DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

DOMINION EXPERIMENTAL FARMS

EXPERIMENTAL STATION

KENTVILLE, N.S.

REPORT OF THE SUPERINTENDENT

W. SAXBY BLAIR

FOR THE YEAR 1926

Main approach, barn and implement shed, Dominion Experimental Station, Kentville, N.S.

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

TABLE OF CONTENTS.

EXPERIMENTAL STATION, KENTVILLE, N.S.

THE SEASON

Considerably more snow than usual fell during the winter of 1925-26, some of it remaining on the ground until well into May. April and May were cold and dull months, the spring being about three weeks later than usual. Ploughing was not possible until after May 1, and seeding was not general till the 22nd of the month. The land dried out slowly until early June, when conditions improved noticeably. June and July were generally favourable for the growth of all crops, and a good yield of hay was obtained. The precipitation during August and September was less than half the average, decreasing the potato yield to some extent, though average crops of grain and roots were harvested. Numerous rainy days in October somewhat hindered apple harvesting operations, but November was bright and open, and ploughing was possible until the end of the month. Winter set in on December 4, with little frost in the ground.

The following table gives some meteorological records for the year, and includes also the records of the previous twelve years averaged for comparison:—

METEOROLOGICAL RECORDS AT THE DOMINION EXPERIMENTAL STATION, KENTVILLE, N.S., FOR THE YEAR 1926

1926	Temperature (Fahrenheit)						Precipitation (inches)				Sunshine	
	Mean		Maximum		Minimum							
	1926	Average previous 12 years	Highest	Mean maximum	Lowest	Mean minimum	Rainfall, inches	Snowfall, inches	Total precipitation 1926, inches	Average previous 12 years, inches	1926, hours	Average previous 12 years, hours
Month												
January	21·06	19·01	47	27·19	− 7	14·93	1·52	33·2	4·84	3·52	69·50	81·57
February	17·32	19·62	46	23·93	−10	10·71	0·62	59·5	6·57	2·89	116·0	99·57
March	24·18	29·11	48	32·23	− 1	16·13	2·14	16·5	3·79	2·83	132·60	132·26
April	34·96	38·99	58	41·66	11	28·27	1·55	19·7	3·52	2·80	179·25	143·24
May	47·33	49·52	73	56·84	28	37·81	3·75	.....	3·75	1·90	171·70	203·00
June	59·01	59·00	82	70·50	35	47·53	3·33	.....	3·33	3·19	243·25	208·27
July	64·21	65·49	94	75·26	40	53·16	2·98	.....	2·98	2·84	217·20	220·84
August	63·43	64·29	84	73·48	36	53·39	1·85	.....	1·85	3·19	201·50	212·24
September	54·53	57·09	78	65·26	30	43·80	1·00	.....	1·00	3·06	173·90	180·57
October	46·95	47·87	79	56·51	26	39·39	4·63	.....	4·63	4·22	126·95	151·37
November	38·54	36·38	66	45·96	15	31·13	3·10	.....	3·10	4·03	110·80	83·16
December	23·62	24·73	45	28·64	2	18·61	1·85	27·5	4·60	3·63	67·35	57·27
Totals or averages	41·26	42·59	.....	49·79	.....	32·90	28·32	156·4	43·96	38·10	1,810·00	1,773·36

ANIMAL HUSBANDRY

CATTLE

SHORTHORN HERD

The Shorthorn herd at the end of the year 1926 consisted of one herd bull, 28 cows, 1 three-year-old heifer, 5 two-year-old heifers, 8 yearling heifers, 8 heifer calves and 10 bull calves, a total of 61 head. Twenty-four calves were born during the year, and 24 head were disposed of; those sold were 2 cows, 4 heifers in calf, 1 heifer calf and 13 bull calves for breeders, and 4 cows for beef.

All normal cows are entered for Record of Performance testing and a good percentage qualify each year.

Several meal mixtures were used during these lactation periods, with the prices varying according to the mixture. The following was found very satisfactory for winter use: 250 pounds of ground oats, 400 pounds of gluten feed, 150 pounds of wheat bran, 100 pounds of oil meal, and 100 pounds of cotton seed meal. For the summer months a mixture of 200 pounds of wheat bran, 200 pounds of ground oats, 100 pounds of oil meal, and 100 pounds of cotton seed meal gave good results.

Dual-purpose Shorthorn yearling heifers.

The tabulated data show the feed consumed by, and the production of the 17 cows which completed their lactation periods during the year. These are made up of 8 mature cows with an average production of 5,831 pounds of milk; one four-year-old with 5,501 pounds; 2 three-year-old cows with an average of 4,269 pounds, and 6 two-year-old cows with an average of 5,202 pounds. The average production of these 17 cows was 5,408 pounds of milk and 260 pounds of butter.

In the following tables the price of butter is that received monthly from a local creamery, and varies from 35 cents to 51½ cents per pound during the year. Skim-milk is valued at 20 cents per cwt. The cost of the meal mixtures varied according to the feeds used and their varying prices, but averaged $2.25 per cwt. for the year. Roots, ensilage, and green feed are valued at $3 per ton, hay at $10 per ton, and pasture at $1 per month.

The cow is charged with feed consumed each month at the price paid for the feed for the month and she is credited with the butter produced according to the price received from the creamery to which the cream is sent, and a profit balance struck. The monthly profits are added together at the end of the lactation period, the sum of which is the value of the product from the cow. The total feed cost is similarly arrived at by adding together the cost of feed consumed each month from calving to calving.

AMOUNT AND VALUE OF MILK PRODUCED BY SHORTHORN COWS WHICH COMPLETED LACTATION PERIODS DURING THE YEAR ENDING DECEMBER 31, 1926

Name of cow	Age in years	Date of dropping calf	Number of days dry	Number of days milking	Total milk	Daily average yield of milk	Average per cent fat	Butter produced	Value of butter	Value of skim-milk	Total value of product
					lb.	lb.		lb.	$ cts.	$ cts.	$ cts.
Kentville Jessamine	11	Mar. 29, 1925	103	336	8,226·0	24·46	3·74	362·38	144·65	15·83	160·48
" Victoria 3rd	7	Sept. 1, 1925	117	231	4,866·7	21·06	4·41	252·72	121·80	9·30	131·10
" Lady	7	Mar. 23, 1926	130	283	9,030·1	31·90	4·03	428·52	168·97	17·33	186·30
" Meadow Flower 2nd	6	Jan. 9, 1926	102	263	5,317·5	20·21	3·94	248·35	108·04	10·21	118·25
" Jessamine 4th	6	Mar. 21, 1926	156	211	4,571·0	21·66	3·80	204·39	80·94	8·79	89·73
" May 2nd	6	April 29, 1926	148	248	5,839·7	23·54	3·65	251·30	94·35	11·25	105·60
" Jessamine 6th	5	Mar. 20, 1926	111	242	4,273·2	17·65	3·54	178·02	70·87	8·24	79·11
" Victoria 6th	4	Jan. 6, 1926	132	236	5,501·0	23·30	4·30	278·48	123·90	10·52	134·42
" Susan 5th	5	May 11, 1926	107	234	4,526·5	19·34	4·31	228·39	85·93	8·66	94·59
" May 3rd	3	Sept. 6, 1925	68	285	3,836·2	13·46	4·33	195·62	92·47	7·34	99·81
" Jessamine 12th	2	Feb. 15, 1925	First calf	345	5,604·2	16·24	4·48	295·02	118·18	10·70	128·88
" Jessamine 12th	3	Mar. 14, 1926	46	261	4,702·0	18·01	4·28	236·64	94·29	9·00	103·29
" Susan 7th	2	Dec. 22, 1925	First calf	271	5,829·0	21·50	3·91	268·53	115·56	11·20	126·76
" Meadowflower 3rd	2	Jan. 12, 1926	"	291	4,364·6	15·00	4·47	229·92	99·26	8·33	107·59
" Primrose 4th	2	Nov. 29, 1925	"	290	4,686·5	16·16	4·30	237·23	101·82	8·96	110·78
" Jessamine 14th	2	Dec. 4, 1925	"	309	6,420·3	20·77	4·21	318·34	137·03	12·30	149·33
" Susan 9	2	Feb. 11, 1926	"	275	4,310·3	15·67	4·15	210·78	88·51	8·26	96·77
Average	4·4		111	271	5,406·2	19·94	4·09	260·27	108·62	10·37	118·99

FEED CONSUMPTION AND COST

Name of cow	Age in years	Date of dropping calf	Amount of meal consumed	Amount of roots and ensilage consumed	Amount of hay consumed	Amount of green feed consumed	Months on pasture	Total cost of feed	Cost to produce 100 pound of milk	Cost to produce one pound of butter	Profit on 1 pound butter, skim-milk not considered	Profit on cow
			lb.	lb.	lb.	lb.		$ cts.	$ cts.	cents	cents	$ cts.
Kentville Jessamine	11	Mar. 29, 1925	3,592	16,715	4,206	2,205	1·5	140 55	1 70	38·78	1·13	19 93
" Victoria 3rd	7	Sept. 1, 1925	2,106	9,910	3,026	2,130	1·5	86 38	1 77	34·18	14·01	44 72
" Lady	7	Mar. 23, 1926	2,784	11,500	4,644	200	4·0	107 55	1 19	25·09	14·34	78 75
" Meadow Flower 2nd	6	Jan. 9, 1926	2,322	10,370	3,808	200	4·0	91 94	1 72	37·01	6·49	26 31
" Jessamine 4th	6	Mar. 21, 1926	1,807	10,330	4,030	200	4·0	81 09	1 77	39·67	−0·07	8 64
" May 2nd	6	April 29, 1926	2,389	9,590	4,340	200	4·0	94 08	1 61	37·43	0·11	11 52
" Jessamine 6th	5	Mar. 20, 1926	1,809	8,780	3,898	200	4·0	78 05	1 82	43·84	−4·03	1 06
" Victoria 6th	4	Jan. 6, 1926	2,148	9,225	3,119	200	4·75	85 40	1 55	30·66	13·83	49 02
" Susan 5th	5	May 11, 1926	1,938	8,385	3,920	200	4·0	80 06	1 76	35·05	2·57	14 53
" May 3rd	3	Sept. 6, 1925	1,576	8,600	2,799	1,855	1·5	71 66	1 86	36·63	10·64	28 15
" Jessamine 12th	2	Feb. 15, 1925	2,308	11,465	2,886	2,205	1·25	96 36	1 72	32·66	7·40	32 52
" Jessamine 12th	3	Mar. 14, 1926	2,090	6,415	3,358	200	4·0	78 02	1 65	32·96	6·88	25 27
" Susan 7th	2	Dec. 22, 1925	2,031	6,260	2,547	200	3·75	72 48	1 24	26·99	16·04	54 28
" Meadow Flower 3rd	2	Jan. 12, 1926	1,931	5,565	2,988	200	4·0	71 44	1 63	31·07	12·10	36 15
" Primrose 4th	2	Nov. 29, 1925	2,060	7,220	2,717	200	3·5	75 39	1 60	31·77	11·15	35 39
" Jessamine 14th	2	Dec. 4, 1925	2,325	7,010	3,048	200	4·0	83 08	1 29	26·09	16·95	66 23
" Susan 9th	2	Feb. 11, 1926	1,840	4,495	2,912	200	4·0	67 29	1 56	31·92	10·07	29 48
Averages	4·4	.....	2,179	8,931	3,426	647	3·39	85 93	1 59	33·02	8·21	33 06

STEER FEEDING

The experiments carried on in steer feeding for the year 1926 were: Economy of Feeding light vs. Heavy Steers, and Economy of Feeding Choice vs. Inferior Steers. Thirty-two steers were purchased for this work. All were fed alike throughout the period and received an equal amount of feed per steer.

They were dehorned October 9, and started at once on light feed, receiving the first week 3 pounds of meal, 10 pounds of hay, and 20 pounds of potatoes per steer per day. For the second and third weeks, 3 pounds of meal, 12 pounds of hay, and 30 pounds of potatoes each. For the fourth week, 3 pounds of meal, 10 pounds of hay, and 25 pounds of ensilage. For the fifth week, 3 pounds of meal, 10 pounds of hay, and 30 pounds of ensilage. For the sixth week, 4.5 pounds of meal, 10 pounds of hay, and 30 pounds of ensilage. For the remainder of the period, to March 25, 1926, they received 8 pounds of meal, 10 pounds of hay, and 30 pounds of ensilage per steer per day. The hay fed was of mixed grasses and was of good quality; the ensilage was of sunflowers.

From October 9 to December 31 the meal mixture was equal parts of wheat bran, oats, oil meal, and cornmeal. From January 1 to the end of the period the meal mixture was 300 pounds of bran, 300 pounds of oats, 200 pounds of oil meal, 100 pounds of cottonseed meal, and 100 pounds of cornmeal. The average price of the meal mixture was $2.20 per cwt. The steers were fed twice each day, and the water was before them all the time except in very severe weather.

The gross weight of these steers at the time of purchase was 29,441 pounds, an average weight of 920 pounds. The purchase price was $1,602, or about 5.4 cents per pound. The finished weight of the steers at the barn on March 23, 1926, was 35,970 pounds, making a total gain in weight of 6,529 pounds or an average of 204 pounds per steer.

The total feed cost was $1,266.70, an average cost of feed per head of $39.58. Of these steers one from each group was sold locally; the remaining thirty were sold in England.

The following data were obtained:—

ECONOMY OF FEEDING LIGHT VS. HEAVY STEERS

—		Light steers in good flesh	Heavy steers in good flesh
Average weight at beginning of test	lb.	847	1,029·4
Average weight at end of test	"	1,050	1,207·5
Average gain during 116 days	"	203	178·1
Average gain per day	"	1·75	1·54
Total net return from eight steers	$	529 24	604 96
Average price received per pound live weight	ct.	6·3	6·26
Meal eaten (at $2.20 per cwt.)	lb.	7,424	7,424
Hay eaten (at $10 per ton)	"	9,280	9,280
Ensilage eaten (at $3 per ton)	"	27,840	27,840
Total cost of feed	$	251 49	251 49
Average cost per steer	$	31 43	31 43
Feed cost per pound of gain	ct.	15·48	17·64

It will be noticed that the light steers made the best gains, and sold to the best advantage. The heavy steers did not make such good gains, but sold at almost the same price per pound, live weight. It is evident from this shipment that light steers of good conformation are likely to be more profitable for export than the heavy steers.

ECONOMY OF FEEDING CHOICE VS. INFERIOR STEERS

—		Medium steers in good flesh	Medium steers in thin flesh
Average weight at beginning of test	lb.	922·5	942·9
Average weight at end of test	"	1,112	1,127
Average gain in 116 days	"	189·5	184·5
Average gain per day	"	1·63	1·59
Total net returns from eight steers	$	554 00	532 04
Average price received per pound, live weight	ct.	6·23	5·9
Meal eaten (at $2.20 per cwt.)	lb.	7,424	7,424
Hay eaten (at $10 per ton)	"	9,280	9,280
Ensilage eaten (at $3 per ton)	"	27,840	27,840
Total cost of feed	$	251 49	251 49
Average cost per steer	$	31 43	31 43
Feed cost per pound of gain	ct.	16·58	17·03

It will be noticed that although the gains were practically the same the choice steers sold at a higher price, and were more profitable to feed than the others. The medium steer in thin flesh requires a longer period for finishing, and for this reason among others brought a lower price when sold. On the other hand, the medium thin steers were not of as good beef conformation, which probably was a greater factor influencing the price received. The inferior steer is bound to sell to a disadvantage, and careful selection for the export trade is of prime importance.

PROFIT AND LOSS STATEMENT ON STEERS SENT TO GREAT BRITAIN

Date of shipment		Mar. 21, 1926
Number of steers		30
Average cost of steers per head	$	50 42
Total cost of steers		1,512 63
Average cost of feed per steer		39 58
Total cost of feed		1,187 40
Cost of transportation to and selling in Great Britain—		
Total charges from Experimental Station to St. John		165 28
Stock yards West St. John		39 92
Handling and loading		21 00
Ropes, roping, tools, tagging, men, etc		19 72
Insurance, $140.00 per head, at ⅛ per cent		26 25
Ocean feed		91 64
Excise stamps		0 16
Ocean freight at $20 per head		600 00
Total charges to port of debarkation		963 97
Overseas charges, awaiting sale, at $5.25 each		157 50
Total charges		1,121 47
Average charge per head		37 38
Total cost		3,821 50
Total return		3,214 33
Loss per lot		607 17
Loss per steer		20 24

SWINE

The swine on hand at the beginning of the year consisted of 5 sows, 1 herd boar, I young boar and 20 young feeders. During the year 80 pigs were born, four sows producing two litters each. From these litters 15 pigs were lost when very young. The breeding sow Nappan Augustine died from ulcers of the stomach. One feeder died from crippling, and one young pig was lost by accident. Forty-seven pigs of various ages were sold for breeding purposes. Four were sold for feeding purposes, and 11 were raised and sold for pork. There were on hand at the close of the year 4 breeding sows, 1 herd boar, 2 young boars and 20 feeders, 27 in all; the same number and of about the same value as at the beginning of the year.

The meal mixture used for the breeding hogs was made up of 100 pounds each of ground oats and and wheat bran, 200 pounds of middlings, 50 pounds each of linseed oil meal and meat meal and 35 pounds of mineral mixture, and cost on the average $2.24 per cwt. (The mineral mixture was made up of 100 pounds each of ground limestone, edible bone meal, and charcoal and 50 pounds of salt.)

The following table gives the feed consumed by the mature breeding swine during the year:—

FEED CONSUMED BY MATURE BREEDING SWINE DURING THE YEAR 1926

—		Ottawa Augustus	Nappan Augustine	Kentville Beauty	Kentville Charlotte	Kentville Rose	Kentville Bonnie
Sex		Boar	Sow	Sow	Sow	Sow	Sow
Age of individual	yrs.	2	3	2	2	2	1·5
Number of days fed	days	365	184	365	365	365	365
Total meal eaten in period, at $2.24 per cwt	lb.	1,792	903	1,918	2,233	1,977	2,138
Average meal eaten per day	"	4·91	4·9	5·25	6·11	5·41	5·86
Total mangles eaten in period, at 15 cents per cwt	"	2,056	1,442	2,455	2,427	2,497	2,427
Average mangels eaten per day	"	5·63	7·83	6·72	6·65	6·84	6·64
Total skim milk eaten in period, at 20 cents per cwt	"	.....	561	502	883	673	654
Average skim milk eaten per day	"	.....	3·05	1·37	2·42	1·84	1·79
Total cost of feed	$	43 22	23 50	47 64	55 41	49 36	52 83
Average cost per day	cts.	11·84	12·77	13·05	15·18	13·51	14·47

COST OF PORK PRODUCTION

Ten Yorkshire pigs, eight weeks old, were fed for 182 days, from December 1, 1925, to May 31, 1926. They were part of a lot fed for 90 days in a feeding project, and carried for 92 days more for the purpose of determining the cost of producing pork. They were fed for economical gains, and the cost of all feeds was tabulated. The pork was of good quality. The following data were obtained:—

Value of 10 pigs eight weeks old at $4	$	40 00
1,100 pounds skim-milk at 20 cents per cwt	$	2 20
5,950 pounds meal at $2.24 per cwt	$	133 28
2,130 pounds roots at 15 cents per cwt	$	3 19
Total cost of 10 pigs to time of sale	$	178 67
1,411 pounds of pork sold at 17 cents	$	239 87
Profit over feed and cost of pigs	$	61 20
Total weight of pigs at eights weeks of age	lb.	308
Average weight of pigs at eight weeks of age	lb.	30.8
Total weight of pigs at end of 182 days	lb.	1,960
Average weight of pigs at end of 182 days	lb.	196
Total gain in 182 days	lb.	1,652
Average gain in 182 days	lb.	165.2
Average gain per pig per day	lb.	.91
Dressing percentage	%	72
Average cost per pound of gain	ct.	8.4
Cost to produce one pound of pork	ct.	12.6

In view of the fact that these pigs were fed in an experiment for 90 days the results are good. More favourable conditions throughout the whole period would likely have given greater profit. After paying for the first cost of the pigs and the feed consumed the sum of $61.20 is realized to pay for labour and other expenses.

SOAKING GROUND GRAINS VS. DRY FEEDING, AND WARM VS. FEEDING OF SOAKED GRAIN COLD

In order to compare different methods of feeding grain sixteen pigs were divided into four lots of four pigs each, as equal in weight as possible. All lots

received an equal amount of meal, roots, and milk, and had access to water as required. This test was begun December 1, 1925, and lasted 90 days. The following data were obtained:—

—		Lot 1	Lot 2	Lot 3	Lot 4
		Meal fed dry	Meal in water slop, fed cold	Meal soaked from one feed to next, fed cold	Meal soaked from one feed to next, fed warm
Number in lot		4	4	4	4
Total weight at beginning of test	lb.	132	118	130	131
Average weight per pig	"	33	29·5	32·5	32·7
Total weight at end of test	"	372	402	415	435
Average weight per pig	"	93	100·5	103·7	108·7
Gain in 90 days	"	240	284	285	304
Average daily gain per pig	"	·666	·788	·792	·84
Meal eaten (at $2.24 per cwt.)	"	913	913	913	913
Roots eaten (at 15 cents per cwt.)	"	448	448	448	448
Skim milk eaten (at 20 cents per cwt.)	"	21	21	21	21
Cost of feed for period	$	21 16	21 16	21 16	21 16
Cost of feed for one pound of gain	ct.	8·81	7·45	7·42	6·96

It was very noticeable in this test that the pigs fed the dry meal did not get as good a start as those fed the slop, although water was given them to drink. Very little difference was noticeable in lots 2 and 3, but for cold weather feeding it would appear (from Lot 4) that it pays to give the feed warm.

MINERAL SUPPLEMENTS IN INDOOR FEEDING

In order to determine the value of minerals in the ration of young pigs one lot of four pigs was fed a meal mixture of oats, middlings, bran, oil meal, tankage and mineral mixture, and another similar lot fed the same feeds without the mineral mixture. This test was begun December 1, 1925, and lasted for 90 days. The following data were obtained:—

—		Lot 1	Lot 2
		Fed mineral mixture	No mineral mixture
Number in lot		4	4
Total weight at beginning of test	lb.	130	131
Average weight per pig	"	32·5	32·7
Total weight at end of test	"	415	485
Average weight per pig	"	103·7	121·2
Gain in 90 days	"	285	354
Average daily gain per pig	"	·79	·98
Meal eaten (at $2.24 per cwt.)	"	913	913
Roots eaten (at 15 cents per cwt.)	"	448	448
Skim milk eaten (at 20 cents per cwt.)	"	21	21
Cost of feed for period	$	21 16	21 16
Cost of one pound gain	cts.	7·42	5·97

The result of this test shows poorer results from the use of minerals, which is very unusual. The explanation may be in the method of feeding the minerals. The mixture was made up of 100 pounds each of ground limestone, charcoal (chick size) and edible bone meal, and 50 pounds of salt. This was fed in the meal mixture at the rate of 7 per cent of the meal. A number of the pigs in Lot 1 suffered from bowel trouble. One was examined for the cause, and it was found that the larger particles of the limestone were lodged in the bowel. It is possible that with this method of feeding the mineral mixture more limestone was eaten than would have been the case had the pigs been allowed free access to it, to take it when they wanted it. Other experiments will be made, giving the mineral feed in other ways than in the meal mixture.

FIELD HUSBANDRY

FODDER CROPS

Owing to the late spring and damp land it was not possible to seed corn and sunflowers on the field area until June 12, and the yield per acre of these crops was not as large as usual.

The corn ensiled amounted to 94.45 tons; sunflowers, 78.11 tons; oats-peas-vetches, 11.60 tons, and second growth clover, 9.82 tons, making a total of 193.98 tons of ensilage.

The stand of turnips, mangels, and carrots was exceptionally good, but all suffered from lack of rain during July and August, and the yield while fair was not as large as it would have been had precipitation been normal during the growing period. Crops harvested were as follows: turnips, 2,070 bushels; mangels, 1,720 bushels; carrots, 324 bushels, and sugar beets, 120 bushels, making a total of 4,234 bushels.

HAY

The land at this Station during the entire winter of 1925-26 was evenly covered by a considerable depth of snow. This prevented alternate thawing and freezing of the ground and the consequeut throwing out of young grass and clover plants, making conditions favourable for the clover crop. The weather during the month of June was almost ideal for the growth of grass. Areas newly seeded in 1925 consequently gave good yields of hay in 1926. The land on which flax was grown in 1925 had been seeded to grass and clover with that crop and gave a good yield of hay of good quality in 1926. The practice of seeding to grass with the flax crop has been tried here two years with complete success. Considering the increased interest being taken in the production of flax in different parts of Nova Scotia this information will no doubt be of some value to those interested in this phase of farm work. The average yield from this area was 3.44 tons per acre of cured hay.

Where alfalfa was used in the grass mixture when seeding down with oats in 1925, very few alfalfa plants were noticed, and the yield was practically the same (2.91 tons per acre) where alfalfa was seeded as where the grass mixture sown did not contain alfalfa (2.89 tons per acre).

The marsh land plowed in the spring of 1924 and seeded at that time to grass with a nurse crop of oats yielded 22.4 tons, or an average of 3.4 tons per acre. The grass mixture used in 1924 in seeding this area was made up of 10 pounds of timothy, 5 pounds of red clover and 5 pounds of alsike clover per acre. Alsike clover has been largely in evidence both in the 1925 and the 1926 crops, and the hay yield of over three tons per acre would indicate the advisability of using an excess of alsike in the grass mixture where seeding marsh lands.

The total yield of hay at this Station in 1926 was 136 tons.

GRAIN CROPS

The grain crops harvested were: oats, 485 bushels; wheat, 44 bushels; barley, 81 bushels; peas, 13 bushels; and vetches, 5.4 bushels, making a total yield exclusive of small test areas, of 628.4 bushels.

A COMPARISON OF DIFFERENT FODDER CROPS

The growing of different succulent fodder crops on plots of equal size and uniformity and treated alike as to preparation of the soil and fertilizing was again undertaken in 1926. The object of the work, as indicated in previous reports, is to secure information as to the amount of fodder it is possible to produce per acre and the attendant cost.

The land on which this test was conducted this season was in clover hay in 1925, having produced a crop of flax in 1924, timothy and clover being seeded with that crop. Manure was applied in the spring of 1926 at the rate of 16 tons per acre, and no other fertilizer was used. Ploughing and discing were done with a tractor, and the land cultivated with a wheel cultivator until a good seed bed was secured. All seeding was done June 2. The crops grown were as follows: corn, sunflowers, turnips, mangels and O.P.V. mixture. The dry weather during a large part of the growing season lessened the yield of these crops, especially mangels and turnips.

The O.P.V. was sown broadcast at the rate of 3 bushels per acre, the mixture being made up of 2½ bushels of oats, ½ bushel of peas, and ⅓ bushel of vetches. The corn and sunflowers were seeded with the grain drill, and the turnips and mangels with the garden drill. The O.P.V. was harvested August 13, the crop being at that time sufficiently matured to make good fodder. The sunflowers were harvested September 13, being at that time 30 per cent in bloom. Corn was harvested September 27, and turnips and mangels, October 12.

The accompanying tables give in detail the cost of producing these crops, the yield per acre, and the cost per ton or bushel. In figuring production costs manure is charged at $2 per ton, labour at the current rate of wages, and rental of land is based on a valuation of $50 per acre at 6 per cent interest.

COST OF GROWING ONE ACRE OF CORN, 1926

Rental of land	$ 3 00
Share of manure, 50 per cent of 16 tons at $2	16 00
Use of machinery	2 85
Seed, 30 pounds at 5 cents	1 50
Ploughing with tractor, 2 hours at $1.25	2 50
Discing with tractor, 1 hour at $1.25	1 25
Cultivating, 1½ hours at 50 cents	75
Seeding, 1½ hours at 50 cents	75
Cultivating, 10 hours at 50 cents	5 00
Hoeing, 24 hours at 30 cents	7 20
Cutting, 1½ hours at 50 cents	75
Twine, 3 pounds at 16 cents	48
Loading and hauling to silo, 4 hours at $1.10	4 40
Cutting and storing in silo, 4 hours at $1.80	7 20
Kerosene and oil	1 30
Total cost per acre	$54 93

Yield per acre, 16.86 tons.
Cost per ton, $3.26.

COST OF GROWING ONE ACRE OF SUNFLOWERS, 1926

Rental of land	$ 3 00
Share of manure, 50 per cent of 16 tons at $2	16 00
Use of machinery	2 85
Seed, 15 pounds at 8 cents	1 20
Ploughing with tractor, 2 hours at $1.25	2 50
Discing with tractor, 1 hour at $1.25	1 25
Cultivating, 1½ hours at 50 cents	75
Seeding, 1½ hours at 50 cents	75
Cultivating, 10 hours at 50 cents; 6 hours at 40 cents	7 40
Hoeing, 30 hours at 30 cents	9 00
Cutting, 1½ hours at 50 cents	75
Loading and hauling to silo, 5 hours at $1.10	5 50
Cutting and storing in silo, 5 hours at $1.80	9 00
Kerosene and oil	1 30
Total cost per acre	$61 25

Yield per acre, 17.44 tons.
Cost per ton, $3.51.

COST OF GROWING ONE ACRE OF TURNIPS, 1926

Rental of land	$ 3 00
Share of manure, 50 per cent of 16 tons at $2	16 00
Use of machinery	2 85
Seed, 2 pounds at 50 cents	1 00
Ploughing with tractor, 2 hours at $1.25	2 50
Discing with tractor, 1 hour at $1.25	1 25
Cultivating, 1½ hours at 50 cents	75
Making rows with horse hoe, 2 hours at 40 cents	80
Levelling off rows with weeder, ½ hour at 40 cents	20
Seeding with garden drill, 3 hours at 30 cents	90
Cultivating, 15 hours at 40 cents	6 00
Hoeing and thinning, 58 hours at 30 cents	17 40
Pulling and topping, 29 hours at 30 cents	8 70
Loading, hauling and storing, 10 hours at 50 cents	5 00
Total cost per acre	$66 35

Yield per acre, 665.2 bushels, or 16.63 tons.
Cost per bushel, 10 cents.
Cost per ton, $3.99.

COST OF GROWING ONE ACRE OF MANGELS, 1926

Rental of land	$ 3 00
Share of manure, 50 per cent of 16 tons at $2	16 00
Seed, 15 pounds at 25 cents	3 75
Use of machinery	2 85
Ploughing with tractor, 2 hours at $1.25	2 50
Discing with tractor, 1 hour at $1.25	1 25
Cultivating, 1½ hours at 50 cents	75
Making rows with horse hoe, 2 hours at 40 cents	80
Levelling off rows with weeder, ½ hour at 40 cents	20
Seeding with garden drill, 3 hours at 30 cents	90
Cultivating 5 times, 15 hours at 40 cents	6 00
Hoeing and thinning, 62 hours at 30 cents	18 60
Pulling and topping, 21 hours at 30 cents	6 30
Loading, hauling, and storing, 10 hours at 50 cents	5 00
Total cost per acre	$67 90

Yield per acre, 772 bushels, or 19.3 tons.
Cost per bushel, 8.8 cents.
Cost per ton, $3.52.

COST OF GROWING ONE ACRE OF OATS, PEAS, AND VETCHES, 1926

Rental of land	$ 3 00
Share of manure, 50 per cent of 16 tons at $2	16 00
Use of machinery	2 85
Seed: oats, 2½ bushels at 80 cents; peas, ½ bushel at $2.85; vetches, ½ bushel at $3	4 43
Ploughing with tractor, 2 hours at $1.25	2 50
Discing with tractor, 1 hour at $1.25	1 25
Cultivating and smoothing, 2 hours at 50 cents	1 00
Seeding, 1 hour at 50 cents	50
Cutting, 1½ hours at 50 cents	75
Loading, hauling, and unloading, 5 hours at 50 cents	2 50
Cutting and storing in silo, 2½ hours at $1.20	3 00
Kerosene and oil	65
Total cost per acre	$38 43

Yield per acre, 7.4 tons.
Cost per ton, $5.19

SUMMARY—COMPARISON OF DIFFERENT FODDER CROPS

Crop	Yield per acre, tons					Cost per acre					Average yield per acre	Average cost per acre	Average cost per ton
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926			
						$	$	$	$	$	tons	$	$
Corn	19·92	14·90	13·31	23·18	16·86	60 78	45 32	56 57	60 55	54 93	17·63	55 63	3 15
Sunflowers	20·80	19·80	18·18	27·50	17·44	63 73	53 91	69 70	73 59	61 25	20·78	64 43	3 11
Turnips	21·28	19·14	13·41	17·37	16·63	69 34	58 25	69 34	80 84	66 35	17·56	68 82	3 92
Mangels	17·59	16·47	19·62	25·86	19·30	60 89	60 60	72 08	77 52	67 90	19·71	71 39	3 62
O.P.V.	5·01	8·26	4·95	10·30	7·40	47 37	30 44	41 46	48 48	38 43	7·19	40 28	5 59

YIELDS PER ACRE FOLLOWING DIFFERENT FODDER CROPS

Crop in 1924	1925		1926
	Oats	Straw	Clover hay
	bush.	tons	tons
Mangels	65·0	1·61	3·40
Turnips	71·0	1·68	3·56
Sunflowers	61·2	1·43	2·80
Corn	63·8	1·50	3·32
O.P.V.	58·5	1·60	3·32

YIELDS OF ALASKA OATS PER ACRE FOLLOWING DIFFERENT FODDER CROPS

Crop in 1925	1926	
	Oats	Straw
	bush.	tons
Mangels	35·3	0·84
Turnips	38·8	0·91
Sunflowers	34·1	0·79
Corn	40·7	1·02
O.P.V.	49·4	1·12

OTHER COSTS OF PRODUCTION

Cost of Growing One Acre of Clover Hay, 1926

Rental of land	$ 3 00
Share of manure, 20 per cent of 15 tons at $2	6 00
Seed: clover and timothy	3 90
Use of machinery	2 85
Cutting, 1½ hours at 50 cents	75
Tedding, ¾ hours at 50 cents	38
Raking, ¾ hours at 40 cents	30
Coiling, 2¼ hours at 30 cents	68
Shaking out and recoiling, 5 hours at 30 cents	1 50
Loading, hauling, and unloading, 5½ hours at $1.10	6 05
Total cost per acre	$25 41

Yield per acre, 3.28 tons.
Cost per ton, $7.75.
Harvesting cost per ton, $3.81.

Cost of Growing One Acre of Oats, 1926

Rental of land	$ 3 00
Share of manure, 30 per cent of 15 tons at $2	9 00
Seed, 3 bushels at 80 cents	2 40
Use of machinery	2 85
Ploughing with tractor, 2 hours at $1.25	2 50
Discing with tractor, 1 hour at $1.25	1 25
Cultivating, 1½ hours at 50 cents	75
Seeding and smoothing, 3 hours at 50 cents	1 50
Cutting, 1½ hours at 50 cents	75
Twine, 3 pounds at 19 cents	57
Stooking, 1¼ hours at 30 cents	38
Loading, hauling, and unloading, 2 hours at 80 cents	1 60
Threshing, 6½ hours at 30 cents	1 95
Kerosene and oil	45
Total cost per acre	$28 95

Yield per acre, oats, 49.4 bushels.
Yield per acre, straw, .94 tons.
Cost of oats after deducting value of straw at $6 per ton, 47.2 cents per bushel.

CROP ROTATIONS

Rotations covering from two to five years are being tested, and accurate cost and production records being kept. Different fertilizing and cultural methods are embodied in these tests in order to enhance the value of the information obtained.

As this work has only been under way since 1924 it is considered that there are as yet not sufficient data to warrant publication in the annual report. It is believed that data of this nature carefully compiled will be of great value to farmers as soon as an accumulation covering a number of years is obtained.

HORTICULTURE

THE SEASON

The winter of 1925-1926 was noteworthy for its long duration and depth of snow. The precipitation during December was 1.76 inches against 3.79 inches, the average for the previous eleven years. The first snow of the winter occurred December 10, but there was no sleighing until after the 26th. January was slightly warmer than usual with less sunshine and a greater precipitation, 33.2 inches of snow falling as compared with the average of 19.2 inches for the previous twelve years. February was noted for its bad storms and excessive snowfall, 59.5 inches falling, this being over three times the average snowfall for this month from 1914 to 1925. February's temperature was slightly lower and its hours of sunshine greater than the average. March was colder with more snow and rain than usual. The mean temperature was 4.93 degrees lower than the average while the snow and rainfall aggregated 3.79 inches as compared with 2.80 inches, the average for the previous twelve years.

April was a cold, backward month. The temperature was 4.03 degrees below the previous twelve-year average, while 19.75 inches of snow fell as compared with 4.8 inches, the April average of the previous twelve years. Nine inches of this fell on the 21st of the month. May was a cold, dull, wet month. The mean temperature was 2.19 degrees lower, its precipitation 1.85 inches more, and its sunshine 31.3 hours less than the average of the previous twelve years. Orchard fertilization, May 13 to 18, and cultivation May 19, were fully two weeks late. Dormant sprays were applied to cherries and plums on May 15, and the first regular spray on May 20. Cherries and plums were showing bloom at the close of the month. June was a normal month. Apples bloomed from June 5 to 17. The bloom was light generally throughout the valley. Blossom Sunday fell on June 14. The cherry bloom, May 31 to June 8, was heavy, and the plum bloom, May 29 to June 9, was light. During the apple blooming period the weather was without frosts from June 12 to 18 and was favourable for pollination and fertilization of the blossoms, and a good set of fruit resulted. Taking the valley generally the crop was approximately 50 per cent of the average.

July was a favourable month for the development of all fruit crops. August and September were dry months, the total precipitation (2.85 inches) being less than half the average (6.25 inches), for the previous twelve years. The effects of this were evidenced in the lessened size of the late-maturing varieties of applies, such as Northern Spy and Ben Davis. During October there were numerous rainy days. The precipitation was practically normal but light rains fell on 13 days making the apple harvest under good conditions difficult. November was a bright, open month, well suited to the harvesting of root crops and fall ploughing. Winter set in on December 4 and 6, with snowfalls aggregating 16 inches, with very little frost in the ground.

SMALL FRUITS

STRAWBERRIES

Strawberries came through the winter of 1925-26 in a strong, healthy condition, and during the early summer gave promise of a heavy crop. They bloomed heavily from June 11 to 21. Continued dry weather during the latter part of June and the month of July seriously reduced the yield, particularly of the late-maturing varieties. The crop was one week later than usual on account of the late spring.

TEST OF VARIETIES.—The soil upon which this test was conducted is an open sandy loam of average fertility. The strawberries followed a vegetable crop. Stable manure at the rate of 15 tons per acre was applied in the autumn and ploughed down. In the spring 500 pounds per acre of commercial fertilizer (made up of 200 pounds of nitrate of soda and 300 pounds of acid phosphate) were applied and harrowed into the soil just previous to planting.

Each variety was tested in duplicate plots. Eleven strong vigorous plants set eighteen inches apart in the row, with the rows five feet apart, comprise a plot. The plots were frequently cultivated, hoed, and kept free from weeds, and all runners were allowed to develop and the plants evenly spaced.

From the results of variety tests over a period of thirteen years the Senator Dunlop variety can be safely recommended over all others. This variety is a hardy, vigorous, healthy grower, adaptable to many soil conditions, produces runners abundantly, is productive, has an attractive appearance, and is of good quality. The faults are that the fruit is inclined to be rather soft for distant shipments, and the berries become small in size as the season advances. Howard or Kellogg Premier, grown only during the last four years, has stood second to Senator Dunlap. This variety is similar to Dunlap in type, is of the same season, of a lighter red colour, with slightly larger berries of equal quality. Rewastico is a comparatively late berry. It is hardy, healthy, vigorous, productive, and produces runners in abundance. The fruit is large, glossy, medium red, very juicy, and firm but of rather poor flavour and quality.

Desdemona, originated at the Central Experimental Farm, Ottawa, is a promising variety. It produces numerous runners, is productive, hardy, healthy, and a vigorous grower. It is as early as Dunlap, and has a longer fruit season. The fruit is large, deep rich red, firm, and of excellent quality.

The following table gives the results from this test over a period of four years. Under "Season," the letters E, M, and L indicate early, medium, and late, respectively; under "Size" S M, and L indicate small, medium, and large, respectively; and under "Quality," P, F, G, and VG indicate poor, fair, good, and very good, respectively.

STRAWBERRIES, TEST OF VARIETIES: YIELD PER ACRE

Variety	Season	Size	Quality	1923	1924	1925	1926	Average yield
				qt.	qt.	qt.	qt.	qt.
Senator Dunlap	E	L	G	14,400	16,020	4,500	13,926	12,211
Kellogg Premier	E	L	G	14,340	12,240	2,820	8,025	9,356
Rewastico	M	L	F	9,720	13,680	4,800	7,851	9,012
Early Jersey Giant	E	L	G	12,300	13,200	2,160	8,078	8,934
Desdemona	E	L	VG	12,540	9,900	1,140	7,128	7,677
Pocomoke	M	M-L	G	11,520	9,120	1,620	8,448	7,677
Gold Mine	M	L	G	11,760	11,880	2,580	4,398	7,654
Ford	M	L	F	12,540	8,640	2,760	5,216	7,289
Arnout	M	L	G	9,960	6,912	1,320	9,646	6,959
Stephen Late	L	L	P	8,940	9,360	3,960	5,475	6,933
Cordelia	M	M	F	12,420	7,800	1,320	5,744	6,821
Cassandra	M	L	G	11,100	9,900	900	4,820	6,680

STRAWBERRIES, TEST OF VARIETIES: YIELD PER ACRE—*Concluded*

Variety	Season	Size	Quality	1923	1924	1925	1926	Average yield
				qt.	qt.	qt.	qt.	qt.
McAlpine	M	L	G	11,100	8,160	2,340	4,989	6,647
Sample	L	M-L	P	7,800	9,840	2,400	5,871	6,478
New Globe	M	VL	P	12,120	8,460	480	4,514	6,393
Glen Mary	L	M	F	8,580	7,920	2,520	6,272	6,323
Dr. Burrill	E	M-L	G	7,920	7,980	3,120	6,204	6,306
Orem	M	M-S	P	9,840	7,080	1,560	6,336	6,204
Greenville	M	VL	P	11,400	6,600	1,140	5,216	6,089
Parson Beauty	M	M	F	10,620	6,120	3,780	3,828	6,087
Portia	L	M-L	G	11,160	8,040	480	3,960	5,910
Magic Gem	M	M-S	F	8,460	8,040	1,320	5,772	5,898
Dornan	M	L	VG	8,460	4,020	540	9,491	5,628
Prize	L	L	G	9,600	7,800	1,800	2,967	5,542
Lavinia	M	L	VG	8,760	5,280	540	5,280	4,965
Maggie	E	S	F	10,560	5,400	240	3,632	4,958
Ophelia	M	L	G	6,480	4,440	600	6,135	4,414
Brandywine	M	L	G	7,040	4,980	1,020	3,168	4,052
Jessie	L	VL	G	3,180	6,600	660	4,224	3,666
Amanda	L	L	G	7,500	4,620	240	1,320	3,420

NITRATE OF SODA AS A TOP-DRESSING IN SPRING.—To determine the value of spring applications of nitrate of soda to promote greater fruitfulness in strawberry plantations a test was started in the spring of 1923. A uniform area of Senator Dunlap was selected and divided into three equal areas, which were treated as outlined below. The results would indicate that under our soil conditions 100 pounds of nitrate of soda per acre applied broadcast after the strawberry plants have started growth in the spring may materially increase the yield of fruit. Heavier applications than this have not on the average been so profitable. The results per acre were as given below.

Nitrate of soda, per acre	Crop, 1923	Crop, 1924	Crop, 1925	Crop, 1926	Four-year average
lb.	qt.	qt.	qt.	qt.	qt.
200	11,880	8,820	4,260	5,082	7,510
100	8,280	10,440	4,620	4,686	7,006
None	3,660	7,380	2,160	2,838	4,009

RASPBERRIES

Three varieties of red raspberries, planted in 1922, are grown at this Station, Newman No. 23, Newman No. 20, and Herbert. The Newman seedlings were originated by C. P. Newman, LaSalle, Que. Newman No. 23 is said to be a cross between Eaton and King. It is an early, hardy, and productive variety. The berry is large, firm, attractive, crimson red, and of good quality. Newman No. 20 is said to be a cross between Eaton and Cuthbert. It is slightly later in season, a larger berry, of better colour and quality, and is firmer and hence a better shipper than the No. 23, but is not so productive. Because of lack of growth the plants were fertilized in the spring of 1926 with a mixture of 400 pounds of nitrate of soda, 200 pounds of acid phosphate, and 200 pounds of muriate of potash per acre. A splendid crop of fruit was harvested in spite of considerable breakage of the canes from the excessive snow during the winter of 1925-26 and from the dry weather during the fruiting season. The following are the yields per acre recorded during the past four years.

RASPBERRIES—VARIETIES

Variety	Crop, 1923	Crop, 1924	Crop, 1925	Crop, 1926	Four-year average
	qt.	qt.	qt.	qt.	gt.
Newman No. 23	539·4	1,512·5	3,919·0	4,877·8	2,712·2
Newman No. 20	506·7	899·9	2,510·0	3,244·3	1,790·2
Herbert	704·0	745·2	2,398·0	3,008·5	1,713·4

BLACKBERRIES AND DEWBERRIES

Eldorado, West Kittatinny, Taylor, Snyder, Erie, Blowers, and Rathbun blackberries and the Lucretia dewberry are under test at this Station. These were planted in 1922, and although they have proved reasonably hardy and have become fairly well established they have not been at all productive and do not offer much inducement as a commercial undertaking.

BLACK CURRANTS

The varieties Black Victoria, Saunders, and Boskoop Giant are under test at this Station. Forty-eight bushes of each of these varieties were set 6 feet by 4 feet in 1921. The soil was a light sandy loam. The low yields from these plants may be attributed largely to considerable defoliation resulting from yearly attacks of White Pine Blister Rust. In the past no satisfactory control had been obtained by either spray or dust. In 1926 four applications of a fine grade of sulphur dust gave very promising results. There was little or no premature dropping of foliage, and the plants entered the dormant season in apparently good condition. The effect of this control will be observed in 1927. A more detailed note of this test will be found in the report of the Dominion Botanist for 1926 under the report of the Kentville Laboratory of Plant Pathology. There has been considerable dropping of fruit before maturity. This evidently is due to faulty fertilization of the blossoms. Frost injury on May 19, 1925, no doubt accounts for the low yield in 1925. The following are the yields per acre obtained.

Variety	Crop, 1922	Crop, 1923	Crop, 1924	Crop, 1925	Crop, 1926	Total crop
	qt.	qt.	qt.	qt.	qt.	qt.
Black Victoria	1,360·8	1,776·8	2,305·8	18·8	1,436·4	6,898·4
Boskoop Giant	378·0	644·6	1,171·8	132·3	2,532·6	4,859·3
Saunders (3-year)	113·4	1,058·4	1,209·6	Nil	2,041·2	4,422·6
Saunders (1-year)	226·8	75·6	1,360·8	56·7	1,251·8	2,971·7

RED CURRANTS

Fay Prolific and Perfection are the varieties grown. Forty-eight bushes of each were planted 6 feet by 4 feet in 1921. The soil is a light, sandy loam, and the bushes have grown well but the yields have been materially reduced by attacks of Currant Leaf Spot. The following are the yields per acre recorded.

Variety	Crop, 1922	Crop, 1923	Crop, 1924	Crop, 1925	Crop, 1926	Total yield
	qt.	qt.	qt.	qt.	qt.	qt.
Fay Prolific	793·8	2,457·0	1,701·0	604·8	2,116·0	7,672·6
Perfection	302·8	1,625·4	1,247·4	917·2	2,419·2	6,512·0

GOOSEBERRIES

Downing and Josselyn (Red Jacket), two American gooseberries, are grown at this Station. They were set in the spring of 1921 in rows 5 feet by 5 feet. They have grown splendidly and are a very satisfactory crop. Unfortunately this fruit is not generally popular on our local markets and as a consequence the demand is limited. The following are the yields per acre obtained:—

Variety	Crop, 1922	Crop, 1923	Crop, 1924	Crop, 1925	Crop, 1926	Total yield
	qt.	qt.	qt.	qt.	qt.	qt.
Downing	1,450	7,514·1	10,164·0	3,158	7,949·7	30,235·8
Josselyn	1,343·1	4,846·0	3,630·0	3,920·4	7,005·9	20,745·4

TREE FRUITS

CHERRIES

The crop failure of 1925 was followed by a heavy crop in 1926. The sour cherries (*Prunus cerasus*) are the most satisfactory. They are hardier, more productive, and less subject to the attacks of brown rot, leaf spot, and cracking of the fruit, are immune to attacks of bacterial gummosis, and far less subject to the depredations of birds than are the sweet cherries (*Prunus avium*).

Of the Amarelle group of sour cherries, the Montmorency leads in vigour, health, and productiveness. The tree adapts itself to many soil and climatic variations, and is an annual cropper. Dyehouse, and Early Richmond belonging to this group are earlier but are not as hardy nor as productive as Montmorency. Of the Morello group of sour cherries the varieties Suda Hardy, Baldwin, and English Morello are the best. The fruits of this class are very seldom touched by birds. They are not dessert fruits, but owing to their rich, wine-coloured juice and pleasant aromatic flavour are excellent canning cherries.

Of the Heart group of sweet cherries Governor Wood, Ida, and Black Tartarian are the most productive. Of these Black Tartarian, because of its high quality of fruit, hardiness, vigour of growth, and adaptability to various soil and climatic conditions, is recommended for planting. The low yields of sweet cherries recorded, particularly those of the Heart group, is largely accounted for through the destruction of a large percentage of the crop by birds before the fruit is ripe enough for harvest. Of the Bigarreau group Rockport, Florence and Kirtland are early; Bing, Yellow Spanish, Napoleon, and Elkhorn are mid-season; and White Caroon, Paul, Dikeman, Mercer, and Windsor are late-maturing varieties. Napoleon, Mercer, Bing, and Windsor are recommended for planting from this group.

Of the Duke cherries, hybrids of sweet and sour cherries, Nouvelle Royale, May Duke, Empress Eugenie, Olivet, and Royal Duke are the most productive and of the best quality.

The following table gives a summary of the data compiled in connection with the various varieties. Under "Class" the letters A, M, H, B, and D stand for Amarelle, Morello, Heart, Bigarreau, and Duke, respectively; under "Use" C stands for Cooking and D for Dessert; under "Quality" P, F, and G for Poor, Fair, and Good, respectively; and under "Size" S, M, L, and VL for Small, Medium, Large, and Very Large, respectively.

Variety	Class	Date of harvesting	Colour of fruit	Use	Quality	Size	Total yield, single tree, 1918–1926, inclusive
							qt.
Montmorency Monarch	A	July 20—Aug. 4	Dark red	C	G	M	401
Napoleon	B	July 15—Aug. 2	Bright red over yellow	D	G	L	330·5
Early Richmond	A	July 10—July 26	Light to dark red	C	G	M	300
Governor Wood	H	July 7—July 21	Yellowish crimson	D	G	L	286
Montmorency	A	July 19—Aug. 3	Dark red	C	G	M	285
Montmorency King	A	July 19—Aug. 4	Dark red	C	G	M	284·5
Florence	B	July 3—July 23	Orange over yellow	D	G	M-L	261·5
Vladimir	M	July 13—July 30	Dark red to black	C	G	M	249
Downer Late Red	H	July 14—July 31	Light to dark red	D	G	S	247
Suda Hardy	M	July 26—Aug. 17	Purplish red	C	F	M	234
Mercer	B	July 20—Aug. 5	Dark reddish black	D	G	M-L	226
Timme	A	July 15—Aug. 2	Light to dark red	C	G	S	214·5
Elton	H	July 6—July 23	Dark red over amber	D	G	M	206·5
Ida	H	July 7—July 23	Light red over amber	D	G	M-L	205
Rockport	B	July 3—July 21	Amber red cheeks	D	G	M-L	200
Baldwin	M	July 10—July 26	Very dark red	C	F	M	192
Royal Ann	B	July 15—Aug. 7	Bright yellow over red	D	G	L	188
English Morello	M	July 12—Aug. 15	Dark red to black	C	G	M	187
Black Tartarian	H	July 25—July 31	Deep reddish black	D	G	M-L	184
Windsor	B	July 21—Aug. 6	Dark red to black	C,D	G	M-L	184
Dyehouse	A	July 7—Aug. 24	Light opaque red	C	F	M-S	183
White Caroon	B	July 10—July 26	Yellowish white	D	G	M-L	176
Paul	B	July 21—Aug. 6	Dark mottled red	D	G	L	174
Coes Transparent	H	July 5—July 19	Pale amber mottled red.	D	G	M-L	170
Ostheim	M	July 12—Aug. 13	Very dark red	C	G	S-M	164
Elkhorn	B	July 13—Aug. 6	Purplish black	D	G	M-L	139
Terry	A	July 6—July 21	Deep red	C	G	S	136
Nouvelle Royale	D	July 14—July 26	Dark red	C, D	G	L	128
Belle Magnifique	D	Aug. 9—Sept.13	Very light red	C	F	S-M	123·2
Dikeman	B	July 16—July 26	Deep reddish black	D	G	S	115·5
Late Duke	D	Aug. 12—Sept.13	Light to dark red	C	F	S-M	113
May Duke	D	June 30—July 16	Light to dark red	D	G	M	111
Wragg	M	Aug. 4—Sept.13	Dark red to black	C	G	M	95
Empress Eugenie	D	July 12—Aug. 10	Very dark red	D	G	M-L	91
Louis Phillippe	D	July 13—July 26	Very dark red	C, D	G	M-L	86·5
Arch Duke	D	July 13—July 26	Light to dark red	C, D	G	M-L	85·5
Waterloo	B	July 12—July 28	Dark purplish red	D	P	S	74
Marguerite	A	Aug. 11—Sept. 4	Light red	C	P	S	73
Olivet	D	July 18—Aug. 9	Very deep red	C	G	L	67·5
Yellow Spanish	B	July 12—July 26	Amber, red cheeks	D	G	M	62
Kirtland	B	July 4—July 23	Red over yellow	D	G	M	56
Royal Duke	D	July 14—July 26	Dark red	C, D	G	M-L	50·5
Early Purple Guigne	H	June 25—July 12	Dark purplish black	D	P	S	36
Lyons	B	July 14—July 27	Very dark red	D	G	L	24

MONTMORENCY CHERRY ON MAHALEB AND MAZZARD STOCKS

Varieties of cherries are budded principally on Mazzard and Mahaleb stocks, which are grown from seed. The former is used extensively for the sweet cherry because of being a strong grower of the sweet cherry family. The Mahaleb is a distinct species, dwarfer in habit of growth, a native of Southern Europe, and is used almost entirely for budding sour cherries on. In order to find out whether there is any marked difference in these two stocks for sour cherries five trees propagated on each of these different stocks were planted in 1913, and a record of growth and crops has been kept. The conclusions reached as to the merits of these two stocks for sour cherries is as follows: (1) the trees on Mahaleb stock show the dwarfing effect of this stock, being somewhat smaller and less vigorous than those on Mazzard; (2) the Montmorency on Mahaleb stock were more productive in the earlier fruiting years and have main-

tained this supremacy throughout; (3) no difference can be noted in the size of the fruit grown on the two stocks; (4) no difference has been noted in the hardiness of the trees on the different stocks.

Nearly all sour cherries are propagated on Mahaleb stock, and it would appear from this test that this practice is the best.

The data secured were as follows:—

MONTMORENCY CHERRY ON MAHALEB AND MAZZARD STOCKS

Tree number	Condition of tree	Size of tree	Diameter of tree	Total yield of fruit since planting in 1913
			in.	qt.
Mazzard				
1	Good	Large	5·5	178
2	Good	Large	6·7	193
3	Good	Large	7·0	264
4	Good	Large	6·8	250
5	Good	Large	6·5	252
Average	Good	Large	6·5	227·4
Mahaleb				
1	Good	Large	5·5	221
2	Good	Large	6·0	281
3	Good	Large	6·0	281
4	Good	Large	5·7	252
5	Good	Large	5·5	124
Average	Good	Large	5·7	231·8

PLUMS, TEST OF VARIETIES

The plum crop in 1926 was as a whole slightly below the average, and the fruit was small with a considerable percentage unmarketable. Heavy importations of Ontario plums seriously affected the local market, the prices received barely covering the local cost of production and handling charges.

In case any black knot develops it is removed in the early fall before the knots mature. Any wounds made are covered with a coloured lead paint. In the spring a dormant lime-sulphur spray, 1 to 10, is applied before the buds open. Lime-sulphur arsenate is used June 1st, followed by wetable-sulphur arsenate June 23, and wetable sulphur July 15. This has kept insect pests and diseases under control. The brown rot is one of the most troublesome diseases, and usually an application of dry sulphur dust is applied one month and again ten days before the fruit is ripe. The weather during late July and August, 1926, being dry these dusts were not applied. If the weather is damp at this time frequent sulphur dust applications are necessary to protect the fruit from the brown rot fungus.

The Japanese variety Burbank is the outstanding producer of the varieties tested. It is a heavy biennial cropper, often requiring careful pruning of the tree and thinning of the crop to insure fruit of good size and high colour at harvest time. Sheldrake and Moore Arctic are productive varieties but lack quality and attractiveness.

Our local markets call largely for red and blue varieties of good size, well coloured, and attractive in appearance. The varieties that are recommended for planting to suit the local trade are Burbank (ready to pick August 28), Quackenboss (Sept. 5), Freeman (Sept. 2), and Bradshaw (Sept. 9). Millar Superb, Monarch and Reine Claude are later in fruiting.

The following table gives the species from which the different varieties have originated. The European group (*Prunus domestica*) is indicated by D; the Japanese (*P. triflora*) by T; the American (*P. americana*) by A; the Damson

(*P. insititia*) by I; and a hybrid of some of these species by H. The letters "C" and "D" under "Use" indicate Cooking and Dessert respectively. The quality is indicated by P (poor); F (fair); G (good), and VG (very good), and the size, small, medium, or large by S, M, and L, respectively.

PLUMS—TEST OF VARIETIES

Variety	Class	Date of harvesting	Colour of fruit	Use	Quality	Size	Total yield single tree 1919–1926 inclusive
							qts.
Burbank	T	Aug. 28-Sept. 18	Dark red over yellow.	C, D	G	L	786
Sheldrake	D	Sept. 2-Sept. 22	Purplish black	C	P	M	538
Arctic (Moore)	D	Aug. 26-Sept. 15	Bluish black	C	P	S	463
Hudson	D	Sept. 5-Oct. 2	Reddish purple	C	F	M	403
Quackenboss	D	Sept. 5-Oct. 3	Dark purple	C	F	M	392
Shiro	H	Aug. 13-Aug. 25	Clear light yellow	C, D	F	L	375
Newark	D	Aug. 20-Sept. 9	Dull reddish yellow	C	P	S	344
Paul Early	D	Aug. 17-Sept. 4	Purple	C	F	S	329
Freeman	D	Sept. 2-Oct. 3	Golden yellow	D	G	M	328·5
Miller Superb	D	Sept. 5-Sept. 25	Golden yellow	C, D	G	M	321
Gueii	D	Aug. 28-Sept. 18	Dark purple	C	F	M	288
Drap d'Or	I	Sept. 9-Sept. 27	Golden Yellow	C	F	S	271
Earliest of All	T	Aug. 1-Aug. 21	Pinkish red	C	P	S	268
Lombard	D	Sept. 21-Oct. 2	Purplish red	C	P	S–M	254
Reine Claude	D	Sept. 27-Oct. 4	Green yellow	C, D	G	M–L	229
Veronesh	D	Sept. 2-Sept. 18	Dark amber	C	VP	L	226
Yellow Japan	T	Sept. 21-Oct. 1	Red	D	G	M–L	226
America	H	Sept. 2-Sept. 11	Yellowish red	C	F	M	218
Agen	D	Sept. 4-Oct. 3	Reddish purple	C	G	M	211
Early Rivers	D	Aug. 22-Aug. 31	Similar to Paul Early.	C	F	S–M	211
Agen (French Prune)	D	Sept. 21-Oct. 8	Purple black	C	G	M	211
Freestone Damson	I	Sept. 6-Oct. 4	Dark blue	C	G	S	195·5
Yellow Egg	D	Sept. 9-Oct. 3	Golden Yellow	C	F	VL	183
Tatge	D	Sept. 19-Sept. 30	Similar to Lombard.	C	P	M–L	182
Oullins	D	Aug. 28-Sept. 7	Greenish yellow	C, D	P	M	182
Transparent	D	Sept. 5-Sept. 25	Reddish amber	D	G	M	175
Peters	D	Sept. 2-Sept. 24	Dullyellow green	C, D	F	M–L	173
Green Gage	D	Sept. 9-Oct. 3	Dull greenish yellow.	C	F	M	170
Belle de Louvain	D	Aug. 30-Sept. 4	Purplish red	C	F	L	164
Tennant	D	Sept. 5-Sept. 18	Dark reddish purple	D	F	L	163·5
Diamond	D	Sept. 15-Sept. 27	Purplish black	C	P	L	163
Palatine	D	Sept. 21-Oct. 2	Green to yellow	C, D	G	M	159
Red June	T	Aug. 10-Sept. 3	Garnet red	D	F	M	146
Cling Stem	D	Sept. 5-Sept. 24	Reddish yellow	C	F	M–L	140
Middleburg	D	Oct. 2-Oct. 8	Greenish	C, D	F	M	140
Italian Prune	D	Oct. 3	Purple	C, D	G	L	136·5
Shipper	D	Sept. 2-Sept. 24	Purplish black	C	P	S	131·5
California	A	Sept. 6-Oct. 3	Bright red	C	F	M	131
Empire	D	Sept. 9-Oct. 3	Dark red purple	C	G	M	130
Imperial Gage	D	Sept. 5	Greenish yellow	C, D	G	M	129
Grand Duke	D	Oct. 1-Oct. 8	Purple	C	F	L–VL	129
Frost Gage	D	Sept. 5-Sept. 27	Purplish black	C	G	S	127
Hector	D	Sept. 9-Oct. 3	Reddish purple	C, D	G	L	122
Curlew	D	Aug. 28-Sept. 7	Purple	C	F	M	119
Duane	D	Sept. 5-Sept. 21	Purple	C	P	L	119
Chabot	T	Sept. 5-Sept. 21	Dull red on green	D	G	M–L	117
Bradshaw	D	Sept. 9-Sept. 20	Reddish purple	C, D	G	L	115
Spaulding	D	Sept. 5-Sept. 18	Greenish yellow	D	G	S	114·5
Hale	T	Aug. 28-Sept. 6	Yellow tinged with red.	C	P	L	111
Monarch	D	Sept. 22-Oct. 5	Dark purple	C	F	L	108·5
Golden Drop	D	Sept. 16-Oct. 6	Golden yellow	C	G	VL	107
Washington	D	Sept. 10-Sept. 19	Greenish yellow	C, D	G	L	105
Jefferson	D	Sept. 1-Sept. 24	Yellow	D	G	M–L	99
Climax	H	Aug. 15-Aug. 28	Deep dark red	D	G	M–L	97
Monroe	D	Sept. 9-Sept. 25	Golden yellow	C, D	G	S	93
Imperial Epineuse	D	Sept. 6-Oct. 2	Reddish purple	C	G	L	92
October	T	Sept. 11-Sept. 21	Purplish black	C, D	F	L	88

PLUMS, TEST OF VARIETIES—*Concluded*

Variety	Class	Date of harvesting	Colour of fruit	Use	Quality	Size	Total yield single tree 1919–1926 inclusive
							qts.
Abundance	T	Aug. 16-Aug. 28	Reddish yellow	D	VG	M	82
French Damson	I	Sept. 24-Oct. 4	Dull black	C	F	S-M	80
Shropshire Damson.	I	Sept. 5-Oct. 4	Dark blue	C	F	S	79
Willard	T	Aug. 16-Sept. 12	Dark red	C	P	M	74
Belgian Purple	D	Sept. 5-Sept. 22	Purple	C	P	S-M	73
St. Catherine	D	Sept. 30-Oct. 4	Golden yellow	C	F	S	73
Tragedy	D	Aug. 28-Sept. 18	Dark purple	D	D	M	71·5
Czar	D	Sept. 15-Sept. 25	Purple black	C	P	M	68
Pond Seedling	D	Oct. 1-Oct. 5	Reddish purple	C	G	VL	65·5
Pearl	D	Sept. 5-Sept. 17	Reddish yellow	D	G	L	56·5
Georgeson	T	Aug. 2-Sept. 11	Yellow	C	P	M	51
Wyant	A	Oct. 1-Oct. 4	Dark carmine	C	P	M	50·5
Furst	D	Sept. 5-Sept. 24	Purplish black	C, D	G	L	49·5
Giant	D	Oct. 2	Reddish purple	C	P	L	43
Arch Duke	D	Sept. 5-Sept. 23	Dark purple	C, D	G	L	38
Guthrie Late	D	Sept. 17-Oct. 4	Greenish	C	G	M	16·5
Stella	A	Sept. 7-Sept. 19	Purplish red	C	F	L	8
Gold	H	Sept. 18	Yellow, crimson check.	C	F	M-L	3

DIFFERENT GRADES OF NURSERY STOCK

An experiment to determine the relative value of different grades or sizes of plum stock as received from nurseries was started in the spring of 1913. The varieties Burbank and Giant Prune in $^{11}/_{16}$ inch, $\frac{5}{8}$ inch, $\frac{1}{2}$ inch, and 1-year-old stock, five trees of each grade, and of each variety, were planted as fillers in an apple orchard. The apple trees were planted 40 feet by 40 feet, the plum trees being set as fillers between the apple trees, leaving the orchard planted 40 feet by 20 feet.

The Burbank variety has done somewhat better than the Giant Prune.

The following are the results recorded:—

DIFFERENT GRADES OF NURSERY STOCK

BURBANK PLUMS

Grade	Condition of tree	Size of tree	Diameter of tree, 1925	Total yield since planting
			in.	qt.
11/16	Medium	Medium	4·75	168
11/16	Good	Large	6·50	391·5
11/16	Medium	Small	4·00	142
11/16	Medium	Medium	5·00	199
11/16	Good	Medium	5·50	243
Average	Medium	Medium	5·15	228·7
in.				
5/8	Medium	Large	6	203
5/8	Poor	Small	5	56
5/8	Good	Large	6·75	249
5/8	Medium	Large	7	266
5/8	Good	Large	9	367
Average	Medium	Large	6·75	228·2
1/2	Good	Large	6	170
1/2	Medium	Small	4	151
1/2	Good	Medium	5	214
1/2	Poor	Small	4·5	137
Average	Medium	Small	4·87	168

Note—20 p.c. died after planting.

DIFFERENT GRADES OF NURSERY STOCK—*Concluded*

BURBANK PLUMS

Grade	Condition of tree	Size of tree	Diameter of tree, 1925	Total yield since planting
			in.	qt.
1 year	Good	Medium	4·50	212
1 year	Good	Large	7	274
1 year	Good	Medium	5	217
1 year	Medium	Small	4	223
Average	Good	Medium	5·12	231·5

Note—20 p.c. died after planting.

GIANT PRUNE PLUMS

11/16	Poor	Large	6·50	117
11/16	Poor	Medium-Large	4	49
11/16	Fair	Large	5·50	110·5
Average	Poor)	Large	5·33	92·1

Note—40 p.c. died after planting.

5/8	Fair	Small	3·50	122
5/8	Poor	Small	3·00	18·5
5/8	Poor	Small	2·75	28
Average	Poor	Small	3·08	56·1

Note—40 p.c. died after planting.

1/2	Fair	Medium	3·50	81
1/2	Poor	Medium-small	5	74
1/2	Fair	Medium-small	4·75	91·5
Average	Fair	Medium	4·41	85·5

Note—40 p.c. died after planting.

1 year	Good	Small	3·50	92·0
1 year	Fair	Small	3·50	48·5
1 year	Fair	Medium	4·50	96·0
1 year	Fair	Medium-large	5·50	155·5
Average	Fair	Medium	4·25	98·0

Note—20 p.c. died after planting.

SUMMARY

BURBANK

Grade	Condition	Size of tree	Diameter of tree, 1925	Total yield since planting	Percentage reaching bearing age
			in.	qts.	
1 year	Good	Medium	5·12	231·5	80
11/16	Medium	Medium	5·15	228·7	100
5/8	Medium	Large	6·75	228·2	100
1/2	Medium	Small	4·87	168·0	80

GIANT PRUNE

1 year	Fair	Medium	4·25	98·0	80
11/16	Poor	Large	5·33	92·1	60
1/2	Fair	Medium	4·41	85·5	60
5/8	Poor	Small	3·08	56·1	60

ORCHARD CULTIVATION

The trees in the 46.7 acres of apple orchard planted at this Station from 1912 to 1915 were spaced 20 by 40 feet, and have been headed low. This method after a period of ten years does not permit of clean cultivation close to the tree, so that in 1922 a strip ten feet wide, five feet on either side of each row, was seeded down to clover and timothy. This strip has since remained in sod. Outside of this strip a space of 8 feet is kept cultivated till early in July.

In the cherry, plum, pear, and apple orchards where the trees are planted 20 feet by 20 feet the entire area between these sod strips is cultivated frequently until early in July. The grass on the strips left in sod is mowed twice during the season, mid-June and mid-August, and the cut grass is left as a mulch about the tree.

ORCHARD FERTILIZATION

Commercial fertilizers were applied to the orchards of the Station between the 14th and 18th of May. Fourteen-year-old trees planted 40 feet by 20 feet were fertilized with a mixture made up of 100 pounds of sulphate of ammonia, 300 pounds of nitrate of soda, 200 pounds of acid phosphate and 100 pounds of muriate of potash, applied at the rate of seven pounds per tree.

Fourteen-year-old trees planted 20 feet by 20 feet were fertilized with a mixture made up of 400 pounds of nitrate of soda, 200 pounds of acid phosphate, and 100 pounds of muriate of potash, applied at the rate of five pounds per tree.

The mature orchard, planted 33 feet by 33 feet on heavier and more fertile soils, was fertilized with a mixture of 400 pounds of nitrate of soda, 200 pounds of acid phosphate, and 200 pounds of muriate of potash, applied at the rate of seven pounds per tree.

The fertilizer was applied to the orchards as the buds were bursting, and was applied broadcast to an area of soil about the tree extending 3 feet beyond the spread of the branches.

COMPARATIVE TIME OF BLOOM AND YIELDS OF STANDARD COMMERCIAL VARIETIES OF APPLES PLANTED 1912

A light crop of apples aggregating approximately 2,000 barrels was harvested at this Station in 1926. This was only about 50 per cent of the 1925 crop. All apples were harvested by October 21. McIntosh, Gravenstein, Ribston, Blenheim and Nonpareil were the only varieties that yielded an average crop.

The late spring and a lack of rainfall in August and September, combined with less than the normal amount of sunshine in October, resulted in a crop of fruit below the average in size and colour. This was particularly noticeable in late-maturing varieties, as Baldwin, Ben Davis, and Spy.

The following table gives the yield of each variety with its date of full bloom as compared with Crimson Beauty, our earliest-blooming variety.

COMPARATIVE TIME OF BLOOM AND YIELDS OF STANDARD COMMERCIAL VARIETIES OF APPLES PLANTED 1912

Variety	Number of trees fruiting	Average number of days after full bloom of Crimson Beauty to full bloom of variety	Total yield lowest-yielding tree since planting	Total yield highest-yielding tree since planting	Total yield per acre, 54 trees, since planting	Total yield per tree since planting	
			pk.	pk.	bbl.	pk.	bbl.
Baldwin	41	6	8·50	75·25	192·09	39·13	3·56
Baxter	6	5	25·0	51·75	173·07	35·25	3·20
Ben Davis	19	6	61·25	107·50	423·73	86·32	7·84
Bishop Pippin	19	6	15·50	61·00	174·58	35·57	3·23
Blenheim	38	5	1·50	86·00	180·63	36·80	3·35
Cox Orange	10	5	18·50	87·50	239·27	48·75	4·43
Crimson Beauty	16	.....	21·75	75·00	230·58	46·98	4·27
Duchess	16	2	35·00	98·75	326·16	66·44	6·04
Dudley (North Star)	2	4	86·00	137·50	548·58	111·75	10·16
Fallawater	21	6	16·00	101·50	251·58	51·25	4·66
Fameuse	20	3	46·00	158·75	549·61	111·96	10·18
Gano	16	6	46·75	145·00	470·71	95·89	8·72
Golden Russet	16	4	13·00	62·50	169·45	34·52	3·14
Gravenstein	19	1	19·00	176·00	354·83	72·29	6·57
Banks Gravenstein	17	1	18·75	93·50	274·05	55·83	5·08
Greening (R.I.)	40	5	22·75	117·50	271·02	55·21	5·02
Hubbardson	8	4	47·00	108·75	322·27	65·65	5·97
King of Tompkins	29	4	2·50	67·25	178·41	36·35	3·30
McIntosh	20	5	25·25	143·75	409·15	83·35	7·58
McMahan	4	.....	62·00	128·00	442·09	90·06	8·19
Milwaukee	20	5	72·75	151·00	523·09	106·56	9·69
Nonpareil	15	5	17·00	67·00	179·52	36·57	3·32
Northern Spy	40	8	1·00	80·25	145·58	29·66	2·69
Ontario	18	.....	35·50	112·75	313·36	63·84	5·80
Red Astrachan	6	.....	26·00	67·00	227·01	46·25	4·20
Ribston	35	5	15·50	112·66	367·30	74·83	6·80
Rome Beauty	17	8	51·00	150·75	393·33	80·13	7·28
Stark	17	4	27·83	115·00	431·67	87·94	7·99
Tolman Sweet	18	6	29·00	71·25	244·62	49·83	4·53
Wagener	37	3	13·50	98·50	305·91	62·32	5·66
Wealthy	45	3	51·50	136·25	406·32	82·77	7·52
Wellington	20	6	32·75	119·00	348·13	70·92	6·45
Wolf River	11	6	16·25	133·75	340·90	69·45	6·31
Yellow Transparent	19	2	33·50	92·50	257·47	52·45	4·77

VARIETIES OF APPLES ORIGINATED AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA, THAT HAVE FRUITED AT THE DOMINION EXPERIMENTAL STATION, KENTVILLE, N.S.

Explanation of abbreviations used in table:—
Form.—A, angular; C, conical; I, irregular; O, oblate or ovate; Ob, oblong; R, roundish.
Size.—L, large; M, medium; S, small.
Colour.—B, blush; C, carmine; D, dark; G, green; L, light; R, red; Ru, russet; S, striped; W, white; Y, yellow.
Flavour.—A, acid; B, brisk; M, mild; S, sweet; Sa, subacid.
Quality.—B, best; G, good; F, fair; P, poor; V, very.
Use.—D, dessert; K, kitchen.

Variety	Bearing age	Form	Size	Colour of skin	Colour of flesh	Flavour	Quality	Use	Season	Total yield, single tree, since planting
	year									pks.
Spy Seedlings—										
Rosalie	8	R, O, C	L	G, Y, S, C, R	W	M, Sa	G-VG	D	Oct.-Dec.	65
Donald	9	R, O	M-L	Y, B, C	Y	Sa	F	D, K	Oct.-Mar.	30¾
Glenton	8	R, O, C	M-L	Y, B, S, C	W, Y	Sa	G	D, K	Oct.-Dec.	30
Rocket	6	R, C	M	Y, B, C	Y	Sa	F-G	D, K	Oct.-Jan.	63½
Niobe	8	R, C	M-L	G, Y, B, C	Y	M, Sa	G-VG	D, K	Dec.-Mar.	47
Bingo	9	R, C	M-L	G, Y, R, S, C	Y	B, Sa	F-G	D, K	Mar.-May	39¾
Thurso	7	O, B, C	M	Y, B, S, C	Y	Sa	F	D, K	Dec.-Feb.	34½
Ascot	9	R, O, C	M	G, Y, B, S, C	Y	B, Sa	G-VG	D	Feb.-Mar.	19
Elmer	6	R, O, B, C	M	G, Y, B, S, C	Y	M, Sa	G		Jan.-Mar.	28
Nestor	9	O, C	M, L	Y, B, S, C	Y, W	B, Sa	F G	D, K	Nov.-Jan.	25½
Galton		O, C	L	Y, B, S, C	Y	Sa	G-VG	D, K	Oct.-Jan.	15½
Lipton	8	R, O, C	M	Y, B, L, C, R	Y	M, Sa	G	D, K	Dec.-Feb.	9
Emilia	8	R, C	M	G, Y, B, C	W	B, Sa	G-VG	D, K	Dec.-April	11½
Langford Beauty Seedlings—										
Kim	8	R, O	M, S	Y, B, C	W	B, Sa	F-G	D	Nov.-Jan.	17
Diana	4	R, O, B, C	M	Y, B, C	W, R	B, Sa	G	D, K	Sept.-Dec.	61½
McIntosh Seedlings—										
Joyce	9	R, O	M	Y, B, C	W	M, Sa	G-VG	D	Sept.-Oct.	26½
Melba	8	R, O, C	M	Y, B, S, C	W	M, Sa	G-B	D	Sept.	56
Lobo	7	R	M	Y, C, R	W	M, Sa	VG-B	D	Oct.-Nov.	35¾
Forerunner	7	R, O, B, C	M	Y, C, R	Y	Sa	F-G	D	Sept.	26
Brock	6	R	L	Y, R	Y	M, Sa	G	D, K	Sept.-Oct.	24

VARIETIES OF APPLES ORIGINATED AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA, THAT HAVE FRUITED AT THE DOMINION EXPERIMENTAL STATION, KENTVILLE, N.S.—*Concluded*

Variety	Bearing age	Form	Size	Colour of skin	Colour of flesh	Flavour	Quality	Use	Season	Total yield, single tree, since planting
McIntosh Seedlings—Con.	year									pks.
Pedro	4	O, C	M-L	G, Y, B, C	W	B, Sa	G	D, K	Sept.-Oct...	28½
Winton	8	R, C	M	Y, B, C, R	W	M, Sa	G	D	Oct.-Dec...	9
Gilda	7	R, O	M-S	Y, R, S, C	Y	M, Sa	G	K, D	Oct.-Jan...	3½
Honora	7	R, O, C	M-L	Y, B, L, C	W	M, S	G-VG	D, K	Sept.-Oct...	..
Lawyer Seedling—										
Danville	7	Ob	M	G, Y, B, R	W	Sa	F	D, K	Sept.-Oct...	51
McIntosh x Lawyer Seedlings—										
Rustler	8	R	M	Y, R, C	Y	M, Sa	G	D, K	Dec.-Mar...	30½
Mavis	7	R, O	M	G, Y, R, S, C	G, W	M, Sa	F-G	D, K	Dec.-Mar...	16½
Gano Seedling—										
Roger	6	Ob, C	M	Y, B, S, R	Y	Sa	F-G	K	Dec.-Mar...	123
Wealthy Seedling—										
Pinto	6	R, O	M-L	G, Y, B, S, R	Y, W	Sa	F	K	Nov.-Jan...	65¾
Girton	7	R, O, B, C	M-L	Y, B, S, C	W	B, Sa	F-G	K	Dec.-Mar...	(few fruits)
Salome Seedlings—										
Nepean	6	Ob, A	M	G, Y, L, R	W, Y	Sa	G	K, D	Feb.-April..	99½
Lucia	7	Ob	M	Y, B	Y	M, Sa	F-G	D, K	Dec.-Mar...	22
Shiawassee Beauty Seedling—										
Ramona	6	R, O	M	Y, B, L, R	W	M, Sa	G	D, K	Sept.-Oct...	28½
Swazie Seedling—										
Ambo	4	R, O	M	G, Y, B, C	W	M, Sa	G	D, K	Sept.-Oct...	75
Langford Beauty Seedling—										
Kildare	4	R, O, C	S-M	G, Y, B, S, C	W, Y	M, Sa	G	D, K	Sept.-Oct...	84
Russian Seedling—										
Rupert	5	O	M	L, G, Y, B	W	B, Sa	F-G	D, K	Aug.-Sept...	23

For explanation of abbreviations used in table see previous table

Variety	Origin	Bearing age	Form	Size	Colour of skin	Colour of flesh	Flavour	Quality	Use	Season	Total yield single tree since planting
		yr.									pk.
Adams Pearmain	England	7	C	M	Y, R, C	Y, W	M, Sa	VG	D	Dec.-Mar.	43½
Akin	U.S.A.	6	R, O, I	M	Y, R, S	Y	B, Sa	G	D	Jan.-June	6½
Alfriston	England	7	R	L	L, G	W	B, A	P	K	Jan.-April	14½
Allington Pippin	England	6	R, I	M-L	G, Y, R, S, C	Y	B, Sa	G	D, K	Nov.-Jan.	81½
Alaska	U.S.A.	6-7	R, O, C	M-L	G, Y, R	Y	B, Sa	F	D, K	Nov.-Mar.	66
Allens Everlasting	England	7	O	S	G, Ru	Y	B, Sa	G	D	Feb.-April	4½
Annie Elisabeth	England	7	C	L	Y, R, S	Y	B, A	F	K	Feb.-Mar.	40
Arkansas	U.S.A.	7	R, C	M-L	G, Y, R, S	G, W	Sa	G	K	Dec.-May	55
Arkansas Black	U.S.A.	6-7	R	M	Y, D, R	Y	B, Sa	G	K	Dec.-April	33½
Autumn Strawberry	U.S.A.	6	R, Ob, C	M	Y, R, S	Y, W	Sa	VG	D	Oct.-Dec.	42½
Barnack Beauty	England	7	C	M	Y, R, S	Y	B, Sa	G	D, K	Dec.-Mar.	24½
Bailey Sweet	U.S.A.	6	R, C	L-M	Y, R, S	Y	S	VG	D, K	Oct.-Jan.	43½
Bayard	England		O, C	L	Y, D, R, S	Y, W	Sa	F	K	Nov.-Dec.	3½
Beauty of Bath	England	6	O	M	Y, R, S, C	Y, W	Sa	G	D	Aug.-Sept.	14
Bens Red	England	6	O	M	Y, R, S, C	Y, W	Sa	G	D	Sept.	64½
Belle de Pontoise	England	5	O, C	VL	Y, Ru, R	Y	A	F	K	Jan.-Mar.	34½
Belle de Boskoop	England	6	O	L	G, Y, B, S, R	Y	B, Sa	G-VG	D, K	Dec.-April	43½
Bess Pool	England		R, C	M	Y, R, S	W	B, Sa	G	D, K	Nov.-Mar.	¼
Bismarck	N.Z.	6-7	R, O, C	L-VL	G, Y, B, S, R	W	Sa	F-G	K	Oct.-Dec.	46
Black Ben Davis	U.S.A.	5	R, Ov	M-L	Y, B, D, R	W	M, Sa	G	D, K	Mar.-June	77½
Boiken	Europe	6	O, C, I	M-L	Y, B, L, R	W	B, Sa	G	K	Nov.-Mar.	115½
Bramley Seedling	Europe	6	R, O	L	Y, G, R, S, C	W	B, Sa	G	K	Nov.-Dec.	39½
Calville Blanc	Europe	8	O, A	M	Y	W	M, Sa	G	D, K	Dec.-Mar.	4½
Canada Red	Canada	7-8	R, C	M	Y, R, S	W	M, Sa	G-B	D, K	Nov.-Mar.	2
Carolina Red June	U.S.A.	6-7	R, O	S-M	Y, R	W	B, Sa	G-VG	D, K	Aug.-Sept.	39½
Chenango	U.S.A.	6-7	R, O, B, C	L-M	Y, R, S	W	M, Sa	G VG	D	Sept.	92½
Chas. Ross	England	6-7	R, O	L-VL	Y, R, S	Y	Sa	G	K	Oct.-Nov.	32
Chelmsford Wonder	England	6	R, C	L-VL	Y, B, R	Y	Sa	G	K	Jan.-Mar.	57
Cellini	England	8	R, O	M	Y, R, S	W	B, Sa	G	D, K	Aug.-Oct.	17
Claygate Pearmain	England	7	R, O	M	Y, B, Ru	Y, W	B, Sa	G	D	Dec.-Mar.	½
Clinton	U.S.A.	6	R, O, C	M	G, Y, B	Y	Sa	G	K	Dec.-Mar.	47
Cox Pomona	England	6	R, O, A	M-L	Y, R, S	W	B, Sa	G	K	Oct.-Nov.	62

APPLES, TEST OF VARIETIES—*Continued*

For explanation of abbreviations used in table see previous table.

Variety	Origin	Bearing age	Form	Size	Colour of skin	Colour of flesh	Flavour	Quality	Use	Season	Total yield single tree since planting
		yr.									pk.
Crimson Bramley	England	5	O, A	M-L	Y, B, C	Y	B, Sa	G	K	Dec.-Jan.	53½
Deacon Jones	U.S.A.	6	R, C	L-VL	Y, R, S	Y, W	M, Sa	F-G	K	Nov.-Mar.	65
Devonshire Quarrenden	England	6–7	O	S	L, C	W	M, Sa	G	D	Aug.-Sept.	49½
Delicious	U. S. A.	6–7	R, O, B, C	M-L	Y, R, S	Y	Sa	G	D, K	Dec.-May	47½
Dodd	Canada		O, B	M	Y, B, S, C	W	Sa	G	D, K	Oct.-Jan.	(few fruits)
Early Victoria	England	6	R, C	M-L	Y	W	Sa	P	K	Sept.-Oct.	28
Early Julian	England	6	R, O	M-L	Y	W	Sa	P	K	Sept.	10½
Early Harvest	U.S.A.	6	R, O	M	Y	VW	Sa	G-VG	D	Aug.-Sept.	49
Early Rivers	England	5	R, C	M-L	G	W	A	P	K	Sept.	67
Ecklinville	England	6	R	L	G, Y	W	Sa	F	K	Sept.-Nov.	60
Encore	England	6–7	R, O, C	VL	Y, B, R, S	W	Sa	G	K	Mar.-April	9½
English Russet	England	6–7	R, C	M-S	G, Y, Ru	Y, W	M, Sa	G	D	Jan.-May	57
Ewalt	U.S.A.	6	R, C, R, O	L	Y, B, R, S	Y, W	B, Sa	G	K	Nov.-April	54
Estelline	U.S.A.	5	R, C	M		G, Y	B, Sa	F	K	Oct.-Dec.	51
Evangeline	N.S.	6	R, O, C	M	G, Y, S, R	Y, W	B, Sa	F	D, K	Nov.-Feb.	3
Fall Pippin	U.S.A.	7	R, O	L-VL	G, Y	W	Sa	VG	D, K	Sept.-Jan.	28½
Fall Jenneting	U.S.A.	6	R, O, C	L-M	G, Y	W	Sa	G	D, K	Sept.-Dec.	60
Gascoyne's Scarlet	England	7	Ob	L	Y, C, R	W, Y	Sa	F	K	Oct.-Feb.	52½
Gilliflower	U.S.A.	6	Ob, C	M-L	Y, G, D, R	W	M, Sa	G	D, K	Oct.-Feb.	39½
Gold Medal	England	5	R, O	L	Y, G	W	M, A	F	K	Oct.-Jan.	42½
Golden Sweet	U.S.A.	6	R, O	M-L	Y, G	Y	S	G-VG	D	Sept.-Oct.	62
Grimes Golden	U.S.A.	7–8	R, Ob	M	Y, B	Y	Sa	VG-B	D, K	Nov.-Feb.	56¾
Grenadier	England	6	C	L	G, Y	W, Y	A	F	K	Oct.-Nov.	49
Hambling Seedling	England	8	R, C	M	Y, G, B	W	M, Sa	F	K	Dec.-Feb.	35
Hector McDonald	England	6	R, O	L	Y, B, R	W	M, Sa	F	K	Oct.-Nov.	57
Hendrick Sweet	U.S.A.	8	R, C	M	Y, S, R	W	S	G	D, K	Nov.-Feb.	27½
Heusgen Golden Reinette	Europe	6	R, O	M	G, Y, Ru	Y	M, Sa	G-B	D	Feb.-April	45
Houblon	England	6	R, O	M	D, C, R	Y	M, Sa	G	D	Nov.-Dec.	8¾
Hounslow Wonder	England	6–7	R, O	L	Y, B, R.	W	M, Sa	G	D	Dec.-Jan.	23½
Illinois Red Rome Beauty	U.S.A.	8	R, O, C	M-L	D, R, S, C	Y	Sa	G	K, D	Jan.-June	
James Grieve	England	6	R, C	M	Y, B, R	W	M, Sa	G	D	Oct.-Nov.	78
Jewett Red	U.S.A.		R, O	M	Y, R, S	Y, W	M, Sa	G-VG	K	Oct.-Mar.	58½
Jonathan	U.S.A.	7	R, C	M	Y, R, S	Y	Sa	VG-B	D, K	Nov.-Jan.	17
King David	U.S.A.	7	R, O, C	M-S	Y, D, R	Y	B, Sa	G	K	Nov.-Mar.	35½
King Edward VII	England	7	R, C	VL	Y, R, S	Y	B, A	F	D, K	Feb.-April	36
King of Pippins	England	6	R, O	S-M	Y, R, S	Y	B, Sa	G	K	Nov.-Dec.	47
Lady Sudley	England	8	R, Ob. A	M	Y, C, S	Y	B, Sa	G	D	Sept.-Oct.	35

Langley Pippin	England	6	R, C	M	Y, S, R	Y	B, Sa	G	D	Sept.-Oct.	32
Lady Sweet	U.S.A.	6	R, C	L-M	Y, G, R, S	W, Y	Sa	G-VG	D	Nov.-April	25½
Lawver	U.S.A.	6	R, O	M	G, R, S	W, Y	B, Sa	F-G	K	Jan.-May	71½
Lanes Prince Albert	England	6	R, C	L-VL	G, Y, R, B, S	Y, W	B, Sa	F	K	Dec.-Mar.	53½
Langford Beauty	Canada	6	R, O	M	Y, R	W	M, Sa	G	D	Aug.-Sept.	87½
Lord Stradbrooke	England	7-9	R	L	G, Y, B, C	Y	B, Sa	F	K	Jan.-Mar.	48
Lord Derby	England	6	Ob. A	L	G, Y	Y	B, Sa	F	K	Nov.-Jan.	42½
Lord Grosvenor	England	7	R, C	L	Y	W	B, Sa	F	K	Sept.-Nov.	34
Lord Suffield	England	6	R, C	L	G	W	Sa	F	K	Sept.-Oct.	26
Lord Hindlip	England	6	R, C	M	Y, B, R, Ru	Y	Sa	G	D	Jan.-May	16½
Lowland Raspberry	Europe	8	R, C	M-L	W, R, S	W	M, Sa	VG	D	Aug.-Sept.	30
Magog	U.S.A.	6	R, Ob	M-L	G, Y, R, S	Y	Sa	G	K	Oct.-Jan.	64
Maiden Blush	U.S.A.	8	O	M	Y, B	W	Sa	G	K	Sept.-Nov.	49
Mann	U.S.A.	7-8	R, O	M-L	G, Y	Y	Sa	F-G	K	Jan.-Apr.	48
Mere de Menage	Europe	7-8	O, C	L-VL	Y, B	W	Sa	F	K	Oct.-Jan.	38
Milding	U.S.A.	6	O, C	L-M	Y, R, S	W, Y	Sa	G	D, K	Nov.-Jan.	129
Mother	U.S.A.	7	R, C	M	Y, R, S	Y	M, Sa	VG-B	D	Oct.-Jan.	23½
Mr. Gladstone	England	7	R, O, A	M	Y, B, C	Y	M, Sa	F	K	Sept.-Oct.	15½
McLellan	U.S.A.	8	R, O, C	L-M	G, Y, R, S	W	M, Sa	VG	D	Oct.-Feb.	3½
Mammoth Black Twig	U.S.A.	7	R, C	L-M	G, Y, R, S	G, W	Sa	G	K	Dec.-May	32½
Newton Wonder	England	7	R	M	Y, B, S, C	Y, W	C, A	F	K	Dec.-May	59½
Newton Pippin	U.S.A.	7	R, O	M-VL	G, Y	G, W	Sa	B	D, K	Feb.-June	30
New Hawthornden	England	5	R	M-L	G, Y, B	Y, W	A	F	K	Nov.-Feb	24½
Norfolk Beauty	England	6	O	L-VL	G, Y	Y	M, Sa	G	K	Nov.-Jan	42½
Northwestern Greening	U.S.A.	6	R, C	M-L	Y, G	Y	M, Sa	G	K, D	Nov.-Feb	83½
Ohio Bright Red Rome	U.S.A.	8	R, O, C	M-L	R, B, C	Y	Sa	G	K, D	Dec.-June	23
Ohio Dark Red Rome	U.S.A.	8	R, O, C	M-L	D, R, B, C	Y	Sa	G	K, D	Dec.-June	55
Ohio Red Rome Beauty	U.S.A.	8	R, O, C	M-L	L, R, S, C	Y	Sa	G	K, D	Jan.-June	
Olympia	U.S.A.	7	R, C	M-L	Y, R, S	Y	B, Sa	G-VG	K, D	Dec.-Mar.	16½
Opalescent	U.S.A.	6	R, C	L-VL	Y, D, R	Y, W	M, Sa	G-VG	D	Oct.-Jan.	108
Ostego	U.S.A.	8	R, Ob, C	M	Y, D, R, S, C	Y	M, Sa	G	D	Nov.-Feb.	23½
Ortley	U.S.A.	9	Ob, C	M	W, Y, B	W	Sa	VG	D, K	Dec.-Feb.	20½
Peasgood Nonsuch	England	6	R, O	L	Y, R, S	Y	Sa	G	K	Oct.-Dec.	39½
Peck Pleasant	U.S.A.	6	R, O, C	M-L	Y, B	Y	Sa	VG-B	D, K	Nov.-Mar.	57½
Pensaukee Russet	U.S.A.	6	R, O, C	M	G, Ru, B	Y	B, Sa	F-G	D, K	Mar.-May	39¾
Pewaukee	U.S.A.	5	R, Ov	M-L	Y, G, R, S	W	Sa	P	K	Nov.-Apr.	157
Porter	U.S.A.	6	Ob. C	S-L	Y, B	Y	Sa	G-VG	D, K	Oct.-Nov.	41½
Rev. W. Wilks	England	6	R, O, A	L	Y	Y, W	Sa	F	K	Oct.-Nov.	80
Red Winter Reinette	Canada	7	R, O, C	M	G, Y, S, B, R,	W, Y	M, Sa	G-B	D	Jan.-Apr.	49¾
Red Victoria	England	6	O	L	L, C, R	W, Y	M, Sa	P	K	Sept.-Oct.	52
Red Bietigheimer	Germany	7-8	R, O, C	VL	Y, R, S	W	Sa	F-G	K	Nov.-Dec.	76
Rockland	U.S.A.	6-7	R, O	M-L	Y, D, R, S, C,	Y	Sa	G	D, K	Nov.-Jan.	22½
Rome Beauty	U.S.A.	8	R, O, C	L	G, Y, R, S	Y	Sa	G	D, K	Jan.-May	39½
Rolfe	U.S.A.	6	R, O	M-L	Y, B	W, Y	B, Sa	G	K	Oct.-Dec.	34½
Rambo	U.S.A.	6-7	R, O	M	G, Y, R, S	G, W	M, Sa	G-VG	D	Dec.-Jan.	35½
Sutton Beauty	U.S.A.	7	R	M	Y, R, S	W	M, Sa	G-VG	D, K	Nov.-Mar.	17½
Stirling Castle	England	6	R, O	L	G, Y	W	M, Sa	F	K	Nov.-Jan.	15

APPLES, TEST OF VARIETIES—*Concluded*

For explanation of abreviations used in table see previous table.

Variety	Origin	Bearing age	Form	Size	Colour of skin	Colour of flesh	Flavour	Quality	Use	Season	Total yield single tree since planting
		yr.									pk.
Smokehouse	U.S.A.	6	R, O	M-L	G, Y, R, S	Y	M, Sa	F	D, K	Oct.-Mar.	103½
Stayman Winesap	U.S.A.	7	R, C	M-L	Y, R, S	Y	Sa	G	D	Dec.-May	50
Schoharie	U.S.A.	10	R, Ob, C	M	Y, D, R, S	Y	M, Sa	G	D, K	Nov.-Mar.	50½
Summer Golden	England	7	R, O	M	Y	Y, W	Sa	F	K	Oct.-Dec.	25
Saratoga	U.S.A.	9	R, O, C	L	G, Y, R	W, Y	Sa	G	K	Jan.-April	27
St. Lawrence	Canada	7–8	R, O, C	M-L	Y, B, S, C, R.	W	M, Sa	G-B	D	Oct. Nov.	54
Stump	U.S.A.	8	R, Ob, C	M-S	W, Y, R, S	W, Y	Sa	VG	D	Oct.-Nov	19
Seek-no-further	U.S.A.	6	R, C	M	Y, R, S	Y, W	M, Sa	VG-B	D	Jan.-Mar.	54½
Salome	U.S.A.	7	R, O, C	M	Y, R, S	W, Y	Sa	G-VG	D, K	Nov.-Mar.	33
Smith Cider	U.S.A.	6	R, O, C	M-L	G, Y, R, S	W	Sa	G	K	Nov.-Mar.	51
Sterns	U.S.A.	8	O, C	L	Y, R	Y	M, Sa	G	K	Oct.-Nov.	20
Scarlet Beauty	U.S.A.	5–6	R, O, C	L	Y' C, R	W, Y	Sa	F	K	Nov.-Jan.	
Scarlet Pippin	Canada	6	R	M	Y, R, S	W	M, Sa	VG	D, K	Oct.-Dec.	80
Sops of Wine	England	5	R, C	M	G, Y, R	W	M, Sa	G	K	Aug.-Sept.	36½
Summer Champion	U.S.A.	6–7	R, O	L	Y, R, S	W	M, Sa	G	K	Aug.-Sept.	61½
Star of Devon	England	5	R, C	M-S	Y, B, R	Y, W	M, Sa	G	D, K	Nov.-May	33½
Striped Beaufin	England	5	R, O	L	G, Y, R, S	Y, W	B, A	F	K	Nov.-May	8
Sturmer Pippin	England	5	R, O	S	G, Y, Ru R	Y, W	M, Sa	G-VG	D	Dec.-May	31
Tower of Glamis	England	6	R, O, I	L	G, Y, B	Y	B, A	G	K	Oct.-Feb.	37½
Tom Putt	England	7	R, O	M	C, R	Y	B, Sa	G	K	Nov.-Jan.	19
Twenty Ounce	U.S.A.	7	R, C	VL	G, Y, R, S	W, Y	Sa	G	K	Sept.-Dec.	45½
Victoria Sweet	U.S.A.	6–7	R, O, C	M	Y, R, S	Y	S	G-VG	D, K	Oct.-Jan.	90½
Warners King	England	7	R, O	VL	G, Y	Y	B, Sa	G-B	K	Oct.-Dec.	50
Wm. Crump	England	9	R, C	S	G, B, R, Ru	Y	B, Sa	G-VG	D	Nov.-Feb.	¾
Williams Favorite	U.S.A.	7	R, Ob, C	M	Y, D, R, S	Y, W	M, Sa	G	D	Sept.-Oct.	41¾
Walter Pease	U.S.A.	7	R, C	L-M	Y, G, R, S, C	W, Y	Sa	G-VG	D	Nov.-Feb.	39¼
Wellington	England		R, O	M-L	Y, B, R	W	B, A	G-B	K	Nov.-Mar.	46½
Walker Beauty	U.S.A.	6	R, C	M-L	Y, B	Y	B, A	G	K	Nov.-Mar.	
Winter Banana	U.S.A.	6	R, O, C	L	W, Y, B	Y	M, Sa	G-VG	D, K	Nov.-Jan.	92½
Worcester Pearmain	England	6	R, O, C	M	Y, C, R	Y	M, Sa	G	D	Oct.-Nov.	76½
Wismer Dessert	Canada	7	R	M-L	Y, R, S	Y, W	M, Sa	G-VG	D	Jan.-April	9½
Winterstein	England	6	R, O	M	Y, G, R, S	W	M, Sa	G	D	Dec.-Feb.	16

Winter Pearmain	England	8	R, O. C	M	Y, G, B, R	Y	M, Sa	G	D	Dec.-Mar.	25½
Winter Ribston	England	7	R, O	M	G, Y, R, Ru	Y	M, Sa	G-B	D	Dec.-Mar.	12
York Imperial	U.S.A.	7	R, O	M	Y, R, S	Y	M, Sa	G-VG	D, K	Jan.-May	53¼
CRAB APPLES											
Excelsior	U.S.A.	7	R, O	L	Y, R	W	Sa	G-VG	D, K	Sept.	47½
General Grant	U.S.A.	5	R, O	S-M	G, Y, R, S	Y, W	Sa	F	K	Sept.-Oct.	41½
Martha	U.S.A.	6	O	M	Y, R	Y	B, Sa	G-VG	D, K	Sept.-Oct.	36
Whitney	U.S.A.	5	R, C	L	Y, R, S	Y	M, Sa	G-VG	D, K	Sept.	47½

81079—34

THINNING WEALTHY APPLES

The fruit was removed from twenty-two trees of Wealthy apples during the last week in July, leaving but one apple to a fruit spur. Four trees averaging about the same number of fruits per tree were left as controls. The fruit was removed with small thinning shears made for that purpose. The trees were fourteen years old and were spaced 20 by 20 feet apart. The fruits removed were counted during the thinning. The results obtained were as given below, and show a decided gain from the operation. It was found that the thinned apples coloured and sized much better than the ones not thinned, and did not drop so readily when nearing the harvesting time. It is very evident that with this variety, which has the habit of setting heavily in alternate years, the thinning of the fruit is necessary if a large proportion is to grade as No. 1. The values stated for the different grades are the prices obtained this year by the United Fruit Companies in their shipments of this variety.

THINNING APPLES

Wealthy	Thinned to one fruit per spur	Not thinned
Number of trees in test	22	4
Average number of apples removed per tree	389	
Average time taken to thin one tree ..... min.	24	
Average yield per tree ..... pk.	17·7	19·6
Average number of apples harvested per tree	885	1,176
Percentage of No. 1's	56·37	22·17
Percentage of No. 2's	32·43	40·38
Percentage of No. 3's	10·04	29·81
Percentage of Domestics	0·00	0·00
Percentage of culls	1·16	7·64

Calculated on a crop of 100 barrels per acre the revenue from the above tests would be as follows:—

Thinned				Value	*Unthinned*				Value
56·37	barrels	No. 1's at	$3.09 ..... $	174 18	22·17	barrels	No. 1's at	$3.09 ..... $	68 50
32·43	"	No. 2's "	2.64	85 61	40·38	"	No. 2's "	2.64	106 60
10·04	"	No. 3's "	1.36	13 65	29·81	"	No. 3's "	1.36	40 54
1·16	"	culls "	0.25	0 29	7·64	"	culls "	0·25	1 91
				273 73					217 55

Balance in favour of thinning, $56.18.

SPRAYING AND DUSTING

The spraying and the dusting at this Station were carried out in 1926 as follows:—first spray or dust, May 22, as leaves were commencing to unfold; second spray or dust, June 1, a day or two after the mouse-ear stage of the leaves; third spray or dust, June 10, pink stage, or regular second spray; fourth spray or dust, June 22, regular calyx spray; fifth spray or dust, July 3, regular fourth spray.

The strength of lime-sulphur used for the different sprays was as follows: first spray, 1 gallon lime-sulphur to 35 gallons water, and to each 160 gallons of liquid 6 pounds dry arsenate of lead, 6 pounds hydrated lime, and 3 pounds calcuim caseinate; second and third sprays, 1 gallon lime-sulphur to 40 gallons water, and to each 160 gallons of liquid 5 pounds dry arsenate of lead, 6 pounds hydrated lime and 1½ pounds calcium caseinate; fourth spray, 1 gallon lime-sulphur to 45 gallons of water, and the other materials as for the second and third sprays; fifth spray, 1 gallon lime-sulphur to 50 gallons water, and to each 160 gallons of liquid 4 pounds dry arsenate of lead, 6 pounds hydrated lime, and 2 pound calcium caseinate.

The results from the different sprays are given in the following table.

SPRAYING AND DUSTING RESULTS

Variety and how sprayed or dusted	Per cent clean	Per cent scab	Per cent No. 1's, 2's and 3's	Per cent culls	Per cent bud moth injury	Per cent green apple bug injury	Per cent russeting
Gravenstein							
Bordeaux-arsenate (4-8-40) spray	89·44	10·56	.....	2·35	1·06	1·17	4·71
Lime-sulphur-arsenate spray	74·46	25·54	.....	5·30	2·13	3·19	
Wetable sulphur-arsenate spray	54·84	45·16	.....	16·13	3·23	6·45	
Lime-sulphur-aluminium, arsenate	71·06	28·94	.....	10·00	5·00	5·00	
Check plot			(No bloom; no fruit)				
Sulphur dust after bloom			(No bloom; no fruit)				
Sulphur dust (85-15)	88·67	11·33	.....	0·33	2·33	4·66	
Bordeaux dust	86·08	13·92	.....	2·53	3·79	5·06	1·26
Sulphur dust (1st, 2nd and 3rd); Bordeaux dust (4th and 5th)	86·42	13·58	.....	1·23	6·21	1·85	0
McIntosh							
Bordeaux-arsenate (4-8-40) spray	89·90	10·10	69·10	9·45	4·95	3·30	3·60
Lime-sulphur-arsenate spray	75·60	24·40	61·50	10·20	1·25	11·65	0·95
Wetable sulphur-arsenate spray	67·55	32·45	58·15	19·00	1·55	13·45	0·20
Lime-sulphur-aluminium, arsenate	51·55	48·45	45·40	20·10	2·10	8·05	0·30
Check	1·10	98·90	2·00	98·00	1·90	37·60	
Sulphur dust after bloom	41·00	59·00	18·60	60·40	2·90	43·60	
Sulphur dust (85-15)	91·00	9·00	85·15	6·25	3·00	3·90	0·25
Brodeaux dust	92·90	7·10	66·40	19·85	2·20	10·20	0·85
Sulphur dust (1st, 2nd 3rd); Bordeau dust (4th and 5th)	90·05	9·95	72·40	11·50	3·70	5·65	0·35
Fameuse							
Bordeaux-arsenate (4-8-40)spray	95·40	4·60	48·30	23·30	5·30	6·80	23·3
Lime-sulphur-arsenate spray	89·66	10·34	64·00	26·40	2·70	10·70	1·4
Wetable sulphur-arsenate spray	88·10	11·90	74·80	14·70	3·90	7·30	
Lime-sulphur-aluminium, arsenate	71·06	28·94	62·20	30·00	1·30	3·70	
Cleck plot			(No bloom; no fruit)				
Sulphur dust after bloom			(No bloom; no fruit)				
Sulphur dust (85-15)	89·40	10·60	80·80	16·10	1·80	2·10	
Bordeaux dust	88·38	11·62	80·00	15·30	1·64	5·40	0·9
Sulphur dust (1st, 2nd, 3rd); Bordeaux dust (4th and 5th)	66·49	33·51	45·60	32·40	0·30	3·60	

The table below gives the average of the results with these three varieties, except in the plots where McIntosh only fruited. Kolodust, a sulphur dust, was used on plot 9, but there was not sufficient fruit on the trees of this plot to secure reliable records. So far as our records show this has been a satisfactory dust.

AVERAGE OF THE THREE VARIETIES

How sprayed or dusted	Per cent clean	Per cent scab	Per cent No. 1's, 2's and 3's	Per cent culls	Per cent bud moth injury	Per cent green apple bug injury	Per cent russeting
Bordeaux-arsenate (4-8-40) spray	91·58	8·42	58·80	11·70	5·77	3·75	10·53
Lime-sulphur-arsenate spray	79·91	20·09	62·75	13·96	2·03	8·51	1·17
Wetable sulphur-arsenate spray	70·16	29·84	66·47	16·61	2·89	9·06	
Lime-sulphur-aluminium, arsenate	64·56	35·44	53·80	20·03	2·80	5·58	
*Check plot	1·10	98·90	2·00	98·00	1·90	37·60	
*Sulphur dust after bloom (3 applications)	41·00	59·00	18·60	60·40	2·90	43·60	
Sulphur dust (85-15)	89·69	10·31	92·97	7·56	2·37	3·55	
Bordeaux dust	89·12	19·88	73·20	12·56	2·54	6·89	1·00
Sulphur dust (1st, 2nd, 3rd); Bordeaux dust (4th and 5th)	80·98	19·02	59·00	15·04	3·40	3·70	

* One variety only (McIntosh) fruited.

COST OF SPRAY MATERIALS

Lime-sulphur, 1-42, (average strength of the five sprays used)—

	Cents
3.8 gallons of concentrated lime-sulphur at 24.4 cents	93
6 pounds hydrated lime at 1.1 cents	07
5 pounds dry arsenate of lead at 16 cents	80
1.9 pounds calcium caseinate at 15 cents	28
Total cost of 160 gallons of spray	$2 08

Cost per gallon, 1.3 cents.

Bordeaux, 4-8-40—

	Cents
16 pounds of copper sulphate at 5.5 cents	88
32 pounds of hydrated lime at 1.1 cents	35
5 pounds of dry arsenate of lead at 16 cents	80
Total cost of 160 gallons of spray	$2 03

Cost per gallon, 1.27 cents.

Wetable sulphur—

	Cents
16 pounds of superfine sulphur at 3.2 cents	51
8 pounds of hydrated lime at 1.1 cents	09
1 pound of calcium caseinate at 15 cents	15
2½ pounds of dry arsenate of lead at 16 cents	40
Total cost of 100 gallons of spray	$1 15

Cost per gallon, 1.15 cents.

Lime-sulphur-arsenate with aluminium sulphate—

	Cents
3.8 gallons of concentrated lime-sulphur at 24.4 cents	93
10 pounds of aluminium sulphate at 3¾ cents	38
5 pounds of dry arsenate of lead at 16 cents	80
Total cost of 160 gallons of spray	$2 11

Cost per gallon, 1.32 cents.

The labour charge for spraying was $1.26 per hour, made up as follows: 2 men spraying, at 28 cents; teamster at 29 cents; team at 20 cents; use of machine at 15 cents; gasoline, oil, etc., at 6 cents.

COST OF SPRAYING

Trees planted 14 years.	Lime-sulphur arsenate	Bordeaux-arsenate	Wetable sulphur	Lime-sulphur-arsenate with aluminium sulphate
Total material used on 54 trees, 5 applications... gal.	496	496	496	496
Cost of spray material for 54 trees, 5 applications $	6·45	6·30	5·70	6·55
Time taken to spray 54 trees, 5 applications..... min.	375	375	375	375
Cost of applying sprays to 54 trees, 5 applications. $	7·87	7·87	7·87	7·87
Total cost for spray and labour, 54 trees, 5 applications..... $	14·32	14·17	13·57	14·42
Total cost per acre of 40 trees, 5 applications.... $	10·61	10·50	10·05	10·68

DUSTING COSTS

Materials used were charged at cost: sulphur, 85-15 (85 per cent superfine sulphur, 15 per cent arsenate of lead), $6 per cwt.; sulphur, 90-10, $5.25 per cwt.; Bordeaux, 12-15-73 (12 per cent dehydrated copper sulphate, 15 per cent arsenate of lead, 73 per cent hydrated lime), $5.50 per cwt.; Bor-

deaux, 12-8-80, $4 per cwt. The labour charges were $1 per hour, made up as follows: teamster, 29 cents; operator, 30 cents; team, 20 cents; use of machine, 15 cents; gasoline, oil, etc. .6 cents.

COST OF DUSTING

Trees planted 14 years		Sulphur 90-10	Bordeaux 12-8-80	Bordeaux (first three) and sulphur (last two)
Total material used on 54 trees, 5 applications	lb.	345	300	320
Cost of dust for 54 trees, 5 applications	$	18 11	12 00	14 55
Time taken to dust 54 trees, 5 applications	min.	162	150	156
Cost of dusting 54 trees, 5 applications	$	2 70	2 50	2 60
Total cost of dusting one acre, 54 trees, 5 applications	$	20 81	14 50	17 15

NOTE.—The increase in the time taken to dust in 1926 over former years is due to the fact that the eam was driven more slowly, and the dust blast regulated accordingly.

VEGETABLES

BEANS

The tests with beans were made in rows 2½ feet apart, 66 feet of row to each variety. The yield recorded in the table below is from a single row 33 feet long, the balance of the plot being left to ripen for seed. Seeding was done May 28, and practically all seed had germinated by June 10. The plants were spaced 2 inches apart in the rows.

Bean anthracnose disease, referred to in the table as pod spot, was not bad during the early season but developed considerably later and when the beans were harvested for seed was abundant on many varieties. Seed showing discoloration should not be used for planting, as in this way more disease than otherwise will result.

Hodson Long Pod, a yellow-podded variety, is the most resistant to disease, with Refugee or 1,000 to 1, a green-podded variety, about equally resistant. Princess Artois, which was under test for the first time this year, is a very dwarf green variety resistant to disease. For general planting the two first named are recommended. Davis White Wax is an early yellow-pod variety usually fairly resistant to anthracnose.

BEANS, TEST OF VARIETIES AND STRAINS

Variety or Strain and Source	First ready for use	Weight harvested to Aug. 3		Total weight harvested		Length of pod	Per cent of pods showing spot	
							When harvested green	When harvested for seed
		lb.	oz.	lb.	oz.	in.		
Masterpiece (O-1562)	July 30	8	12	35	10	9	0	0
Hodson Long Pod (O-2748)	Aug. 10	..	..	34	12	9	0	0
Plentiful French (O-2755)	July 28	15	0	34	10	6	0	5
Hodson Long Pod (Rennie)	Aug. 10	..	..	34	0	9	0	0
Round Pod Kidney Wax (McDonald)	July 28	15	0	31	6	5	0	70
Davis White Wax (O-1636)	" 27	8	12	30	0	5	0	70
Wardwell Kidney Wax (Graham)	" 26	11	10	29	12	4½	2	70
Refugee or 1,000 to 1 (Burpee)	Aug. 9	..	..	29	12	3	0	0
Refugee or 1,000 to 1 (O-563)	" 9	..	..	28	0	3	0	0
Bountiful (C-4901)	July 28	11	12	27	12	5	0	20
Wardwell Kidney Wax (O-1516)	" 27	10	8	27	12	4½	0	90
Bountiful (D. & F.)	" 28	11	10	27	10	4½	50	90

BEANS, TEST OF VARIETIES AND STRAINS—*Concluded*

Variety or Strain and Source	First ready for use	Weight harvested to Aug. 3	Total weight harvested	Length of pod	Per cent of pods showing spot	
					When harvested green	When harvested for seed
		lb. oz.	lb. oz.	in.		
Dwarf French or Bountiful (Andrews Mountain)	" 27	9 14	26 14	5	25	90
Giant Stringless Green Pod (Burpee)	" 28	7 14	26 10	4	60	100
Yellow Eye Yellow Pod (O-2738)	" 28	9 12	26 6	3¾	0	1
Round Pod Kidney Wax (Graham)	" 30	6 8	26 8	5	2	70
Gaspereau (L. Gates)	" 28	12 12	25 12	4¾	10	30
Refugee or 1,000 to 1 (Andrews Mountain)	" 30	2 14	25 6	3	0	0
Round Pod Kidney Wax (O-6875)	" 30	9 8	24 8	4½	0	70
Inter-Challenge Black Wax (O-6876)	" 25	12 12	24 6	5	0	80
Stringless Green Pod (O-5405)	" 28	10 4	23 0	3½	0	30
Yellow Eye L. (O-6950)	Aug. 4	.. 6	19 10	3½	0	0
Fordhook Favourite (Burpee)	July 30	4 4	19 2	4	2	20
Stringless Green Pod (Graham)	" 30	5 0	18 10	4	10	100
Princess Artois (O-9388)	" 26	8 2	16 0	4	0	0
No. 1 Pole Bean Green Pod (O-6604)	Aug. 4	.. ..	47 0	8	10	20

BEETS

The trial plots of beets were seeded May 7 and June 21. The plants were thinned from three to four inches apart in the row. The yields given in the table below are the product of one row 8¼ feet long. For quality the Detroit Dark Red is the best, and, on the whole, is the most satisfactory of all varieties tested.

BEETS—TEST OF VARIETIES AND STRAINS

Variety or strain and source	Date of seeding	Number of roots			Weight from 8¼-ft. row
		Ready for use	Marketable	Not marketable	
					lb. oz.
Crosby Egyptian (D. & F.)	May 7	Aug. 2	19	1	7 0
	June 21	" 28	16	1	3 10
Extra Early Flat Egyptian (Moore)	May 7	" 2	18	3	7 0
	June 21	" 28	14	2	2 10
Cardinal Globe (Rennie)	May 7	" 2	18	0	6 12
	June 21	" 28	16	0	4 12
Crosby Egyptian (Madsen)	May 7	" 2	18	2	6 8
	June 21	" 28	14	2	2 8
Detroit Dark Red (O-8935)	May 7	" 2	20	2	6 0
	June 21	" 28	15	1	2 8
Early Wonder (Lethbridge)	May 7	" 2	20	1	5 8
	June 21	" 28	15	0	2 6
Extra Early Egyptian (Madsen)	May 7	" 2	15	4	5 4
	June 21	" 28	14	2	4 2
Eclipse (McDonald)	May 7	" 2	19	2	4 12
	June 21	" 28	14	1	4 4
Detroit Dark Red (Madsen)	May 7	" 2	16	2	4 4
	June 21	" 28	14	0	4 12
Detroit Dark Red (Moore)	May 7	" 2	20	2	4 2
	June 21	" 28	11	1	5 12
Crimson Globe (Madsen)	May 7	" 2	20	2	4 0
	June 21	" 28	14	0	3 4
Detroit Dark Red (McDonald)	May 7	" 2	15	5	3 8
	June 21	" 28	15	0	4 12
Blood Red Globe (Buckbee)	May 7	" 2	7	3	2 2
Early Model (Graham)	May 7	" 2	5	15	2 0
	June 21	" 28	15	0	2 2
Black Red Ball No. 1 (O-6894)	May 7	" 2	2	19	1 4
	June 21	" 28	15	0	4 4
Blood Red Ball (Burpee)	May 7	" 2	1	19	1 4

BEETS, SEEDING AT DIFFERENT DATES

Successional seedings of one strain of Detroit Dark Red beet were made, and the weight of roots from these seedings obtained at different dates. The beets seeded May 7 were satisfactory for bunching on August 6, giving 14 bunches (of five to a bunch) of choice marketable roots to a 33-foot row. The May 18 seeding was at this date considerably inferior. For winter storage seeding June 5 to 15 is satisfactory the early-seeded roots being, too large for table purposes by fall.

SUCCESSIONAL SEEDING OF DETROIT DARK RED BEETS

Date of seeding	First ready for use	Weight of 18 roots									
		August 2		August 6		August 16		August 31		October 11	
		lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.
May 7	Aug. 6	4	2	7	8	11	4	16	8	33	0
" 18	" 6	4	2	4	10	10	8	14	10	36	0
" 28	" 16	2	10	4	10	7	2	12	12	28	8
June 5	" 28	..	..	..	..	3	12	7	8	9	6
" 14	Sept. 5	..	..	..	..	..	..	..	..	6	12

CABBAGE

The season, because of the dry weather, was not a good one for cabbage and the heads were on the whole much undersized. The plants from seed sown outside on May 7 were treated in the seed row with corrosive sublimate, 1 ounce to 10 gallons of water, each week after seeding, to control the root maggot, which was very severe. Toward the end of July the cabbage-worm butterfly was unusually abundant and continued to the latter part of September, making it necessary to dust the plants repeatedly to hold this pest in check. Arsenate of lime 1 part, mixed with 10 parts of hydrated lime, was used as a poison, being dusted thoroughly into the leaves early in the morning every ten days. When heavy applications of this poison are made it is necessary to use care in removing all outer leaves and burying them to prevent poisoning from their consumption. The following tests were made with plants started in the greenhouse April 1, transplanted to flats April 9, and set to the open field May 15 in rows 33 inches apart, the plants being 18 inches apart in the rows. These were all protected with tar paper discs to prevent destruction by the root maggot. The results from plants started outside and transplanted June 18 are also given.

CABBAGE—TEST OF VARIETIES, SEED SOWN INSIDE

Variety and source	Number of plants	First ready for use	Weight of three average heads				Number of heads ready for use	
Seed started April 1			lb. oz.	lb. oz.	lb. oz.	lb. oz.		
		July	July 16	July 21	July 23	Aug. 2	July 23	Aug. 2
Golden Acre (Keith)	20	16	5 2	6 ..	5 4	8 4	20	..
Golden Acre (Stokes)	21	16	4 12	7 8	5 2	8 ..	13	3
Golden Acre (Dreer)	12	18	.. ..	4 10	4 6	9 8	8	2
Golden Acre (Harris)	21	21	.. ..	4 8	3 14	8 2	9	9
Golden Acre (Madsen)	16	23	.. ..	.. ..	.. ..	6 8	5	10
Jersey Wakefield (McDonald)	25	16	4 2	4 14	4 4	6 ..	21	4
Copenhagen Market (Graham)	25	21	.. ..	7 8	6 4	10 8	6	14
Copenhagen Market (Madsen)	25	21	.. ..	6 ..	.. ..	9 12	4	13
Copenhagen Market (Stokes)	25	21	.. ..	6 ..	.. ..	9 4	3	13
		Aug.	Aug. 2	Aug. 25	Sept. 7		Aug. 2	Aug. 25
All Head (Steele-Briggs)	10	2	10 12	20 ..	.. ..	.. ..	3	7
							Aug. 25	Sept. 7
Succession (Ewing)	21	12	.. ..	10 ..	12 ..	.. ..	15	6
Enkhuizen Glory (Rennie)	21	12	.. ..	11 ..	9 8	.. ..	12	8
Winnigstadt (Steele-Briggs)	25	20	.. ..	8 ..	10 8	.. ..	13	8
Danish Ballhead (Lethbridge)	30	25	.. ..	13 8	16 ..	.. ..	6	10

CABBAGE—TEST OF VARIETIES, SEED SOWN OUTSIDE

Variety and source	First ready for use	Weight of three average heads		Number of heads ready for use		
		lb. oz.	lb. oz.			
Seed started May 7	Aug.	Aug. 14	Aug. 25	Aug. 14	Aug. 25	Sept. 7
Golden Acre (Harris)	12	8 8	13 ..	14	22	25
Golden Acre (Keith)	12	8 4	9 12	9	15	25
Golden Acre (Madsen)	12	7 12	8 ..	9	21	25
Golden Acre (Stokes)	12	7 ..	7 12	6	16	25
Golden Acre (Dreer)	12	6 12	10 4	6	17	25
Jersey Wakefield (McDonald)	12	6 ..	6 14	10	18	25
Copenhagen Market (Madsen)	16	.. ..	15 ..	1	14	21
Extra Early Copenhagen Market (Graham)	16	.. ..	12 ..	2	15	21
Copenhagen Market (Graham)	18	.. ..	11 8	.....	13	23
Copenhagen Market (Stokes)	18	.. .	10 8	1	9	19
	Sept.	Sept. 7	Oct. 9		Sept. 7	Oct. 9
All Head Early (Steele-Briggs)	7	10 4	.. ..	.....	9	25
Succession (Ewing)	7	10 ..	.. ..	.....	5	20
Enkhuizen Glory (Rennie)	7	9 ..	.. ..	.....	3	22
Early Winnigstadt (Steele-Briggs)	7	8 ..	.. ..	.....	4	20
Danish Ballhead (Lethbridge)	30	.. ..	13 4	.....	.....	23
Reeds Danish Ballhead (Stokes)	30	.. ..	12 12	.....	.....	25
Extra Amager Danish Ballhead (O-8619)	30	.. ..	9 8	.....	.....	25
	Oct.					
The Houser (Stokes)	9	.. ..	7 14	.....	.....	6

CABBAGE, SUCCESSIONAL SOWINGS

Two varieties were used in this test, Copenhagen Market and Danish Ballhead. Unfortunately records were obtainable only of the former variety; the other variety was stolen from the field just before harvesting. There were 25 plants to each trial plot and the seed used was from the one source.

Variety	Date of seeding	Date of transplanting	First ready for use	Weight of three average heads	Number of heads ready
				lb. oz.	
				Aug. 2	Aug. 2
Copenhagen Market	Mar. 20	May 15	Aug. 2	8 ..	16
Copenhagen Market	April 1	May 15	Aug. 2	10 8	20
				Aug. 25	Aug. 25
Copenhagen Market	April 21	May 25	Aug. 12	10 ..	18
					Sept. 7
Copenhagen Market	May 7	June 18	Aug. 25	11 8	23
				Sept. 13	Oct. 9
Copenhagen Market	May 18	June 30	Sept. 13	5 8	15
Copenhagen Market	May 28	June 30	Sept. 13	6 ..	22
Copenhagen Market	June 5	July 7	Oct. 4	(Very poor)	
Copenhagen Market	June 11	July 7	.....	(Very poor)	

CAULIFLOWER

The season was not favourable for cauliflower because of the dry weather in late July and August. Abundant moisture during the time the heads are forming very materially influences the development of the head, and it will be noticed that the late varieties were worthless for market, failing to produce marketable

heads, and that all the early varieties developed heads inferior in size. The April-seeded plants were started under glass, and the seeding on May 7 was made in the field. Twenty-five plants of each variety were set in rows 33 inches apart, the plants being 18 inches apart in the row. The results obtained were as follows:—

CAULIFLOWER—TEST OF VARIETIES

Variety and source	Date of seeding	Date of planting	Number of heads ready	Weight of three average heads
				lb. oz.
			July 21	July 21
Extra Early Dwarf Erfurt (McDonald)	April 1	May 15	18	1 8
Early Snowball (Madsen)	" 1	" 15	14	1 8
Early Snowball (Graham)	" 1	" 15	10	1 10
Extra Early Erfurt (Madsen)	" 1	" 15	8	1 8
Danish Giant (McDonald)	" 1	" 15	9	1 8
White Mountain Erfurt (Stokes)	" 1	" 15	4	2 0
Veitch Autumn Giant (McDonald)	" 1	" 15	0	0 0
Large Late Algiers (Dupuy & Ferguson)	" 1	" 15	0	0 0
Autumn Giant (Sutton)	" 9	" 15	0	0 0
			Aug. 2	Aug. 2
Extra Early Dwarf Erfurt (McDonald)	" 21	" 25	10	1 10
Early Snowball (Graham)	" 21	" 25	9	1 8
			Aug. 25	Aug. 25
Early Snowball (Madsen)	May 7	June 18	14	1 10
Extra Early Dwarf Erfurt (McDonald)	" 7	" 18	14	3 0
			Sept. 7	Sept. 7
Early Snowball (Graham)	" 7	" 18	19	2 6
White Mountain Erfurt (Stokes)	" 7	" 18	17	2 0
Extra Early Erfurt (Madsen)	" 7	" 18	9	2 0
Large Late Algiers (Dupuy & Ferguson)	" 7	" 18	7	2 0
Danish Giant (McDonald)	" 7	" 18	12	3 6
Autumn Giant (Sutton)	" 7	" 18	0	0 0
Autumn Giant (McDonald)	" 7	" 18	0	0 0
Early Snowball (Graham)	" 18	July 7	0	0 0
Early Snowball (Graham)	" 28	" 7	0	0 0
Early Snowball (Graham)	June 5	" 7	0	0 0

CORN

The corn was seeded May 28 in rows 3½ feet apart, the seed being scattered along the row. The plants were thinned to an average of 6 inches apart, each plot being 66 feet long. The product was graded into good marketable ears, second grade ears not entirely suitable for a discriminating market, and unmarketable ears. The weight of six average marketable ears is given. The corn-stalk borer was noticeable on some of the small plants the latter part of June and thinned some of the plots. It will be noticed that some strains of the same variety are apparently considerably later than others.

Banting, yellow, is advised for early use. Alpha, white to cream, is an excellent early sort. Early Malcolm and Early Cory are still the leading main-crop sorts. Golden Bantam is the leading medium-season sort, and Burbank is an equally desirable yellow, sweet variety. Several of the later kinds did not mature ears before frost. The results from this test were as stated below.

CORN, TEST OF VARIETIES AND STRAINS

Variety or strain and source	First ready for use	Number of days to maturity	Height	Total ears harvested	Number of ears marketable	Number of marketable ears per plant	Number of 2nd grade ears	Weight of six average ears
			ft.					lb. oz.
Early Malcolm (O-8205)..	Sept. 8	103	5½	177	142	1·07	29	2 14
Golden Bantam (Moore).	" 8	103	5½	143	123	0·88	16	3 0
Earliest Catawba (Burpee).	" 16	111	6	137	115	0·87	18	3 0
Golden Bantam (James)..	" 8	103	5	137	104	0·78	28	3 0
Buttercup (Harris).....	" 8	103	5½	130	105	0·75	18	3 6
Golden Nugget (Farquhar).	" 8	103	5½	114	96	0·72	13	x
Charlevoir (Ferry).....	" 20	115	5½	123	82	0·72	31	x
Alpha (Ferry).....	Aug. 24	88	4	152	99	0·72	25	2 14
Early Mayflower (McDonald.)	" 31	95	5½	151	101	0·70	21	4 4
Golden Bantam (Graham)	Sept. 16	111	6	120	92	0·69	20	x
Banting (0-6645).....	Aug. 16	80	3	147	80	0·67	26	2 0
Sweet Squaw (0-6823)....	Sept. 8	103	5½	113	83	0·67	22	3 0
Golden Bantam (McDonald.)	" 16	111	5½	118	93	0·64	17	x
Early Cory (Eagles).....	Aug. 28	92	5	93	56	0·62	16	4 0
Extra Early Cory (Moore)	" 26	90	5	129	79	0·60	25	3 6
Extra Early Cory (McDonald.)	Sept. 18	113	5½	98	78	0·56	16	4 8
Pickaninny (0-6579).....	Aug. 18	82	3	146	67	0·51	34	1 4
Seymour Sweet Orange (Burpee).	Sept. 16	111	6	89	61	0·41	17	x
Groff Golden (Groff).....	" 24	119	5	80	58	0·41	15	x
Vanguard (Stokes).....	" 8	103	6	92	50	0·37	26	3 4
Burbank (Burbank).....	" 16	111	5½	78	42	0·32	28	x
Golden Giant (Rennie)....	" 18	113	6	50	35	0·26	13	x
Sunny Slope (Stokes).....	" 22	117	6½	43	18	0·14	16	x
White Evergreen * (Burpee.)	†	†	7	†	†	†	†	†
Evergreen Bantam* (McDonald.)	†	†	8	†	†	†	†	†
Stowells Evergreen* (Graham.)	†	†	7	†	†	†	†	†

*Record of weight not taken. †No marketable ears when killed by frost.

CUCUMBER

The seed was sown in the open ground in rows on May 29. The test was confined to single rows 16½ feet long, containing 9 plants of each variety. The ground was ploughed out throwing a furrow each way and into this manure was spread and tramped, and then covered with the plough. The rows were firmed and the seed sown, and later the plants were thinned to nine of the best plants evenly spaced.

The striped cucumber beetle was troublesome toward the latter part of June and in July, and was controlled by frequent dusting with a mixture of one part of arsenate of lime to ten parts of hydrated lime. Because of the dry weather in the early fall the plants dried out considerably, resulting in a decreased yield. The yield of marketable cucumbers was as follows:—

CUCUMBERS, TEST OF VARIETIES

Variety and Source	Weight of fruit on August 1		Weight of fruit on August 19		Total weight of fruit	
	lb.	oz.	lb.	oz.	lb.	oz.
Extra Early White Spine (Burpee)	2	14	11	14	81	4
Davis Perfect (Graham)	2	6	12	6	81	0
Improved Long Green (McDonald)	5	2	13	0	71	5
Windermoor Wonder (Stokes)	2	10	8	14	70	0
Early Fortune (Stokes)	4	0	10	12	69	0
Extra Long White Spine (Stokes)		14	8	2	67	12
XXX Table (Rennie)	1	8	9	2	64	10
White Spine (Bruce)	6	12	15	6	62	14
Improved Long Green (Stokes)	1	2	6	8	51	14
Pickling Cucumber (Ferry)	5	14	11	0	47	10

LETTUCE

Tests were made with different varieties and strains of lettuce. The April-seeded lots were started in the greenhouse and the May 7 seeding was made in the open ground. Dreer All Heart has consistently proven a good head variety. New York, Crisp as Ice, and Iceberg are fine sorts. Grand Rapids is one of the most satisfactory of the open-head sorts. The Cos lettuce is an excellent kind. The results from this test are given in the following table:—

LETTUCE—TEST OF VARIETIES

Variety and source	Date seeded	Transplanted to field	First ready for market	Average weight of six heads
				lb. oz.
Black-Seeded Simpson (Harris)	April 30	May 18	June 26	1 2
	May 7	.....	July 15	2 4
	" 7	June 11	" 21	2 4
Curled Black Seeded Simpson (Ewing)	April 30	May 18	June 26	1 3
	May 7	.....	July 15	2 2
	" 7	June 11	" 21	2 8
	" 28	.....	" 24	2 4
Extra Curled Black Seeded Simpson (Harris)	April 30	May 18	June 26	1 4
	May 7	.....	July 13	2 10
	" 7	June 11	" 21	2 4
Black Seeded Simpson (Dreer)	April 30	.....	June 26	1 7
	" 22	May 18	July 5	1 10
	May 7	.....	" 15	2 8
	" 7	June 11	" 21	2 4
	" 28	.....	" 24	2 2
	June 22	.....	Aug. 12	3 12
	" 22	July 16	" 23	4 6
Black Seeded Simpson (Vaughan)	May 7	.....	July 15	2 0
	" 7	June 11	" 21	3 0
	" 28	.....	" 24	2 2
Extra Early Paris Market (0-6098)	April 30	.....	June 26	1 10
	May 7	.....	July 21	seeding
	" 7	June 11	" 21	"
Big Boston (Lethbridge)	April 30	.....	" 3	2 4
	" 22	May 18	" 12	1 8
	May 7	.....	" 24	seeding
	" 7	June 11	" 21	"
	June 22	.....	Aug. 11	"
Big Boston (Stokes)	May 7	.....	July 24	4 0
	" 7	June 11	Aug. 2	7 0
All Heart (Dreer)	April 30	.....	July 3	2 6
	" 30	May 18	" 12	4 0
	May 7	.....	" 18	3 12
	" 7	June 11	" 30	5 0
	" 28	.....	Aug. 2	2 4

LETTUCE, TEST OF VARIETIES—*Concluded*

Variety and source	Date seeded	Transplanted to field	First ready for market	Average weight of six heads
				lb. oz.
Salamander (McDonald)	April 30	May 18	July 3	2 8
	May 7	.....	" 18	3 14
	" 7	June 11	" 30	4 12
	" 28	.....	Aug. 4	4 8
	June 22	.....	" 20	Poor
	" 22	July 16	" 22	"
New York or Wonderful (Graham)	April 30	.....	July 8	5 10
	" 22	May 18	" 16	6 8
	May 7	.....	" 20	6 8
	" 7	June 11	Aug. 2	6 12
	" 28	.....	" 11	6 0
	June 22	.....	" 20	5 9
	" 22	July 16	" 27	6 4
Crisp as Ice (Wills)	April 30	.....	July 8	2 12
	" 22	May 18	" 20	5 8
	May 7	.....	" 21	4 0
	" 7	June 11	Aug. 4	5 4
	" 28	.....	" 8	4 8
	June 22	.....	" 20	4 4
	" 22	July 16	" 27	4 0
Tom Thumb (Sharpe)	April 22	May 18	July 3	1 2
	May 7	.....	" 16	1 12
	" 7	June 11	" 21	1 8
Grand Rapids (Burpee)	April 22	May 18	" 9	3 8
	May 7	.....	" 16	3 0
	" 7	June 11	" 21	2 12
	" 28	.....	" 24	2 4
	June 22	.....	Aug. 11	2 4
	" 22	July 16	" 27	5 8
Grand Rapids (Stokes)	May 7	.....	July 12	2 0
	" 7	June 11	" 21	2 12
	" 28	.....	" 24	2 0
	June 22	.....	Aug. 11	2 12
	" 22	July 16	Aug. 27	5 12
Grand Rapids (0-2287)	May 7	June 11	July 21	3 0
	" 7	.....	" 12	2 0
Iceberg (Ewing)	April 22	.....	" 20	6 8
	May 7	.....	" 20	5 4
	" 7	June 11	Aug. 4	5 4
	" 28	.....	" 6	6 0
	June 22	.....	" 20	No record
	" 22	July 16	" 30	"
All Seasons (Vaughan)	April 22	May 18	July 20	7 12
	May 7	.....	" 24	6 8
	" 7	June 11	Aug. 6	4 12
Danvers Market (Vaughan)	" 7	.....	July 16	1 8
	" 7	June 11	" 23	1 8
Cos (Graham)	April 30	.....	" 9	6 12
	May 7	.....	" 24	7 0
	" 7	June 11	Aug. 4	9 0

LETTUCE, SOWN AT DIFFERENT DATES

Lettuce seed was sown in the field November 7, 1925, and germinated early this spring. Seed from the same package was sown May 7 to compare with this, and from the results obtained it is evident that the fall seeding gave the earliest and best heads. Plants were also transplanted from both the late fall and the early spring seedlings and it is evident that the plants from the seed which germinated early were marketable at an earlier date. A comparison was also made of the same seed started at different dates in the greenhouse and later transplanted, and of seed sown outside late in May and in June, all plants being thinned to 8 inches apart in the rows, and the rows being 18 inches apart.

LETTUCE SOWN AT DIFFERENT DATES

Variety	When seeded	When transplanted	First ready for use	Weight of six average heads	
				Date	lb. oz.
Grand Rapids	1925 Nov. 7	.....	July 6	July 16	4 0
	Nov. 7	June 14	July 14	July 16	2 10
	1926 May 7	.....	July 12	July 16	2 0
	May 7	June 11	July 21	July 21	1 8
	Mar. 20	May 18	June 20	June 20	1 12
	April 3	May 18	July 3	July 3	2 6
	April 22	May 18	July 5	July 5	1 10
	May 28	.....	July 24	July 24	2 0
	June 22	.....	Aug. 11	Aug. 11	2 4

ONIONS

The following table gives the yield of 18 varieties or strains of onions started in flats in the greenhouse on March 25 and planted to the field on May 19, three inches apart in the rows and the rows one foot apart. The plots were single rows 16½ feet long. A record is also given of a row of Large Red Wethersfield seeded very late the previous fall, which while marketable were not as well matured as the transplanted plot of the same variety. The yield per acre is calculated from the weight of marketable bulbs harvested from each plot. Cranstons Excelsior is the best yellow-skinned and Southport Red Globe the best red variety for transplanting.

ONIONS—TEST OF VARIETIES AND STRAINS

Variety and source	Number of bulbs		Weight of marketable bulbs	Equivalent yield per acre
	Not marketable	Marketable		
			lb. oz.	lb.
Southport Red Globe (Steele, Briggs)	2	54	18 8	48,840
Cranstons Excelsior (Dupuy and Ferguson)	2	46	18 0	47,520
Extra Select Large Red Wethersfield (Dupuy and Ferguson)	3	50	17 8	46,200
Ailsa Craig (Graham)	3	54	16 12	44,220
Cranstons Excelsior (Dupuy and Ferguson)	4	47	16 0	42,240
Large Red Wethersfield (0/6042)	8	44	16 0	42,240
Danvers Yellow Globe (Steele, Briggs)	4	45	15 0	39,600
Large Red Wethersfield (Graham)	2	52	15 0	39,600
Extra Select Large Red Wethersfield (McDonald)	1	50	14 8	38,280
Red Globe Prizetaker (Graham)	3	43	14 0	36,960
Denia (Dupuy and Ferguson)	3	45	13 12	36,300
Ferguson Red Globe (Dupuy and Ferguson)	5	48	13 8	35,640
Giant Yellow Prizetaker (Graham)	3	49	13 8	35,640
Yellow Globe Danvers (Graham)	2	55	13 8	35,640
Mammoth Prizetaker (Dupuy and Ferguson)	5	43	13 0	34,320
Yellow Globe Danvers (0/6053)	3	51	11 12	31,020
Japanese (Stokes)	2	53	11 8	30,360
Southport White Globe (Steele, Briggs)	1	47	11 4	29,700
Large Red Wethersfield (Fall sown) (Graham)	8	50	15 0	39,600

ONIONS FROM SEED SOWN AT DIFFERENT DATES AND TRANSPLANTED

Owing to the short season it is difficult to grow onions from seed sown in the open ground. If they have not made sufficient growth to enable them to mature by the middle of September the cool damp weather following results in a strong

vegetative growth with many thick necks and unmarketable bulbs. To offset this it is necessary to start the plants in shallow flats eight weeks before planting-out time and transplant them to the field just as soon as the ground can be worked. It takes about eight weeks to grow strong plants for transplanting, and weak, poorly developed plants are not satisfactory. The onion root maggot attacks the field seeded plants more than the transplanted plants and adds another difficulty in the way of producing a commercially profitable crop from field seeding.

The test recorded below shows the yield from plants started under glass in shallow boxes at different dates. Owing to the late season planting was nearly two weeks later than usual. The first plot of Cranstons Excelsior and Prizetaker were once transplanted into flats in the greenhouse, spacing the plants one inch apart. This practice does not seem to be necessary, although with Cranstons Excelsior, a particularly desirable variety for transplanting, an increased yield resulted.

The plants were set in rows one foot apart, and four inches apart in the row. The trial plots were single rows 16½ feet long. Harvesting was done on September 15, at which date the bulbs were well matured.

ONIONS FROM SEED SOWN AT DIFFERENT DATES AND TRANSPLANTED

Variety	When seeded	Number of bulbs not marketable	Number of marketable bulbs	Weight of marketable bulbs
				lb. oz
Cranstons Excelsior	Feb. 25	3	37	30 8
" "	" 25	4	39	19 ..
" "	Mar. 4	4	40	18 ..
" "	" 25	2	46	18 ..
Prizetaker	Feb. 25	1	32	16 ..
"	" 25	3	37	15 ..
"	Mar. 4	3	38	15 ..
"	" 25	5	43	13 ..
Denia	Feb. 25	2	34	19 4
"	Mar. 4	3	31	17 ..
"	" 25	3	45	13 12
Red Wethersfield	Feb. 25	2	54	19 ..
"	Mar. 4	8	54	13 ..
"	" 25	3	50	17 8
Red Globe	Feb. 25	3	45	18 ..
"	Mar. 4	3	41	14 ..
"	" 25	12	48	13 8

ONION SETS

Onion sets are small onions grown the year before from seed sown thickly in a row and prevented because of this crowding from developing into large bulbs. Any variety may be used for this purpose. The bulb should not be larger than one-half inch in diameter, as the larger bulbs run into seed stalks, resulting in many unmarketable bulbs. Tests were made with sets grown at Kentville and at Ottawa with results as stated below. The rows were 16½ feet long, and 60 sets were planted to each trial plot on May 14. Some loss resulted from sets not starting, particularly with the small sized bulbs. The larger sizes often develop double bulbs and for that reason the number harvested may be greater than that planted. Onion sets are really grown for early bunch onions only.

ONION SETS

—	Size of sets	Number of plants seeding	Number of bulbs		Weight of marketable bulbs
			Not marketable	Marketable	lb. oz.
From Ottawa					
Red sets	Small	7	3	52	6 4
"	Medium	36	4	57	8 8
"	Large	41	6	46	6 10
Yellow sets	Small	1	6	41	4 10
"	Medium	14	10	44	6 10
"	Large	21	7	27	4 2
From Kentville					
Red Wethersfield	Small	0	18	29	2 10
"	Medium	26	10	44	4 6
"	Large	44	28	44	4 10
Prizetaker	Small	11	12	28	4 2
"	Medium	7	9	48	9 6
"	Large	17	23	52	9 0

MULTIPLIER OR POTATO ONIONS

This onion develops two or more sections which when divided may be planted. A supply for home use can be obtained more easily from this than from any other onion. The bulbs are not large but are very firm and have excellent keeping qualities. If a start is once made and sufficient bulbs held over for planting one may continue to grow them indefinitely. In the test made, in rows 16½ feet long and one foot between the rows, 40 sets were planted to a row. The increase was as stated in the following table.

MULTIPLIER OR POTATO ONIONS

Size of bulb set	Number of plants seeding	Number and size of bulbs harvested		
		Large	Medium	Small
Small	2	86	78	36
Medium	13	96	120	78
Large	18	150	90	44

PARSLEY

Three varieties of parsley were grown from seed started in the greenhouse on March 27, the plants being transplanted on May 3, into flats two inches apart, and later set to the field. A planting was made in the field May 8, and the plants were thinned to 8 inches apart. Triple Curled was the best variety, and Moss Curled the next.

PEAS

The seed for this test was sown on May 7 in rows 3 feet apart, each plot being a single row 33 feet long. The plants were thinned to one inch apart in the rows. The variety Thomas Laxton continues to be one of the most desirable varieties.

PEAS, TEST OF VARIETIES

Variety and Source	Height	Length of pod	First ready for use	Weight of green peas, July 21	Total weight of green peas from 33 ft. row	Row, 33 ft. for seed	
						Yield of seed	Per cent moth injury
	ft.	in.	July	lb. oz.	lb. oz.	lb. oz.	%
Thomas Laxton (McDonald).	3	3	12	12 6	22 0	3 5	15
Gregory Surprise (Gregory)..	3	2½	12	11 0	25 8	4 2	10
Pedigree Extra Early (Stokes)	3½	2½	12	8 12	19 6	4 2	13
Marchioness (Stokes).....	3	3½	14	8 14	25 0	3 0	7
Pioneer (Gregory).....	1½	4	19	5 12	20 6	3 1	13
Laxtonian (Graham).....	1½	4	20	3 4	20 6	4 0	12
Blue Bantam (Graham).....	1¼	4	20	2 2	22 6	4 3	9
English Wonder (0·8622).....	2	2½	21	2 0	25 6	3 10	20
American Wonder X Gradus (0·3584).....	5	2½	21	2 0	30 0	4 9	9
Gradus (Carter).....	4	4	21	1 8	16 10	4 5	15
Gregory Surprise X English Wonder (0·6471).....	4½	2½	24	.. ..	19 14	4 4	4
Market Gardener (Carter)...	5	4	26	.. ..	29 2	4 8	10

PEAS: PLANTED AT DIFFERENT DISTANCES APART IN THE ROW

The seed was sown on May 7 in rows 3 feet apart, and the plants were spaced 1, 2, and 3 inches apart in the row. When the plants are spaced 3 inches apart the pods are larger and present a better appearance when picked. In two pounds of Thomas Laxton there were 134 pods from the one-inch, 114 from the two-inch, and 109 from the three-inch spacing. The closer planting tends to a little earlier maturity.

PEAS SPACED AT DIFFERENT DISTANCES

Variety and source	Distance apart in row	Weight of green pods, July 21	Total weight of green pods from 33 ft. row
	in.	lb. oz.	lb. oz.
Thomas Laxton (McDonald).....	1	14 8	29 6
" "	2	10 10	28 0
" "	3	7 4	21 10
English Wonder (0·8622).....	1	2 0	22 6
" "	2	1 12	18 10
" "	3	1 8	18 0
Stratagem (Graham).....	1	.. ..	34 10
" "	2	.. ..	31 6
" "	3	.. ..	22 2

POTATOES

An area of land newly broken in 1925 and seeded to oats that year was planted to four varieties of potatoes June 5, after the land had received 1,500 pounds per acre of a 3-8-10 fertilizer. The crop was dug October 16, and gave yields as follows:

YIELD OF POTATOES, 1926

Variety	Yield per acre		
	Marketable	Unmarketable	Total
	bush.	bush.	bush.
Irish Cobbler	154·0	10·2	164·2
Bliss Triumph	143·7	8·8	152·5
Green Mountain	145·2	17·6	162·8
Garnet Chili	133·4	13·2	146·6

POTATOES: SPROUTED SEED VS. UNSPROUTED

Tests were made with Irish Cobbler potatoes planted in the field April 24, April 30, and May 13. One lot of those planted on May 13 was placed in the greenhouse April 24 in shallow trays to sprout. The results of this test were as follows:—

POTATOES: SPROUTED SEED VS. UNSPROUTED

—	Yield of marketable tubers per acre
	bush.
Placed in greenhouse April 24; planted May 13	226·2
Planted in field April 24	231·4
Planted in field April 30	224·4
Planted in field May 13	208·2
Placed in greenhouse April 24; planted May 13; dug July 29	154·2
Planted to field from cellar May 13; dug July 29	127·0

POTATOES DUG AT DIFFERENT DATES

Irish Cobbler potatoes planted at the same date were dug at different dates, the yield of marketable tubers obtained being as follows:—

—	Yield of marketable tubers per acre
	bush.
Dug July 23	129·9
" July 29	154·6
" August 5	214·1
" August 13	272·0
" August 21	285·0
" August 27	279·5
" September 3	275·8

RHUBARB FORCING

Rhubarb roots may be dug in the fall before the ground freezes, lifting the plants carefully to avoid breaking too many roots. The clumps are left outside to freeze, and toward the latter part of December or early January are placed for forcing in a cellar or greenhouse at a moderate temperature.

In one case old plants which were started from seed in 1913 were dug; the other roots forced were from seed sown in the spring of 1923 and transplanted the following spring to rows 3 feet apart, the plants 18 inches apart in the rows. The larger the roots the greater the crop produced, as the growth results from the stored-up nourishment in the roots. Roots placed in a cool cellar December 7 gave stalks just before the out-door crop was available.

After the crop is gathered twice the stalks grow small, but the plants will continue to give weekly till early in April about one-half pound to each three roots. The results from this test were as follows:—

RHUBARB, FORCING

Variety and Source of Seed	Year seed was sown	Date of putting in greenhouse	Number of clumps forced	Dates of picking crop	Weight of crop, two pickings
					lb. oz.
Seedlings	1913	Dec. 4	3	Jan. 1–Feb. 8	16 0
Ruby No. 1 (O–45)	1923	Dec. 28	3	Jan. 30–Feb. 6	10 10
Victoria (Lethbridge)	1923	Jan. 16	3	Jan. 30–Feb. 6	16 6
Ruby No. 3 (O–45)	1923	Jan. 16	3	Feb. 13–Mar. 26	14 0
Ruby No. 2 (O–45)	1923	Jan. 16	3	Feb. 13–Mar. 26	11 0

SQUASH AND PUMPKINS

Several varieties of squash and pumpkins were grown in hills, three plants to a hill. Rows were run out with a plough turning a furrow each way, and at intervals of ten feet manure was placed, tramped, and covered. The seed was sown on May 28. After the plants were well established they were thinned to three plants to a hill. Two hills were grown to each test. The yields were as given in the table below. The Golden and Green Hubbards are the leading varieties. The Kitchenette is similar to Hubbard but much smaller, and is a very desirable kind. Perfect Gem is an excellent early squash. The bush vegetable marrow is preferable to the trailing kind where space is limited. The Small Sugar is an excellent pumpkin.

SQUASH AND PUMPKIN—TEST OF VARIETIES

Variety and source	Number of ripe fruit, Sept. 2	Total ripe fruit from six plants, Sept. 17	Weight of three average fruits, Sept. 17
			lb. oz.
Squash			
Hubbard (Graham)	7	8	29 0
Golden Hubbard (O–5546)	10	17	24 8
Golden Hubbard (McDonald)	7	12	20 8
Kitchenette (Vaughan)	12	16	19 12
Table Queen (Vaughan)	12	22	13 0
Acorn (Buckbee)	24	50	13 0
Perfect Gem (Morse)	40	52	6 8
White Bush vegetable marrow (Ewing)	34	38	47 8
English vegetable marrow (Steele-Briggs)	28	34	44 8
White Bush Scallop (Graham)	40	52	25 0
Pumpkin			
Connecticut Field (McDonald)	6	7	82 12
Small Sugar (Graham)	12	19	26 12
Small Sugar (Moore)	15	20	20 0
Small Sugar (O–5548)	17	19	19 4

CITRON

These were grown in hills made in the same way as for squash and pumpkins.

CITRON

Variety and Source	Number of ripe fruit, Sept. 2	Total ripe fruit from six plants, Sept. 17	Weight of three average fruits, Sept. 17
			lb. oz.
Green Seeded (McDonald)	10	20	55 0
Red Seeded (Rennie)	18	22	32 0

TOMATOES

The varieties used in this test were sown in the greenhouse on April 3, and pricked out in flats on April 26. Six plants of each variety were set 5 by 4 feet apart in the field on June 2. These plants were allowed to grow unchecked from time of planting out until cut down by frost.

The last picking was on September 20, at which date about 50 per cent of the early and 25 per cent of the later varieties had ripened. There was little or no rot in the fruit and very few cracked fruit compared with other years. The fruit was smooth, even in the coarser varieties. Some of the new varieties tested were very large and smooth, but all late.

The following table gives the yields of the different varieties.

TOMATOES—TEST OF VARIETIES

Stock variety and source	Yield of ripe fruit up to August 31	Total yield of ripe fruit	Yield of ripe fruit not marketable	Yield of green fruit	Total yield green and ripe fruit
	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
50-Day (Buckbee)	4 2	97 14	4 2	81 0	178 14
Alacrity x Earlibell (O-70)	9 2	86 10	8 4	54 8	141 2
Avon Early (Ferry)	3 12	78 8	4 8	87 0	165 8
Alacrity (O-6559)	6 8	78 2	3 10	96 0	174 2
Sparks Earliana (Ewing)	4 4	77 8	5 2	77 8	155 0
Alacrity x Hipper (O-6568)	5 2	69 8	13 6	63 4	132 12
Avon Early (Dreer)	5 4	68 12	4 6	96 12	165 8
Alacrity (O-6560)	2 14	68 2	3 8	96 8	164 10
Earliana (Lang)	1 2	63 8	1 6	107 8	171 0
Earliest of All (S. B.)	1 10	59 12	2 0	91 8	151 4
Sparks Earliana (Buckbee)	3 4	49 4	2 14	148 0	197 4
Earliana(Ferry)	4 2	47 10	3 0	111 0	158 10
Prosperity (Bolgiano)	5 6	46 10	.....	115 8	162 2
Select Earliana, Grade 2 (Langdon)	1 2	43 6	0 12	142 8	185 14
Bonny Best (Langdon)	1 2	43 4	1 14	79 8	122 12
Early Mascot (Graham)	4 0	41 14	1 10	156 0	197 14
Red Canner (Moore)	0 4	39 8	0 2	126 4	165 12
First of All (McKenzie)	1 2	38 6	2 10	83 8	121 14
Bolgiano (Bolgiano)	1 14	34 10	3 0	131 0	165 10
Bonny Best (Moore)	1 14	34 2	1 0	117 4	151 6
Select Earliana (Moore)	1 4	31 6	.....	181 0	212 6
Improved Stone (Lang)	0 6	30 10	3 12	119 8	150 2
Santa Rosa (Burbank)	3 12	29 12	3 2	141 12	171 8
Chalks Jewel (Carter)	2 4	29 2	0 12	92 0	121 2
Burbank (Burbank)	2 4	29 0	0 8	149 4	178 4
Chalks Jewel (Moore)	0 10	28 10	.....	103 0	131 10
Pink No. 1 (O-6574)	2 10	26 8	.....	76 0	102 8
Danish Export (Wiboltt)	3 6	24 2	0 10	92 0	116 2
Bonny Best (Stokes)	1 8	19 12	0 8	92 0	111 12
Seedling (Kent.)	0 6	18 10	0 8	117 4	135 14
John Baer (Carter)	1 0	15 6	.....	154 8	169 14
No. 4 Tulare (Diener)	0 10	13 14	.....	86 12	100 10

TOMATOES—TEST OF VARIETIES

Stock variety and source	Yield of ripe fruit up to August 31	Total yield of ripe fruit	Yield of ripe fruit not marketable	Yield of green fruit	Total yield green and ripe fruit
	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Pink No. 2 (O-6569)	0 14	13 2	0 2	74 8	87 10
Marglobe (Stokes)	0 10	12 12	.....	121 8	134 4
Seedling (Kent.)	0 10	11 0	.....	146 10	157 10
Early Abundance (Diener)	0 4	10 12	1 4	103 0	113 12
Petaluma No. 3 (Diener)	.....	10 10	.....	88 12	99 6
No. 6 Sonoma (Diener)	1 0	10 4	0 6	85 8	95 12
No. 2 Janacio (Diener)	2 4	9 12	.....	88 4	98 0
Prune (Diener)	.....	6 0	.....	89 0	95 0
Bonny Best (Keith)	.....	5 2	.....	199 0	204 2
Richard Diener (Diener)	.....	4 4	.....	104 8	108 12
No. 1 Nonato (Diener)	.....	3 4	.....	128 8	131 12
Early Prosperity (Buckbee)	.....	2 8	.....	91 0	93 8
1099 (Burpee)	.....	1 4	.....	96 0	97 4
San Jose Canner (Morse)	.....	1 4	0 14	110 0	111 4
Geronimo (Diener)	.....	1 4	.....	101 8	102 12
Matchless (Burpee)	.....	.....	.....	84 0	84 0

TOMATOES

The varieties used for this test were Alacrity (O-6599), and Bonny Best (Stokes). There were sown in the greenhouse on April 3, pricked off to flats on April 26, and planted in the open on June 2.

Twenty-five plants of each variety were planted in rows which were 4 feet apart. The plants were set out 1½ feet apart and tied to stakes, and six plants of each were planted 4 feet apart in the row and left unstaked.

It was found that those grown to a single stem and tied to a stake gave earlier fruit, and on September 20 had the highest yield of mature fruit, although bush grown plants gave the highest total yield of ripe and green fruits with fewer cracked fruit.

The following table gives the results:—

TOMATOES—CULTURAL TEST

Method of training	Ready for use	Yield of ripe fruit to Aug. 31	Yield of ripe fruit to Sept. 20	Total yield of ripe fruit	Total yield of green fruit	Total Yield of green and ripe fruit marketable	Yield of fruit not marketable	Number fruit of not marketable
		lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Alacrity—	Aug.							
One truss	16th	35 0	88 6	91 4	0 0	91 4	8 0	45
Two trusses	18th	26 8	111 10	141 6	9 14	151 4	6 8	57
Three trusses	16th	21 12	105 12	128 4	12 8	141 6	7 12	39
Full grown	12th	28 6	93 2	124 8	22 8	147 0	10 14	105
Bonny Best—								
One truss	24th	9 14	112 10	132 2	2 6	134 8	2 2	18
Two trusses	27th	6 8	81 4	131 8	18 8	150 0	2 2	17
Three trusses	24th	8 14	75 10	109 14	17 4	127 2	3 8	25
Full grown	27th	4 12	52 2	91 10	29 8	121 2	9 8	54
Alacrity—								
Bush grown	20th	6 8	78 2	78 2	96 0	174 0	3 10	24
Bonny Best—	Sept.							
Bush grown	10th	.....	19 12	19 12	92 0	111 12	0 8	4

TURNIPS

Tests were made with the different kinds of garden turnips offered by the seed trade. As these are grown for the early market and are sold in bunches of 4 or 5 to a bunch, seeding early in May rather than in the latter part of the month would have been better. There is apparently considerable difference in the strains of the different varieties, some being much more uniform than others. For early use Purple Top Milan is undoubtedly the best variety. The Purple Top White Globe is a good second early, followed by Golden Ball and Orange Jelly.

TURNIPS—TEST OF VARIETIES

Variety and source	First ready for use	Weight of six average roots, August 2
		lb. oz
Extra Early Purple Top Milan (McDonald)	July 20	2 8
Extra Early Purple Top Milan (Kentville)	" 22	2 14
Extra Early White Milan	" 22	2 14
Extra Early White Strap Leaf (Ferry)	" 24	3 14
Early Purple Top Strap Leaf (Ferry)	" 24	2 2
Red Top Strap Leaf (McDonald)	" 24	2 10
Purple Top White Globe (Ferry)	Aug. 2	3 14
White Egg (Ferry)	Aug. 2	3 12
Pomeranian White Globe (Ferry)	Aug. 2	3 4
		August 14
Amber Globe (Ferry)	Aug. 8	7 0
Orange Jelly (Sutton)	Aug. 8	7 4
Orange Jelly (Ferry)	Aug. 8	7 4
Golden Ball (Graham)	Aug. 8	7 0

ORNAMENTAL GARDENING

HARDY HERBACEOUS FLOWERING PLANTS

Aubrietia.—This is an excellent dwarf plant for edging or for rock work, because of its spreading habit of growth. It blooms from the middle of May to early July, and ranges in colour from rose to purple and violet.

Aquilegia.—The long-spurred hybrid columbines are very desirable, and are excellent as cut flowers. In various colours. In bloom toward the latter part of June and in July. Seed may be sown in June, or later, outside and the plants transplanted the following spring to where they are to remain permanently.

Achillea ptarmica fl. pl.—The Pearl. Propagated by division in the early spring. Produces a profusion of double white flowers exceedingly useful for cutting. Continues in bloom through July and part of August.

Althaea rosea (Hollyhock).—This is a biennial, and seed sown in June or early July will make excellent plants for bloom the following year. They may be transplanted in September to their flowering quarters. It is usually desirable to give a light protection of spruce boughs or a very light covering of straw, if in exposed situations.

Anchusa italica has a desirable, striking, blue flower produced in panicled racemes attaining a height of five feet, and remains in bloom from early July to September. The variety Opal is a light blue of excellent quality. It is usually desirable to handle this as a biennial, seeding in June or July and transplanting to permanent quarters early the following spring.

Asters, Late-flowering, (Michaelmas Daisies). There are many fine named varieties of late-flowering asters, some of the best of which are Glory of Colwall, Keston Blue, Maggie Perry, Perry's Blue, Perry's Favourite and Beauty of Colwall.

Boltonia asteroides, a tall, erect-growing, late-fall-flowering plant with small aster-like flowers of white to violet. *Boltonia latisquama* is somewhat better than the above. This is a decidedly desirable perennial.

Campanula Medium (Canterbury Bells) is an exceedingly desirbale biennial. The variety *calycanthema*, known as "Cup and Saucer," is particularly pleasing. The seed may be sown in the spring, and in September the plants may be transplanted to where they are to grow the following year, or they may be left where seeded. A light winter protection of spruce boughs or a very light covering of straw is necessary in exposed situations.

Campanula persicifolia (Peachbells) with white or blue bell-shaped flowers, in bloom during June, is one of the most satisfactory of the perennial campanulas.

Coreopsis grandiflora, C. Lanceolata, and *C. verticillata* are easily grown and give fine yellow flowers on long stems, excellent for cutting. During the latter part of July and early August. It is better to treat these as biennials making a seeding each year.

Delphinium hybridum, D. grandiflorum, and *D. formonsum* furnish an excellent collection of perennial Larkspurs, producing varying shades of blue flowers from the middle of June to the end of July. *D. hybridum* Belladonna is a particularly desirable variety. Seed may be sown in the early spring and the plants set permenently the following spring, or the older clumps may be divided in early spring.

Dianthus barbatus (Sweet William), a biennial of easy culture. Seed in spring and give light protection. In bloom during July and August.

Dianthus plumarius (Garden Pink). Very fragrant. In bloom during the latter part of June and through July. Suitable for edging. A biennial. Seed in the spring.

Digitalis purpurea, variety *gloxiniaeflora,* (Foxglove) should be considered as a biennial. This plant is well suited for shady locations. Seed is sown in the spring and the seedlings transplanted as required. In exposed situations give protection with spruce boughs. Blooms during July.

Doronicum plantagineum excelsum (Leopard's Bane), which is the better plant, and *D. caucasicum* are two of the earliest-flowering perennials, producing yellow bloom on long stems during the third week in May. They are fine for cut flowers and should be more largely grown.

Gaillardia hybrida grandiflora, with large, showy, long-stemmed yellow flowers with brown centres, remaining in bloom nearly the whole season, is one of the most satisfactory perennials. Seed may be sown in the early spring. In exposed places a covering of spruce boughs is advised for winter protection.

Gypsophilia paniculata is very useful in the trimming or making up of bouquets, and almost indespensable in floral decorations. In bloom the latter part of July and continuing for a month. Seed sown in the early spring, and the roots set to permanent quarters the next spring.

Helenium autumnale Riverton Gem yith yellow and terra cotta daisy-shaped flowers is probably the best of the heleniums. Height three and one-half feet. *H. Hoopesii* is largely grown but is not as satisfactory as the above. It is earlier in bloom, flowering early in August. *H. a. rubrum* has deep red flowers, in clusters like Riverton Gem, but later in bloom. These three are recommended.

Hellianthus rigidus Miss Mellish is one of the best. This hardy sunflower gives a wealth of yellow bloom during late July and August. Height, four to five feet.

Heliopsis scabra excelsa has pure yellow semi-double flowers and is excellent for mass effect. In bloom during August. Height, three to four feet.

Iris germanica. In varied colours, of which there are many named varieties. Blooms during the month of June.

Iris Kaempferi, the Japanese iris, in very many shades, later-blooming than the above and requiring a moist situation and plenty of sunshine. These irises are easily propagated by division, and should be more largely grown.

Lychnis chalcedonica, (Maltese Cross). This well-known plant with its dazzling, brilliant scarlet flowers is always pleasing. It comes into bloom in July and continues for a month or more. Height, two fee. *Lychnis Haageana* is dwarfer, with flowers considerably larger. Easily propagated by division.

Lupinus polyphyllus, (Hardy Lupin). An old favourite with long spikes of pea-shaped bloom in blue, white, white and blue, and rose. Some of the new hybrids include yellow and other shades. Height, two and one-half to three feet. Propagated by seed or by division. In bloom from early June to middle of July. Excellent for border planting.

Hardy Lilies. *Lilium speciosum rubrum* is one of the best of the Japanese lilies. *L. s. album* is also good. *L. tigrinum* and *L. auratum* also should be in the lily collection. They are planted six inches below the surface and protected with a mulch during the winter. In bloom during the summer and fall months.

Papaver nudicaule (Iceland Poppy), with its dainty early spring flowers in white, orange, and orange scarlet, which continue in flower when there is a scarcity of bloom, is a desirable perennial. Started readily from seed sown early, or after the seed has ripened. If the flowers are cut when just opening they will last as cut flowers for some days.

Papaver orientale, (Oriental Poppy). This hardy poppy, although not in bloom for many days, is a large showy plant in many bright colours, and is desirable in any perennial collection. Started by seed, and may be transplanted to other quarters. Many fine named varieties are now offered. In bloom during July.

Paeonia. The peony rightly ranks as one of the most popular of the perennial flowering plants. Plant three feet apart in rich well drained soil, and top dress with manure or fertilizer after the blooming season. It is also beneficial to mulch with strawy manure in the fall to provide protection through the winter. Keep well cultivated at all times. Peonies are propagated by root division, which is best done in September. The following are some of the best sorts tried at this Station, with date of first bloom: white varieties, Festiva Maxima (July 1), Duchesse de Nemours (July 3), Marie Lemoine (July 11), and Couronne d'Or (July 13); pink varieties, Marie Crousse (July 5), Triomphe de l'Exposition de Lille (July 6), and Marquise d'Ivry (July 13); deep pink varieties, Edulis Superba (July 4), Livingstone (July 11), and Rubra Superba (July 13); red varieties, Henri Demay (July 4), and Felix Crousse (July 7).

Phlox decussata (Hardy Phloy), in many varieties and in varied colours, is one of our showiest garden flowers. They are of easy culture from division of clumps. The many excellent varieties offered give one a wide range from which to chose. In bloom the latter part of August and early September. Not so valuable for cut flowers as some perennials, but should be included in the border planting.

Physalis Franchetii (Chinese Lantern Plant), is valuable for winter decoration with its large scarlet balloon-shaped seed pods. May be grown from seed, or division of roots.

Platycodon grandiflorum, with bell-shaped flowers in blue and white. Sometimes called the balloon flower because of its appearance before fully open. Height, two feet, and in bloom during late July and in August. Propagated from seed sown in the spring.

Pyrethrum roseum hybridum is one of the best perennial flowering plants, and is very suitable as a cut flower. The profusion of bloom in varying shades from pink to red continues for a month from the middle of June. Height, about two feet, Grows readily from seed. There are many excellent named varieties in both single and double flowers.

Ranunculus acris flore pleno is a hardy buttercup with deep, glossy, golden yellow and very double flowers, about one and one-half feet high. Desirable as a cut flower. Propagated by division.

Rudbeckia laciniata fl. pl. (Golden Glow) is probably more largely grown than any other herbaceous perennial. It produces profuse double blooms of a deep yellow on long stems which make it suitable for cutting. Division is the method of propagation, and as the clumps spread rapidly they should be kept within bounds if good bloom is to be obtained. Frequent division and removal to new places, and the digging up of old clumps is advisable. In bloom during August.

Saponaria ocymoides, a low-growing perennial suitable for edging, with bright pink flowers in loose, broad cymes. In bloom during June and July. Also suitable for rockwork planting. Propagated by division or seed.

Sedums. Dwarf fleshy-leaved plants growing only a few inches in height; valuable for rockeries. They are in bloom during August. Easily propagated by division.

Statice latifolia (Sea Lavender) with small, light blue flowers in sprays, is very desirable to dry for winter decoration or for bouquets. In bloom during August.

Veronica spicata. This is one of the best of the Speedwells, with deep blue flowers borne on spikes which remain in bloom from July until late August There are white and rose forms of this flower. Propagated by division.

Vinca minor (Periwinkle), a trailing plant with blue flowers. In bloom during May and June. Will thrive in deep shade under trees where few other plants will live. Prefers a shady situation. The variety *variegata* has variegated leaves, and is equally suitable for border or rock work planting.

HEDGE PLANTS

A number of shrubs and trees suitable for hedges have been grown in hedgerows for several years at this Station, and we are able to advise some varieties as more suitable for hedge purposes than others.

For an evergreen hedge the spruce stands out as being the most suitable. The white spruce (*Picea canadensis*), and the black spruce (*Picea mariana*) are native species which are entirely suitable. The norway spruce (*Picea excelsa*) is equally as good. If trimmed to a form gradually rounded from the top of the ground the dying out of the lower branches, which may occur if the sides of the hedge are trimmed, as is usually practised, at right angles to the ground and with a rounded top, will not take place.

For a deciduous hedge the Japanese barberry (*Berberis thunbergii*) is the most satisfactory of all the low-growing hedge plants. The colouring of the foliage is brilliant in the fall, and the clusters of red berries are present after the foliage disappears. The Russian privet (*Ligustrum amurense*), sometimes called the Amoor River privet, is the only privet that is sufficiently hardy to permit of the development of a good hedge. The California privet (*Ligustrum ovalifo-*

lium), so often planted and so entirely disappointing because of being only semi-hardy, should not be used . The English hawthorn (*Crataegus Oxyacantha*) is a satisfactory hedge, and because of the thorns gives a protection that is not possible with the other hedges mentioned.

Other varieties of hedge plants under test here, but which have little to recommend them, are: Siberian pea tree (*Caragana arborescens*); honey locust (*Gleditschia triacanthus*); Japanese quince (*Cydonia japonica*); buckthorn (*Rhamnus cathartica*); wayfaring tree (*Viburnum lantana*); and the red-branched dogwood (*Cornus alba sibirica*).

CEREALS

The spring of 1926 was very late, and snow did not altogether disappear from this Station until June 1. The larger cereal plots were seeded May 22. The temperature during May was below normal, practically normal during June, July and August, and about 3 degrees below the average in September. Precipitation during May, June and the first part of July was above the average, but from July 12 to September 30 the total rainfall amounted to only 3.48 inches.

The table below shows the mean temperature, precipitation and hours of sunshine during the growing period.

WEATHER RECORDS DURING GROWING PERIODS, 1926

Month	Mean Temperature	Precipitation	Sunshine
	deg. F.	in.	hr.
May	47·33	3·75	171·70
June	59·01	3·33	243·25
July	64·21	2·98	217·20
August	63·43	1·85	201·50
September	54·53	1·00	173·90

CEREALS, TEST OF VARIETIES

The land used for the tests of different varieties of wheat was in potatoes in 1925, and that used for barley and oats was in hay. All plots were fertilized at the rate of 450 pounds per acre with a mixture of 150 pounds of nitrate of soda, and 300 pounds of acid phosphate. The land was disked with a heavy harrow hauled by the tractor, the fertilizer applied, the land cultivated and smoothed, and the seed sown May 22. The Liberty, a hulless variety of oats very susceptible to smut, was treated with "Bayer's Dust", an organic mercury dust seed disinfectant. This was used at the rate of 2 ounces to the bushel of seed grain. At harvest the percentage of infected heads was negligible. None of the other grains received any preventive treatment and no smut was apparent.

The rates of seeding per acre were: oats, 2½ bushels; wheat, 2 bushels; and barley, 2 bushels (except Duckbill, which was seeded at 2¼ bushels). Germination was rapid, and all varieties made fair growth.

Liberty and Alaska oats, and Chinese, Duckbill and No. 80 barley were cut August 23; Banner and Victory oats, September 7; Marquis wheat, September 1; Huron wheat, September 4, and Red Fife wheat, September 8.

Peas and vetches were seeded May 28, McKay peas at the rate of 3 bushels per acre; Golden Vine peas at 2½ bushels, and vetches at 2 bushels. These were harvested September 13.

CEREALS, TEST OF VARIETIES

Variety	When ripe	Number of days to maturity	Height	Per cent stand	Yield per acre	Straw per acre
			in.		lb. bush.	tons
Oats						
Banner (Kentville)	Sept. 1	102	41	98	1,528 44·9	1·32
Victory	" 2	103	42	97	1,856 54·6	1·21
Alaska (10307)	Aug. 18	88	37	98	1,376 40·4	1·12
Liberty (Ottawa 480)	" 20	90	39	99	1,608 47·3	1·17
Barley						
Charlottetown No. 80	" 23	93	33	99	1,936 40·3	1·21
Chinese (Ottawa 60)	" 21	91	34	99	1,320 27·5	1·31
Duckbill (Ottawa 57)	" 26	96	37	94	1,416 29·5	1·04
Gold Swedish	" 25	95	31	99	1,024 21·3	0·87
Wheat						
Marquis (Ottawa 15)	Sept. 1	102	38	97	748 12·4	0·85
Red Fife (Ottawa 17)	" 5	106	39	96	1,080 18·0	1·48
Huron (Reg'd)	" 4	105	40	98	1,320 22·0	1·06
Peas						
McKay	" 16	109	.....	98	1,573 26·2	.....
Golden Vine	" 14	107	.....	98	1,370 22·8	.....
Vetches						
Black	" 16	109	.....	96	1,090 18·2	.....

RELATIVE YIELDS OF VARIETIES OF OATS, 1914–1926

Year	Yield of Banner, per acre	Percentage of yield of Banner			
		Victory	Daubeney	Liberty-Ottawa 480	Alaska
	lb.				
1914	1,981	.....	90·6	.....	.....
1915	1,872	108·8	63·5	.....	.....
1916	1,474	120·2	98·3	59·7	.....
1917	1,487	95·8	87·4	57·3	.....
1918	2,595	95·6	89·0	58·9	.....
1919	2,423	117·2	.....	47·5	.....
1920	2,539	102·1	.....	61·9	.....
1921	1,776	118·0	.....	108·5	.....
1922	2,052	108·2	.....	72·1	.....
1923	1,788	123·3	.....	66·1	.....
1924	2,594	105·1	.....	68·6	.....
1925	2,065	99·4	.....	69·4	70·8
1926	1,528	121·4	.....	105·2	90·05

RELATIVE YIELDS OF VARIETIES OF WHEAT, 1914–1926

Year	Yield of Marquis, per acre	Percentage of yield of Marquis		
		Huron-Ottawa 3	Red Fife-Ottawa 17	Charlottetown No. 123
	lb.			
1914	1,575	.....	87·9	.....
1915	994	.....	102·4	.....
1916	1,107	.....	95·3	.....
1917	899	.....	96·6	.....
1918	1,273	130·4	115·3	.....
1919	1,489	97·3	107·4	.....
1920	1,245	99·9	111·8	.....
1921	1,294	110·6	105·2	.....
1922	947	99·2	84·2	.....
1923	606	95·0	82·1	.....
1924	1,780	60·4	82·1	81·9
1925	1,199	90·6	94·1	90·0
1926	748	176·4	144·3	.....

RELATIVE YIELDS OF VARIETIES OF BARLEY, 1914-1926

Year	Yield of Charlottetown No. 80 (two-row), per acre	Percentage of yield of Charlottetown No. 80				
		Duckbill-Ottawa 57 (two-row)	Gold Swedish, (two-row)	Manchurian (six-row)	Canadian Thorpe (six-row)	Chinese-Ottawa 60 (six-row)
	lb.					
1914	.....	.....	.....	(1,160 lb.)	(1,064 lb.)	.....
1915	.....	.....	.....	(1,074 lb.)	(844 lb.)	.....
1916	1,408	.....	.....	72·7	66·6	.....
1917	1,060	.....	.....	70·5	81·1	.....
1918	1,623	.....	.....	88·7	73·6	.....
1919	1,873	93·9	.....	84·8	.....	.....
1920	1,797	69·4	.....	62·3	.....	.....
1921	1,912	61·7	.....	.....	.....	.....
1922	2,171	68·2	.....	.....	.....	52·5
1923	1,122	62·8	.....	.....	.....	87·1
1924	1,789	100·7	.....	.....	.....	103·8
1925	1,575	61·1	.....	.....	.....	90·6
1926	1,936	73·1	52·8	.....	.....	68·1

FORAGE PLANTS

CORN FOR ENSILAGE, TEST OF VARIETIES AND STRAINS

Twenty-two varieties and strains of corn were tested in 1926. The land on which this test was made was in clover hay in 1925. It was manured at the rate of 15 tons per acre and ploughed, well worked up with a disk harrow, and received 600 pounds per acre of a 3-8-10 (3 per cent nitrogen, 8 per cent phosphoric acid, 10 per cent potash) fertilizer. This was well cultivated in with the cultivator, the smoothing harrow passed over the ground, and the seed sown in rows 3½ feet apart with the grain drill on June 1. The crop was harvested on September 27, with yields as given in the following table:—

CORN FOR ENSILAGE, TEST OF VARIETIES AND STRAINS

Variety and source	Stage of maturity	Average yield per acre			
		Green weight		Absolute dry weight	
		tons	lb.	tons	lb.
Longfellow (J. O. Duke)	Late silk	24	400	3	108
Burr Leaming (Conn. Agr. Exp. Station)	Tasselling	20	1,800	2	1,780
Longfellow (United Fruit Companies)	Late silk	19	520	2	1,762
Selection 119 (U.S. Dept. of Agriculture)	Tasseling	24	840	2	1,606
Hybrid (A. J. Wimple)	Tasselling	19	1,160	2	1,505
Golden Glow (J. O. Duke)	Early milk	18	80	2	1,469
Northwestern Dent (Brandon)	Late milk	14	1,480	2	1,422
Northwestern Dent (Dakota Imp. Seed Co.)	Late milk	18	300	2	1,386
Pride Yellow Dent (Dakota Imp. Seed Co.)	Late milk	18	520	2	1,335
Wisconsin No. 7 (J. O. Duke)	Tasselling	18	1,620	2	1,289
Ninety Day White Dent (Dakota Imp. Seed Co.)	Early silk	17	980	2	1,274
Longfellow (Dakota Imp. Seed Co.)	Late silk	20	1,140	2	1,224
Hybrid, Twitchell's Pride x Wisconsin No. 7. (C.E.F.)	Early milk	17	760	2	1,214
Silver King (U.S. Dept. of Agr.)	Early silk	19	1,380	2	1,182
Comptons Early (J. O. Duke)	Late silk	18	1,840	2	1,142
Burr Leaming (Geo. S. Carter)	Tasselling	19	1,160	2	1,137
North Dakota (Steele, Briggs)	Silk	16	340	2	990
Leaming (J. O. Duke)	Tasselling	20	920	2	460
Northwestern Dent, N.D.-grown (A.E. McKenzie)	Late milk	14	1,480	2	192
Lancaster (U.S. Dept. of Agr.)	Tasselling	17	1,420	2	151
Amber Flint (A. J. Wimple)	Late silk	14	600	2	89
Twitchell's Pride (C.E.F.)	Late milk	12	1,740	2	20

SUNFLOWERS

Five varieties and strains of sunflowers were tested. The preparation of the land was similar to that of the land used for the corn test. The seed was

sown June 1 and the varieties were harvested September 13. The yields per acre are given in the table below.

SUNFLOWERS, TEST OF VARIETIES AND STRAINS

Variety and Source	Stage of maturity	Average yield per acre	
		Green weight	Absolute dry matter
		tons lb.	tons lb.
Mammoth Russian (United Fruit Co.)	30% in full bloom	20 1,610	3 761
Mammoth Russian (K. McDonald)	30% in full bloom	17 602	3 269
Giant Russian (Dakota Imp. Seed Co.)	Blossoms beginning to open	17 18	2 1,500
Ottawa 76 (C.E.F.)	Seed, early dough	14 1,346	2 583
Mennonite (Rosthern)	100% bloom; seed, late dough	10 1,900	1 1,490

TURNIPS

Thirty varieties and strains of swedes were grown this season, on land which had been in potatoes in 1925. The land was manured at the rate of twenty tons per acre, and no other fertilizers were used. The land was then ploughed and disked. The smoothing harrow was used to level the ground, the rows were run with the horse hoe, and a weeder was drawn lightly over the rows. The seed was sown June 5, and the crop was harvested on October 23. All varieties were more or less affected by aphids, and the crop considerably lessened thereby. The variety Good Luck, from the Steele, Briggs Seed Co., proved to be useless, and was evidently a cross with kale, a closely related species of the same family.

The yields per acre of the different varieties tested are given below.

TURNIPS, TEST OF VARIETIES AND STRAINS

Variety and Source	Yield per acre	
	Green weight	Dry weight
	tons lb.	tons lb.
Ditmars (H. H. McNutt)	28 550	2 1,920
Kangaroo (Rennie)	23 600	2 1,836
Best of All (Rennie)	23 200	2 1,668
Durham (Steele, Briggs)	22 1,530	2 1,140
Bangholm (Kentville)	20 200	2 1,095
Best of All (Graham)	22 370	2 1,062
Halls Westbury (Bruce)	22 1,240	2 999
Ne Plus Ultra (D. & F.)	20 1,180	2 937
Hartleys Bronze Top (McDonald)	19 280	2 934
Giant King (Bruce)	22 370	2 920
Canadian Gem (Steele, Briggs)	22 370	2 920
New Century (Rennie)	20 1,180	2 859
Invicta Bronze Top (Ewing)	21 920	2 828
Monarch or Elephant (U. F. Co.)	20 600	2 819
Kangaroo (Steele, Briggs)	20 20	2 814
New Universal (D. & F.)	21 1,210	2 791
Favourite (D. & F.)	23 600	2 762
Halls Westbury (Rennie)	21 340	2 665
Champion Purple Top (Graham)	19 1,440	2 559
Up-to-Date (Sutton)	21 340	2 530
Canadian Gem (Rennie)	18 270	2 418
Acquisition (Sutton)	18 540	2 366
Halls Westbury (U. F. Co.)	21 340	2 200
Jumbo (H. S. Co.)	17 1,000	1 1,919
Selected Westbury (Steele, Briggs)	17 1,670	1 1,763
Derby Bronze Green Top (Rennie)	16 1,930	1 1,762
Jumbo or Elephant (Rennie)	15 1,610	1 1,679
Crimson King (Sutton)	15 1,320	1 1,670
Sweet Russian (Graham)	11 1,200	1 1,062

MANGELS

The land used for this test had produced a crop of hemp in 1925, and was ploughed that fall. It was manured in the spring at the rate of 15 tons per acre, again ploughed, thoroughly disked with the tractor and heavy double disk harrow, fertilized with a mixture made up of 100 pounds of nitrate of soda, 300 pounds of acid phosphate, and 150 pounds of muriate of potash applied at the rate of 600 pounds per acre, well cultivated with the two-wheel cultivator, and harrowed with a smoothing harrow. The rows were run with a horse hoe and lightly levelled off. The seed was sown with a garden drill on May 20, and the crop was harvested on October 15. The yields per acre are given in the table below.

MANGELS, TEST OF VARIETIES AND STRAINS

Variety and source	Average yield per acre			Dry matter per acre		Remarks
	tons	lb.	bush.	tons	lb.	
Sludstrup Barres (Hartman)	24	285	965·7	3	1,735	Intermediate, even, good.
Taaroje Barres (Hartman)	22	1,820	916·4	3	515	Intermediate, even, good.
Mammoth Long Red (Suttons)	19	1,440	788·8	3	409	Some intermediate, mostly long.
Rosted Barres (Hartman)	22	370	887·4	3	202	Intermediate, even, good.
Elvethan Mammoth (Hartman)	18	540	730·8	3	80	Long red, rough, hard to pull.
Yellow Intermediate (C. E. F.)	19	642	772·8	3	35	Intermediate, very even.
Barres Sludstrup (Hartman)	23	1,850	957·0	2	1,981	Intermediate, yellow, even.
Jumbo (Rennie)	23	327	926·5	2	1,790	Intermediate, white, even.
Improved Tankard Cream (Rennie)	18	830	736·6	2	1,782	Half long, 20% off type.
Golden Tankard (H. S. Co.)	18	540	730·8	2	1,736	Mostly intermediate.
Elvethan Long Red (Sutton)	17	1,670	713·4	2	1,657	Some intermediate, mostly long.
Danish Sludstrup (Ewing)	15	160	603·2	2	1,606	Intermediate, 14% off type.
Danish Sludstrup (D. & F.)	21	1,572	871·4	2	1,546	Intermediate, 7% long.
Improved Mammoth Long Red (D. & F.)	17	655	693·1	2	1,524	Long, red, rough.
Mammoth Red Intermediate (Bruce)	21	920	858·4	2	1,498	Intermediate, even, good.
Gate Post (H. S. Co.)	19	1,730	794·6	2	1,431	Long, some intermediate.
Half Sugar Rose (D. & F.)	18	1,555	751·1	2	1,340	Half long, uniform.
Eckendorfer Red (Hartman)	19	1,440	788·8	2	1,068	Tankard, even.
Long Red Mammoth (Graham)	19	1,730	794·6	2	1,013	Long, red, even.
Giant Yellow Intermediate (Bruce)	21	1,210	864·2	2	977	Intermediate to long, good.
Mammoth Long Red (H. S. Co.)	18	250	725·0	2	984	Long, red, rough.
Giant Sugar (Rennie)	16	1,640	672·8	2	941	Half long and long, rose.
Golden Giant (D. & F.)	17	1,380	707·6	2	878	Intermediate, some long.
Eclipse (McKenzie)	20	745	814·9	2	869	Tankard and Intermediate.
Eckendorfer Yellow (Hartman)	21	920	858·4	2	811	Tankard, even, good.
Fjerritslev Barres (Hartman)	18	250	725·0	2	730	Intermediate, even.
Gate Post (Bruce)	13	680	533·6	2	711	Long, red.
Stryno Barres (Hartman)	19	1,005	780·1	2	618	Intermediate, even, good.
Giant Yellow Globe (Rennie)	19	1,875	797·5	2	565	Some intermediate, mostly even.
Yellow Intermediate (Sutton)	21	50	841·0	2	415	Intermediate, even, good.
Red Tankard (McDonald)	20	962	819·2	2	128	Tankard, even, easy to harvest.
Yellow Leviathan (Bruce)	15	1,610	632·2	2	99	Long, lemon.
Golden Tankard (D. & F.)	16	770	655·4	2	83	Mostly intermediate.
Giant White Feeding (Steele Briggs)	20	0	800·0	2	48	About 25% intermediate; balance, half long.
Half Sugar Giant Rose, (Trifolium, Copenhagen)	17	1,235	704·7	2	20	Intermediate, rose, even.
Nova Scotia Seed (Barkhouse)	13	1,260	545·2	1	1,939	Half long to long, rose.

CARROTS

Seventeen varieties and strains of carrots were tested here this season. The preparation of the land was the same as for mangels and sugar beets. A splendid stand of plants was secured from all the varieties, and as no injury from the carrot rust fly was apparent a good crop was harvested. The seed was sown on May 20, and the crop was harvested on October 23. The yields per acre are given in the following table:—

CARROTS, TEST OF VARIETIES AND STRAINS

Variety and source	Average yield per acre			Dry matter per acre		Remarks
	tons	lb.	bush.	tons	lb.	
Ontario Champion (Graham)	19	1,440	788·8	2	1,486	Intermediate, smooth.
White Half Long (McFayden)	20	1,760	835·2	2	973	Half long, even, smooth.
New Yellow Intermediate (Ewing)	19	1,730	794·6	2	747	Intermediate, light orange.
Improved Danvers (Graham)	18	250	725·0	2	643	Short to half long, smooth.
Improved Intermediate White (Ewing)	20	1,180	823·6	2	632	Intermediate, white, fairly smooth
White Belgian (D. & F.)	20	600	812·0	2	616	Long, white, hard to harvest.
Improved Short White (Steele, Briggs)	24	1,880	997·6	2	519	Short, white, fairly smooth.
Improved White Vosges (McDonald)	20	20	800·4	2	438	Short, smooth, even.
Large White Vosges (Graham)	20	1,180	823·6	2	311	Half long, long, intermediate, rough.
Long Orange Belgian (McKenzie)	15	740	614·8	2	106	Long, crooked, hard to harvest.
Improved Short White (McDonald)	17	220	684·4	2	59	Short, white, smooth.
Long Orange (Rennie)	15	160	603·2	1	1,956	Long, smooth, even.
Large White Belgian (Steele, Briggs)	14	1,880	597·6	1	1,746	Long, white, crooked.
White Intermediate (Summerland)	19	280	765·6	1	1,724	Intermediate, white, smooth.
Long Red Surrey (Steele, Briggs)	15	160	603·2	1	1,640	Long, even, smooth.
Danish Champion (C. E. F.)	15	450	609·0	1	1,474	Intermediate, yellow, not very smooth.
Giant Green Top White (D. & F.)	14	710	574·2	1	1,330	Long white, crooked, rough.

SUGAR BEETS

Seven varieties and strains of sugar beets were tested at the Station in 1926. Three varieties were sent here by the Division of Chemistry, experimental Farm, Ottawa, and four were received from the Amtorg Trading Corporation, 165 Broadway, New York. The latter are of Russian origin and were tested here at the request of the above firm. The land used received the same treatment as that in the mangels test. The yields per acre are given in the following table:—

SUGAR BEETS, TEST OF VARIETIES AND STRAINS

Variety and source	Average yield per acre		Dry matter per acre		Per cent sugar in juice	Coefficient of purity
	tons	lb.	tons	lb.		
Dieppe (Dominion Sugar Co.)	14	564	3	1,498	20·73	91·83
Kalniki—S (Amtorg Trading Corp.)	13	188	3	1,078	20·29	88·72
Shreiber & Son (D. S. Co.)	12	24	3	503	20·83	89·45
Horning (D. S. Co.)	13	294	3	357	19·45	92·17
Ivanovka—S (A. T. Corp.)	11	440	2	1,688	20·17	91·58
Uladovka—YS (A. T. Corp.)	10	1,964	2	1,544	19·32	87·70
Ivanobka—Y (A. T. Corp.)	10	592	2	1,533	20·31	91·45

SOY BEANS

The yields of the six varieties of this plant tested during 1926 are given below. The results from several years' tests with this plant here do not hold out any hope that it will become a profitable crop in this province, no doubt due to the low temperature.

SOY BEANS, TEST OF VARIETIES

Variety	Stage of maturity	Average yield per acre, green weight	
		tons	lb.
Midwest	No pods	5	32
Mancheco 1367	Podded, seeds forming	3	1,920
McDonald College	Podded, seeds fully formed	3	864
Black Eyebrow	No pods formed	3	864
Ito San	Some plants with a few pods	3	826
Early Black	All podded, seeds fully formed	2	1,544

AVERAGE YIELDS AND COSTS OF FORAGE CROPS

The annual yields and costs of various forage crops grown at this Station from 1922 to 1926 inclusive are given below, and also the average yields and costs for this five-year period.

AVERAGE YIELDS AND COSTS OF FORAGE CROPS

—	Cost per acre	Yield per acre	Cost per ton
Clover hay—	$	tons	$
1922	26·10	3·20	8·15
1923	22·17	2·40	9·23
1924	27·27	2·61	10·44
1925	24·64	2·50	9·85
1926	25·41	3·28	7·75
Average	25·12	2·79	9·08
Corn—			
1922	60·78	19·92	3·05
1923	45·32	14·90	3·04
1924	56·57	13·31	4·25
1925	60·55	23·18	2·61
1926	54·93	16·86	3·26
Average	55·63	17·63	3·24
Sunflowers—			
1922	63·73	20·80	3·06
1923	53·91	19·80	2·72
1924	69·70	18·13	3·84
1925	73·59	27·50	2·67
1926	61·35	17·44	3·51
Average	64·43	20·73	3·16
Mangels—			
1922	69·89	17·59	3·97
1923	69·60	16·47	3·67
1924	72·08	19·62	3·67
1925	77·52	25·56	3·03
1926	67·90	19·30	3·52
Average	71·39	19·71	3·57
Turnips—			
1922	69·34	21·28	3·26
1923	58·25	19·14	3·04
1924	69·34	13·41	5·17
1925	80·84	17·37	4·65
1926	66·35	16·63	3·99
Average	68·82	17·56	4·02
Oats, Peas, Vetches—			
1922	47·37	5·01	9·37
1923	30·44	8·26	3·68
1924	41·46	4·95	8·37
1925	43·48	10·30	4·21
1926	38·43	7·40	5·19
Average	40·23	7·19	6·16

INFLUENCE OF LIME ON THE CONTROL OF CLUBROOT

This experiment was begun in 1916 on land infected with the clubroot organism. Quicklime and ground limestone were applied at various rates in 1916, 1918, and 1921. Turnips were grown each year, except in 1918 and 1919.

The results would indicate that the continued application of lime in either form is of some value in the control of clubroot, particularly at the larger rates per acre. It would seem, however, that better progress in the control of this disease is to be looked for through the use of clubroot-resistant varieties of turnips. (See the following section.)

The following tables give data secured in 1925 and 1926:—

PERCENTAGE (AVERAGE) OF CLUBROOT INFECTION ON LIMED AND UNLIMED AREAS, 1925

Variety of turnip	When land was limed	Quicklime per acre											
		1,500 pounds			3,000 pounds			4,500 pounds			6,000 pounds		
		Free	Slight	Bad	Free	Slight	Bad	Free	Slight	Bad	Free	Slight	Bad
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Bangholm—Kentville	1916	48·4	15·0	36·6	71·6	20·0	8·4	83·3	11·7	5·0	76·6	18·3	5·0
Bangholm—Sludsgaard	1916	43·0	26·0	31·0	52·0	18·0	30·0	74·0	16·0	10·0	58·0	12·0	30·0
Ditmars	1916	0	3·0	97·0	10·0	15·0	75·0	5·0	17·0	78·0	0	23·0	77·0
Bangholm—G.S.S. Co	1916	0	0	100·0	0	0	100·0	0	0	100·0	15·0	0	85·0
Bangholm—McD. C. 8112	1916	0	0	100·0	0	0	100·0	0	0	100·0	0	0	100·0
Bangholm—Rennie	1916	15·0	0	85·0	85·0	15·0	0	0	15·0	85·0	45·0	30·0	25·0
Bangholm—Olsgaard	1916	0	0	100·0	0	0	100·0	0	25·0	75·0	0	50·0	50·0
Bangholm 1322—Trifolium	1916	0	0	100·0	0	0	100·0	10·0	0	90·0	30·0	35·0	35·0
Wilhelmsburger	1916, 1918	92·5	7·5	0	100·0	0	0	100·0	0	0	100·0	0	0
Bangholm—Sludsgaard	1916, 1918	93·3	6·7	0	90·0	10·0	0	96·6	3·4	0	96·6	3·4	0
Ditmars	1916, 1918	28·3	15·0	56·7	80·0	18·3	1·7	91·6	5	3·4	86·6	13·3	0·1
Bangholm—McD. C. 8112	1916, 1918	41·8	26·6	31·6	61·8	11·6	26·6	86·6	3·3	10·1	96·6	3·4	0
Bangholm—Herning Strain	1916, 1918, 1921	95·0	0	5·0	100·0	0	0	100·0	0	0	100·0	0	0
Bangholm—Sludsgaard	1916, 1918, 1921	92·6	7·4	0	95·0	5·0	0	90·0	10·0	0	90·0	10·0	0
Ditmars	1916, 1918, 1921	42·5	52·5	5·0	82·5	17·5	0	80·0	2·5	17·5	87·5	7·5	5·0
Wilhelmsburger	1916, 1918, 1921	95·0	0	5·0	100·0	0	0	100·0	0	0	80·0	20·0	0
Bangholm—Kentville	1916, 1918, 1921	95·0	0	5·0	100·0	0	0	95·0	5	0	95·0	5·0	0
Bangholm 1029—Trifolium	1916, 1918, 1921	40·0	30·0	30·0	70·0	30·0	0	75·0	25·0	0	90·0	10·0	0
Otsgata Kaalroe—Sweden	1916	55·0	40·0	5·0	72·5	12·5	15·0	0	20·0	80·0	50·0	35·0	15·0
Otsgata Kaalroe—Sweden	1916, 1918	95·0	0	5·0	90·0	10·0	0	95·0	0	5·0	75·0	15·0	10·0
Bangholm—Kentville	1916, 1918	100·0	0	0	100·0	0	0	85·0	15·0	0	85·0	15·0	0
Bangholm—A. E. McK	1916, 1918	45·0	45·0	10·0	80·0	15·0	5·0	100·0	0	0	90·0	10·0	0

Variety of turnip	When land was limed	Ground limestone per acre											
		3,000 pounds			6,000 pounds			9,000 pounds			12,000 pounds		
		Free	Slight	Bad	Free	Slight	Bad	Free	Slight	Bad	Free	Slight	Bad
		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Bangholm—Kentville	1916	36·7	23·3	40·0	45·0	15·0	40·0	63·2	26·2	10·6	71·6	23·3	5·1
Bangholm—Sludsgaard	1916	29·0	16·0	55·0	60·0	37·0	3·0	69·0	28·0	3·0	67·0	28·0	5·0
Ditmars	1916	0	0	100·0	1·0	1·0	98·0	0	0	100·0	0	0	100·0
Bangholm—G.S.S. Co	1916	0	0	100·0	0	0	100·0	20·0	25·0	55·0	45·0	0	55·0
Bangholm—McD. C. 8112	1916	0	0	100·0	0	0	100·0	0	35·0	65·0	0	30·0	70·0
Bangholm—Rennie	1916	0	0	100·0	50·0	35·0	15·0	45·0	55·0	0	75·0	25·0	0
Bangholm—Olsgaard	1916	0	0	100·0	0	0	100·0	0	0	100·0	5·0	0	95·0
Bangholm 1322—Trifolium	1916	0	30·0	70·0	5·0	5·0	90·0	0	0	100·0	5·0	0	95·0
Wilhelmsburger	1916, 1918	100·0	0	0	100·0	0	0	100·0	0	0	100·0	0	0
Ditmars	1916, 1918	23·3	13·3	63·4	45·0	18·3	36·7	71·6	11·6	16·8	73·3	23·3	3·4
Bangholm—Sludsgaard	1916, 1918	90·0	10·0	0	91·6	5·0	3·4	95·0	3·4	1·6	91·6	5·0	3·4
Bangholm—McD. C. 8112	1916, 1918	35·0	5·0	60·0	63·3	18·3	18·4	68·3	16·6	15·1	60·0	23·3	16·7
Bangholm—Herning strain	1916, 1918, 1921	90·0	10·0	0	90·0	5·0	5·0	100·0	0	0	85·0	5·0	10·0
Bangholm—Sludsgaard	1916, 1918, 1921	80·0	20·0	0	82·5	15·0	2·5	87·5	10·0	2·5	90·0	10·0	0
Ditmars	1916, 1918, 1921	55·0	25·0	20·0	67·5	20·0	12·5	80·0	0	20·0	67·5	20·0	12·5
Wilhelmsburger	1916, 1918, 1921	100·0	0	0	100·0	0	0	95·0	5·0	0	100·0	0	0
Bangholm—Kentville	1916, 1918, 1921	85·0	15·0	0	100·0	0	0	100·0	0	0	65·0	35·0	0
Bangholm 1029—Trifolium	1916, 1918, 1921	60·0	40·0	0	75·0	20·0	5·0	90·0	10·0	0	70·0	15·0	15·0
Otagata Kaalroe—Sweden	1916	35·0	7·5	57·5	72·5	27·5	0	87·5	12·5	0	85·0	5·0	10·0
Otagata Kaalroe—Sweden	1916, 1918	75·0	15·0	10·0	95·0	0	5·0	90·0	10·0	0	95·0	5·0	0
Bangholm—Kentville	1916, 1918	75·0	25·0	0	75·0	25·0	0	80·0	20·0	0	85·0	15·0	0
Bangholm—A. E. McK	1916, 1918	0	15·0	85·0	60·0	30·0	10·0	70·0	20·0	10·0	80·0	20·0	0

PERCENTAGE (AVERAGE) OF CLUBROOT INFECTION ON LIMED AND UNLIMED AREAS, 1925—*Continued*

Variety of turnips	When land was limed	Free	Slight	Bad
		%	%	%
Bangholm—Kentville	Not limed	75	15	10
Bangholm—Sludsgaard	Not limed	20	10	70
Ditmars	Not limed	0	0	100
Bangholm—G.S.S. Co	Not limed	15	0	85
Bangholm—McD. C. 8112	Not limed	0	0	100
Bangholm—Rennie	Not limed	0	0	100
Bangholm—Olsgaard	Not limed	0	0	100
Bangholm 1322—Trifolium	Not limed	0	0	100
Wilhelmsburger	1918	100	0	0
Bangholm—Sludsgaard	1918	100	0	0
Ditmars	1918	45	0	55
Bangholm—McD. C. 8112	1918	10	70	20
Bangholm—Herning strain	1918, 1921	75	15	10
Bangholm—Sludsgaard	1918, 1921	90	10	0
Ditmars	1918, 1921	82·5	10	7·5
Wilhelmsburger	1918, 1921	100	0	0
Bangholm—Kentville	1918, 1921	100	0	0
Bangholm 1029—Trifolium	1918, 1921	90	5	5

INFLUENCE OF LIME ON THE CONTROL OF CLUB-ROOT: YIELD PER ACRE AND PERCENTAGE OF CLUB-ROOT, 1926

Variety and strain	When limed	Quicklime, pounds per acre								Not limed	
		1,500		3,000		4,500		6,000			
		Yield	Club-root	Yield	Club-root	Yield	Club-root	Yield	Club-root	Yield	Club-root
		tons	p.c.	tons	p.c.	tons	p.c.	tons	p.c.	tons	p.c.
Bangholm (McDonald 8112)	1916	0	100·0	0	100·0	0	100·0	0	100·0	0	100·0
Bangholm (McDonald 8112)	1916, 1918	3·0	99	10·5	12·5	13·0	4·1	10·0	4·5	7·5	79
Bangholm (McDonald 8112)	1916, 1918, 1921	7·5	38·1	10·0	38·2	10·2	4·3	11·5	10·5	8·6	26·3
Bangholm (Kentville)	1916	10·1	17	11·2	5	9·5	6	2·0	0	4·5	6·6
Bangholm (Kentville)	1916, 1918	15·0	4·7	11·0	3·5	6·0	0	6·5	0	9·0	8·7
Bangholm (Kentville)	1916, 1918, 1921	7·5	4·7	7·2	4·0	4·9	0	6·7	0	5·0	0
Halls Westbury	1916	0·0	100	0·0	100	0·0	100	0·0	100	0·0	100
Halls Westbury	1916, 1918	2·0	100	7·5	44	5·0	5·5	6·0	10·5	2·0	100
Halls Westbury	1916, 1918, 1921	4·6	28·5	2·0	29·4	3·5	10·5	2·0	11·7	2·0	15·4
Bangholm (Herning VI 1·5)	1916, 1918	16·0	0	14·7	0	13·1	0	13·5	0	14·2	0
Bangholm (Herning VI 1·5)	1916, 1918, 1921	10·2	4·7	11·0	5·2	16·0	0	17·0	4·7	14·0	0
Bangholm (Nappan)	1916, 1918	13·5	0	4·2	0	5·2	0	9·5	0	16·5	4
Bangholm (Studsgaard 5018)	1916	0·0	100·0	0·0	100·0	0·0	100·0	0·0	100·0	0·0	100·0
Bangholm (Studsgaard 5018)	1916	0·5	100·0	3·5	100·0	4·2	55·5	0·0	100·0	0·0	100·0
Bangholm (K.-Trifol.)	1916	0·5	100·0	2·2	83·3	2·0	50·0	0·0	100·0	0·0	100·0
Bangholm (K.-Trifol.)	1916, 1918	12·7	7·1	3·0	6·0	5·5	5·2	10·0	0	19·0	11·1
Wilhelmsburgher (D.L.F.)	1916	2·0	100·0	0·0	100·0	0·0	100·0	0·0	100·0	0·0	100·0
Wilhelmsburgher (D.L.F.)	1916, 1918	12·6	12·5	6·1	16·1	4·2	0	9·1	0	11·5	0
Bangholm (G. S. S. Co.)	1916, 1918	1·5	100·0	4·2	26·6	5·5	5·2	10·0	0	19·0	11·1
Bangholm (G. S. S. Co.)	1916, 1918	3·0	62·5	3·0	38·8	6·0	20	7·0	27·0	2·5	69·2
Bangholm (Studsgaard 4108)	1916	0·0	100·0	2·0	66·0	4·6	62·0	0·0	100·0	0·0	100·0
Bangholm (Studgaard 4108)	1916, 1918	13·1	7·1	5·0	0	3·5	0	6·5	0	13·2	16·0
Bangholm (Studsgaard Christensen)	1916, 1918	16·0	5·5	20·0	0	20·5	0	17·0	0	12·0	0
Kaalroe (Herning strain)	1916, 1918	18·2	0	15·6	0	11·0	0	12·5	0	12·5	0
Bangholm (Pajbjerg J)	1916, 1918	0·0	100·0	6·5	43·7	9·0	39·0	13·0	0	7·5	47·0
Bangholm (D. & F.)	1916	0·0	100·0	6·0	66·0	0·0	100·0	0·0	100·0	0·0	100·0
Bangholm (D. & F.)	1916	2·0	100·0	0·0	100·0	0·0	100·0	0·0	100·0	0·0	100·0
Halls Westbury	1916, 1918	2·0	100·0	7·0	76·5	10·5	6·0	11·2	4·5	6·2	25·0
Halls Westbury	1916	0·0	100·0	2·5	100·0	0·0	100·0	0·0	100·0	0·0	100·0
Halls Westbury	1916, 1918	1·0	44·0	0·2	100·0	0·2	50·0	1·0	6·6	1·0	12·4
Halls Westbury	1916, 1918	1·0	100·0	4·0	20·0	3·1	10·0	5·0	18·1	4·0	5·71

INFLUENCE OF LIME ON THE CONTROL OF CLUB-ROOT: YIELD PER ACRE AND PERCENTAGE OF CLUB-ROOT, 1926—*Continued*

Variety and strain	When limed	Ground limestone, pounds per acre								Nor limed	
		3,000		6,000		9,000		12,000			
		Yield	Club-root	Yield	Club-root	Yield	Club-root	Yield	Club-root	Yield	Club-root
		tons	p.c.	tons	p.c.	tons	p.c.	tons	p.c.	tons	p.c.
Bangholm (McD 8112)	1916	0·0	100·0	0·0	100·0	0	100·0	0	100·0	0	100·0
Bangholm (McD 8112)	1916, 1918	3·0	100·0	10·0	40·0	12·5	7·7	10·0	8·0	7·5	79·0
Bangholm (McD 8112)	1915, 1918, 1921	0·5	100·0	6·5	6·2	13·6	0	14·2	22·7	8·6	26·3
Bangholm (Kentville)	1916	5·0	6·5	12·2	9·5	11·5	0	9·1	3·0	4·5	6·6
Bangholm (Kentville)	1916, 1918	12·0	3·8	8·0	0	8·0	0	7·5	0	9·0	8·7
Bangholm (Kentville)	1916, 1918, 1921	6·1	0	6·2	0	7·5	0	11·0	0	5·0	0
Halls Westbury	1916	0	100·0	0·5	100·0	0·0	100·0	3·5	92·3	0·0	100·0
Halls Westbury	1916, 1918	3·0	63·6	11·5	8·3	6·5	21·0	5·5	14·3	2·0	100·0
Halls Westbury	1916, 1918, 1921	1·0	69·2	2·0	22·2	3·0	11·0	5·5	5·0	2·0	15·4
Bangholm (Herning VI 1·5)	1916, 1918	14·0	0	12·1	0	16·5	0	11·5	0	14·2	0
Bangholm (Herning VI 1·5)	1916, 1918, 1921	12·0	0	14·0	0	16·5	0	15·5	0	14·0	0
Bangholm (Nappan)	1916, 1918	16·0	8·0	14·2	7·4	15·5	0	5·5	4·3	16·5	4·0
Bangholm (Studsgaard 5018)	1916	0·0	100·0	3·0	100·0	14·2	25·	10·2	20·0	0	100·0
Bangholm (Studsgaard 5018)	1916	0	100·0	2·5	100·0	7·7	35·0	3·6	30·7	0	100·0
Bangholm (K.-Trifol.)	1916	0	100·0	4·0	62·5	7·5	53·8	4·0	27·2	0	100·0
Bangholm (K.-Trifol.)	1916, 1918	5·6	63·6	10·2	52·3	7·5	8·7	6·5	0	19·0	11·1
Wilhelmsburgher (D.L.F.)	1916	0	100·0	3·0	100·0	6·5	53	7·0	4·5	0	100·0
Wilhelmsburgher (D.L.F.)	1916, 1918	13·5	8·0	12·0	3·7	13·5	0	7·2	0	11·5	0
Bangholm (G. S. S. Co.)	1916, 1918	5·6	63·6	10·2	52·4	15·7	24·0	10·0	8·7	19·0	11·1
Bangholm (G. S. S. Co.)	1916, 9118	0·2	75·0	2·5	54·5	7·0	57·1	3·5	13·3	2·5	69·2
Bangholm (Studsgaard 4108)	1916	0·0	100·0	5·7	71·4	9·6	27·7	9·7	16·6	0	100·0
Bangholm (Studsgaard 4108)	1916, 1918	10·0	11·0	7·5	0	7·5	0	7·7	0	13·2	16·0
Bangholm (Studsgaard Christensen)	1916, 1918	20·5	2·4	17·0	0	12·0	0	8·0	0	12·0	0
Kaalroe (Herning strain)	1916, 1918	11·1	8·7	10·0	0	13·2	4·0	9·5	0	12·5	0
Bangholm (Pajbjerg)	1916, 1918	3·0	60·0	8·7	58·8	13·5	0	11·5	0	7·5	47·0
Bangholm (D. & F.)	1916	0	100·0	0·0	100·0	0	100·0	4·0	75·0	0	100·0
Bangholm (D. & F.)	1916	0	100·0	0·5	100·0	0	100·0	1·7	76·0	0	100·0
Halls Westbury	1916, 1918	2·0	77·0	7·5	35·0	12·1	0	8·5	0	6·2	25·0
Halls Westbury	1916	0	100·0	0·5	100·0	2·0	100·0	1·5	100·0	0	100·0
Halls Westbury	1916, 1918	2·0	80·0	3·5	13·3	6·6	6·0	2·5	7·1	1·0	12·4
Halls Westbury	1916, 1918	0·5	100·0	2·0	80·0	7·2	25·0	4·0	14·2	4·0	57·1

TURNIP SEED GROWING

The demand for club-root-resistant turnip seed is increasing annually, and at this Station an attempt has been made to partially meet the local demand by growing a quantity of seed each year. The resistance to club-root of this strain of Bangholm has been well sustained, as under severe tests on land badly infested, crops practically free from any club-root injury, although showing club-root infection, are produced.

Stecklings were grown in the summer of 1925 and stored in a pit. The pit was made, covered, and ventilated in the manner described in the report of this Station for 1925. The stecklings came through the winter in good condition, all being sound.

The land selected had produced a crop of hemp in 1925, and was ploughed that fall. It was cultivated in the spring of 1926, manured at the rate of 15 tons per acre with a manure spreader, again ploughed, and then smoothed. The rows were run with a plough three feet apart, and the turnips were planted on May 7 two feet apart in the rows.

The land was fairly dry when the turnips were planted, but considerable rain and cold weather seemed to have a retarding effect on the roots and it was a long time before much growth was made. In consequence the yield was very much reduced, and a return of only 327 pounds per acre was secured which is much below the usual crop at this Station. Harvesting was done on August 24.

EXPERIMENTS WITH FERTILIZERS

DISTRIBUTION OF VARIOUS FERTILIZER APPLICATIONS THROUGHOUT A THREE-YEAR ROTATION

This experiment was started in 1921 and embraces 62 plots in duplicate and sixteen check plots, all of $\frac{1}{20}$ acre each. The rotation followed is a hoed crop, grain, and clover-timothy hay. The yield per acre is calculated from the average of two plots located at different places in the field. The object of the experiment is to obtain data relative to the application of various ingredients of a fertilizer mixture, and to the effect of applying the nitrogenous fertilizer at different times during the rotation.

In the first section of the experiment there are ten series of treatments of three plots (A, B and C) each. The A, B and C plots of each series receive the same amounts of plant food during the rotation, the phosphoric acid and potash being applied the first year while the nitrogen is distributed over the three years of the rotation as follows: Plot A receiving all the nitrogen the first year, Pot B receiving two-thirds of nitrogen the first year, and one-third the second year, and Plot C one-third of the nitrogen each year of the rotation. It will be noted that the total quantity of nitrate of soda is compared in two rates per acre, 200 and 400 pounds, distributed as mentioned above.

Sulphate of ammonia is compared with nitrate of soda, the distribution being the same as mentioned above.

In a second section (series 11 to 21), various sources of phosphoric acid; viz., acid phosphate, slag, tankage, and bone meal are compared, these also being used in two rates per acre. In series 13 and 14, dried blood is compared with nitrate of soda as a source of nitrogen.

In series 18, 19, and 20, stable manure was applied the first year of the rotation, and on some of these plots commercial fertilizers were also used.

In a third section (plots 22 to 31), one-half the total fertilizer has been applied the first year of the rotation, and the remaining half divided over the second and third years, for comparison with the plots of the first section where the total fertilizer is applied the first year of the rotation.

In the second section, nitrate of soda was applied to all the fertilized plots in 1926, as well as to the two plots previously unfertilized, for the purpose of ascertaining whether the influence of the earlier fertilizing, apart from that of the nitrate of soda, will appear in the third year.

A summary of results from this work for the years 1924, 1925, and 1926 (this being the second rotation), is attached. The experiment is being continued through another rotation period.

SUMMARY OF RESULTS OF VARIOUS FERTILIZER APPLICATIONS FOR THE SECOND ROTATION PERIOD, 1924 TO 1926 INCLUSIVE

Plot	How fertilized, pounds per acre			Average yield per acre			
				Corn,	Oats, 1925		Hay,
	1924	1925	1926	1924	Grain	Straw	1926
				tons	bush.	tons	tons
1A	Nitrate of soda, 400; acid phosphate, 500; muriate of potash, 120			20·26	63·8	1·24	1 45
1B	Nitrate of soda, 266; acid phosphate, 500; muriate of potash, 120	Nitrate of soda, 133		19·56	67·7	1·20	1·60
1C	Nitrate of soda, 133; acid phosphate, 500; muriate of potash, 120	Nitrate of soda, 133	Nitrate of soda, 133	17·08	65·3	1·37	1·68
2A	Nitrate of soda, 200; acid phosphate, 500; muriate of potash, 120			20·37	66·6	1·34	1·46
2B	Nitrate of soda, 133; acid phosphate, 500; muriate of potash, 120	Nitrate of soda, 67		19·41	63·8	1·29	1·52
2C	Nitrate of soda, 67; acid phosphate, 500; muriate of potash, 120	Nitrate of soda, 67	Nitrate of soda, 67	18·37	64·4	1·39	1·90
3A	Nitrate of soda, 400; acid phosphate, 250; muriate of potash, 120			18·85	60·4	1·24	1·17
3B	Nitrate of soda, 266; acid phosphate, 250; muriate opotash, 120	Nitrate of soda, 133		16·75	57·9	1·13	1·48
3C	Nitrate of soda, 133; acid phosphate, 250; muriate of potash, 120	Nitrate of soda, 133	Nitrate of soda, 133	17·46	66·4	1·34	1·98
4A	Nitrate of soda, 200; acid phosphate, 250; muriate of potash, 120			19·48	62·9	1·35	1·17
4B	Nitrate of soda, 133; acid phosphate, 250; muriate of potash, 120	Nitrate of soda, 67		17·70	62·05	1·26	1·70
4C	Nitrate of soda, 67; acid phosphate, 250; muriate of potash, 120	Nitrate of soda, 67	Nitrate of soda, 67	16·69	67·05	1·27	1·65
5A	Nitrate of soda, 400; acid phosphate, 500; muriate of potash, 60			19·65	64·2	1·37	1·65
5B	Nitrate of soda, 266; acid phosphate, 500; muriate of potash, 60	Nitrate of soda, 133		19·72	61·4	1·29	1·72
5C	Nitrate of soda, 133; acid phosphate, 500; muriate of potash, 60	Nitrate of soda, 133	Nitrate of soda, 133	17·65	63·8	1·28	1·72
6A	Sulphate of ammonia, 300; acid phosphate, 500; muriate of potash, 120			18·64	63·3	1·2	1·51
6B	Sulphate of ammonia, 200; acid phosphate, 500; muriate of potash, 120	Sulphate of ammonia, 100		17·35	55·3	1·15	1·49
6C	Sulphate of ammonia, 100; acid phosphate, 500; muriate of potash, 120	Sulphate of ammonia, 100	Sulphate of ammonia, 100	16·09	63·8	1·32	1·20
7A	Nitrate of soda, 400; slag, 11%, 714; muriate of potash, 120			20·13	65·3	1·28	1·73
7B	Nitrate of soda, 266; slag, 714; muriate of potash, 120	Nitrate of soda, 133		17·52	56·3	1·29	1·64
7C	Nitrate of soda, 133; slag, 714; muriate of potash, 120	Nitrate of soda, 133	Nitrate of soda, 133	17·12	59·5	1·32	1·68

SUMMARY OF RESULTS OF VARIOUS FERTILIZER APPLICATIONS FOR THE SECOND ROTATION PERIOD, 1924 TO 1926 INCLUSIVE
—Concluded

Plot	How fertilized, pounds per acre			Average yield per acre			
				Corn,	Oats, 1925		Hay,
	1924	1925	1926	1924	Grain	Straw	1926
				tons	bush.	tons	tons
8A	Sulphate of ammonia, 300; slag, 714; muriate of potash, 120			20·13	62·3	1·21	1·43
8B	Sulphate of ammonia, 200; slag, 714; muriate of potash, 120	Sulphate of ammonia, 100		18·27	64·2	1·42	1·25
8C	Sulphate of ammonia, 100; slag, 714; muriate of potash, 120	Sulphate of ammonia, 100	Sulphate of ammonia, 100	16·33	63·8	1·30	1·24
1, 2, 3, 4	Check plots (Average)			12·63	49·96	1·08	0·81
5, 6, 7	Manure (10 tons) (Average)			15·82	61·6	1·30	1·25
9A	Manure (10 tons); nitrate of soda, 200; acid phosphate, 500; muriate of potash, 120			18·27	59·8	1·38	2·20
9B	Manure (10 tons); nitrate of soda, 133; acid phosphate. 500; muriate of potash, 120	Nitrate of soda, 67		20·32	69·7	1·55	1·69
9C	Manure (10 tons); nitrate of soda, 67; acid phosphate, 500; muriate of potash, 120	Nitrate of soda, 67	Nitrate of soda, 67	12·82	60·2	1·33	1·54
10A	Manure (10 tons); nitrate of soda, 200; acid phosphate, 250; muriate of potash, 120			17·31	60·0	1·44	1·88
10B	Manure (10 tons); nitrate of soda, 133; acid phosphate, 250; muriate of potash, 120	Nitrate of soda, 67		20·92	62·6	1·46	1·75
10C	Manure (10 tons); nitrate of soda, 67; acid phosphate, 250; muriate of potash, 120	Nitrate of soda, 67	Nitrate of soda, 67	13·72	55·5	1·32	1·43
11A	Nitrate of soda, 200; acid phosphate, 500; muriate of potash, 120		Nitrate of soda, 133	16·62	67·4	1·36	1·09
11B	Nitrate of soda, 100; acid phosphate, 250; muriate of potash, 60		Nitrate of soda, 133	12·72	54·4	1·15	0·59
12A	Nitrate of soda, 200; slag, 714; muriate of potash, 120		Nitrate of soda, 133	19·14	67·05	1·39	1·19
12B	Nitrate of soda, 100; slag, 357; muriate of potash, 60		Nitrate of soda, 133	13·92	57·05	1·18	0·84
13A	Dried blood, 260; acid phosphate, 500; muriate of potash, 120		Nitrate of soda, 133	14·91	60·5	1·28	0·95
13B	Dried blood, 130; acid phosphate, 250; muriate of potash, 60		Nitrate of soda, 133	12·54	49·4	1·05	0·57
14A	Dried blood, 133; bonemeal, 444; muriate of potash, 120		Nitrate of soda, 133	17·61	65·5	1·33	0·59
14B	Dried blood, 62·5; bonemeal, 222; muriate of potash, 60		Nitrate of soda, 133	12·33	59·1	1·04	0·65
15A	Nitrate of soda, 100; bonemeal, 444; muriate of potash, 120		Nitrate of soda, 133	15·63	65·5	1·30	0·90
15B	Nitrate of soda, 50; bonemeal, 222; muriate of potash, 60		Nitrate of soda, 133	13·68	54·4	1·08	0·61
16A	Nitrate of soda, 100; tankage, 150; acid phosphate, 425; muriate of potash, 120		Nitrate of soda, 133	15·79	57·3	1·34	0·95

16B	Nitrate of soda, 50; tankage, 75; acid phosphate, 212·5; muriate of potash, 60	.....	Nitrate of soda, 133	13·27	52·6	1·11	0·57
17A	Tankage, 300; acid phosphate, 350; muriate of potash, 120	.....	Nitrate of soda, 133	16·56	68·8	1·32	0·88
17B	Tankage, 150; acid phosphate, 175; muriate of potash, 60	.....	Nitrate of soda, 133	12·91	58·2	1·18	0·49
8, 9, 10, 11, 12	Check plots (average)	.....	.....	11·59	54·9	1·11	0·34
13, 14, 15	Manure (10 tons) (average)	.....	.....	15·78	54·9	1·35	0·91
16	Manure (20 tons)	.....	.....	19·65	58·8	1·69	1·44
18A	Manure (10 tons); nitrate of soda, 200; acid phosphate, 500; muriate of potash, 120	.....	Nitrate of soda, 133	17·53	54·7	1·52	1·87
18B	Manure (10 tons); nitrate of soda, 100; acid phosphate, 250; muriate of potash, 60	.....	Nitrate of soda, 133	19·5	59·4	1·45	1·41
19A	Manure (10 tons); nitrate of soda, 200; slag, 714; muriate of potash, 120	.....	Nitrate of soda, 133	17·77	55·8	1·50	2·28
19B	Manure (10 tons); nitrate of soda, 100; slag, 357; muriate of potash, 60	.....	Nitrate of soda, 133	19·54	53·8	1·48	1·41
20A	Manure (10 tons)	.....	.....	17·10	53·2	1·31	1·16
20B	Manure (20 tons)	.....	.....	19·92	60·0	1·50	1·15
21A	.....	.....	Nitrate of soda, 133	11·91	48·2	0·87	0·87
21B	.....	.....	Nitrate of soda, 133	10·71	44·1	1·05	0·66
22	Nitrate of soda, 200; acid phosphate, 250; muriate of potash, 60.	Nitrate of soda, 100; acid phosphate, 125; muriate of potash, 30.	Nitrate of soda, 100; acid phosphate, 125; muriate of potash, 30.	15·13	53·5	1·38	1·70
23	Nitrate of soda, 100; acid phosphate, 250; muriate of potash, 60.	Nitrate of soda, 50; acid phosphate, 125; muriate of potash, 30.	Nitrate of soda, 50; acid phosphate, 125; muriate of potash, 30.	14·52	55·2	1·32	1·26
24	Nitrate of soda, 200; acid phosphate, 125; muriate of potash, 60.	Nitrate of soda, 100; acid phosphate, 62·5; muriate of potash, 30.	Nitrate of soda, 100; acid phosphate, 62·5; muriate of potash, 30.	13·53	53·5	1·23	1·07
25	Nitrate of soda, 100; acid phosphate, 125; muriate of potash, 60.	Nitrate of soda, 50; acid phosphate, 62·5; muriate of potash, 30.	Nitrate of soda, 50; acid phosphate, 62·5; muriate of potash, 30.	13·83	51·4	1·11	0·84
26	Nitrate of soda, 200; acid phosphate, 250; muriate of potash, 30.	Nitrate of soda, 100; acid phosphate, 125; muriate of potash, 15.	Nitrate of soda, 100; acid phosphate, 125; muriate of potash, 15.	15·43	56·4	1·26	1·56
27	Sulphate of ammonia, 150; acid phosphate, 250; muriate of potash, 60.	Sulphate of ammonia, 75; acid phosphate, 125; muriate of potash, 30.	Sulphate of ammonia, 75; acid phosphate, 125; muriate of potash, 30.	13·12	53·2	1·26	1·29
28	Nitrate of soda, 200; slag, 357; muriate of potash, 60.	Nitrate of soda, 100; slag, 178·5; muriate of potash, 30.	Nitrate of soda, 100; slag, 178·5; muriate of potash, 30.	13·30	53·2	1·13	1·29
29	Sulphate of ammonia, 150; slag, 357; muriate of potash, 60.	Sulphate of ammonia, 75; slag, 178·5; muriate of potash, 30.	Sulphate of ammonia, 75; slag, 178·5; muriate of potash, 30.	15·3	61·7	1·25	1·13
30	Manure (10 tons); nitrate of soda, 100; acid phosphate, 250; muriate of potash, 60.	Nitrate of soda, 50; acid phosphate, 125; muriate of potash, 30.	Nitrate of soda, 50; acid phosphate, 125; muriate of potash, 30.	17·79	53·2	1·51	1·69
31	Manure (10 tons); nitrate of soda, 100; acid phosphate, 125; muriate of potash, 60.	Nitrate of soda, 50; acid phosphate, 62·5; muriate of potash, 30.	Nitrate of soda, 50; acid phosphate, 62·5; muriate of potash, 30.	17·32	52·05	1·39	1·52

MALAGASH SALT EXPERIMENT (1924)

The land on which this test with Malagash salt was started in 1924 was in mangels and turnips in 1924, and oats in 1925. The yields of these crops are given in our 1925 report. The yields of clover hay in 1926 as given below are calculated from the average of four plots in different parts of the field.

MALAGASH SALT EXPERIMENT (1924)

Plot	How fertilized, pounds per acre	Yield of clover hay per acre, 1926			
		Green weight			Cured weight
		First cut	Second cut	Total	
		tons	tons	tons	tons
1	Malagash salt, 200	14·40	2·68	17·08	4·78
2	Malagash salt, 400	14·88	2·88	17·76	4·97
3	Malagash salt, 600	14·48	3·18	17·66	4·94
4	Check, not fertilized	12·96	3·16	16·12	4·51
5	Common salt, 200	14·64	3·18	17·82	4·99
6	Common salt, 400	14·72	2·73	17·45	4·88
7	Common salt, 600	13·64	2·78	16·42	4·60
8	Check, not fertilized	12·26	2·73	14·99	4·19
9	Muriate of potash, 200	12·72	2·70	15·42	4·31
10	Muriate of potash, 400	14·44	2·70	17·14	4·80
11	Check, not fertilized	13·16	2·68	15·84	4·43
12	Malagash salt, 200; nitrate of soda, 200	12·96	2·48	15·44	4·32
13	Malagash salt, 400; nitrate of soda, 200	13·80	2·80	16·60	4·64
14	Malagash salt, 600; nitrate of soda, 200	12·96	2·76	15·72	4·40
15	Check, not fertilized	13·32	3·04	16·36	4·58
16	Malagash salt, 200; nitrate of soda, 200; acid phosphate, 500	13·92	3·02	16·94	4·74
17	Malagash salt, 400; nitrate of soda, 200; acid phosphate, 500	14·40	2·78	17·18	4·81
18	Malagash salt, 600; nitrate of soda, 200; acid phosphate, 500	13·96	2·48	16·44	4·60

MALAGASH SALT EXPERIMENT (2) (1924)

The test with Malagash salt, common salt, and muriate of potash, with and without additional fertilizers, applied when seeding to oats, with clover and timothy, in 1924, was in timothy hay in 1926. The complete results from this test are given in the following table. The yields given are calculated from the average of quadruplicate plots.

MALAGASH SALT EXPERIMENT (2) (1924)

Plot	How fertilized, 1924, pounds per acre	Yield of oats per acre, 1924		Yield of cured hay per acre	
		Grain	Straw	Clover, 1925, two cuttings	Timothy 1926
		bush.	tons	tons	tons
1	Malagash salt, 100	56·4	1·13	4·61	1·92
2	Malagash salt, 200	64·2	1·05	4·34	2·05
3	Malagash salt, 300	61·9	0·92	3·96	1·81
4	Malagash salt, 400	63·9	1·02	3·83	1·92
5	Malagash salt, 500	70·3	1·28	3·78	1·97
6	Malagash salt, 600	58·3	0·97	3·42	1·69
7	Check, not fertilized	52·9	0·94	3·74	1·92
8	Common salt, 100	56·9	0·84	3·48	1·90
9	Common salt, 200	67·5	1·04	4·30	2·17
10	Common salt, 400	67·7	1·08	4·30	1·97
11	Check, not fertilized	61·1	1·02	3·72	2·13
12	Malagash salt, 100; nitrate of soda, 100	70·3	1·27	4·39	2·20
13	Malagash salt, 200; nitrate of soda, 100	73·1	1·25	4·05	2·11
14	Malagash salt, 400; nitrate of soda, 100	74·3	1·17	4·43	2·13
15	Check, not fertilized	64·9	1·05	4·29	2·05

MALAGASH SALT EXPERIMENT (2) (1924)—*Concluded*

Plot	How fertilized, 1924, pounds per acre	Yield of oats per acre, 1924		Yield of cured hay per acre	
		Grain	Straw	Clover, 1925, two cuttings	Timothy 1926
		bush.	tons	tons	tons
16	Malagash salt, 100; nitrate of soda, 100; acid phosphate, 300	80·0	1·47	5·26	2·43
17	Malagash salt, 200; nitrate of soda, 100; acid phosphate, 300	75·9	1·30	4·77	2·42
18	Malagash salt, 400; nitrate of soda, 100; acid phosphate, 300	80·0	1·31	4·68	2·30
19	Check, not fertilized	57·1	0·93	3·98	2·13
20	Muriate of potash, 100	58·0	0·88	3·93	2·13
21	Muriate of potash, 200	61·6	0·95	3·94	1·99
22	Muriate of potash, 300	62·8	1·00	4·76	2·38
23	Muriate of potash, 400	68·4	1·04	4·64	2·16
24	Muriate of potash, 500	65·1	0·99	4·13	2·20
25	Check, not fertilized	65·8	1·01	4·09	2·63

MALAGASH SALT EXPERIMENT (1) (1925)

This test was started in the spring of 1925 on land that had been in oats in 1924. The object of the experiment was to find out whether an application of Malagash salt is of value when seeding down to clover and timothy. This salt was also compared with the coarse salt usually found on the market. The yield of oats in 1925 and of clover hay in 1926, as given below, have been calculated from the average production of four plots. The first and second cuttings of clover were weighed at once when cut. The cured weight was determined by allowing a loss of 72 per cent due to drying, which was the average according to the cured weights secured.

MALAGASH SALT EXPERIMENT (1) (1925)

Plot	How fertilized, pounds per acre	Yield of oats per acre, 1925		Yield of hay per acre, 1926			
				Green weight			Cured weight
		Grain	Straw	First cut	Second cut	Total	
		bush.	tons	tons	tons	tons	tons
1	Malagash salt, 200	52·9	1·56	8·88	2·65	11·53	3·23
2	Malagash salt, 400	56·2	1·59	7·76	3·04	10·80	3·02
3	Common salt, 200	46·8	1·39	8·24	2·80	11·04	3·09
4	Common salt, 400	51·5	1·58	10·64	3·08	13·72	3·84
5	Check, not fertilized	51·5	1·50	7·80	2·80	10·60	2·97
6	Malagash salt, 200; nitrate of soda, 100	65·1	1·97	8·76	4·00	12·76	3·57
7	Malagash salt, 400; nitrate of soda, 100	71·0	1·95	8·76	4·36	13·12	3·67
8	Check, not fertilized	52·7	1·68	10·32	3·96	14·28	3·99
9	Malagash salt, 200; nitrate of soda, 100; acid phosphate, 300	71·7	1·98	9·20	3·92	13·12	3·67
10	Malagash salt, 400; nitrate of soda, 100; acid phosphate, 300	64·2	2·00	7·52	3·58	11·10	3·11
11	Malagash salt, 200; nitrate of soda, 100; acid phosphate, 300; muriate of potash, 50	53·4	1·57	12·92	3·29	16·21	4·54
12	Malagash salt, 400; nitrate of soda, 100; acid phosphate, 300; muriate of potash, 50	64·2	1·88	13·76	3·61	17·37	4·86
13	Nitrate of soda, 100; acid phosphate, 300; muriate of potash, 50	60·2	1·92	13·28	3·56	16·84	4·71
14	Check, not fertilized	49·8	1·40	11·96	2·94	14·90	4·17

MALAGASH SALT EXPERIMENT (2) (1925)

The following table gives the yield of grain in 1926 from the plots which were in mangels and turnips in 1925, and which were treated with Malagash salt in 1925 as indicated in the table. The land was seeded to oats, with clover and timothy, in the spring of 1926, and the yield of grain was as stated. The yields per acre are calculated from the average of four plots.

MALAGASH SALT EXPERIMENT (2) (1925)

Plot	How fertilized, pounds per acre	Yield per acre, 1925		Yield per acre, 1926	
		Mangels	Turnips	Straw	Grain
		bush.	bush.	tons	bush.
1	Malagash salt, 200	188·8	315·5	1·50	38·2
2	Malagash salt, 400	204·8	323·8	1·22	31·2
3	Malagash salt, 600	188·8	358·4	1·12	30·6
4	Check, not fertilized	163·2	362·2	1·38	35·3
5	Common salt, 200	172·8	381·4	1·48	36·5
6	Common salt, 400	214·4	343·0	1·26	35·3
7	Common salt, 600	211·2	349·4	1·22	31·8
8	Check, not fertilized	118·4	371·2	1·40	36·5
9	Muriate of potash, 200	153·6	266·2	1·16	31·8
10	Muriate of potash, 400	153·6	320·0	1·28	32·9
11	Check, not fertilized	121·6	321·9	1·30	36·5
12	Malagash salt, 200; nitrate of soda, 200	201·6	400·6	1·30	36·5
13	Malagash salt, 400; nitrate of soda, 200	240·0	352·0	1·42	37·1
14	Malagash salt, 600; nitrate of soda, 200	166·4	353·9	1·18	32·3
15	Check, not fertilized	182·4	307·2	1·30	35·3
16	Malagash salt, 200; nitrate of soda, 200; acid phosphate, 500	256·0	443·5	1·18	32·9
17	Malagash salt, 400; nitrate of soda, 200; acid phosphate, 500	323·2	437·1	1·30	35·3
18	Malagash salt, 600; nitrate of soda, 200; acid phosphate, 500	332·8	400·6	1·26	34·7

MALAGASH SALT ON ROOTS (1926)

Further to test the value, if any, of an application of Malagash salt to land where roots were to be grown a trial was made of this material in 1926, applying it at different rates, as indicated in the table below. Mangels and turnips were grown on these plots and the yields as given are the average of four plots in different sections of the range used for this test. The land was uniform and other than in respect to the application of salt had the same treatment.

MALAGASH SALT ON ROOTS (1926)

Plot	Pounds applied per acre	Yield per acre	
		Turnips	Mangels
		bush.	bush.
1	Malagash salt, 200	704·0	627·2
2	Malagash salt, 400	660·5	627·2
3	Malagash salt, 600	629·7	563·2
4	Not fertilized	678·4	610·5

GYPSUM AND SULPHUR EXPERIMENT

This test was undertaken to determine the effect of these materials on crop yields, and their influence on succeeding crops in the rotation, particularly with

reference to potato and clover development. The materials were applied in 1924, and potatoes planted. The land was seeded to oats, clover, and timothy in 1925. The yields given below are the average of four plots treated alike.

GYPSUM AND SULPHUR

Plot	How fertilized, 1924, pounds per acre	Average yield per acre						
		Potatoes	Oats, 1925		Hay, 1926			
					Green weight			Cured weight
		1924	Grain	Straw	First cut	Second cut	Total	
		bush.	bush.	tons	tons	tons	tons	tons
1	Gypsum, 550	153·8	50·0	1·38	9·70	1·69	11·39	2·73
2	Gypsum, 1,100	144·6	50·3	1·39	9·55	1·66	11·21	2·69
3	Gypsum, 2,200	179·9	54·1	1·45	9·60	1·60	11·20	2·69
4	Check	130·6	50·3	1·21	8·67	1·02	9·69	2·32
5	Sulphur, 100	159·8	50·1	1·44	10·48	1·50	11·98	2·87
6	Sulphur, 200	171·9	56·0	1·45	9·92	1·44	11·36	2·72
7	Sulphur, 400	164·5	48·9	1·44	8·48	1·61	10·09	2·42
8	Superphosphate, 890	171·9	50·3	1·55	9·63	1·31	10·94	2·62
9	Superphosphate, 1,780	169·2	58·8	1·66	11·84	1·53	13·37	3·20
10	Check	144·5	54·8	1·48	10·75	1·98	12·73	3·05
11	Ground natural rock phosphate, 500	183·2	60·2	1·63	10·72	1·87	12·59	3·02
12	Ground limestone, 4,000	152·6	59·3	1·63	11·31	2·22	13·53	3·24
13	Sulphur, 200; ground limestone, 4,000	147·2	48·9	1·008	9·44	1·77	11·21	2·69
14	Check	163·9	53·1	1·52	10·24	2·03	12·27	2·94
15	Gypsum, 500; manure, 20,000	198·5	55·3	1·69	10·83	1·93	12·76	3·06
16	Manure, 20,000	176·4	54·1	1·65	10·96	1·74	12·70	3·04
17	Check	149·2	49·8	1·45	10·00	2·01	12·01	2·88

BASIC SLAG EXPERIMENT (1924)

The land on which tests with slag were started in 1924 was in timothy hay in 1926. The total yields from these plots, all of which received similar treatment except in the slag applied, were as stated below. The slag was applied in the spring of 1924 when seeding down. To all of these plots, including the check plots, 100 pounds of nitrate of soda and 50 pounds of muriate of potash were also applied in 1924. The yields per acre are calculated from the average of four plots treated alike, in different parts of the field.

BASIC SLAG EXPERIMENT, 1924

Plot	How fertilized, pounds per acre	Yield of oats per acre, 1924		Yield of clover hay per acre, 1925		Yield of timothy hay per acre, 1926	
		Grain	Straw	Green weight	Cured weight	Green weight	Cured weight
		bush.	tons	tons	tons	tons	tons
11	Sydney slag, 14%, 1,000	72·9	1·19	14·30	4·78	4·32	2·16
12	Sydney slag, 17%, 824	67·5	1·20	12·47	4·35	3·68	1·84
13	Florida rock phosphate, 29%, 483	64·6	1·18	12·82	4·21	3·28	1·64
14	Bessemer slag, 16%, 875	75·5	1·27	13·88	4·72	4·20	2·10
15	Check, not fertilized	53·4	0·90	9·07	2·75	3·56	1·78
16	Sydney slag, 14%, 500	70·6	1·36	13·55	4·48	4·64	2·32
17	Sydney slag, 17%, 412	64·6	1·21	10·40	3·62	4·24	2·12
18	Florida rock phosphate, 29%, 241·5	66·3	1·09	12·51	4·32	3·76	1·88
19	Bessemer slag, 16%, 437·5	67·7	1·15	12·56	4·45	4·36	2·18
20	Check, not fertilized	62·0	0·99	9·02	2·98	3·96	1·98

SLAG EXPERIMENT

Tests were started in 1926 with Sydney and imported (Belgian) slag. The land on which this experiment was conducted was in corn in 1924, having been manured at the rate of 15 tons of stable manure per acre. This land was planted to turnips in 1925, and received at that time 150 pounds of nitrate of soda, 300 pounds of acid phosphate and 50 pounds of muriate of potash per acre. This land was ploughed in the fall after the turnips were removed. The area was very uniform, and having produced a good crop of corn and turnips was not considered to be rich in available plant food. Oats were seeded, with clover and timothy, in 1926. The results given are calculated from the average yield of four plots.

SLAG EXPERIMENT, 1926

Plot	How fertilized, pounds per acre	Yield of oats per acre	
		Grain	Straw
		bush.	tons.
1	Sydney slag, 14%, 1,000	52·94	1·44
2	Sydney slag, 14%, 500	50·59	1·36
3	Belgian slag, 16%, 875	54·11	1·42
4	Belgian slag, 16%, 437·5	47·18	1·36
5	Sydney slag, 14%, 1,000; nitrate of soda, 100; muriate of potash, 50	54·11	1·58
6	Sydney slag, 14%, 500; nitrate of soda, 100; muriate of potash, 50	56·47	1·67
7	Belgian slag, 16%, 875; nitrate of soda, 100; muriate of potash, 50	60·59	1·82
8	Belgian slag, 16%, 437·5; nitrate of soda, 100; muriate of potash, 50	58·23	1·74
9	Sydney slag, 14%, 1,000; muriate of potash, 100	42·94	1·28
10	Belgian slag, 16%, 875; muriate of potash, 100	54·71	1·55
11	Acid phosphate, 16%, 875	46·47	1·37
12	Acid phosphate, 16%, 875; muriate of potash, 100	46·47	1·54
C1–C6	Checks, not fertilized	45·49	1·16

BASIC SLAG FOR THE IMPROVEMENT OF PASTURE AREAS

This test was undertaken to ascertain the value of basic slag applied as a surface dressing to pasture areas. The area selected had been in pasture four years and had been closely grazed. It was apparently fairly uniform, the growth being principally brown-top, with some timothy. One-half acre was treated with Sydney slag, 14 per cent, and an equal area with Bessemer slag, 16 per cent phosphoric acid. The slag was applied early in April, 1925. The whole area was grazed in 1925. There was a noticeable increase in the number of small clover plants on the areas treated with slag. In 1926 these areas were not grazed and the crop from the plots was harvested August 3, and the green weight obtained. At the time of harvesting and throughout the season the amount of clover on the treated plots was decidedly greater than on the check plots. In fact, check plot No. 1 had practically no clover growing on it, and No. 2 had but a small percentage, the growth being largely brown-top with some timothy. At the time of harvest, which was late, the clover had ripened considerably, and the other grasses had dried out, so that the cured weight would be approximately 50 per cent of the green weight. The green weights from the plots were as follows:—

Plot	How fertilized	Green weight per acre
1	Check, not fertilized	1·76 ton
2	Sydney slag	2·32 "
3	Belgian slag	2·59 "
4	Check, not fertilized	2·16 "
	Average of check plots	1·96 "

EPHOS BASIC PHOSPHATE

In the spring of 1925 an experiment was undertaken to determine the value of Ephos, an Egyptian rock phosphate, as compared with Bessemer imported slag, and acid phosphate. Mangels and turnips were seeded on these plots, and in the spring of 1926 the plots were seeded to oats, with clover and timothy. The yield of roots is given in the table below, also the yield of oats in 1926. The yields are calculated from the average of four plots treated alike, at different points in the field.

EPHOS BASIC PHOSPHATE

Plot	How fertilized, pounds per acre	Yield per acre, 1925		Yield per acre, 1926	
		Mangels	Turnips	Straw	Grain
		tons	tons	tons	bush.
1	Ephos, 292	1·68	7·72	1·38	32·9
2	Acid phosphate, 500	4·12	7·68	1·50	34·7
3	Bessemer slag, 500	4·56	7·04	1·48	34·1
4	Ephos, 292; nitrate of soda, 150; muriate of potash, 100	2·76	8·16	1·36	31·2
5	Acid phosphate, 500; nitrate of soda, 150; muriate of potash, 100	6·35	9·48	1·46	33·5
6	Bessemer slag, 500; nitrate of soda, 150; muriate of potash, 100	6·96	9·72	1·52	34·1
7	Nitrate of soda, 150; muriate of potash, 100	3·08	7·84	1·36	32·3
8	Check, not fertilized	1·52	6·80	1·48	32·9
8	Check, not fertilized	2·48	5·88	1·38	31·2

CALCITIC VS. MAGNESIAN LIMESTONE

This experiment was undertaken to ascertain whether magnesian limestone is as valuable in crop production as calcitic limestone. These materials were also compared with gypsum and hydrated lime.

Stable manure was applied at the rate of 16 tons per acre over the whole area in the spring of 1924, and the land plowed. Nitrate of soda at the rate of 150 pounds, and acid phosphate at the rate of 300 pounds per acre were then applied, and the land disced. The limestone, hydrated lime, and gypsum were next applied, and lightly worked into the soil. The land was seeded to turnips June 13, 1924. Oats were seeded in the spring of 1925, with clover and timothy. The yield of green clover cut July 16 and of a second cutting made September 22, 1926, are given below. The cured weight as given is 24 per cent of the green weight. From many records secured the loss in weight of fresh cut clover when cured for hay is 76 per cent. The yields as given are calculated from the average of four plots located at different places in the field.

CALCITIC vs. MAGNESIAN LIMESTONE EXPERIMENT, AVERAGE YIELDS PER ACRE

Plot	How treated, 1924, tons per acre	Turnips, 1924	Oats, 1925	Straw, 1925	Hay, 1926			
					Green weight			Cured weight
					First cut	Second cut	Total	
		bush.	bush.	tons	tons	tons	tons	tons
1	Magnesian limestone, 2	500·4	58·8	1·90	12·11	1·79	13·90	3·33
2	Magnesian limestone, 4	554·8	64·9	1·88	12·35	1·74	14·09	3·37
3	Magnesian limestone, 6	567·6	63·05	2·09	12·88	2·11	14·99	3·59
4	Magnesian limestone, 8	528·0	62·1	1·94	11·95	1·95	13·90	3·33
5	Check, nor fertilized	551·6	52·7	1·64	12·67	2·09	14·76	3·54
6	Calcitic limestone, 2	602·9	61·4	1·90	12·00	1·28	13·28	3·18
7	Calcitic limestone, 4	582·4	59·2	1·75	12·56	1·61	14·17	3·40
8	Calcitic limestone, 6	568·6	61·6	1·86	12·32	1·44	13·76	3·30
9	Calcitic limestone, 8	595·2	66·8	2·04	11·68	1·76	13·44	3·22
10	Check, not fertilized	570·8	64·3	1·82	12·96	2·08	15·04	3·61
11	Gypsum, 2	567·6	57·6	1·72	10·43	1·31	11·74	2·82
12	Gypsum, 4	572·8	58·3	1·63	8·96	1·34	10·30	2·47
13	Check, not fertilized	532·4	61·2	1·72	10·24	1·37	11·61	2·78
14	Hydrated lime, 1	529·2	63·05	1·74	10·16	1·37	11·53	2·76
15	Hydrated lime, 2	542·0	67·5	2·22	12·40	2·09	14·49	3·47
16	Hydrated lime, 3	532·5	64·9	2·20	13·15	2·26	15·41	3·70
17	Hydrated lime, 4	503·6	62·1	2·20	11·71	2·25	13·96	3·35
18	Check, not fertilized	497·2	61·4	1·78	11·04	1·60	12·64	3·03

NITROGENOUS FERTILIZERS AS A TOP-DRESSING ON ROOT CROPS

Nitrate of soda and sulphate of ammonia in quantities to carry the same amount of nitrogen were applied to areas in turnips and mangels on August 3, being scattered broadcast when the foliage was dry. The nitrate of soda cost $60, and the sulphate of ammonia $65 per ton. The roots were valued at 10 cents per bushel in arriving at a determination of the profit resulting from the application.

The yields per acre are calculated from the average production of two plots in each case and were as follows:—

How treated, pounds per acre	Yield per acre	Gain over check per acre	Value of increase per acre	Cost of fertilizer per acre	Gain or loss (−) per acre
	bush.	bush.	$	$	$
Turnips					
Nitrate of soda, 200	631·2	99·4	9·94	6·00	3·94
Sulphate of ammonia, 150	570·0	38·2	3·82	4·87	−1·05
Not treated	531·8				
Mangels					
Nitrate of soda, 150	686·4	104·4	10·44	4·50	5·94
Sulphate of ammonia, 112½	664·8	82·8	8·28	3·65	4·63
Not treated	582·0				

GROUND LIMESTONE APPLIED AT DIFFERENT RATES

The areas on which the test was conducted were limed at the rates stated below in 1917 and no lime has been applied since. It was possible to secure a comparative record of the crops from these areas since that time except in 1923 and 1924, when the crops grown on the different areas were not comparable. This land was manured for the hoed crops at the rate of 15 tons per acre. The results this year with corn would show no benefit from the applications of lime made in 1917.

GROUND LIMESTONE APPLIED AT DIFFERENT RATES PER ACRE IN 1917: COMPARATIVE YIELDS OF SUCCEEDING CROPS

Quantity applied per acre, 1917	Corn, 1917	Turnips, 1918	Mangels, 1919	Oats, 1920	Clover hay, 1921	Timothy hay, 1922	Hay, 1925	Corn, 1926
	tons	bush.	bush.	bush.	lb.	lb.	lb.	tons
1 ton	15·2	924	831	79·2	4,356	2,355	4,212	15·22
2 tons	14·1	1,090	900	74·3	4,680	2,436	4,760	12·77
3 tons	17·0	1,033	918	84·2	4,902	2,985	5,328	16·17
4 tons	15·3	1,048	1,110	79·8	5,142	3,255	6,212	14·73
Not limed	13·2	1,118	862	76·6	3,054	1,395	2,480	16·10

GRAIN AND HAY YIELDS FOLLOWING HEMP

The areas used for fertilizer tests with hemp in 1924 were seeded to oats, with clover and timothy, in the spring of 1925. The following table gives the average yield of hemp fibre and tow in 1924, the yield of oats and straw in 1925, and the clover-timothy hay yield in both green and cured weights in 1926. The hay was harvested July 20. All yields given are the average of four plots of one-eightieth acre each.

AVERAGE YIELDS PER ACRE FROM PLOTS FERTILIZED IN 1924 FOR HEMP

Plot	How fertilized, 1924; pounds per acre	Hemp, 1924		Oats, 1925	Straw, 1925	Hay, 1926	
		Tow	Fibre			Green	Cured
		lb.	lb.	bush.	tons	tons	tons
1	Nitrate of soda, 200	640·0	583·2	50·9	1·40	8·76	2·36
2	Acid phosphate, 500	715·2	522·0	51·2	1·35	10·68	2·72
3	Muriate of potash, 100	589·6	408·0	46·2	1·32	10·10	2·56
4	Check, not fertilized	689·6	319·2	48·8	1·33	9·12	2·37
5	Nitrate of soda, 200; acid phosphate, 500	789·6	791·2	55·3	1·48	9·38	2·50
6	Nitrate of soda, 200; acid phosphate, 500; muriate of potash, 100	875·2	684·0	53·5	1·43	10·28	2·62
7	Check, not fertilized	620·0	372·8	50·6	1·38	9·36	2·40
8	Nitrate of soda, 100	709·6	445·6	51·2	1·32	8·64	2·14
9	Nitrate of soda, 300	664·0	696·0	50·0	1·37	8·02	2·06
10	Nitrate of soda, 400	689·6	608·0	57·4	1·56	8·36	2·16

YIELD OF CLOVER-TIMOTHY HAY FOLLOWING FLAX

Nine plots of flax on which fertilizers were applied were seeded to clover and timothy when seeding to flax in the spring of 1925. This land was in mangels in 1924, and the results show that the addition of fertilizers, particularly nitrogenous fertilizers, to this area was not advisable for flax. The tendency was to force the growth of the flax plant, and this caused lodging, resulting in materially lessening the yield of line fibre and increasing the tow. This growth, with resultant lodging, in turn adversely affected the stand of clover and timothy. The yields of clover hay on these plots were as stated below. The yields are calculated from the average production of three plots. There were more timothy in evidence than clover.

YIELDS OF CLOVER-TIMOTHY HAY FOLLOWING FLAX

How fertilized per acre, 1925	Yield of flax per acre, 1925			Yield of clover-timothy hay per acre, 1926	
	Seed	Fibre	Tow	Green weight	Cured weight
	lb.	lb.	lb.	tons	tons
Nitrate of soda, 100 lb.	796	230	350	10·38	3·46
Nitrate of soda, 200 lb.	840	160	450	10·86	3·62
Nitrate of soda, 300 lb.	756	115	535	10·08	3·36
Acid phosphate, 500 lb.	612	260	290	10·11	3·37
Check, not fertilized	609	285	322	10·35	3·45
Muriate of potash, 100 lb.	830	260	310	9·99	3·33
Nitrate of soda, 200 lb.; acid phosphate, 500 lb.	692	195	330	10·32	3·44
Nitrate of soda, 200 lb.; acid phosphate, 500 lb.; muriate of potash, 100 lb.	614	115	490	10·08	3·36
Check, not fertilized	640	360	320	10·77	3·59

POULTRY

FEEDING TESTS WITH VARIOUS GREEN FEEDS

The object of this experiment was to find out the relative value of roots (mangels) as compared with sprouted oats, and to determine whether Epsom salts would act as a substitute for green feed. The ration given each pen was otherwise alike. The test was started with 20 White Wyandotte pullets, selected as being uniform, to each pen.

The Epsom salts was fed at the rate of two ounces to 20 birds daily, mixed in the wet mash. The results from this test were as follows:—

FEEDING TESTS WITH VARIOUS GREEN FEEDS: EGGS LAID AND FEED CONSUMED

—	Fed mangels		Fed sprouted oats		Fed Epsom Salts	
	Number of pullets	Eggs laid	Number of pullets	Eggs laid	Number of pullets	Eggs laid
First month	19	247	20	266	20	221
Second month	18	196	20	293	20	245
Third month	18	152	20	103	20	59
Fourth month	17	188	19	185	20	126
Fifth month	16	251	18	271	19	231
Sixth month	15	261	16	281	18	308
Total eggs		1,295		1,399		1,190
Value of eggs		$50.44		$54.86		$45.74

	Feed consumed		
	lb.	lb.	lb.
Scratch grain	408	453	437
Mash	277	311	452
Beef scrap	26	30	36
Mangels	489		
Sprouted oats		67½	
Epsom salts			22½
Grit	19	21	20
Oyster shell	28	27	27
Cost of feed	$19.64	$22.25	$22.70
Value of eggs above cost of feed	$30.80	$32.61	$23.04

FEEDING TEST WITH COD LIVER OIL

One lot of 50 late-hatched Barred Plymouth Rock pullets were fed cod liver oil in addition to the regular ration, at the rate of two tablespoonfuls a day for the lot, mixed in the wet mash, and these were compared with an equal number of similar pullets given the same feed without cod liver oil. The oil cost 86 cents per gallon. It will be noticed that the mortality was somewhat higher in the pen fed cod liver oil, but it is considered that this was not due to the oil fed. The production from these pens is shown in the table below. The results favour the cod liver oil feeding.

FEEDING TEST WITH COD LIVER OIL: EGGS LAID AND FEED CONSUMED

	Fed cod liver oil		Not fed cod liver oil	
	Number of pullets	Eggs laid	Number of pullets	Eggs laid
First month	50	16	50	59
Second month	50	160	50	163
Third month	47	412	49	362
Fourth month	45	851	47	565
Fifth month	42	1,176	45	1,076
Sixth month	40	1,053	43	1,020
Total eggs	.....	3,668	.....	3,245
Value of eggs	.....	$123.84	.....	$109.43
	Feed consumed			
	lb.		lb.	
Scratch grain	1,201		1,228	
Mash	955		945	
Beef scrap	138		148	
Green feed	1,233		1,233	
Grit	47		47	
Shell	55		72	
Cod liver oil	2·138 gal.			
Cost of feed	$65.88		$65.30	
Value of eggs above cost of feed	$57.96		$44.13	

FEEDING TESTS WITH SHELL

Tests covering a period of six months, from November 16, 1925, to May 16, 1926, were made to determine the relative value of clam shell, oyster shell, and hard gypsum for laying hens. The feed ration otherwise was alike in each lot, and a record was kept of the amount consumed. The pens were alike and the treatment was similar. Twenty white Leghorn pullets were used in each lot and the lots were selected as being uniform. It will be noticed from the production given below that the quantity of eggs per pen was quite similar for the first two months, but that the pen to which gypsum was fed dropped in the third month and was again low in the fourth month. No cause could be given for this drop, and as this pen came up again in the last two months of the test it is but fair to assume that the low production was not entirely due to the gypsum fed to them. It will be noticed that this pen consumed 61 pounds of gypsum, an average of over 10 pounds per month, while the pen receiving oyster shell consumed 26 pounds, and the one fed clam shell 25 pounds, for the period. It is quite evident, however, that clam and oyster shells are likely to be the most satisfactory.

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FEEDING TESTS WITH SHELL: EGGS LAID AND FEED CONSUMED

—	Fed oyster shell	Fed clam shell	Fed gypsum
First month	188	194	222
Second month	179	165	180
Third month	165	159	111
Fourth month	297	251	198
Fifth month	392	378	334
Sixth month	391	391	325
Total eggs	1,612	1,538	1,370
Value of eggs	$59.80	$57.02	$52.19
	Feed consumed		
	lb.	lb.	lb.
Scratch grain	477	443	417
Mash	291	353	270
Meat scrap	44	50	53
Green feed	498	498	408
Grit	21	19	.....
Oyster shell	26	.....	.....
Clam shell	.....	25	.....
Gypsum	.....	.....	61
Cost of feed	$22.97	$23.78	$22.63
Value of eggs above cost of feed	$36.83	$33.24	$29.56

HOME-MIXED VS. COMMERCIAL SCRATCH GRAIN

This test was undertaken to determine the relative value of commercial scratch grain as compared with separate grain mixed at home, using equal parts of corn, wheat, and oats. The home mixed grain cost $2.48, and the commercial scratch grain $2.85 per cwt. One hundred Barred Rock pullets were separated into two pens of 50 each, each lot apparently being uniform. It will be seen that the production was greater from the pen fed commercial scratch during the first three months, and less from this pen during the last three months.

HOME-MIXED vs. COMMERCIAL SCRATCH GRAIN—EGGS LAID AND FEED CONSUMED

—	Home-mixed scratch		Commercial scratch	
	Number of pullets	Eggs laid	Number of pullets	Eggs laid
First month	50	436	50	505
Second month	50	441	50	518
Third month	50	364	50	373
Fourth month	50	659	50	567
Fifth month	48	976	48	720
Sixth month	47	936	47	852
Total eggs	.....	3,812	.....	3,535
Value of eggs	.....	$141.10	.....	$141.14
	Feed consumed			
	lb.		lb.	
Scratch grain	1,261		1,312	
Mash	938		949	
Beef scrap	167		162	
Green feed	1,233		1,233	
Grit	43		38	
Oyster shell	97		60	
Cost of feed	$66.93		$72.84	
Value of eggs above cost of feed	$74.17		$68.30	

NOVA SCOTIA SOUTHERN EGG LAYING CONTEST, 1925-26

The average production per bird during the year was 172.5 eggs. The number of birds to register during the year was 38, distributed as follows:—

Pen number	Breeder's name and address	Number to register	Breed
5	Osborne Turnbull, Digby, N.S.	5	W.L.
12	Experimental Station, Kentville, N.S.	5	W.L.
15	Hillside Orchard Farm, Canning, N.S.	5	W.L.
13 and 14	R. D. L. Bligh, Kentville, N.S.	6	B.R.
3	Uktanook Farm, Bear River, N.S.	3	W.L.
2	Caledonia Poultry Yards, North Sydney, N.S.	2	W.W.
6	Sperry Green, Centreville, N.B.	2	B.R.
17 and 19	Highland Poultry Farm, Bear River, N.S.	4	W.L.
18	Experimental Station, Kentville, N.S.	2	W.W.
7	C. A. Good (R.R. 1) Lawrencetown, N.S.	1	R.I.R.
9	Mrs. Leo F. Hayes, North Devon, N.B.	1	W.L.
10	D. H. Borden, Sheffield Mills, N.S.	1	B.R.
16	Mrs. Jas. A. Cassidy, Welsford, N.B.	1	W.W.

PROFIT OVER COST OF FEED

Period	Average price of eggs averaging over 20 oz. per dozen	Number of eggs laid	Value of eggs	Cost of feed	Profit
	cents		$ cts.	$ cts.	$ cts.
Nov. 1–Nov. 28	58	1,452	63 62	49 83	13 79
Nov. 29–Dec. 26	63	2,415	118 99	43 74	75 25
Dec. 27–Jan. 23	53	2,527	105 46	44 80	60 66
Jan. 24–Feb. 20	46	2,243	81 04	43 36	37 68
Feb. 21–Mar. 20	43	2,651	90 29	38 64	51 65
Mar. 21–April 17	38	3,241	97 44	41 48	55 96
April 18–May 15	30	3,099	75 28	48 49	26 79
May 16–June 12	28	3,372	76 68	47 07	29 61
June 13–July 10	31	2,632	66 13	49 92	16 21
July 11–Aug. 7	31	3,517	87 76		
Aug. 8–Sept. 4	42	3,361	114 45	168 69	181 06
Sept. 5–Oct. 2	46	2,691	99 24		
Oct. 3–Oct. 30	46	1,305	48 30		
		34,506	1,124 68	576 02	548 66

The profit on 200 birds for the contest year 1925-26 was $548.66, or an average profit of $2.74 per bird.

The total amount of the various feeds used and their average price per hundred were:—

Grain	9,091	lb., at	$2 55
Mash	8,645	"	2 57
Grit	139½	"	1 50
Meat scrap	1,240½	"	6 00
Green feed	5,878	"	0 20
Charcoal	51½	"	4 00
Shell	861	"	1 50
Skimmilk	5,200	"	0 35

THE APIARY

The winter of 1925-26 was one of the most adverse experienced in years for the wintering of bees; due in general to an early fall, the granulation of stores, and a long, cold winter followed by a prolonged spring, which meant an unusually long period of confinement.

Colonies that were fed an abundance of stores consisting of sugar syrup came through the winter in fair condition. Those wintered on goldenrod and aster honey either died of starvation owing to the stores granulating hard or came through in a weak condition. Colonies that were given combs of clover honey did not winter well; in many cases the clover honey granulated. Four colonies that were fed on a mixture of fermented honey and sugar syrup in equal proportions died during the winter. The eight colonies that were strongest in bees in the spring were fed an average of over twenty pounds of sugar.

Of the four colonies placed in the old honey house only two survived the winter, and these were weak in bees. In these colonies brood-rearing did not start until two weeks later than in colonies in quadruple cases.

Only one of the four colonies that were wrapped in tar paper survived the winter, and it came through in a weak condition. The combs in these colonies were mouldy when examined in the spring, which meant that the colonies were too damp during the spring.

The apiary, Dominion Experimental Station, Kentville, N.S.

Carniolan Bees.—Of the four Carniolan colonies that were put into winter quarters only two survived the winter, and these were so weak that they did not build up in time to take advantage of the main honey flow. One of the Carniolan queens was replaced with an Italian queen during the summer as the bees had started to supersede their queen.

Experiments over a period of five years indicate that at least half the winter stores should be sugar syrup, as heavy losses have occured from the granulation of golden rod, aster, and clover honey in combs during a period of long confinement.

The average number of combs covered May 15 at this Station was 4.3.

At the out-apiary at Bridgetown three of the eight colonies died during the winter, the cause being granulated stores. The average number of combs covered on June 11 was 8.3.

Three of the colonies in the out-apiary at Brooklyn did not survive the winter, for the same reason. The average number of combs covered on June 16 was 8.9.

LOSS OF BEES FROM ARSENICAL DUST USED FOR ORCHARD INSECT PESTS

On June 14 the bees at the Kentville apiary began to show signs of poisoning, which lasted until June 28. This weakened the colonies to such an extent that many did not recover until after the main flow was over.

COMPARISON OF DIFFERENT TYPES OF HIVES

Of the fifty-two colonies at Kentville one is in an eight-frame Langstroth hive, eleven are in ten-frame Jumbos, five in Modified Dadants, and thirty-five in ten-frame Langstroth hives. Of these the eleven-frame Modified Dadant gave the greatest production of honey during 1926.

The table below gives a comparison of the strength of the colonies in the spring and the yields per colony.

Type of hive	Number of combs covered in spring	Weight of honey produced
		lb.
Eleven-frame "Modified Dadant"	5	91
Ten-frame Jumbo	6½	80
Ten-frame Langstroth	8	55

OUT-APIARIES

Records of the amount of honey gathered since the two out-apiaries have been established are given below.

Year	Out-apiary	Number of colonies in spring	Honey produced	Number of colonies in fall	Average honey per colony, spring count
			lb.		lb.
1923	Kennetcook	4	370	8	92·5
	Bridgetown	4	336	8	84·0
1924	Brooklyn	6	885	8	147·5
	Bridgetown	8	973	8	121·6
1925	Brooklyn	8	449	8	56·1
	Bridgetown	8	903	8	112·9
1926	Brooklyn	5	252	5	50·4
	Bridgetown	5	385	6	77·0

Average out-apiary production per colony for the four years, 94·8 lb.

SWARM DETECTION

Shallow Super Method.—In the two out-apiaries, consisting of ten colonies, a shallow super is left on each colony the entire year. In the winter and spring these serve as a food chamber, and in the active season as an additional brood chamber. Additional supers given these colonies during the active season were

placed over a queen excluder. Of the ten over-wintered colonies in the two out-apiaries only three developed queen cells, all of which were along the bottom bars of the frames in the shallow supers. Neither of the two colonies at the Kentville apiary that had a shallow super developed queen cells.

This method does away with going through a colony and examining it for queen cells, as any queen cells that might be present can be detected by tipping one end of the shallow super and looking along the bottom bars of the shallow frames.

QUEEN-REARING

Queen-rearing was not carried on as extensively this year as in previous years, due to the weakness of the colonies when queen-rearing should have begun. However, sufficient queens were raised to re-queen all colonies that had old or worn-out queens.

INCREASE

Increasing was not possible until July 22, the colonies not being strong enough before then to permit of division. At that time seven colonies were made up by taking for each nucleus two frames of emerging brood with adhering bees and one comb of honey. A young queen was introduced to each nucleus. As the season advanced empty drawn combs were given the nuclei as required.

PRODUCTION

The production for 1926 was below the average on account of the colonies not being up to strength when the clover flow started. This can be attributed to their not being strong in bees in the spring, and to the bees being poisoned about the time they started to build up, by the arsenic used in orchard dusts for insect control. The following table gives the annual yields since 1919. The yields for 1926 are from twenty colonies only, as thirteen were so weakened from the above causes that their production was negligible.

Year	Number of colonies in spring	Number of colonies in fall	Honey produced	Average honey produced per colony, spring count
			lb.	lb.
1919	21	36	2,577·5	122·7
1920	32	56	1,168·0	36·5
1921	43	60	1,681·0	39·1
1922	41	69	1,685·5	41·1
1923	36	61	1,836·5	51·0
1924	41	57	2,472·5	60·3
1925	44	61	1,741·0	39·5
1926	33 (20)	41	763·5	38·2

ALUMINUM COMBS

A colony of bees were transferred to aluminum combs at the beginning of the honey flow. On examining the colony three weeks later patches of brood were found in three combs only. As the colony was gradually dwindling the aluminum combs were replaced with wax combs, and from then on brood-rearing continued as in a normal colony.

INCREASING STRENGTH OF COLONY FOR MAIN FLOW

On June 24 three frames of capped brood and adhering bees were removed from a colony that covered seven frames, and placed in a super. Over the

original brood chamber an ordinary floor board, with the three-eighths inch side down, was placed, first nailing a cleat across the front of the floor board in order to rest it on the front edge of the hive. On top of this floor board was placed the super containing the brood and bees; to this a young laying queen was introduced. The bees in the lower hive body used the lower entrance, while those in the upper also had an entrance.

On July 23, at the commencement of the main honey flow, the lower chamber was removed to a new stand, leaving the upper chamber on the old stand. This meant that practically all the field bees returned to the old stand, making a populous colony that was able to take advantage of the main flow. This colony produced 70 pounds of honey and gave an increase of one colony.

PRODUCTION FROM COLONIES DIVIDED OR ALLOWED TO SWARM AS COMPARED WITH THOSE WHERE SWARMING WAS CONTROLLED

This experiment to determine the average profit of colonies that were increased through division, as compared with those that were not divided or did not swarm, was continued this year. In the table below honey is valued at fifteen cents a pound and a colony of bees at $7.

Number of colonies used	Number of increase	Average honey produced	Average value of honey and increase
		lb.	$ cts.
5	6	44·2	15 03
5	.....	46·2	6 93

CONDITION OF COLONIES IN THE AUTUMN

The latter part of the summer being favourable for brood rearing and each colony having a prolific queen, the colonies went into winter quarters with a maximum of young bees. The average number of combs covered on October 6 was 9.3.

WINTER STORES, 1926-27

Forty of the forty-one colonies at the Kentville apiary are being wintered on sugar syrup and natural stores of golden rod and aster honey. One colony is being wintered on natural stores only. A larger amount of sugar syrup was fed this year than usual, as it has been found that in other years the bees that were not fed an abundance of sugar syrup did not come through the winter in good condition.

Four of the Bridgetown colonies are being wintered on stores of golden rod and aster honey and sugar syrup. Two colonies are wintered on natural stores of golden rod and aster honey. The five Brooklyn colonies are being wintered on natural stores and sugar syrup. The colonies in both out-apiaries were brought into the apiary at Kentville before feeding commenced.

EXHIBITIONS

Honey exhibits were put on at Bridgewater, Yarmouth, and Windsor, and the apiarist judged the honey at the Provincial Exhibition and the Maritime Winter Fair, both at Amherst.

FIBRE PLANTS

ONE ACRE OF FLAX GROWN FOR FIBRE

The area on which the flax for fibre was grown commercially had been in hay the previous two years. It was fall ploughed. After working and before seeding 150 pounds of nitrate of soda, 300 pounds of acid phosphate, and 50 pounds of muriate of potash per acre were applied broadcast and harrowed in. The growth was good during the early season, but because of dry weather during the ripening period the crop matured very rapidly. The seed was sown on May 7 and the crop was pulled on August 7. The crop was tied in small sheaves and stooked, and deseeded on August 24. The straw was spread on a grass field on August 25 and was retted by September 20, when it was gathered and stored for scutching, which was done during December.

Spreading flax for retting.

The tests with different varieties were carried out on an adjoining area which had been similarly treated. These were seeded and harvested about the same time as the commercial area, except the plots " seeded at different dates " and " harvested at different dates ".

COST OF ONE ACRE OF FLAX GROWN FOR FIBRE

Rental of land	$ 3 00
Ploughing with tractor, 2½ hours at $1	2 50
Discing with tractor, 1 hour at $1	1 00
Cultivating, 1 hour at 50 cents	50
Share of fertilizer, 75 per cent of $9	6 75
Seed, 1½ bushels at $3	4 50
Seeding, broadcast by hand, 1 hour at 30 cents	30
Covering, with weeder, 1 hour at 40 cents	40
Pulling, 38 hours at 25 cents	9 50
Tying, 18 hours at 25 cents, $4.50; stooking, 6 hours at 25 cents, $1.50.	6 00
Deseeding: men, 12 hours at 25 cents, $3; man and team, 3 hours at 50 cents, $1.50; gasoline, 2 gallons at 30 cents, 60 cents; oil, 1 pint at 25 cents	5 35
Spreading for retting, 37 hours at 25 cents	9 25
Lifting and tying, 22 hours at 25 cents	5 50
Hauling to shed and storing, 1½ hours at 50 cents	75
Breaking, 60 hours at 25 cents	15 00
Scutching and cleaning tow, 91 hours at 30 cents	27 30
Gasoline, 16 gallons at 30 cents, $4.80; oil, 1½ gallons at $1, $1.50	6 30
Use of machinery	7 00
Total cost per acre	$110 90

Product from one acre:

Fibre	529 lb.	
Tow	176 lb.	
Seed	438 lb.	
Weight of retted straw	2,874 lb.	
Weight of broken straw	1,777 lb.	
Weight of fibre	529 lb.	
Weight of tow	176 lb.	
Weight of fibre from 100 lb. retted straw		18.4 lb.
Weight of fibre from 100 lb. broken straw		29.7 lb.
Weight of tow from 100 lb. retted straw		6.1 lb.
Weight of tow from 100 lb. broken straw		9.9 lb.

FLAX, VARIETY TEST

Variety	Seed per acre	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
		De-seeded straw	Retted straw	Fibre	Tow	De-seeded	Retted	De-seeded	Retted
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Riga Blue	690	2,920	2,440	485	140	16·5	19·8	4·7	5·7
829C	590	2,920	2,420	535	245	18·3	22·1	8·3	10·1
J. W. S.	550	4,080	3,180	595	130	14·5	18·7	3·1	4·1
Dutch White	790	3,660	2,920	655	255	17·9	22·4	6·9	8·7
Pure Line No. 6	560	3,420	2,710	605	255	17·7	22·3	7·4	9·4

FLAX, RIGA BLUE, SEEDED AT DIFFERENT RATES PER ACRE

Rate seeded, pounds per acre	Seed per acre	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
		De-seeded straw	Retted straw	Fibre	Tow	De-seeded	Retted	De-seeded	Retted
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
84	670	2,840	2,460	565	250	19·9	23·0	8·8	10·1
98	620	2,860	2,340	515	210	18·0	22·0	7·3	9·0
112	680	3,080	2,560	555	230	18·0	21·6	7·4	9·0

DIFFERENT METHODS OF SEEDING: DRILLS AND BROADCAST

Variety, Riga Blue

How seeded	Seed per acre	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
		De-seeded straw	Retted straw	Fibre	Tow	De-seeded	Retted	De-seeded	Retted
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Drills	530	2,260	1,820	320	150	14·1	17·5	6·6	8·2
Broadcast	610	2,800	2,240	565	155	20·1	25·2	5·5	6·9

FLAX, SEEDED AT DIFFERENT DATES

Variety, Riga Blue

When seeded	Seed per acre	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
		De-seeded straw	Retted straw	Fibre	Tow	De-seeded	Retted	De-seeded	Retted
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
May 14 (Harvested, August 6)	600	3,440	2,620	620	230	18·0	23·6	6·7	8·8
May 21 (Harvested, August 9)	620	2,840	2,260	440	195	15·5	19·4	6·8	8·6
May 28 (Harvested, August 16)	640	3,140	2,500	525	210	16·7	21·0	6·6	8·4
June 5 (Harvested, August 24)	650	3,100	2,380	420	185	13·5	17·6	6·0	7·7

FLAX, HARVESTED AT DIFFERENT DATES

Variety, Riga Blue

Date harvested	Seed per acre	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
		De-seeded straw	Retted straw	Fibre	Tow	De-seeded	Retted	De-seeded	Retted
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
August 2	610	2,640	2,180	375	105	14·2	17·2	4·0	4·8
August 9	720	3,160	2,510	590	195	18·6	23·5	6·1	7·7
August 16	570	2,540	2,150	565	190	22·2	26·2	7·4	8·8
August 24	580	3,100	2,360	470	240	15·1	20·0	7·7	10·1

ONE ACRE OF FLAX GROWN FOR SEED

An acre of flax was grown for seed but the straw at the time of harvest looked as if it would yield a good quality of fibre, so it was decided to pull the crop, in order that the straw could be retted if it was thought advisable. Accordingly, in the table giving the cost of production, the charges made for binding are based on what it would have cost had this been done. The machinery cost is also added. (In the cost of the flax grown for fibre a charge is made covering the cost of pulling and also covering the full machinery cost.)

The land on which this crop was grown was in corn in 1925, having been manured at the rate of 20 tons per acre. The seeding was done June 5, the area being late due to a damp soil. The harvesting was done September 1,

after the seed had matured. The variety grown was J. W. Stewart, which is also used extensively in Ireland for fibre purposes. The primary object was to find out whether seed for seeding purposes could be successfully grown here for export. At the time of seeding the area was seeded with 8 pounds of timothy, 8 pounds of red clover, and 2 pounds of alsike clover per acre. The stand of clover was excellent. The flax was seeded at the rate of 50 pounds per acre, much thinner than is practised when seeding for fibre production. The results of this test are given below.

COST OF ONE ACRE OF FLAX GROWN FOR SEED

Variety, J.W.S. Seeded, June 5; pulled, Sept. 1; threshed, Sept. 14.

Rental of land	$3 00
Share of manure, 30 per cent of 15 tons at $2	9 00
Ploughing in fall, 6 hours at 60 cents	3 60
Discing with tractor, ¾ hours at $1	75
Cultivating, 1 hour at 50 cents	50
Seed, 50 pounds at 5 cents	2 50
Seeding, 1 hour at 50 cents	50
Smoothing, 1 hour at 50 cents	50
Cutting, 2 hours at 50 cents	1 00
Twine, 3 pounds at 18 cents	54
Stooking, 1½ hours at 30 cents	45
Deseeding: men, 13 hours at 25 cents, $3.25; team, 4 hours at 50 cents, $2; gasoline and oil, 80 cents	6 05
Use of machinery	2 85
Total cost for one acre	$31 24

Product from one acre: seed, 612 lb.
Cost of one pound of seed, 5.1 cents; of one bushel (56 lb.), $2.85

COST OF ONE ACRE OF FLAX GROWN FOR SEED AND FIBRE

Variety, J.W.S. Seeded, June 5; pulled, Sept. 1; threshed, Sept. 14.

Rental of land	$ 3 00
Share of manure, 30 per cent of 15 tons at $2	9 00
Ploughing in fall, 6 hours at 60 cents	3 60
Discing with tractor, ¾ hours at $1	75
Cultivating, 1 hour at 50 cents	50
Seeding, 1 hour at 50 cents; smoothing, 1 hour at 50 cents	1 00
Seed, 50 pounds at 5 cents	2 50
Pulling, 34 hours at 25 cents	8 50
Tying and stooking, 24 hours at 25 cents	6 00
Deseeding: men, 13 hours at 25 cents, $3.25; team, 5 hours at 50 cents, $2.50; gasoline and oil, 80 cents	6 55
Spreading for retting, 35 hours at 25 cents	8 75
Picking up and tying, 19 hours at 25 cents	4 75
Hauling to shed and storing, 2 hours at 50 cents	1 00
Breaking, 60 hours at 25 cents	15 00
Scutching and cleaning tow, 89 hours at 30 cents	26 70
Use of machinery, $7; gasoline, 16 gallons at 30 cents, $4.80; oil, 2 gallons at $1, $2	13 80
Total cost per acre	$111 40

Product from one acre:

Fibre	454 lb.
Tow	162 lb.
Seed	612 lb.
Weight of retted straw	2,330 lb.
Weight of broken straw	1,431 lb.
Weight of fibre	454 lb.
Weight of tow	162 lb.
Weight of fibre from 100 lb. retted straw	19.4 lb.
Weight of tow from 100 lb. retted straw	6.9 lb.

FERTILIZER EXPERIMENTS WITH FLAX

Tests were again carried on this year using different fertilizing materials on flax grown for fibre. The results given are the average of three plots of one-sixtieth acre each located at different points in the area. The presence of weeds in the soil is a factor of considerable consequence in such tests, for the reason

that readily available fertilizers promote active weed growth, which in turn acts adversely on the flax crop. It is apparent that flax should follow a hoed crop in which weed growth has been controlled, the residue of plant food left from such a crop usually being sufficient to give a good fibre crop.

The field on which fertilizers were used with flax this year was in turnips in 1925, having been given a uniform application of commercial fertilizer for the turnip crop and kept reasonably free from weeds.

There was a noticeable increase in weed growth on the plots where nitrate of soda in large amounts was used, and this materially interfered with the proper development of the flax. If fertilizers are used it is evident that moderate amounts only should be applied, and from tests made it would seem that 100 to 150 pounds of nitrogenous fertilizers, 300 pounds of acid phosphate, and 50 pounds of muriate of potash should supply the requirements of the flax plant on soils in a fair state of fertility. On soils where a hoed crop, with fertilizers, has previously been grown, no application of fertilizer is necessary for the flax crop.

FLAX, FERTILIZING EXPERIMENT

How fertilized, per acre	Seed per acre	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
		De-seeded straw	Retted straw	Fibre	Tow	De-seeded	Retted	De-seeded	Retted
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Nitrate of soda, 100 lb.	540	2,800	2,200	400	285	14·3	18·2	10·1	12·9
Nitrate of soda, 200 lb.	585	3,280	2,390	425	350	13·0	17·7	10·6	14·6
Nitrate of soda, 300 lb.	600	3,280	2,530	425	325	13·0	16·7	9·9	12·8
Nitrate of soda, 400 lb.	590	3,240	2,440	420	355	12·9	17·2	10·9	10·4
Nitrate of soda, 200 lb.; acid phosphate, 500 lb.	500	3,160	2,290	380	290	12·0	16·6	9·1	12·6
Nitrate of soda, 200 lb., acid phosphate, 500 lb.; muriate of potash, 100 lb.	530	3,040	2,300	375	380	12·3	16·3	12·5	16·5
Muriate of potash, 100 lb.	590	2,360	2,090	390	290	16·5	18·6	12·2	13·8
Acid phosphate, 500 lb.	450	2,240	1,660	320	220	14·2	19·2	9·8	13·2
Cyanamid, 50 lb. (1); acid phosphate, 500 lb.; muriate of potash, 100 lb.	380	1,720	1,460	300	185	17·4	20·5	10·7	12·6
Cyanamid, 150 lb. (1); acid phosphate, 500 lb.; muriate of potash, 100 lb.	440	2,020	1,580	315	200	15·6	20·0	9·9	12·6
Cyanamid, 250 lb. (1); acid phosphate, 500 lb.; muriate of potash, 100 lb.	500	2,320	1,920	340	205	14·6	17·7	8·8	10·6
Cyanamid, 50 lb. (2); acid phosphate, 500 lb., muriate of potash, 100 lb.	390	2,160	1,630	340	195	15·7	20·8	9·0	11·9
Cyanamid, 150 lb. (2); acid phosphate, 500 lb.; muriate of potash, 100 lb.	435	2,520	1,890	345	240	13·6	18·2	9·5	12·7
Cyanamid, 250 lb. (2); acid phosphate, 500 lb.; muriate of potash, 100 lb.	450	2,700	2,060	400	255	14·8	19·4	9·4	12·3
Cyanamid, 150 lb. (2)	590	2,700	2,180	445	220	16·4	20·4	8·1	10·0
Cyanamid, 150 lb. (3)	570	2,880	2,280	450	330	15·6	19·7	11·4	14·4
Acid phosphate, 500 lb.; muriate of potash, 100 lb	590	2,120	1,720	330	190	15·5	19·1	9·0	11·0
Check, no fertilizer	585	2,340	2,072	416	233	17·7	20·0	10·0	11·2

NOTE: (1) applied 5 days before seeding.
(2) applied 10 days before seeding.
(3) applied when seeding.

HEMP FOR FIBRE

The land on which the hemp was grown had been in corn the previous year, having been manured at the rate of 15 tons per acre. The soil was fairly heavy, and because of the wet spring dried out slowly and could not be worked for seeding until June 10. The soil unfortunately was badly infested with wild radish (*Raphanus Raphanistrum*) or kale, as it is sometimes called locally. The thought was that a thorough working at such a late date would eliminate this weed sufficiently to allow the hemp to overcome it, but this did not happen, especially where acid phosphate was used. This fertilizer pushed the growth of this weed, and the hemp was smothered or so checked that the crop was practically worthless. The results as given are therefore of little value. If this crop can get a start over weeds that may be present it will suppress the growth of the weeds. The weather this season, however, seemed to favour the weeds, and they came on so rapidly that the hemp plant was suppressed and was not able to overcome them, except on particular areas where apparently the wild radish was not so abundant.

HEMP, TEST OF VARIETIES

Variety	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
	Before breaking	After breaking	Fibre	Tow	Before breaking	After breaking	Before breaking	After breaking
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Russian	210	140	25	20	11·9	18·0	9·5	14·3
French	1,440	730	100	55	7·0	13·7	3·8	7·5
Kentucky	1,900	950	125	60	6·5	13·1	3·1	6·3

HEMP, DIFFERENT RATES OF SEEDING

Seed used, pounds per acre	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
	Before breaking	After breaking	Fibre	Tow	Before breaking	After breaking	Before breaking	After breaking
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
40	1,420	570	105	60	7·4	18·4	4·2	10·5
50	1,220	620	105	70	8·6	16·9	5·7	11·6
60	2,020	920	185	90	9·1	20·1	4·4	9·7

HEMP, DIFFERENT METHODS OF SEEDING

How seeded	Yield per acre				Average yield of fibre from 100 lb. straw		Average yield of tow from 100 lb. straw	
	Before breaking	After breaking	Fibre	Tow	Before breaking	After breaking	Before breaking	After breaking
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Broadcast	1,700	710	160	100	9·4	22·5	5·8	14·0
Drills, 7" apart	3,360	1,660	425	135	12·6	25·6	4·0	8·1

HEMP FERTILIZING EXPERIMENT, YIELDS PER ACRE

How fertilized, pounds per acre	Before breaking	After breaking	Fibre	Tow
	lb.	lb.	lb.	lb.
Nitrate of soda, 100	1,480	640	120	80
Nitrate of soda, 200	1,540	710	145	50
Nitrate of soda, 300	1,960	820	180	105
Nitrate of soda, 400	2,500	1,050	275	120
Acid phosphate, 500	610	260	35	25
Nitrate of soda, 200; acid phosphate, 500	1,400	630	110	70
Nitrate of soda, 200; acid phosphate, 500; muriate of potash, 100	1,840	810	150	95
Muriate of potash, 100	1,420	670	105	70
Cyanamid, 150 (1)	2,440	930	275	120
Cyanamid, 150 (1); acid phosphate, 500; muriate of potash, 100	2,340	1,100	265	105
Cyanamid, 250 (1); acid phosphate, 500; muriate of potash, 100	2,120	880	195	90
Cyanamid, 150 (2)	1,577	747	145	70
Cyanamid, 150 (2); acid phosphate, 500; muriate of potash, 100	2,080	1,080	245	85
Cyanamid, 250 (2); acid phosphate, 500; muriate of potash, 100	2,300	990	260	110
Check, not fertilized	1,680	802	138	71

NOTE:—(1) Applied when seeding.
(2) Applied 5 days before seeding.

OTTAWA: Printed by F. A. ACLAND, Printer to the King's Most Excellent Majesty, 1928.