examination was made on April 28, 1926, and it was found that six of the twenty-two colonies put into winter packing-cases had died from exposure, leaving only sixteen colonies in the spring count. Eight colonies were united during the season. There was one swarm which was hived, and four new colonies were built up with new queens, making a total of fifteen colonies to go into winter quarters during the fall of 1926. The fifteen colonies from which honey was extracted produced a total of 788 pounds or an average of 48 pounds per colony. The strongest colony produced 150 pounds and three others averaged 112 pounds each.

PREVENTION OF SWARMING

The two methods tested at this Farm for prevention of swarming are (1) By de-queening and re-queening, (2) The separation of queen and brood. From our experience the former method seems preferable.

FIBRE DIVISION

Thirty-three sixtieth-acre plots of flax were seeded in 1926. Seeding was completed on June 10 except for the "Dates of Seeding" experiment. The different plots were pulled as they matured while the straw was de-seeded and retted here then shipped to Kentville where it was scutched and the records taken on fibre and tow. The plots seeded on June 25 were very late in maturing and their yields are not included in this year's report as it was impossible to get the straw retted. The following table gives the results:—

FLAX TESTS—1926

Variety or Treatment	Weight per acre before breaking	Weight per acre after breaking	Weight per acre of fibre	Weight per acre of tow	Weight per acre of seed
	lb.	lb.	lb.	lb.	lb.
Riga Blue	1420·2	910·2	145·2	120·0	510·0
J. W. S.	2020·2	1180·2	315·0	139·8	480·0
Pure Line No. 6	1840·2	949·8	244·8	150·0	544·8
829 C	1879·8	1069·8	220·2	124·8	705·0
Dutch White Blossom	1840·2	1410·0	180·0	150·0	679·8
Riga Blue, 84 pounds per acre	1120·2	720·0	115·2	94·8	435·0
Riga Blue, 98 "	1579·8	960·0	190·2	124·8	580·2
Riga Blue, 112 "	1540·2	1050·0	199·8	115·2	510·0
First seeding, June 10	1159·8	930·0	130·2	120·0	454·8
Second seeding, June 17	2040·0	1330·2	240·0	165·0	670·2
Third seeding, June 25	(Too late maturing for records this year).				

HEMP

Fifteen plots of hemp were seeded in 1926, and seeding, except for the "Dates of Seeding" experiment, was completed on June 10. Germination was very slow, the French and Russian lots being a complete failure. The following table gives the data collected:—

HEMP TESTS—1926

Variety or Treatment	Pounds per acre before breaking	Pounds per acre after breaking	Pounds fibre per acre	Pounds tow per acre
Kentucky Seed	4860·0	2209·8	360·0	300·0
First seeding, June 10	4260·0	2080·2	379·8	244·8
Second seeding, June 17	4440·0	2580·0	460·2	244·8

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