DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

EXPERIMENTAL FARM
AGASSIZ, B.C.

REPORT OF THE SUPERINTENDENT

W. H. HICKS, B.S.A.

FOR THE YEAR 1926

Doune Lodge Bell Heather—43611. First-prize brood mare and reserve grand champion at New Westminster exhibition.

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TABLE OF CONTENTS

DOMINION EXPERIMENTAL FARM, AGASSIZ, B.C.

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SEASONAL NOTES

The year 1926 was one of the earliest and driest on record. The total precipitation of 51.57 inches is the lowest since 1908 and is almost 20 inches short of the average for the preceding fifteen years. It is interesting to note that although the precipitation for the year was almost 10 inches short of 1925, for the six months April to September the precipitation was 17.32 for 1926, as compared to 10.94 inches for the preceding year. The shortage occurred during the winter, which was unusually mild, bright, and free from winds and cold, March being a particularly dry and delightful month with only 1.98 inches precipitation, the lowest rainfall ever recorded for that month at Agassiz. The lowest temperature recorded during the winter of 1925-26 was 23 degrees on January 13. No frost was recorded between March 7 and October 16 and no cold weather till December 11, when a characteristic wind arose and the temperature dropped to 12 degrees December 14.

Owing to the mild open winter some ploughing was done in February and considerable work was accomplished on the land in the following month. Some of the hardy flowers bloomed outside all winter and, early in March due to the absence of winter killing, the clovers and grasses in pastures and meadows made such rapid growth that siloing clover was commenced May 25. The crop was one of the earliest and heaviest ever harvested. The pasture fields were ready for grazing earlier than usual and carried more stock up to midsummer. Roots were planted under favourable conditions and although they suffered from drought in the summer they made a remarkable recovery in the late autumn and yielded well. The corn was planted just previous to a cool wet period in May, which retarded growth so much that even with the suitable weather during the summer the yield was only average. Cereals were sown early. The heavy rainfall in May supplied sufficient moisture to last through to ripening time and an excellent crop of grain and straw was threshed August 4 without any discoloration from bad weather.

Early potatoes were harvested May 18 and ripe tomatoes as late as November 12.

METEOROLOGICAL RECORDS, AGASSIZ, B.C. 1926

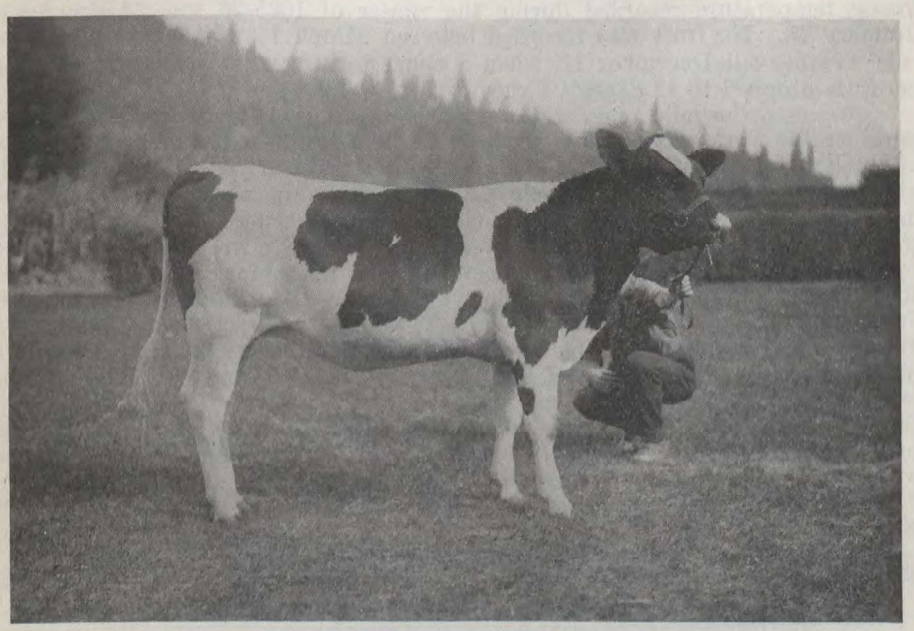
—	Temperature F°				Precipitation				Sunshine	
	Maximum	Minimum	Mean	Mean five-years average 1922-1926	Rain	Snow	Total	Five-years average 1922-1926	Hours	Five-years average 1922-1926
	F°	F°	F°	F°	ins.	ins.	ins.	ins.	hrs.	hrs.
January	49	23	38·80	35·99	5·93	0·50	5·98	9·46	62·9	45·5
February	58	32	42·23	38·50	5·24	.....	5·24	7·59	57·5	58·2
March	74	32	50·39	43·87	1·98	.....	1·98	4·57	150·7	112·5
April	85	35	55·56	50·62	3·54	.....	3·54	3·73	179·9	129·6
May	90	40	55·73	56·70	6·62	.....	6·62	4·66	136·5	170·8
June	91	45	62·61	61·46	0·92	.....	0·92	1·61	208·0	188·0
July	95	43	66·03	65·19	0·21	.....	0·21	1·05	222·3	210·3
August	88	44	64·62	64·14	3·13	.....	3·13	2·10	135·4	171·2
September	84	37	57·28	59·07	2·90	.....	2·90	3·54	171·0	155·0
October	70	36	53·95	52·11	6·54	.....	6·54	6·62	96·8	105·1
November	64	30	46·08	43·27	4·99	.....	4·99	6·03	53·6	71·2
December	56	12	36·05	35·84	6·42	31	9·52	10·56	27·6	39·0
Total	.....	.....	52·44	50·55	48·42	31·50	51·57	61·52	1,502·2	1,456·4

ANIMAL HUSBANDRY

DAIRY CATTLE

On December 31, 1926, the dairy herd numbered seventy-two head of pure-head Holstein-Friesian cattle: two mature bulls, one yearling, and two bull calves, thirty-one mature cows, seven of these being over eleven years old, four three-year-olds, seven two-year-olds, eight yearlings and seventeen heifer calves. Early in the year the two-year bull Agassiz Sir Canary Faforit was sold to head the herd at the Kamloops Indian Industrial School, while during the year ten bull calves were sold for breeding purposes and eight were vealed. Four cows and four heifers were culled and disposed of for beef and two young cows were sold for breeding.

The herd has continued fully accredited for another year, having successfully filled all requirements.



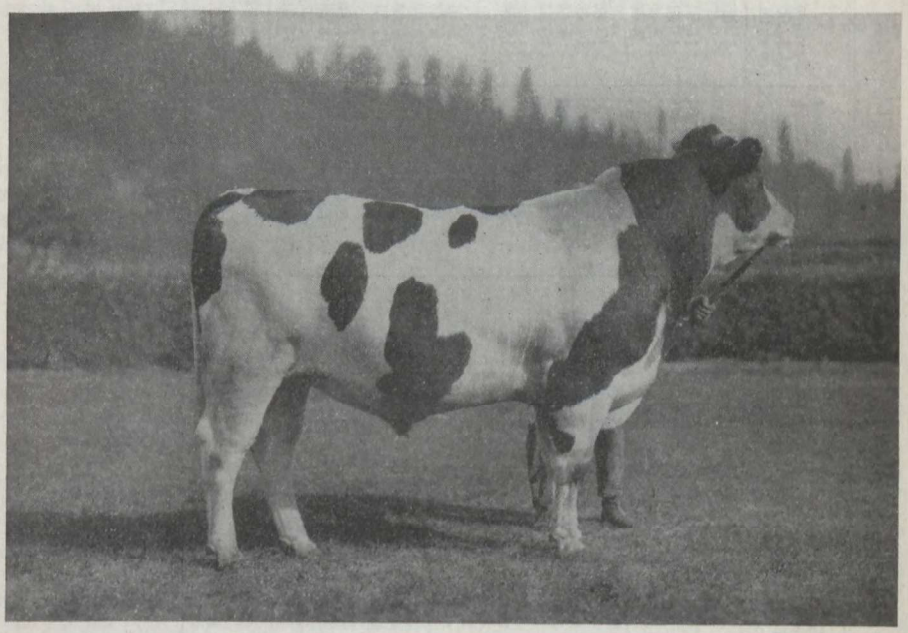
Agassiz Old Pietje Re-Echo 141358; sire, Agassiz Champion Re-Echo 54809; dam, Pietje Priscilla Mechthilde 14123. This choice heifer represents the very best of the females bred on the Agassiz Farm.

EXHIBITION WORK

Sixteen head of Holsteins were exhibited at Vancouver Exhibition in August but did not do as well as usual. The junior herd sire won the junior yearling class, while the senior herd sire was placed second in the mature bull class. The dry two-year-old heifer won her class and was reserve senior champion. Other placings were: first, in the 450 pounds of fat class; first in a class of nineteen heifer calves; and second for young herd, calf herd, produce of dam and produce of dam with a record. At New Westminster Exhibition in September a good showing was made with nine animals. Rajah was grand champion bull, Agassiz Priscilla Korndyke was reserve grand champion cow and along with a sister won the produce of dam with a record class. First on milking two-year-old, second on senior calf, and second on exhibitor's herd were other positions won.

HERD RECORDS—PROJECT A. 360 AND A. 56

The following list shows the performance of all cows finishing a lactation period during the year 1926. In this table feeds are charged at market value. Butter-fat is computed at 50 cents per pound and skim-milk at 25 cents per one hundred pounds. The forty-two cows freshening during the year gave birth to forty-five calves, three having twins. The average milk production of the twenty-three cows that finished lactation during the year was 13,573 pounds and the average fat production was 463.49 pounds. This is the highest average production in the history of the herd.



Sir Bess Ormsby Fobes 40th. Junior herd sire.

From the figures in the table it is found that the average feed cost to produce one hundred pounds of milk was $1.09 and to produce a pound of butter-fat was just over 32 cents.

MILKING RECORD—COWS WHICH HAVE COMPLETED LACTATION PERIOD DURING 1926

Cow No.	Number of Period	Number of days in Lactation Period	Total amount of Milk produced	Percentage of fat in milk	Total amount of fat in milk	Amount of Butter (80%) produced	Amount of Meal consumed	Amount of roots and silage consumed	Amount of Hay consumed	Amount of Beet Pulp consumed	Pasture at $2.00 per mth.	Total Cost of Feed	Total Value of Product	Profit over Feed
			lb.		lb.	lb.	lb.	lb.	lb.	lb.	$ cts.	$ cts.	$ cts.	$ cts.
93	8	305	14,521	4·13	600·0	750·0	2,793	13,970	551	504	11 31	124 67	332 67	208 00
81	8	365	15,621	3·66	571·0	713·75	3,027	15,570	585	478	17 61	134 06	320 64	186 58
145	4	365	23,646	3·46	819·0	1,023·75	4,710	22,666	3,497	.....	2 66	278 80	462 70	183 90
513	4	487	17,494	3·4	594·79	743·48	4,676	27,790	887	.....	6 66	175 45	335 75	161 30
157	2	365	16,282	3·75	610·0	762·5	3,468	19,875	2,690	.....	.....	200 93	341 63	140 70
95	6	329	13,754	3·22	442·88	553·6	2,866	17,280	695	.....	10 66	113 71	252 38	138 67
195	1	305	13,799	3·55	490·0	612·5	2,789	12,810	1,037	1,184	6 66	138 05	276 05	138 00
202	1	305	12,188	3·76	458·0	572·5	2,494	12,020	542	857	9 66	119 05	256 42	137 37
142	5	426	18,868	3·16	596·0	745·0	4,825	26,750	1,660	685	10 44	208 74	340 45	131 71
135	4	453	17,064	3·24	552·87	691·0	5,004	34,315	1,517	.....	.....	192 38	314 83	122 45
176	2	287	12,934	2·99	388·0	485·0	2,443	12,565	1,140	252	18 66	112 71	223 10	110 30
192	1	305	13,833	3·49	483·0	603·75	3,143	12,991	2,430	1,254	.....	164 18	272 62	108 44
189	1	365	15,800	3·53	558·0	697·5	4,044	17,240	1,812	1,620	.....	207 09	314 55	107 46
70	9	340	13,403	3·39	454·0	567·5	3,406	20,075	1,405	445	5 01	152 25	257 16	104 91
77	8	344	14,090	3·0	422·7	528·37	3,490	22,900	735	.....	9 66	141 00	243 05	102 05
143	5	413	14,567	3·0	437·0	546·25	3,596	24,030	860	.....	10 66	149 96	251 27	101 31
154	5	299	12,502	3·24	405·0	506·25	3,185	21,475	735	.....	8 66	130 59	230 62	100 03
188	2	303	9,726	3·36	326·8	408·5	2,305	15,065	653	.....	11 31	100 23	185 28	85 05
169	2	325	9,288	3·47	322·29	402·86	2,298	23,545	872	.....	.....	125 02	182 03	57 01
173	2	308	8,845	3·52	311·34	389·17	3,045	21,415	890	.....	1 00	122 61	175 57	52 96
147	4	234	7,919	3·6	285·08	356·35	2,388	17,030	885	90	8 34	109 40	160 35	50 95
127	5	356	9,844	3·17	312·05	390·0	3,247	25,235	820	.....	.....	134 39	178 17	43 78
139	6	359	6,182	3·57	220·69	275·86	1,713	15,120	730	.....	10 31	88 98	124 24	35 26
Average	.....	345	13,572·6	3·41	463·49	579·36	3,359	19,771	1,201	320	6 92	148 88	262 28	113 40
Totals	.....	7,943	312,170·0	.....	10,660·49	13,325·61	74,955	454,732	27,628	7,369	159 27	3,424 25	6,032 53	2,608 19

LIST OF RECORDS COMPLETED BY COWS IN THE CANADIAN RECORD OF PERFORMANCE DURING THE YEAR 1926
PROJECT A. 58

Name	Age at start of test		Month starting test	Duration of test	Amount of milk	Amount of fat	Percentage of fat
	years	days		days	lb.	lb.	
Agassiz Pietje Inka Sylvia	6	—	April 1925	365	23,646	819	3·46
Agassiz Aurora Faforit	5	—	Jan. 1925	365	16,282	610	3·75
Agassiz Inka Lina De Kol	2	248	Jan. 1925	365	15,800	558	3·53
Agassiz Walula Canary Inka	2	236	April 1925	305	13,833	483	3·49
Agassiz Mercena De Kol	2	364	Dec. 1925	305	13,799	490	3·55
Agassiz Aurora Sylvia De Kol	2	208	Dec. 1925	305	12,188	458	3·76
Agassiz Lulu Korndyke	10	—	Dec. 1925	365	15,621	571	*3·66
Agassiz Faforit Posch	9	—	Jan. 1926	305	14,521	600	*4·13

MANGELS VERSUS TURNIPS—PROJECT A. 2

This experiment was conducted during February and March. Each cow was fed 12 pounds of grain per day throughout the trial, the mixture being three parts crushed oats, three parts bran, one part oil meal and one part corn meal, costing 1.8875 cents per pound. Each cow also received 5 pounds of alfalfa, 60 pounds of ensilage, and 20 pounds of such roots as were being fed. The alfalfa was valued at $25 per ton and the ensilage and roots each at $5 per ton.

MANGELS VERSUS TURNIPS

—		Mangels	Turnips
Number of cows on trial		10	10
Total milk produced by all cows	lb.	2,496·1	2,545·0
Number of days on test	days	7	7
Amount of milk produced per cow per day	lb.	35·66	36·36
Per cent of fat in milk produced	"	3·184	3·144
Total fat produced	"	79·48	80·01
Amount of fat produced per cow per day	"	1·135	1·143
Grain consumed per 100 pounds milk produced	"	33·65	33·
Grain consumed per pounds 100 fat produced	"	10·568	10·498
Silage consumed per 100 lb. milk produced	"	168·26	165·03
Silage consumed per 100 pound fat produced	"	52·84	52·48
Mangels consumed per 100 lb. milk produced	"	56·08	.....
Mangels consumed per pound fat produced	"	17·61	.....
Turnips consumed per 100 lb. milk produced	"	.....	55·01
Turnips consumed per pound fat produced	"	.....	17·50
Alfalfa hay consumed per 100 lb. milk produced	"	14·022	13·752
Alfalfa hay consumed per pound fat produced	"	4·403	4·374
Total cost of feed	$	34·23	34·23
Feed cost to produce 100 lb. of milk	$	1·371	1·344
Feed cost to produce 1 lb. butter fat	cts.	43·067	42·782
Feed cost to produce 1 lb. butter	cts.	34·452	34·221

The results obtained are slightly in favour of turnips. The cost of one hundred pounds of milk was 2.7 cents less, and for a pound of butter slightly under a quarter of a cent less when turnips were fed.

PROGRESS IN BREEDING HOLSTEIN CATTLE—PROJECT A. 502

The breeding work with Holstein cattle was continued throughout the year with satisfactory results. Five heifer calves were added to the Pietje family and two cows were sold, making the total on hand to date twenty-four. To this family goes the honour of making the highest record of the year, i.e., 23,646

pounds of milk and 1,023.75 pounds of butter. This cow Agassiz Pietje Inka Sylvia is thus the fifth in the herd to produce over twenty thousand pounds of milk in a year, only two others holding higher records. Agassiz Priscilla Korndyke, a member of this family, made the best showing at the exhibitions, winning reserve grand championship at the Provincial Show.

The Aurora family numbers the same as last reported, i.e., eleven. Two cows and a sterile heifer were disposed of, while three heifer calves were born. Two two-year-old members of this group made creditable 305 day R.O.P. records.

The Lina family was increased from eleven to fourteen head, five calves being raised and two heifers sold. Agassiz Lulu Korndyke as a ten-year-old cow made a good record, 15,621 pounds of milk and 713.75 pounds of butter in a year on twice a day milking.

The Lady Lyons family is represented by the same members as last year, there having been no additions or losses.

Agassiz Walula De Kol, a member of the Walula family, was reserve senior champion at Vancouver Exhibition. This family was increased to seven by the addition of two calves.

Agassiz Faforit Posch, the oldest member of the Faforit family, produced 600 pounds of fat in 305 days on twice a day milking. This is an excellent record following the 880 pound fat production in 305 days last year and proves her value as a producer and reproducer. Two females were sold from this family and two calves reared, leaving nine in the family.

HERD SIRES

The same three sires are being used as were on hand last year, i.e., Tsussie Rajah 28017, Agassiz Champion Re-Echo 54809, and Sir Bess Ormsby Fobes 40th 64569. Rajah is now ten years old, is still in active service and has five nice daughters in the herd. Champion has eight daughters but can only be used to a limited extent as he is closely bred along the lines of many of the females. The two first calves by the young Fobes bull have arrived and give great promise. The junior sire has developed into a big bull and it is gratifying to note that a paternal sister was grand champion at the national dairy show and All-American four-year-old for the year, she having a twenty thousand two-year-old record.

CONTAGIOUS ABORTION—PROJECT A. 94

Although the percentage of abortions during 1926 was as high as the preceding year, at the time of writing there is not the same difficulty with sterility as usual. At the close of the year there are thirty cows pregnant, one doubtful, eleven fresh cows not bred, and three bad cases.

Agassiz Segis May Echo aborted March 24, Queen De Kol had a healthy calf March 31, and the two-year-old heifer Faforit Posch De Kol aborted August 18. These have each had considerable ovary trouble since and so far have refused to breed, although treatment by a specialist has continued as previously. The other cases have responded to treatment which is satisfactory, particularly in the cases of No. 157 and No. 176.

Of the forty-two cows calving during 1926 eight aborted, or nineteen per cent. This is the largest number of cows freshening in a year since 1920. Three of the aborters lost their calves at eight months, one at six, two at four, one at three, and one at two months. All the non-aborting cows, with one exception, carried their calves over nine months, fifteen of them going over nine months and nine days. The one exception was the case of twins where the cow and calves were all normal. The absence of retained afterbirths was particularly noticeable during the year.

The following table shows the abortions during the past ten years:—

SUMMARY OF ABORTIONS

Year	Number of cattle in herd	Number of cows freshened	Number of cows aborted	Per cent aborted	Average milk production per cow
					lb.
1917	80	..	1	....	8,372
1918	80	..	2	....	9,042
1919	72	..	3	....	10,199
1920	63	43	13	30·2	11,134
1921	54	28	12	42·9	9,996
1922	64	26	7	26·9	10,370
1923	74	23	4	17·4	12,371
1924	68	32	8	25·0	13,480
1925	67	28	5	17·9	12,543
1926	72	42	8	19·0	13,573

Abortion started gradually, reached the peak in five years, then decreased for two years, then upward for a year and then down again for two years. This action tends to disprove the theory of self-immunization, particularly when only one of the eight aborters in 1926 was a heifer and five of the others had previously aborted, two of them four times. The following history of Pietje Priscilla Mechthilde born July, 1909, and now over seventeen years old is interesting evidence against the self-immunization theory.

September 3, 1913—healthy calf.
December 2, 1914—healthy calf.
February 9, 1916—healthy calf.
February 24, 1917—healthy calf.
October 29, 1917—aborted.
November 6, 1918—healthy calf.
July 7, 1919—aborted.
July 18, 1920—healthy calf.
July 31, 1921—healthy calf.
August 13, 1922—aborted.
September 8, 1924—healthy calf.
September 30, 1925—healthy calf.
July 22, 1926—aborted.
December 31, 1926—pregnant.

DAIRY WORK

CHEESE-MAKING

During the spring and early summer of 1926 English Stilton was made regularly. An interesting point was brought out in connection with the cheese made at that time which had not previously been observed. During this period the cattle had an abundance of good pasture and the milk produced resembled that of the Stilton-making districts in England more closely than has hitherto been the case. As the cheese began to mature it was observed that the characteristic blue vein developed more freely than usual, while the flavour and texture were both good. This would seem to bear out the contention that the best milk for English Stilton and some other varieties of cheese, is that produced on good pasture. It has, however, the disadvantage, observable in this case, that the yield of cheese is usually lower when the milk is from cows on pasture.

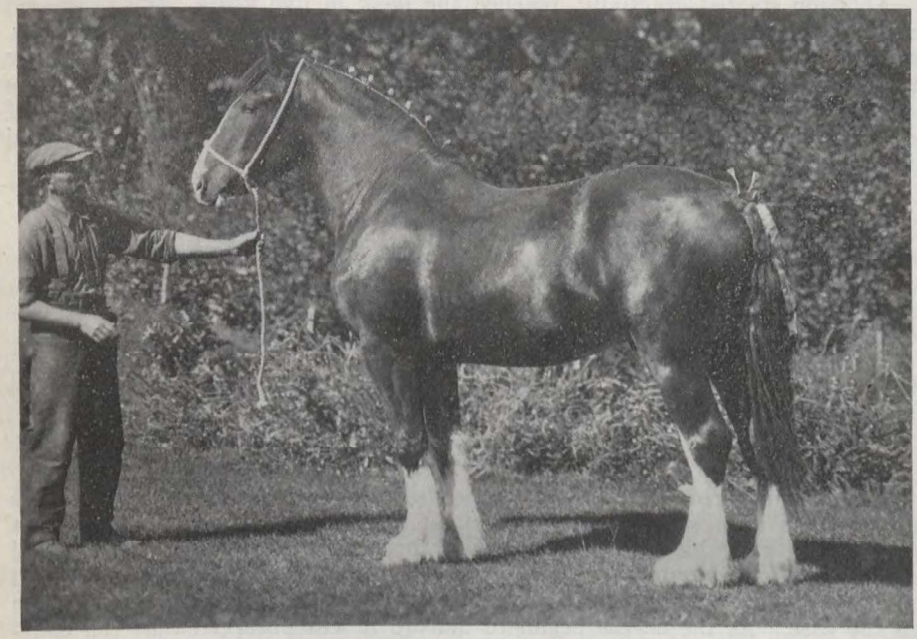
Cream cheese continued to be made regularly and maintained its popularity. Both these varieties sell at a remunerative price which remains the same at all seasons of the year. With the exception of the foregoing, cheese-making has been curtailed this year as there was not much milk available for this purpose.

Milk-testing has consisted of the regular composite test for each cow in the herd and testing of samples for such farmers as cared to submit them.

The number of those availing themselves of this service seems to be increasing. Corrosive sublimate has been substituted for formaldehyde as a preservative for composite samples with satisfactory results, the readings obtained being clearer and the keeping qualities better.

HORSES

The horses on December 31, 1926, totalled nineteen head, all pure-bred Clydesdale except two, and all bred on the Farm except four foundation mares and the pony. No horses were sold during the year. Madge reared her sixth foal in as many years and did 510 hours work in the spring on a feed cost of $60.38. Heather reared an early foal, was fitted for showing but did not work, the cost for feed being $80.49. Heather, Madge and Bell were bred but only the two latter are in foal.



Glen—Grand champion draught gelding at the New Westminster exhibition.

The average feed cost of a year of the seven horses doing most of the work was $100.75 for an average of 2,181 hours work accomplished, or 4.62 cents per hour. The average feed cost of maintaining three two-year-olds and one yearling was $51.32.

Five horses were shown at New Westminster Exhibition and won five first prizes, two reserve championships and one grand championship, as follows:—

Heather—First prize brood mare and reserve champion.
Heather Bell—First prize foal.
Jerry—First prize agricultural gelding, three-year-old.
Bob—First prize heavy draft gelding, three-year-old, and reserve champion.
Glen—First prize heavy draft gelding, two-year-old, and grand champion.

HORSE-RECORDS OF FEED AND LABOUR FROM JANUARY 1, 1926 TO DECEMBER 31, 1926

Name	Date of Birth	Oats consumed	Bran consumed	Hay consumed	Roots consumed	Pasture at $2.00 per month	Total cost of feed	Hours labour	Weight Dec. 31, 1924	Weight Dec. 31, 1925
		lb.	lb.	lb.	lb.	$ cts.	$ cts.		lb.	lb.
Scotty	May, 1920	3,584	364	5,796	1,050	.....	108 74	2,695	1,780	1,750
Bell	June 1916	3,346	399	5,656	1,050	.....	102 62	2,490	1,725	1,850
Mike	April 1922	3,276	364	5,824	1,050	.....	104 03	2,415	1,545	1,585
Prince	May 1922	1,836	341	2,744	707	12 00	70 61	640	1,460	1,640
Diana	May 1918	3,248	364	5,824	1,085	.....	103 64	2,530	1,800	1,646
Heather	June 1918	1,960	343	3,696	917	14 00	80 49	.....	1,880	1,830
Madge	June 1915	1,428	280	2,618	658	12 00	60 38	510	1,560	1,675
Bucklyvie	June 1921	3,320	364	5,180	1,050	2 00	101 88	2,395	1,625	1,570
Nellie	April 1923	2,920	364	4,858	927	2 00	93 45	1,740	1,530	1,585
Bob	May 1923	2,604	385	4,606	945	6 00	90 83	689	1,600	1,770
Jerry	April 1923	2,646	378	4,562	861	6 00	90 76	1,005	1,480	1,690
Pat	May 1923	1,442	266	2,296	651	10 00	56 61	200	1,325	1,480
Topline Bute	April 1924	1,141	232	1,722	336	14 00	49 65	.....	1,100	1,450
Glen	April 1924	1,435	295	2,324	168	14 00	59 84	.....	1,245	1,550
Mac	April 1924	1,183	232	1,750	168	14 00	50 67	.....	1,235	1,600
Harry	May 1925	1,043	232	1,330	336	14 00	45 13	.....	.....	1,260

SHEEP

The sheep on hand December 31, 1926, totalled seventy-seven head; consisting of one ram, forty-one ewes, sixteen shearling ewes and nineteen spring lambs, all pure-bred Dorsets. Of the thirty-nine ewes on hand January, 1925, one was not in lamb and the thirty-eight gave birth to sixty-one lambs and raised fifty-seven of them, or exactly 150 per cent. The official ram-grader inspected three rams on hand in September; the two lambs graded three star and the shearling two star.

EASTER LAMB PRODUCTION—PROJECT A. 408

From the group of ewes that lambed in January twenty lambs were sold for the Easter market. These lambs weighing 1,200 pounds, an average of sixty, sold for 17 cents per pound or $10.20 per lamb. This is slightly less than the average price received during the previous years.

VALUE OF SILAGE FOR PREGNANT EWES—PROJECT A. 559

On December 5, 1925, the thirty-eight pregnant ewes on hand were divided in two equal groups. Lot 1 was given the run of fields and when the weather was unsuitable for pasture the ewes were fed a small amount of alfalfa hay along with some turnips and mangels. They were given a half pound of grain per ewe per day composed of two parts crushed oats and one part bran. Lot 2 was kept confined to a bare paddock, fed the same grain as Lot 1, a little alfalfa and plenty of silage, starting with 5 pounds per ewe per day and increasing to double that in five weeks. They consumed very little hay when eating 9 or 10 pounds of silage.

The lambing results were just about as uniform in the two groups as it was possible to be. The nineteen ewes in Lot 1 gave birth to thirty lambs, three of which died, being weak triplets. The same number of ewes in the ensilage-fed Lot gave birth to thirty-one lambs one of which was smothered. The lambs were equally robust and vigorous so that ensilage proved a safe feed for in-lamb ewes.

SWINE

The swine on hand December 31, 1926 totalled fourteen head all pure-bred Yorkshires; consisting of the imported boar Rogerfield Masterpeace, twelve pure-bred sows due to farrow in late February and early March, and one market hog. During the year sixty-eight market hogs, fifty-four weaners, two young registered sows and five boars were sold. Owing to the difficulty in getting the sows bred, all sows farrowed so late that it was deemed advisable not to breed for second litters. Consequently only one sow of the twelve had two litters. From the thirteen litters 103 pigs were raised or an average of eight.

MINERAL VERSUS COD-LIVER OIL—PROJECT A. 496

In January twenty uniform pigs were divided into five equal groups to be finished, with the object in view of determining the value of minerals and cod-liver oil as supplements to a grain and milk ration. The grain ration consisted of four parts shorts, two parts ground oats, and one part corn meal and cost 1.657 cents per pound. The pigs were fed what they would clean up at all times. Equal quantities of milk were given each lot. The mineral mixture was fed at the rate of 3 per cent of the grain ration and was made up of the following: ground bone meal 8 pounds; ground charcoal 5 pounds; ground rock phosphate 5 pounds; salt 3 pounds. Cod-liver oil was mixed with the feed and fed at the rate of ¼ ounce per pig per day.

PIG-FEEDING EXPERIMENT—MINERALS VERSUS COD-LIVER OIL

—		Lot 1 grain milk	Lot 2 grain, milk, cod-liver oil mineral	Lot 3 grain, milk mineral	Lot 4 grain, milk, cod-liver oil	Lot 5 grain, milk, cod-liver oil, ashes
Number of pigs in each group		4	4	4	4	4
Total weight January 20	lb.	231	225	229	230	231
Total weight April 20	"	600	755	570	765	775
Total gain in weight in 90 days	"	369	530	341	535	544
Average gain per pig per day	"	1·025	1·472	0·947	1·486	1·511
Feed Consumed						
Pounds of grain at 1·657c. per pound	lb.	1,240	1,752	1,128	1,673	1,732
Pounds of milk at 25c. per 100 lb.	"	1,925	1,925	1,925	1,925	1,925
Pounds of mineral mixture at 2·7c. per pound	"	.....	56	36	.....	.....
Ounces of cod-liver oil at 1·5c. per ounce	oz.	.....	90	.....	90	90
Total cost of feed consumed	$	25·38	36·70	24·47	33·88	34·86
Feed cost to produce one pound gain	cts.	6·878	6·924	7·1759	6·333	6·408

The results show cod-liver oil valuable as a hog feed. The three lots getting cod-liver oil made the greatest gains; Lot 5 getting ashes and oil gave the best gains. Lot 3 with mineral only, added to the milk and grain ration made very poor gains, even less than Lot 1 without a supplement. This is contrary to results obtained previously. Not only did the cod-liver-oil-fed lots make good gains but the gains were cheap, except Lot 2 which consumed so much meal that the cost of 100 pounds gain was greater than with Lot 1.

SKIM-MILK VERSUS FISH MEAL FOR MARKET HOGS—PROJECT A. 571

High-grade wholesome edible fish meal has become a popular feed for poultry in British Columbia. It is also used with considerable success for hog-feeding. In an experiment covering a period of 120 days it was compared with skim-milk as a supplement to the grain ration. Forty uniform hogs being divided into eight equal lots for this purpose. The pigs used were pure-bred

Yorkshire sows and barrows and averaged ten weeks old when started. A grain ration as follows was fed all lots for the first sixty days: one part bran, two parts ground barley, four parts shorts, four parts oats and four per cent oil meal. This ration cost 1.663 cents per pound. For the second period the ration was made a little stronger by using four parts barley and only two parts shorts, the cost being 1.733 cents per pound. The pigs were confined in small pens throughout the trial, milk was fed at from 6 to 8 pounds per pig per day and charged at 25 cents per 100 pounds, while fish meal cost $70 per ton and was fed at the rate of seven per cent of the meal ration.

SCHEDULE OF FEEDING

Lot 1—Meal ration and skim-milk throughout experiment.
Lot 2—Meal ration and seven per cent fish meal throughout experiment.
Lot 3—Meal ration and skim-milk to July 10, then replace milk with fish meal to finish.
Lot 4—Meal ration and skim-milk to July 10, then meal only to finish.
Lot 5—Meal ration and skim-milk to August 11, then replace milk with fish meal to finish.
Lot 6—Meal ration and skim-milk to August 11, then meal only to finish.
Lot 7—Meal ration and skim-milk to September 17, then replace milk with fish meal to finish.
Lot 8—Meal ration and skim-milk to September 17, then meal only to finish.

ANALYSIS OF FISH MEAL FED

	Per cent
Moisture	7.25
Protein	69.38
Fat	12.48
Ash	10.14
Phosphate of lime	7.58

SKIM-MILK VERSUS FISH MEAL

Lot	Weights						Total gain	Total cost of feed	Cost per cwt. gain
	June 21	July 10	Aug. 11	Aug. 21	Sept. 18	Final Oct. 19			
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	$ cts.	cents
Lot 1	202	314	510	589	775	907	705	43 18	612·48
" 2	205	294	473	530	753	972	767	48 13	627·51
" 3	205	323	485	551	717	960	755	49 11	650·46
" 4	200	299	390	420	641	791	591	35 82	606·09
" 5	204	312	480	533	700	990	786	50 60	643·77
" 6	207	313	498	543	610	746	539	35 92	666·42
" 7	202	307	498	571	740	912	710	46 91	660·70
" 8	205	321	505	586	745	640	640	39 63	619·22

The results secured give strong evidence in favour of fish meal as a gain producer. In each instance the fish meal-fed hogs made greater gains than those getting a similar ration, with fish meal eliminated. Comparing Lot 1 and 2; skim-milk gave the greatest growth for the first half of the period and then the fish meal gradually caught up and finished well in the lead. Comparing Lot 3 and Lot 4; each got milk to July 10 and Lot 3 with fish meal to finish gave much the better gains. Lot 4 never did well, one pig being crippled for a time was given milk for the first twenty days in September in an endeavour to bring it back to normal. Comparing Lot 5 and Lot 6; while these pens were getting milk, Lot 6 made greater gains but when the milk was discontinued they went off feed several times, and Lot 5 getting fish meal made much faster gains. The same is true of Lot 7 and Lot 8, although the final difference in weights was not so great owing to shortness of feeding period.

Although fish meal gave good results in gain production it did not show up so well when costs were considered. In each instance where fish meal was fed the costs were higher except with Lot 5. This advantage in cost in favour of the fish meal is due to the fact that Lot 6 went off feed.

Briefly the evidence in this one trial is that fish meal is valuable in producing rapid gains in market hogs but at $70 per ton is a little too expensive.

FIELD HUSBANDRY

The four-year rotation, now in existence at this farm for a period of years, was continued on the same general plan as formerly. It consists of first year, hoed crop; second year, grain seeded down; third year, hay; fourth year, pasture. (Project F. 20).

HOED CROPS

The crops grown in this section were corn and mangels. The entire area had been ploughed in the fall and well worked. In the spring barnyard manure was applied broadcast at the rate of 12 tons per acre and ploughed under. The portion devoted to mangels also received at time of seeding an application of commercial fertilizer in the proportion of one of nitrate of soda, two of superphosphate of lime and one of muriate of potash, at the rate of 500 pounds per acre.

The mangel seed was sown at the rate of 10 pounds per acre in drills set up 30 inches apart with a double mould-board plough. The varieties grown being Danish Sludstrup and Half Sugar White. The lack of moisture retarded the growth of the mangels considerably but they recovered wonderfully in the fall after some rain to such an extent that the resulting crop was up to average. The total mangel crop harvested amounted to 135 tons 1,290 pounds from six acres.

The corn was sown in rows. Owing to uncongenial wet weather immediately after sowing this crop got such a poor start as to affect final yields. The varieties grown were Golden Glow and Longfellow. From eleven acres there was a total yield of 177 tons 738 pounds harvested.

GRAIN

The grain (oats) was grown on land that had been in hoed crop the previous year. Ploughing was done in the spring. Seeding commenced on April 8 and harvesting took place during the last week in July. The grass and clover mixture used for seeding down consisted of 9 pounds red clover, 3 pounds alsike clover, 1½ pounds White Dutch clover, 3 pounds Italian rye grass and 3 pounds orchard grass, per acre. The total crop of grain (oats) harvested amounted to 39 tons 1,530 pounds from 37 acres.

HAY

An excellent crop of clover was harvested from 60 acres. The first cutting which commenced on May 25 produced 306 tons 380 pounds of clover silage and 103 tons 1,600 pounds of hay. The second cutting which commenced on July 12 yielded 59 tons 1,200 pounds of hay.

PASTURE

Owing to the fact that during the winter of 1924-25 the clover seeded down the previous spring was winter-killed the same area was seeded down again in the spring of 1925. Accordingly, the area devoted to pasture during 1926 having been seeded down only the year previous produced an excellent pasture during the entire season.

SUMMARY OF YIELDS, VALUE, AND PROFIT AND LOSS, AGASSIZ, FOUR-YEAR-ROTATION

Rotation Year	Crop	Yield per acre 1926	Value of crop 1926	Cost of Production 1926	Profit or loss per acre 1926
			$ cts.	$ cts.	$ cts.
1	Mangels	22 tons	73 00	110 65	−37 65
	Corn	16 "	106 00	70 25	35 75
2	Grain (Oats)	63 bush.	41 50	49 90	−8 40
3	Hay	3 tons	60 00	40 30	19 70
4	Pasture	.....	8 40	29 05	−20 65

COST OF PRODUCTION

The following table shows the cost prices and return values used in determining the cost of producing the various crops of the four-year rotation:—

COST PRICES

Rent including taxes	$24 00	per acre
Manure	2 00	per ton
The cost of the manure is distributed as follows: 40 per cent to the first crop of the rotation, 30 per cent to the second, 20 per cent to the third and 10 per cent to the fourth.		
Manual labour	0 27½	per hour
Teamster labour	0 30	per hour
Horse labour	0 15	per hour
Machinery	3 00	per acre
Twine	0 20	per pound
Threshing	0 04½	per bushel
Oats	0 85	per bushel
Corn	0 08	per pound
Mangel seed	0 50	per pound
Red clover	0 30	per pound
Alsike clover	0 24	per pound
White Dutch clover	0 58	per pound
Italian rye grass	0 12	per pound
Orchard grass	0 22	per pound

RETURN VALUES

Oats	$ 0 50	per bushel
Hay	20 00	per ton
Oat straw	10 00	per ton
Corn ensilage	6 65	per ton
Roots	3 35	per ton

HORTICULTURE

Horticultural work during the past season was largely a continuation of experiments started in previous years and consisted chiefly of variety tests and different cultural methods with vegetables. The year 1926 was the driest recorded here since 1908 and the seasons were approximately three weeks earlier than the average. These two factors combined tended to hasten the maturity of most crops and also to shorten the period over which mature fruit could be harvested. This was particularly noticeable in peas, nearly all pods maturing at the same time. As the garden here is not watered, those crops which require an abundance of moisture suffer to a considerable extent during dry seasons.

Flea-beetles again proved a serious menace to cruciferous crops namely cabbage, cauliflower, radish and turnip, and to a certain extent damaged potatoes and tobacco. Under the supervision of the Entomological Branch, experiments were carried out as to the best means of controlling this pest. It was found that nicotine dust, 5 ounces of liquid nicotine sulphate (containing 40 per cent nicotine) to 5 pounds of finely hydrated lime, dusted on the plants during bright sunshine, was effective in killing 90 per cent of the beetles. A bulletin on this subject is being prepared for publication by the Entomological Branch.

Cabbage root-maggots were effectively controlled with bichloride of mercury, 1 ounce dissolved in 10 gallons of water, applied at the rate of one half pint to each plant at intervals of five days from the time of setting out, making in all four or five applications to each plant.

Moles have effectively been controlled by trapping, only an occasional mound being found in the garden. This pest is capable of doing considerable damage by burrowing under raspberry and strawberry roots and vegetables, cutting off the water supply and causing the death of the plant, especially if it has been weakened by some previous cause.

Seed in small quantities was harvested from the different varieties of flowers and vegetables. A considerable difference in yield and type is usually noticeable in the same variety when seed is obtained from different sources. Seed produced on the farm here has in most cases given a higher yield than the same variety of seed obtained from an outside source.

One hundred three-pound samples of seed potatoes of different varieties were sent out to growers in the spring.

VEGETABLES

BUSH BEANS

VARIETY TEST.—Twenty varieties and strains of beans were grown. The seed was planted on April 20 and the first mature pods were ready for harvesting on July 2. All varieties matured between the 2nd and 12th of July. Jones White, a variety introduced recently by the Manitoba Agricultural College, is a bean of considerable promise, having out-yielded other varieties during the last two years. Extra Early Red Valentine and Hodson Long Pod are both good wax varieties. Of the green varieties Masterpiece has so far proved the best yielder and is of good quality. Canadian Wonder, Refugee, and Stringless Green Pod are also good.

The following table gives the average yield in pounds per 15-foot row and the dates of maturity of varieties tested. (Project H. 61):—

BEANS—TEST OF VARIETIES

Variety	Average yield in pounds	No. of years average	Date of maturity						
			1920	1921	1922	1923	1924	1925	1926
Jones White	32·3	2	.....	.....	.....	.....	.....	July 26	July 2
Masterpiece	29·6	6	July 18	.....	July 6	July 13	July 5	" 6	" 2
Hodson Long Pod	26·3	7	" 29	July 23	" 19	" 21	" 16	" 10	" 12
Extra Early Red Valentine	24·8	7	" 18	" 15	" 10	" 17	" 5	" 8	" 5
Canadian Wonder	22·9	7	" 16	" 15	" 6	" 13	" 4	" 6	" 2
Bountiful	22·1	6	" 15	" 11	" 6	" 13	" 4	.....	" 2
Refugee	20·6	6	" 25	" 25	" 19	" 24	" 20	.....	" 15
Davis White Wax	19·6	6	" 16	.....	" 5	" 11	" 3	July 6	" 5
Grennels Rustless	19·6	5	" 20	.....	" 8	" 11	" 2	.....	" 5
Plentiful French	18·0	4	" 14	.....	" 6	" 10	" 3	.....	.....
Wardwell Kidney Wax	17·8	7	" 18	July 12	" 6	" 10	" 5	July 6	July 7
Roundpod Kidney Wax	17·8	7	" 18	" 15	" 8	" 10	" 5	" 6	" 5
Pencil Pod Black Wax	17·0	5	" 20	.....	" 3	" 10	" 8	.....	" 5
Stringless Green Pod	16·9	7	" 19	July 12	" 8	" 12	" 6	July 6	" 2
Yellow Eye	16·7	5	" 16	.....	" 6	" 13	" 2	" 14	.....
Fordhook Favourite	13·8	4	" 16	.....	" 11	" 16	" 7	.....	.....
Challenge Black Wax	13·8	5	.....	.....	" 3	.....	June 27	" 3	" 2
Kentucky Wonder	11·0	3	July 28	July 26	" 19	.....	.....	.....	.....

DISTANCE APART OF PLANTING.—This experiment was started in 1923. Two varieties were grown, Round Pod Kidney Wax and Stringless Green Pod. Seed was planted two, four and six inches apart. Results to date have not been regularly uniform but the majority of tests have shown that the closer plantings give an increased yield. (Project H. 58.)

BEET

VARITIES.—Eighteen varieties and strains of beet were grown during the past season. Seed was sown on April 17 and small roots were ready for use on June 28. Results to date show the following to be the heaviest yielding varieties: Detroit Dark Red, Crimson Globe, Cardinal Globe, Eclipse, and Crosby Egyptian. (Project H. 68).

DIFFERENT DATES OF SEEDING.—This experiment was commenced in 1923 to determine the best time of planting seed. In the past season the first seed

was planted on April 23 followed at intervals of ten days until June 14. The early sowings produced the earliest roots and if allowed to remain in the ground until the fall gave the heaviest yield; but such roots become tough and woody. For best results it is recommended to make an early sowing followed by one or two later ones to assure good tender roots for fall use. (Project H. 65).

BRUSSELS SPROUTS

VARIETIES.—This vegetable does not do particularly well here as only a comparatively few buttons form and these are frequently loose and open. During the past season five varieties were grown and of these Barr Little Gem, Matchless and Lulu Island were the best. (Project H 70.)

CABBAGE

VARIETIES.—Twenty-one strains and varieties of cabbage were grown during the past season. Of the early varieties, Copenhagen Market, Golden Acre and Early Winnigstadt were the best. Good early fall varieties are Copenhagen Market, Dala and Enkhuizen Glory. Of the late varieties Flat Dutch and Danish Ballhead are the best (Project H 77.)

The following table gives the average yield from thirty foot rows and the dates of maturity of different varieties tested.

CABBAGE—TEST OF VARIETIES

Variety	No. of years	Average yield 30-ft. row	Date of maturity					
			1921	1922	1923	1924	1925	1926
Dala	3	87·6	.....	.....	.....	Aug. 12	Aug. 12	Aug. 5
Enkhuizen Glory	6	84·1	Aug. 23	Aug. 15	Aug. 16	" 10	" 16	" 5
Flat Dutch	3	79·3	.....	" 11	" 20	" 17	.....	.....
Copenhagen Market	5	67·9	Aug. 13	.....	" 21	" 7	Aug. 3	July 30
Danish Ballhead	5	52·2	.....	Sept. 14	" 22	Sept. 3	" 20	Aug. 15
Golden Acre	3	51·3	.....	.....	.....	Aug. 10	July 20	" 8
Early Winnigstadt	4	50·9	.....	.....	Aug. 22	" 26	Aug. 12	" 7
Extra Amager Danish Ballhead	4	50·3	.....	Sept. 14	Sept. 11	.....	" 23	" 15
Early Jersey Wakefield	6	42·8	Aug. 13	Aug. 17	Aug. 22	Aug. 26	" 30	" 5
Etampes	3	39·2	.....	.....	" 22	" 15	.....	" 10
Large Blood Red	3	34·6	.....	.....	" 27	Sept. 7	.....	" 20
Fordhook Forcing	3	33·6	.....	.....	.....	Aug. 10	July 27	July 30
Suttons Earliest	3	29·3	.....	Aug. 11	Aug. 16	Aug. 25	.....	.....
Dwarf Green Savoy	3	22·4	.....	.....	.....	Sept. 11	Sept. 6	Aug. 15
Perfection Drumhead Savoy	6	21·4	Sept. 1	Sept. 10	Sept. 23	" 3	Aug. 28	" 15

DIFFERENT DATES OF SEEDING.—In this test two varieties were grown, Copenhagen Market and Danish Ballhead. Six sowings of seed were made in the cold frame from April 14 to June 4. Due to the hot, dry weather, only the first three sowings were transplanted into the open. With the first-named variety the earliest sowing April 14 gave the highest yield and with the Danish Ballhead the third sowing on May 5 gave the largest yield. (Project H 74.)

CAULIFLOWER

VARIETIES.—Cauliflower does not succeed very well here, summers being too dry and hot to obtain good results, heads in the majority of cases being small. Varieties which have done best to date are, Early Snow Ball, Magnum Bonum and Early Dwarf Erfurt. (Project H 88.)

HOTBED VERSUS SOWING IN THE OPEN.—In this project three varieties were compared. Seed sown in the hotbed was planted on April 3 and the young plants were set out on April 30. Seed sown in the cold frame was planted on April 14 and transplanted to the open on June 10. In all three varieties the seed sown in the cold frame gave higher yields than the earlier hotbed-sown seed. (Project H 84.)

CARROTS

VARIETIES.—In this project ten varieties and strains were grown. To date in this project Chantenay and Market Garden have proved to be the highest-yielding varieties. (Project H 83.)

DIFFERENT DATES OF SEEDING.—Six sowings were made of the Chantenay variety from April 23 to June 14. The first sowing gave the highest yield, and in the other five sowings the yield decreased at each later date. (Project H 79.)

CELERY

VARIETIES.—This district is not well adapted to celery-growing owing to the lack of moisture. During the past season eleven varieties were grown, including both the early or easy blanching varieties and the larger-growing greener late varieties. The easy blanching strains have so far proved to be the best, due to the comparative ease in blanching. Two varieties, Easy Blanching and Golden Self Blanching, are recommended.

DIFFERENT METHODS OF BLANCHING.—Four different methods of blanching were tried with Golden Self Blanching. Plants grown in trenches and hoed up, plants grown on the level and hoed up when full grown, plants grown on the level and blanched with boards, and plants grown on the level and blanched with paper. For eating quality plants grown in trenches and hoed up were best. Next in quality were plants grown on the level and blanched with earth. Blanching with boards gave good quality celery and there was considerably less rust with this method as compared to hilling up with earth. Blanching with paper gave rather similar results. (Project H 90.)

CORN

VARIETIES.—Seventeen varieties and strains of corn were grown during the past season. Of the late varieties in recent years Howling Mob and Sunnybrook have given the highest yields. The most popular variety is Golden Bantam a medium early variety and a good yielder. Pickaninny a black variety of good quality but low in yield, originated at the Central Experimental Farm, Ottawa, is the earliest maturing variety grown, being between two and three weeks earlier than Golden Bantam. Sweet Squaw is another early variety maturing a week ahead of Golden Bantam. It is of good quality and is also a good yielder. Four varieties of different seasons to be recommended are Pickaninny, Sweet Squaw, Golden Bantam, and Howling Mob.

The following table gives the average yield from thirty foot rows. (Project H 102.)

CORN—TEST OF VARIETIES

Variety	No. of years	Average yield in pounds 30-ft. row	Date of maturity						
			1920	1921	1922	1923	1924	1925	1926
Howling Mob	7	32·5	Sept. 16	Sept. 3	Aug. 25	Aug. 23	Aug. 16	Aug. 17	Aug. 14
Sunnybrook	3	30·1	.....	.....	.....	.....	Sept. 2	" 17	" 19
Golden Bantam (Graham)	4	26·8	.....	.....	.....	Aug. 20	Aug. 12	" 8	" 9
Delicious	2	26·5	.....	.....	.....	.....	Sept. 13	.....	" 19
Extra Early Cory	5	26·1	Aug. 28	Aug. 18	Aug. 16	Aug. 17	Aug. 15	.....	.....
Sweet Squaw	7	24·9	" 21	" 10	" 11	" 16	" 6	Aug. 3	July 31
Golden Giant	6	24·8	Sept. 1	.....	" 26	" 20	" 15	" 17	Aug. 17
Country Gentleman	4	24·1	" 12	Sept. 19	" 31	.....	Sept. 10	.....	.....
Early Fordhook	4	22·8	Aug. 29	.....	.....	.....	Aug. 13	Aug. 12	Aug. 9
Golden Bantam (Burpee)	6	22·7	" 28	Aug. 30	Aug. 17	Aug. 18	" 13	" 10	.....
White Evergreen	3	22·6	.....	.....	.....	.....	Sept. 13	" 24	Aug. 22
Early Malcolm	7	22·2	Aug. 27	Aug. 12	Aug. 14	Aug. 14	Aug. 9	" 3	" 5
Stowells Evergreen	4	19·3	Sept. 20	Sept. 3	Sept. 19	Sept. 1	Sept. 10	.....	.....
GoldenBantam (McDonald)	3	18·2	Sept. 1	Aug. 22	.....	.....	Aug. 14	.....	.....
Pickaninny	7	11·0	Aug. 12	" 2	June 27	June 31	June 22	June 23	June 21

REMOVING SUCKERS—In this project two varieties were grown, Golden Bantam and Early Malcolm. Suckers were removed on July 2. In both varieties the plants with suckers removed matured cobs four days earlier than the plants which were not pruned. Both lots of Early Malcolm yielded the same weight while in Golden Bantam the lot with suckers removed yielded one and a half pounds more from a thirty foot row. (Project H 101).

CUCUMBER

VARIETIES.—Five varieties were grown during the past season. Varieties which have done well in the past are Davis Perfect, Improved Early White Spine, and Fordhook Pickling. (Project H 106).

LEEKS

VARIETIES.—Two varieties of leeks were grown in this project. This vegetable does well here but there is small demand for it. Improved Musselburgh and Perfection have both given satisfactory results. (Project H 112).

LETTUCE

VARIETIES.—Eleven varieties and strains of lettuce were grown during the past season. This is one of the easiest and surest crops to grow. The three types cos, leaf, and head lettuce give good yields. All Heart Cos; Grand Rapids, leaf; and New York, head; are all to be recommended. New York has proved to be the heaviest yielding variety during the past few years and it is of excellent quality with large firm crisp heads. Big Boston, Hanson and Iceberg are also good varieties. (Project H 116).

ONIONS

VARIETIES.—Fourteen varieties and strains of onions were grown for this project. Seed was sown on April 13 and the crop harvested on August 23. The onions were cured under cover. The highest-yielding varieties during recent years have been, Ailsa Craig, Southport Yellow Globe and Giant Yellow Prize-Taker. Of the red varieties Southport Red Globe and Large Red Wethersfield are the best, and of the white varieties Southport White Globe has proved to be the highest yielder. (Project H 138).

SOWN IN HOTBED VERSUS SOWN IN OPEN.—Three varieties were grown in this project Ailsa Craig, Brand Exhibition and Yellow Globe Danvers. Seed of all varieties was sown in a hotbed and in the open. The hotbed seedlings were planted out on May 13. With each variety the yield was higher from seed sown in the open. (Project H 137).

PARSNIPS

VARIETIES.—Hollow Crown has proved to be the most satisfactory variety of parsnip grown here always giving good yields. (Project H. 145).

DIFFERENT DATES OF SEEDING.—Seed was sown on five different dates from April 23 to June 4. Seed sown on April 23 and May 13 gave the highest yields. (Project H 142).

PARSLEY

VARIETIES.—Two varieties Champion Moss Curled and Imperial Curled do very well and give large plants with abundant foliage. (Project H. 140).

PEAS

VARIETIES.—Twenty-five varieties and strains of garden peas were grown during the past season. Due to very hot and dry weather at the time the peas

were reaching maturity ripening was premature with the result that many pods were not properly filled out and the picking season extended over a very few days. The best early semi-dwarf or intermediate variety is Thomas Laxton; good early dwarf varieties are English Wonder and Little Marvel; tall varieties Duke of Albany, V.C., and Telephone; late dwarf varieties Lincoln and Stratagem.

The following table gives the average in pounds from 30-foot rows, the date of maturity and the average height of plant.

PEAS—TEST OF VARIETIES

Variety	Average yield in pounds 30-ft. rows	No. of years	Date of maturity							Height of plants
			1920	1921	1922	1923	1924	1925	1926	
Seedling No. 6	35·0	3	.....	.....	.....	.....	June 30	June 24	July 3	7 feet
Duke of Albany	26·5	5	.....	.....	July 6	June 30	" 18	" 26	" 3	7 "
Lincoln	26·2	4	.....	.....	" 3	.....	" 26	" 27	" 3	3½ "
V. C.	25·7	3	.....	.....	.....	.....	" 23	" 27	" 6	6½ "
Bruce	21·4	3	.....	.....	.....	.....	July 6	" 24	June 28	4 "
Telephone	20·8	7	June 22	June 27	July 4	July 2	June 18	" 26	July 6	6 "
Gradus X Amer. Wonder	20·3	3	.....	.....	.....	.....	" 30	" 24	June 28	6½ "
English Wonder	19·5	4	July 5	.....	.....	.....	" 21	" 20	" 26	15 ins.
Director	19·4	3	.....	.....	.....	.....	" 30	" 16	July 3	3½ feet
Thomas Laxton	19·2	7	June 30	June 18	June 22	June 21	" 7	" 10	June 21	3½ "
Kerr Dwarf	18·3	3	.....	.....	" 24	" 23	" 10	.....	.....	22 ins.
Gregory Surprise X English Wonder	18·3	3	.....	.....	.....	.....	" 27	June 24	June 28	6½ feet
Gradus	16·4	7	July 10	June 23	June 27	June 23	" 18	" 20	" 26	4 "
Stratagem	16·4	7	" 10	July 9	July 2	July 9	" 28	July 6	July 10	2 "
American Wonder	15·6	5	" 5	June 23	June 24	June 27	" 30	.....	.....	2½ "
Little Marvel	14·1	4	June 25	.....	.....	.....	" 16	June 10	June 24	20 ins.
Stevenson	13·9	4	.....	June 24	June 26	June 27	" 12	.....	.....	20 "
Extra Early Blue Bantam	11·5	7	June 30	" 18	" 22	" 25	" 16	June 15	July 3	20 "
Pilot	11·4	6	" 28	" 23	" 18	" 21	" 7	.....	June 26	24 "
Laxtonian	11·3	6	" 28	.....	" 22	" 27	" 10	June 17	July 3	18 "

DIFFERENT DISTANCES OF PLANTING.—Two varieties were grown in this project, English Wonder and Stratagem. Seed was planted in rows 1, 2, and 3 inches apart. The highest yield was obtained from seed planted 1 inch apart with decreasing yields for 2 and 3 inches. (Project H. 148).

PEPPERS

VARIETIES.—Four varieties of peppers were grown in this project. Seed was sown in a hotbed on April 9 and transplanted to the open on June 1. The season was favourable for growth and good yields were obtained. Ruby King and Neapolitan gave the highest yields. (Project H. 157).

POTATOES

VARIETIES.—Forty varieties of potatoes were grown for this project. The seed for the majority of the varieties has been produced on the farm. Empire State has been grown here continuously since 1892 without obtaining seed from an outside source. American Wonder and Late Puritan have been grown here continuously since 1895 without a change of seed. A number of other varieties have been grown from the original seed stock from five to twenty years. The potato field was fertilized with barnyard manure averaging 10 tons to the acre in the early spring and with commercial fertilizer broadcasted over the drills and harrowed in after planting, at the rate of 710 pounds per acre, made up in the following proportion, 260 pounds nitrate of soda, 300 pounds superphosphate of lime, and 150 pounds muriate of potash. Seed was planted on April 23 in

triplicate rows 30 feet long in three ranges, rows 30 inches apart and seed 14 inches apart in each row and most of the varieties harvested after the tops were dead. The average yield for all varieties was 9 tons 936 pounds as compared to 9 tons 732 pounds per acre for 1925. For the last five-year period ten leading varieties in order of greatest yield have been, Jones White, U.B.C., Table Talk, Dreer Standard, Dalmeny Beauty, Agassiz Special, Wee McGregor, Gold Coin, Green Mountain, and Carman No. 1 with an average yield for all varieties of 10 tons 896 pounds. The following table gives the yield per acre of marketable and unmarketable potatoes for the past season. (Project H 186).

POTATOES—TEST OF VARIETIES

Variety	Stock seed obtained	Season	Date of planting	Date of digging	Yield per acre marketable	Yield per acre unmarketable
					tons lb.	tons lb.
Wee McGregor	1918	Main crop	April 23	Oct. 2	14 1,603	1 781
Table Talk	1919	"	" 23	" 1	14 1,514	2 1,156
Gold Coin	1925	"	" 23	Sept. 30	14 93	.. 1,778
Jones White	1920	"	" 23	Oct. 2	12 1,425	4 1,423
Dalmeny Beauty	1906	"	" 23	" 4	12 1,340	2 356
Empire State	1892	"	" 23	" 2	11 1,736	2 631
U. B. C.	1920	"	" 23	" 2	11 1,113	2 1,837
Up-to-Date	1925	"	" 23	" 1	11 1,024	2 1,156
Agassiz Special	1919	"	" 23	Sept. 30	11 625	1 489
Sir Walter Raleigh	1925	"	" 23	Oct. 2	10 1,869	1 1,467
Rawlings Kidney	1918	"	" 23	" 4	10 1,602	2 1,067
American Wonder	1895	"	" 23	" 2	10 891	2 ..
Eureka	1925	"	" 23	Sept. 2	10 2	3 490
Morgan Seedling	1918	"	" 23	Oct. 4	9 1,380	2 89
Dakota Red	1919	Medium early	" 23	Sept. 2	9 1,335	2 89
Ormandy	1921	"	" 23	" 2	9 1,157	.. 1,378
Houlton Rose	1919	"	" 23	" 2	9 1,113	1 934
Late Puritan	1895	Main crop	" 23	" 30	9 1,020	3 756
Carman No. 1	1918	"	" 23	Oct. 4	9 46	2 800
Dreer Standard	1902	"	" 23	" 1	8 1,957	1 489
Green Mountain	1919	"	" 23	Sept. 30	8 1,061	1 1,289
Rural Russet	1925	"	" 23	" 30	8 268	.. 1,067
Netted Gem	1926	"	" 23	" 2	7 802	2 800
Manitoba Wonder	1919	Medium early	" 23	" 2	6 1,913	1 1,023
May Queen	1922	"	" 23	" 2	6 1,335	2 1,512
Bermuda Early	1917	Early	" 23	" 1	5 1,823	1 1,734
Early Hero	1919	"	" 23	" 1	5 1,112	1 89
Jersey Royal	1925	Medium early	" 23	" 2	5 979	2 845
Irish Cobbler	1919	"	" 23	Oct. 2	5 757	1 222
Vick Extra Early	1911	Early	" 23	Sept. 1	5 45	1 1,334
Early Rose	1925	"	" 23	" 1	4 1,383	1 178
Early Ohio	1925	"	" 23	" 1	4 1,334	1 262
Arran Chief	1916	Main crop	" 23	Oct. 1	4 1,067	3 312

NOTE.—Of the following varieties only one row of each was grown so the acre yield is not completed: Burbank, Beauty of Hebron, Early Surprise, Early St. George, Epicure, and Eureka Extra Early.

EARLY VARIETIES.—Seven varieties were grown for the production of early potatoes. The seed was set out to sprout on January 18 and planted on March 8. There were six 30-foot rows of each variety in two ranges. Three rows of each variety were fertilized with commercial fertilizer at the rate of 500 pounds per acre made up as follows: 250 pounds of nitrate of soda, 150 pounds of superphosphate of lime, and 100 pounds of muriate of potash. Cost of fertilizer per acre was $13.85. The potatoes were dug on May 18 and 21 and netted respectively 9 and 8 cents per pound.

The following table gives the relative yield for each variety in pounds for the fertilized and unfertilized plots and the total yield in tons per acre for all varieties from the fertilized and unfertilized plots.

POTATOES—TEST OF EARLY VARIETIES

Variety	Yield three 30-ft. rows fertilized		Yield three 30-ft. rows unfertilized		Total yield	
	lb.	oz.	lb.	oz.	lb.	oz.
Early Rose	58	13	47	9	106	7
Epicure	59	12	41	1	100	13
Eureka Extra Early	59	0	41	4	100	4
Early Ohio	53	14	43	6	97	4
Vick Extra Early	60	2	36	0	96	2
Bermuda	58	0	37	12	95	12
Early Hero	46	5	36	0	82	5
Total yield	395	14	283	0		

Yield per acre fertilized rows: 5 tons 952 lb.
Yield per acre unfertilized rows: 3 tons 1,827 lb.

NUMBER OF EYES PER SET.—Two varities of early potatoes were used in this project, Vick Extra Early and Epicure. Sets averaging 2¼ ounces each with two, three, four or more eyes per set were selected, and six 15-foot rows of each variety were planted, two rows with four or more eyes, two rows with three eyes, and two rows with two eyes. Seed was sprouted, and was planted on March 8. The results with both varieties were identical, the highest yield being from tubers with four or more eyes and the lowest yield from tubers with two eyes. (Project H 64.)

RADISH

VARIETIES.—Six varieties of radish were grown in this test. This vegetable is very subject to attacks from flea-beetles which eat the foliage, and from root-maggots which eat into the edible part of the radish. Owing to the latter form of insect injury it is necessary to grow the seed in frames covered with cheese cloth. French Breakfast and Scarlet White Tip are satisfactory varieties. (Project H 192.)

SPINACH AND SWISS CHARD

These two vegetables are grown for greens and both succeed well here. Spinach is an early season green and runs to seed soon after reaching marketable size and for a coninuous crop successive plantings are necessary. Swiss chard takes approximately one month longer to mature than spinach but has the added advantage that it grows throughout the hot summer months and that successive cropping can be made from one planting by cutting the outer leaves; it is one of the best summer greens. Both these greens withstand a considerable amount of freezing. Spinach varieties grown here during the past season were Broad Leaved Victoria and Longstanding Bloomsdale. Swiss chard varieties, Fordhook Giant with dark green foliage, and Lucullus with light green foliage. (Projects H 199 and 203.)

TOMATOES

VARIETIES.—Twenty-eight varieties and strains of tomatoes were grown during the past season. Seed was planted in hotbeds on April 3 and transplanted to the open on May 13. Plants were pruned to two main stems and tied to stakes four feet high. The season was favourable for tomato-growing and plants averaged 8½ pounds or slightly over 20 tons to the acre. Practically all fruit ripened on the vine before the first killing frost. The heaviest yielding variety was Victoria Whole Salad, a small round smooth fruited variety, and the earliest

maturing variety was Abbotsford Argo similar in type to the above. Victoria Whole Salad has proved itself to be the highest yielding variety during the past seven years and Abbotsford Argo has averaged the earliest during the past three years, the period over which it has been grown.

The following table gives the average yield from five plants and the different dates of maturity. (Project H 211.)

TOMATOES—TEST OF VARIETIES

Variety	Yield in pounds from 5 plants	No. of years	Date of maturity						
			1920	1921	1922	1923	1924	1925	1926
Victoria Whole Salad	65·9	7	Aug. 26	Aug. 15	Aug. 15	Aug. 14	July 31	Aug. 6	Aug. 10
Best of All	60·4	5	.....	.....	" 5	" 10	Aug. 4	" 4	" 13
Chalks Early Jewel	56·1	4	.....	.....	.....	" 14	" 1	July 15	" 11
Bonny Best	54·3	6	Aug. 22	.....	Aug. 12	" 2	July 31	" 27	" 12
Earliest of All	52·9	5	.....	.....	" 2	" 18	" 31	" 30	" 16
John Baer	50·2	3	.....	.....	.....	.....	Aug. 4	" 21	" 11
Sunnybrook Earliana	50·1	3	.....	.....	Aug. 19	Aug. 10	July 29	.....	.....
Crimson Canner	50·0	6	.....	Aug. 19	" 5	July 31	Aug. 1	July 14	Aug. 10
Sparks Earliana	48·9	3	.....	.....	.....	.....	July 31	" 14	" 16
Pink No. 1	47·1	4	.....	.....	.....	Aug. 10	Aug. 2	" 31	" 10
Earliana	46·5	3	.....	.....	.....	" 10	" 15	Aug. 20	.....
Early Detroit	46·5	5	.....	.....	.....	.....	" 12	" 6	Aug. 16
Danish Export	45·7	7	Aug. 12	Aug. 6	July 31	Aug. 11	July 30	July 14	July 30
Early Mascot	44·8	4	.....	.....	.....	" 16	" 30	" 27	Aug. 11
Alacrity X Hipper	44·4	4	.....	July 29	.....	.....	" 31	" 14	" 11
Select Earliana	44·1	3	.....	.....	.....	Aug. 6	" 31	.....	" 16
First of All	43·8	4	.....	.....	.....	" 9	Aug. 1	July 24	" 11
Alacrity	41·8	7	Aug. 18	Aug. 9	Aug. 5	" 10	July 29	" 16	" 14
Alacrity X Earlibell	41·6	4	.....	" 13	.....	.....	Aug. 15	" 16	" 10
Abbotsford Argo	41·5	3	.....	.....	.....	.....	July 9	" 7	July 27

METHODS OF PRUNING.—This project was commenced in 1923. Two varieties were grown in this experiment, Alacrity and Bonny Best. Each variety was given the same treatment and each plant was pruned to a single stem. In row one, the plants were headed back at the first truss; in row two, at the second truss; in row three, at the third truss; row four was not headed back. Pruning has not served to advance the maturing of fruit. Fruit on stems pruned to one truss has been of inferior quality due to sunscald. This method of pruning has nothing to recommend it. Fruit on stems pruned to two trusses is also affected by sunscald, but to a lesser extent than in the former case. The yield in all cases has been proportionate to the number of trusses to each stem, the highest yield coming from stems not headed back. (Project H 207.)

TURNIPS—VARIETIES

Due to the attacks of flea-beetles in this district the turnip crop requires an extra operation as it is necessary to dust the plants with a nicotine dust. This method of control found to be satisfactory during the past season. Root-maggots are also a source of considerable injury. During the early season before adequate dusting methods had been adopted the attack on this crop by flea-beetles was heavy which gave the plants a severe set back. This followed by a very dry summer brought about a condition unfavourable to this crop, which requires a considerable amount of moisture. The varieties which succeeded best were Green Globe, Early Snowball, and Early Purple Top Milan. (Project H 214.)

PUMPKIN—VARIETIES

One of the most satisfactory varieties to grow is the Small Sugar, averaging about 10 inches in diameter. This variety yields well and is of good quality and due to its small size there is little waste. It is one of the best pumpkins for pies. (Project H 188.)

WINTER SQUASH—VARIETIES

This group of squash is represented by the Hubbard, Warted Hubbard and the Golden Hubbard. Fruits are large and of good quality. These varieties store and keep well at a temperature of 50°—60° F. in a dry room. (Project H 201.)

SUMMER SQUASH AND VEGETABLE MARROW—VARIETIES

For early squash the bush varieties either green or white are the best to grow. This type of squash is of good quality and yields well and due to the bush habit of growth is economical of space. Long Green trailing is a high yielding variety of good quality. (Project H 216.)

CITRON—VARIETIES

Citrons grow well in this district but there is very little demand for them. The variety which has succeeded best here is the Colorado Preserving. (Project H 309.)

FALL-SOWN VERSUS SPRING-SOWN SEED

The object of this experiment is to determine the yields of fall-sown seed as compared to spring-sown and also the comparative dates of maturing of vegetables sown under these two systems. The following varieties of vegetables were tested, lettuce, turnips, carrots, beet, onions, cabbage and radish. The fall-sown seed was planted on November 28, 1925 in 30-foot rows.

FALL-SOWN VERSUS SPRING-SOWN SEED

Vegetable	Variety	Date of planting	Per cent germination	Ready for use	Yield	Remarks
Lettuce	Grand Rapids	Nov. 28, 1925	75	April 28, 1926	11¼ lb.	Poor quality.
Lettuce	Grand Rapids	April 22, 1926	75	June 12, 1926	15¼ "	Good quality.
Turnips	Early Purple Milan	Nov. 28, 1925	100	.....	.....	100 per cent bolted March 23, 1926.
Carrots	Chantenay	Nov. 28, 1925	45	May 22, 1926	38 bunches	Fair quality.
Carrots	Chantenay	April 8, 1926	70	June 23, 1926	36 "	Fair quality.
Beet	Detroit Dark Red	Nov. 28, 1925	5	June 1, 1926	.....	Two roots only.
Beet	Detroit Dark Red	April 8, 1926	50	June 20, 1926	13 bunches	Good quality.
Onions	Large Red Wethersfield	Nov. 28, 1925	70	July 13, 1926	7 lb.	"
Onions	Large Red Wethersfield	April 8, 1926	75	July 26, 1926	11¼ "	"
Cabbage	Copenhagen Market	Nov. 28, 1925	55	July 2, 1926	58 "	"
Cabbage	Copenhagen Market	April 3, 1926	90	July 31, 1926	46 "	"
Radish	Scarlet Turnip White Tip	Nov. 28, 1925	80	Mar. 29, 1926	32 bunches	Ready for use before attack of root maggot.
Radish	Scarlet Turnip White Tip	April 8, 1926	80	May 4, 1926	28 "	Affected with root maggot.

TOBACCO—VARIETIES

This is the second year tobacco was grown for this project. Three varieties were tested; Standup Burley, Connecticut Havana, and Belge. Seed was planted in a cold frame on April 8 and transplanted into the field on May 20. Immediately after transplanting there was a period of three weeks of cold wet weather which gave the young plants a serious setback. The highest yield was 87½ pounds green weight from twenty-five plants of Connecticut Havana followed by 72½ pounds and 55 pounds respectively for Standup Burley and Belge.

CONTROLLING WEEDS WITH THERMOGEN PAPER

During the early spring considerable publicity was given to Thermogen Paper (which is similar to roofing paper), the advocates claiming that used as a ground covering it would keep down weeds, conserve moisture, and reduce the amount of labour required for cultivating and weeding. In order to obtain

information the material was tried out with three different crops—potatoes, cabbage and tomatoes. The width of paper used in each case was 18 inches.

With potatoes the paper was laid on either side of a row when the plants were about 4 inches high. It was so laid that one row was completely covered on both sides, and the rows adjacent were covered only on one side. The material was held down on the outer edges with soil and strips of 2 by 4 scantling were placed crosswise every 10 feet. At the time of digging, weeds had come up between the strips of paper and had outgrown the potatoes making them difficult to harvest. Couch grass had grown up through the paper. As a method of weed control it proved unsatisfactory. The yield of potatoes was also adversely affected. The check plot with no paper, which received cultivation during the growing season, considerably outyielded the treated plot.

With cabbage and tomatoes the paper was laid on the ground at the time of transplanting and the plants were dibbled in through the paper. The paper was held down with soil and boards. In the early season the plants in these plots showed more vigour than the check plots, but this was overcome later in the season. Weights taken at harvesting time gave a heavier yield were plants received ordinary cultivation. The Thermogen was effective in keeping down weeds with these crops.

TREE FRUITS

The past season was a good one for tree fruits, particularly pears. The orchard was sprayed twice with lime-sulphur and lead arsenate, and once with Bordeaux mixture in the early fall to control Anthracnose. As in 1925 a system of clean cultivation was practised. All the trees made good growth and diseases and insects were kept in check.

APPLE—VARIETIES

Of the sixty apple trees planted out in 1913 only twelve remain; one Delicious, one Transcendent crab, four Kings, and six Northern Spys. The remainder have either been pulled out as unsuitable varieties for the district, died from collar-rot, or killed back by Anthracnose. This year thirty-six young trees of different varieties were planted in the spring. All made satisfactory growth. Of the four varieties of bearing age the Northern Spys gave the highest yield. This variety is subject to scab and Baldwin spot. (Project H 33.)

PEAR—VARIETIES

Varieties of pears which have proved to be of greatest value in this district all did well. The Bosc in particular yielded a large crop of clean medium-sized fruit. This is one of the later varieties, being ready for use this season on October 6. Boussock is a variety which yields well but is in season similar to Bartlett and not of as good quality or appearance. Louise Bonne is another good-yielding variety, with medium-size fruit, and in season is midway between Bartlett and Bosc. Dr. Jules Guyot is an early variety and a good yielder but in quality and appearance inferior to Bartlett. Anjou, the latest variety grown here, yielded well in the past season; its fruit was large and free from scab. (Project H 44.)

PLUM—VARIETIES

The plum crop in most varieties grown was heavy. Grand Duke failed to set fruit as the blossoms were all blighted by brown rot. Washington did not blossom. Brown rot was in evidence on most varieties in varying degrees. The varieties least affected were Damson, Italian Prune, Burbank, Mallard, Coes Golden Drop, and Peach Plum. The latter variety gave the first ripe fruit on July 16. (Project H 48.)

CHERRY—VARIETIES

The three leading varieties of sweet cherries are Bing, Lambert, and Royal Anne. These varieties need some other varieties planted with them in order to get pollination of blosoms which is necessary to set fruit. Black Tartarian or Black Republican are usually used. The three varieties on the farm are so planted that pollination is not good and maximum yields can therefore not be expected. These trees are all vigorous and grow to a large size. In home gardens where space is limited, Empress Eugene is a suitable variety though somewhat a shy yielder. Its fruit ripens earlier than that of the other varieties and matures over a longer period. Belle Magnifique is another good variety; late in maturing, approximately a month later than the Bing. The tree yields well, quality of fruit is good, somewhat tart. Of the sour cherries Morella and Olivet are the best.

NUTS—FILBERTS

Seventy five seedling filberts obtained from the Dominion Experimental Station, Sidney, were planted out in the spring, the majority of which made a satisfactory growth. The one serious pest for this variety of nut is a bud-mite which eats out the centre of the bud thus preventing its growth. A number of these seedlings will be grafted over to some known varieties, the remainder left to try and obtain new suitable varieties.

SMALL FRUITS

STRAWBERRY—VARIETIES

The strawberry patch was not cropped during the past season as it will not come into bearing until 1927, having been planted out in September, 1925.

The following varieties are being grown: Gibson, Glen Mary, Hermia, Lavinia, Portia, Cassandra, Paxton, Sharpless, Magoon, Royal Sovereign, Vanguard, Gold Dollar.

A new brand of strawberry-weevil bait was tried out this season. In the strawberry patch here none of the weevil were present. There was found, however, a patch of garden peas which was heavily infested, the weevil eating the vines just below the ground. An application of bait was made along the row. On examining three feet of row three days later a hundred beetles were found, seventy-five of which were dead and twenty-five showing signs of life. These were put in a glass and all were dead on the following day. (Project H 21.)

CURRANT—VARIETIES

Currants this year were heavily infested with the larva of the currant fruit-fly. No adequate measures of control have so far been discovered for this pest. An effective but drastic control is to destroy the crop before it matures. The benefits from this method of control will be dependent upon the amount of infestation from neighbouring sources. The three highest-yielding varieties of black currants during the past season in order of yield are, Victoria, Kerry, Buddenborg. Six varieties are being grown: Boskoop Giant, Buddenborg, Black Naples, Clipper, Kerry, Victoria.

In order of the highest yield red currants were as follows: Perfection, Wilder, Fay Prolific. Other varieties being grown are Pomona and Cherry. (Project H 4.)

BLACKBERRY—VARIETIES

Two varieties of blackberries are being grown Snyder and Erie. The former is the heavier-yielding variety and is also considerably more hardy. The canes of the Erie have been killed back three times since 1922, whereas Snyder has suffered little or no injury during the same period. (Project H 2.)

LOGANBERRY

This district cannot be recommended for loganberries, winters often being severe enough to kill the plants. Plants wintered well during the past winter and bore a medium crop this season. Quite a percentage of fruit which set failed to mature and a considerable portion of that which reached maturity was irregularly formed. This is a condition rather prevalent in many districts of the province and is of considerable economic importance.

GOOSEBERRY—VARIETIES

Three varieties of gooseberries are being grown in this test. Josselyn (Red Jacket), Charles, and Mabel. The first mentioned is the leading variety. Oregon Champion is another variety which has succeeded well here. (Project H 6.)

RASPBERRY—VARIETIES

Three varieties of raspberries planted in 1924 (Count, Viking, and Brighton) yielded their first crop this year. None of these varieties so far compare with the old-established variety Cuthbert. The plants so far show a lack of vigour, with small fruit that is inclined to crumble when picked. Fillbasket, another old variety, though a heavy yielder and a vigorous growing plant is lacking in quality. The fruit is large and juicy, hard to pick and will not hold up either for fresh fruit or for canning. (Project H 11.)

MANURE VERSUS COMMERCIAL FERTILIZER FOR SMALL FRUITS

This experiment was started in 1922, the year the young plants were set out. Manure was spread at the rate of 10 tons per acre and commercial fertilizer at the rate of 630 pounds per acre (200 pounds nitrate of soda, 300 pounds superphosphate, 130 pounds muriate of potash). Results so far show that manure is of greater value for raspberries, blackberries, and gooseberries. The difference in yield from currants is not so marked, but a slight advantage is shown in favour of bushes treated with commercial fertilizer.

FLOWERS

ROSES—VARIETIES

The location and plan of the rose garden was altered during the winter, which necessitated the moving of all bushes. The ground was deeply trenched and given a liberal application of manure. The first variety to bloom was Gloire de Dijon on April 20. The best mass of bloom was from May 25 to June 5. Some of the better varieties of climbers are Paul Scarlet, Dr. Van Fleet, Gloire de Dijon, Caroline Testout and Tausendschon. Varieties of bush roses which have done well are Florence Forrester, Mrs. Beckwith, Margaret Molyneux, Lady Hillingdon, Madame Ravary, Madame Jules Grolez, Mrs. Charles Lamplugh, Mrs. Wilmot, W. F. Dreer, Lilian Moore, Mrs. Aaron Ward, Madame Gabriel Luizet, Maman Cochet, Frau Carl Druschki, Hugh Dickson and Mrs. J. J. Lang. (Project H 302.)

ANNUAL FLOWERS

There was a good showing of annual flowers during the past season but due to the dry weather the period of bloom did not last as long as usual. Sweet peas were planted late and did not make as good a showing as usual. Asters did well and there was a wealth of colour in the fall when most other bloom was over; the same can be said for stocks. Asters should not be planted on the same soil two years in succession due to a wilt that attacks the young plant around the stem at ground level when about 6 inches high. Another prized flower for

fall showing is Salpiglossis. Other annuals which have succeeded well here are Antirrhinums, Zinnia, Lavatera, Godetia, Clarkia, Schizanthus, Dianthus, Portulaca, Candytuft, Nemesia, Phlox Drummondii, Tagetes, Salvia Bluebeard, Salvia Fireball, Calendula, Leptosiphon, Dimorphotheca.

PERENNIALS

The early spring appearance of a perennial border can always be brightened up with bulbs, particularly narcissi and daffodils. A few of the perennials which have succeeded well here are: Thalictrum, Delphinium, Hollyhock, Helenium, German Iris, Paeony, Chrysanthemum, Helianthus, Aquilegia, and Doronicum.

BULBS

The bulb bloom was early and of good quality during the past season. Some of the better daffodils are Madame DeGraaf, Madame Plemp, Barri Albatross, Lucifer, and Van Waveren Giant. Of the narcissi, Poetez, Elvira, and Pheasant Eye are two of the best. Of the early tulips Keiserskroon, Chrysolora, Artus, Duchesse de Parma, Cottage Maid, and Lorraine made the best showing. Several new varieties of Darwin tulips were added to the collection, amongst which there are some excellent varieties. Of the Darwins Velvet King, Prince Albert, Moonlight, Sirene, Joseph Israels, Rev. Ewebank, La Tulip Noire, Giant, Dream, Farncombe Sanders, Valentine, Pride of Haarlem, Psyche, and Tulip Faust made the best showing.

CEREALS

LAND AND TREATMENT

The land upon which the cereal plots were located is a sandy loam. This area had been in mangels the previous year. Before sowing all cereal grains were treated with formalin as a smut preventive. Seeding took place on April 15 and harvesting of barley commenced on July 13.

OATS—VARIETIES OR STRAINS

Fifteen varieties of oats were sown in quadruplicate plots. In point of yield Victory came first with Banner second, followed by Prolific. Alaska, besides coming fifth in yield of grain, is also desirable from the standpoint of earliness.

OATS—TEST OF VARIETIES OR STRAINS

Name of variety	Date of ripening	Number of days maturing	Average length of straw, including head	Strength of straw on scale of 10 points	Yield of grain per acre	Weight per measured bushel after cleaning
			inches		lb.	lb.
Alaska	July 24	100	48	8	3,465	39
Banner (Ott. 49)	Aug. 2	109	45	8	3,300	31
Columbia (Ott. 78)	" 2	109	44	9	2,970	32
Gerlach (Sask	" 2	109	45	8	2,722	34
Gold Rain (Swedish)	" 2	109	48	9	3,135	36
Irish Victor P (Ott. Sel.)	" 2	109	46	8	2,640	34
Laurel (Ott. 477) Hulless	July 26	102	42	8	1,320	48
Longfellow (Ott. 478)	" 29	105	45	8	2,046	32
Legacy (Ott. 678)	" 29	105	33	8	2,310	32
Leader A (Ott. Sel.)	" 29	105	36	8	1,650	28
Leader B (Ott. Sel.)	" 29	105	41	8	1,940	30
Liberty (Ott. 480) Hulless	" 28	104	36	8	1,320	54
Lincoln	Aug. 2	109	48	9	2,310	34
Prolific	" 4	110	48	10	3,630	36
Victory	" 3	110	48	10	3,960	37

BARLEY—VARIETIES OR STRAINS

Fourteen varieties of barley were sown on the same date and under the same conditions as the oats. Chinese (Ottawa 60) gave the highest yield.

BARLEY—TEST OF VARIETIES OR STRAINS

Name of Variety	Date of ripening	Number of days maturing	Average length of straw, including head	Strength of straw on scale of 10 points	Yield of grain per acre	Weight per measured bushel after cleaning
			inches		lb.	lb.
Albert (Ott. 541) (6)	July 14	89	42	6	2,970	49
Barks (Don. Barks) (6)	" 24	99	42	8	3,300	45
Beaver (Ott. 475) (6)	" 23	98	54	7	3,465	47
Charlottetown 80 (Charlottetown) (2)	" 23	98	50	7	3,630	54
Chinese (Ott. 60 (6)	" 14	89	48	8	4,455	50
Duckbill (Ott. 57) (2)	" 24	99	48	8	2,310	49
Early Chevalier (Ott. 51) (2)	" 16	91	51	8	3,630	51
Feeder (Ott. 561) (6)	" 14	89	42	8	1,485	47
French Chevalier (2)	" 23	98	54	7	3,135	53
Gold (Swedish) (2)	" 23	98	48	8	3,630	54
Hannchen (Sask. 229) (2)	" 23	98	44	5	2,345	54
Himalayan (Ott. 59) Hulless (6)	" 14	89	30	8	3,300	62
O.A.C. 21 (O.A.C.) (6)	" 16	91	50	8	4,125	50
Success	" 13	88	42	8	3,960	47

SPRING WHEAT

Seven varieties of spring wheat were sown on the same date and under the same conditions as the oats and barley. The yields were poor. Early Red Fife gave the highest yield with Garnet second and Marquis lowest of all.

WHEAT—TEST OF VARIETIES OR STRAINS

Name of Variety	Date of ripening	Number of days maturing	Average length of straw including head	Strength of straw on scale of 10 points	Yield of grain per acre	Weight per measured bushel after cleaning
			inches		lb.	lb.
Marquis	Aug. 7	113	42	8	396	60
Early Red Fife	" 7	113	40	8	1,566	57
Crown	" 7	113	34	8	907	60
Huron	" 7	113	35	8	907	59
Red Fife	" 7	113	36	7	577	57
Garnet	" 6	112	32	7	1,402	61
Reward	" 3	109	32	7	950	61

PEAS—VARIETIES OR STRAINS

Three varieties of peas were tested in quadruplicate plots. Of those tested Chancellor gave the highest yield but all crops suffered considerably by the pea aphis.

PEAS—TEST OF VARIETIES

(Sown on April 16)

Name of Variety	Number of days maturing	Average length of plant	Average length of pod	Actual yield of seed per acre	Per cent stand	Per cent loss from any cause which did not affect the stand	Weight per measured bushel after cleaning
		inches	inches	lb.			lb.
Arthur	90	48	3	1,025	100	30	62
Chancellor	90	38	2	1,810	100	30	63
Solo	90	42	2½	1,480	100	30	61

NOTE.—All varieties suffered through attacks of the pea-aphis.

BEANS—VARIETIES OR STRAINS

Six varieties or strains of beans were tested. White Marrowfat ranked first with Norwegian a close second.

BEANS—TEST OF VARIETIES

Name of Variety	Date of sowing	Date of ripening	Number of days maturing	Average length of plant	Average length of pod	Actual yield of seed per acre	Per cent stand	Weight per measured bushel after cleaning
				inches	inches	lb.		lb.
Beauty	April 29	Aug. 17	110	24	4	1,925	100	61
Carleton	" 29	" 17	110	26	3	1,200	100	61
Large White	" 29	" 17	110	23	5	1,637	100	63
Navy	" 29	" 17	110	25	4	1,600	100	58
Norwegian	" 29	" 17	110	28	5	2,001	100	64
White Marrowfat	" 29	" 17	110	27	4	2,012	100	61

FORAGE CROPS

During the summer months the rainfall was so slight as to materially retard the growth of forage crops. Immediately after planting corn and sunflowers, cold wet weather set in. This had a decidedly bad effect on the growth of these crops, so much so that they never recovered sufficiently, even with the congenial hot weather later, to give but very medium yields. The roots, however, responded remarkably well to the rains which came along in the fall just a short time prior to their harvesting.

Variety tests were carried out with corn, sunflowers, mangels, sugar beets, swede turnips; and annual hays such as oats, barleys and peas.

The turnip crop was an entire failure owing to the ravages of the flea-beetle. Notwithstanding the application of nicotine dust and the co-operative assistance of the Entomological Branch at Agassiz the resulting crop was not worth harvesting. It was very noticeable, however, that the crop took on a new lease of life in the fall after the rainy weather set in. This would indicate that a fresh supply of moisture earlier in the season would have saved the crop despite the previous destruction by the flea-beetle.

From all plots green-weight samples were taken with a view to estimating from these the total dry matter and the yield of dry matter per acre. This past fall, however, it was impossible in the case of roots, owing to the excessive

moisture in the atmosphere, to get the samples sufficiently air-dried to stand shipment to the drying-plant for final drying. The green samples of mangels, sugar beets and carrots were all spoiled and no figures are recorded relating to dry-matter content.

SOIL AND TREATMENT

The roots were grown on land that had been in grain the previous year; corn and sunflower crops on land that had been in corn the previous year; annual hays on land that had the previous year been in early potatoes followed by turnips. The reason for having corn follow corn was to provide for a thorough cultivating of a particular piece of land which was badly infested with weeds.

The entire area had been ploughed in the fall and reploughed in the spring and well worked. To that portion devoted to roots barnyard manure was applied in the spring, at the rate of 10 tons to the acre, and ploughed under. There was an additional application of commercial fertilizer, in proportions of two of nitrate of soda, three of superphosphate of lime, and one of muriate of potash, at the rate of 500 pounds per acre.

The portion devoted to corn and sunflowers received an application of 12 tons per acre of barnyard manure disked in, but no commercial fertilizer. There was neither barnyard manure nor commercial fertilizer applied to the area apportioned to annual hays.

CORN FOR ENSILAGE

The corn, of which there were nineteen varieties, was sown in hills three feet apart each way.

Due to the very unfavourable wet and cold weather immediately following the planting of the corn and sunflowers, germination was so delayed as to effect considerably the final yields of these crops. The following table gives, according to the estimated yield of dry-matter content, the results of corn varieties tested. (Project Ag. 1.)

CORN

—	Yield per acre (green weight)		Dry-matter content	Yield per acre dry matter	
	tons	lb.	p.c.	tons	lb.
North Western Dent (Nebraska Grown)	18	205	22·54	4	145
Golden Glow (Duke)	13	1,430	22·15	3	75
Burr Leaming (Carter)	19	350	15·43	2	1,910
Longfellow (Duke)	15	1,785	17·97	2	1,710
Northwestern Dent (Dakota Imp. Seed Co.)	10	930	25·59	2	1,350
Longfellow (Duke)	13	1,950	18·63	2	1,212
Compton's Early (Duke)	14	535	17·97	2	1,127
Leaming (Duke)	14	1,900	15·9	2	754
Wisconsin No. 7 (Duke)	15	1,070	14·88	2	623
Ninety-Day White Dent (Dakota Imp. Seed Co.)	11	425	18·94	2	249
Longfellow (Dakota Imp. Seed Co.)	12	400	16·84	2	111
Golden Glow (Duke)	9	1,435	19·88	1	1,863
Northwestern Dent (North Dakota grown, A. E. McKenzie)	7	235	27·3	1	1,822
Hybrid (Wimple)	8	1,000	20·51	1	1,485
Whitecap Yellow Dent (Steele Briggs)	8	1,940	19·34	1	1,468
North Dakota (Steele Briggs)	7	1,405	21·76	1	1,350
Twitchell's Pride (Fredericton)	5	680	27·38	1	924
Amber Flint (Wimple)	5	1,500	24·77	1	847
Quebec 28 (Dr. Todd)	3	1,150	24·18	..	1,728

SUNFLOWERS FOR ENSILAGE

Eight varieties of sunflowers were grown in hills three feet apart each way. Russian Giant gave a very high yield compared to any of the other varieties as will be noted from the accompanying table. (Project Ag. 76.)

SUNFLOWERS

—	Yield per acre green weight		Dry matter content	Yield per acre dry matter	
	tons	lb.	p.c.	tons	lb.
Russian Giant (Dakota Imp. Seed Co.)	33	100	15·78	5	420
Manchurian (McKenzie)	12	1,200	15·78	1	1,960
Manchurian (C.P.R.)	12	1,300	13·24	1	1,340
Manteca (C.P.R.)	12	1,300	12·54	1	1,160
Black (C.P.R.)	10	1,500	14·45	1	1,100
Mammoth Russian (C.P.R.)	9	1,300	13·59	1	620
Mixed (C.P.R.)	9	1,700	13·24	1	600
Ottawa 76 (C.E.F.)	8	1,500	12·73	1	220

MANGELS

Twelve varieties of mangels were sown on April 28 in drills 30 inches apart and harvested on October 19. As a result of a very dry summer the yields were poor. (Project Ag. 16.)

MANGELS

—	Yield per acre (green weight)	
	tons	lb.
Giant Yellow Globe (Rennie)	22	856
Yellow Intermediate (C.E.F.)	20	317
Giant Half Sugar White (Steves)	19	1,468
Giant White Feeding Sugar (Steele Briggs)	19	982
Danish Sludstrup (K. McDonald)	16	841
Long Red Mammoth (Ewing)	16	40
Barres Oval (Gen. Swedish Co.)	15	1,506
Long Yellow (Ewing)	11	962
Danish Sludstrup (Steves)	11	161
Giant Yellow Globe (Ewing)	10	1,093
Red Eckendorffer (Gen. Swedish Co.)	9	1,491
Yellow Eckendorffer (Gen. Swedish Co.)	9	690

CARROTS

Ten varieties of carrots were sown in drills 30 inches apart on April 28 and harvested on October 19. The following table shows that the carrots were not affected seriously by the lack of moisture as were the mangels. (Project Ag. 36.)

CARROTS

	Yield per acre (green weight)	
	tons	lb.
White Belgian (Trifolium)	26	599
White Belgian (Ewing)	25	1,264
New Yellow Intermediate (Ewing)	25	463
Large White Belgian (Rennie)	24	1,662
White Intermediate (Exp. Farm Summerland)	24	1,395
Improved Intermediate White (Ewing)	24	60
Half-Long White (Gen. Swedish Co.)	24	60
Mammoth Short White (Rennie)	23	1,405
Yellow Belgian (Ewing)	23	1,259
Danish Champion (C.E.F.)	22	322

SUGAR BEETS

Six varieties of sugar beets were grown. The yields were very light, due no doubt in large measure to lack of moisture. Analyses were made by the Chemistry Division.

SUGAR BEETS

—	Yield per acre	Sugar in juice	Co-efficient of purity	Average weight of one root
	tons lb.	p.c.		lb. oz.
Ivanosk S	13 1,434	15·39	85·96	1 10
Schreiber & Sons	12 564	14·84	83·85	1 9
Vladovosk	12 564	14·65	80·07	1 13
Ivanosk R. M	11 1,229	13·83	83·77	1 10
Horning	11 161	14·49	83·73	1 13
Dieppe	8 1,622	15·49	84·63	1 10

ANNUAL HAY CROPS

To determine their relative value as annual hays three varieties of oats, five of peas, and one of hulless barley were grown on 1/100 acre plots. The following table gives the results per acre. (Project Ag. 241.)

ANNUAL HAY CROPS

—	Yield per acre (green weight)	Yield per acre (Dry matter)	Yield per acre (cured hay)
	tons lb.	tons lb.	tons lb.
O.A.C. 72 Oats	7 1,800	2 281	2 1,036
Victory Oats	7 1,350	2 95	2 817
Hulless Barley	5 1,650	1 1,695	2 347
Gold Rain Oats	6 875	1 1,576	2 207
Canadian Beauty Peas	6 200	1 328	1 738
Golden Vine Peas	5 475	1 207	1 595
Marrowfat Peas	5 1,625	1 154	1 534
Arthur Peas	4 1,525	1 7	1 361
Prussian Blue Peas	4 1,950	.. 1,998	1 350

FERTILIZERS

MANURE AND FERTILIZERS FOR MANGELS

An experiment was carried on to obtain data with respect to methods of application of manure for the mangel crop and to ascertain the most desirable rate at which to apply the manure when used in conjunction with a standard dressing of commercial fertilizer. The manure was applied at the rates of 10, 15 and 20 tons per acre by each of the following methods: (1) by application in the drill (2) by broadcasting and ploughing under (3) by disking or cultivating in the manure on the ploughed land. The fertilizer employed was the equivalent of a 5-8-8 mixture and was prepared by mixing two parts of nitrate of soda, three parts of superphosphate and one part of muriate of potash. It was applied at the rate of 500 pounds per acre. In connection with the foregoing it must be explained that where the manure is applied in the drills the necessity of extra labour arises in going over the same area a second time when covering the

manure with the plough, or in other words, splitting the drills in order to cover the manure. There were fourteen one-eightieth acre plots in quadruplicate embodied in the experiment on 56 plots in all.

The accompanying table gives the particulars of the treatments together with the average yields per acre obtained. (Project C 158.)

FERTILIZER EXPERIMENTS WITH MANGELS—1926

—	Yields per acre (Average quadruplicate plots)		Treatment
	tons	lb.	
1....	28	260	20 tons per acre well rotted manure applied in drills plus 500 lb. commercial fertilizer per acre applied broadcast before drills were set up.
2....	27	1,180	20 tons per acre well rotted manure broadcast and ploughed under plus 500 lb. commercial fertilizer per acre broadcast before drills were set up.
3....	25	620	20 tons per acre well rotted manure broadcast and disked in after ploughing plus 500 lb. commercial fertilizer per acre broadcast before drills were set up.
4....	25	100	15 tons per acre well rotted manure broadcast and ploughed under plus 500 lb. commercial fertilizer per acre broadcast before drills were set up.
5....	24	440	10 tons per acre well rotted manure broadcast and disked in after ploughing plus 500 lb. commercial fertilizer broadcast before drills were set up.
6....	24	200	10 tons per acre well rotted manure broadcast and ploughed under plus 500 lb. commercial fertilizer per acre broadcast before drills were set up.
7....	23	1,000	15 tons per acre well rotted manure broadcast and disked in after ploughing plus 500 lb. commercial fertilizer per acre broadcast before drills were set up.
8....	22	1,420	15 tons per acre well rotted manure applied in drills plus 500 lb. commercial fertilizer per acre broadcast before drills were set up.
9....	22	160	20 tons per acre well rotted manure broadcast and ploughed under.
10....	21	400	10 tons per acre well rotted manure applied in drills plus 500 lb. commercial fertilizer per acre broadcast before drills were set up.
11....	20	1,060	15 tons per acre well rotted manure broadcast and ploughed under.
12....	17	760	10 tons per acre well rotted manure broadcast and ploughed under.
13....	16	560	500 lbs. per acre commercial fertilizer broadcast before drills were set up.
14....	4	1,820	Neither manure nor fertilizer.

The tabulated data show that no very marked differences in yield have have resulted from the various methods of application of the manure.

Taking everything into consideration the application of barnyard manure broadcast and ploughed under would probably be the most practicable of the three methods under consideration.

As a rule, the disking in or cultivating in of manure after the land is ploughed is not desirable unless the manure is extremely well rotted; by this method there may be a tendency for the land to dry out more or less rapidly, if the manure is of a coarse nature.

Application of manure in drills would probably not give such an increase in yield as to warrant the extra labour involved in going over the entire area a second time when splitting drills to cover the manure.

On a sandy loam, such as prevails where the experiment was carried on, it would appear that an application of from 12 to 15 tons of barnyard manure per acre in conjunction with 500 pounds per acre of a complete commercial fertilizer will result in a fair yield of mangels. In this experiment very low yields were recorded on the plots which received neither manure or fertilizers.

UREA VERSUS NITRATE OF SODA

An experiment was conducted to compare the value of urea with that of nitrate of soda as a source of nitrogen for the mangel crop.

The urea was in the form of a white powder which analyzed 46 per cent nitrogen or 55.5 per cent ammonia. In other words, the urea contained three times as much nitrogen as does nitrate of soda.

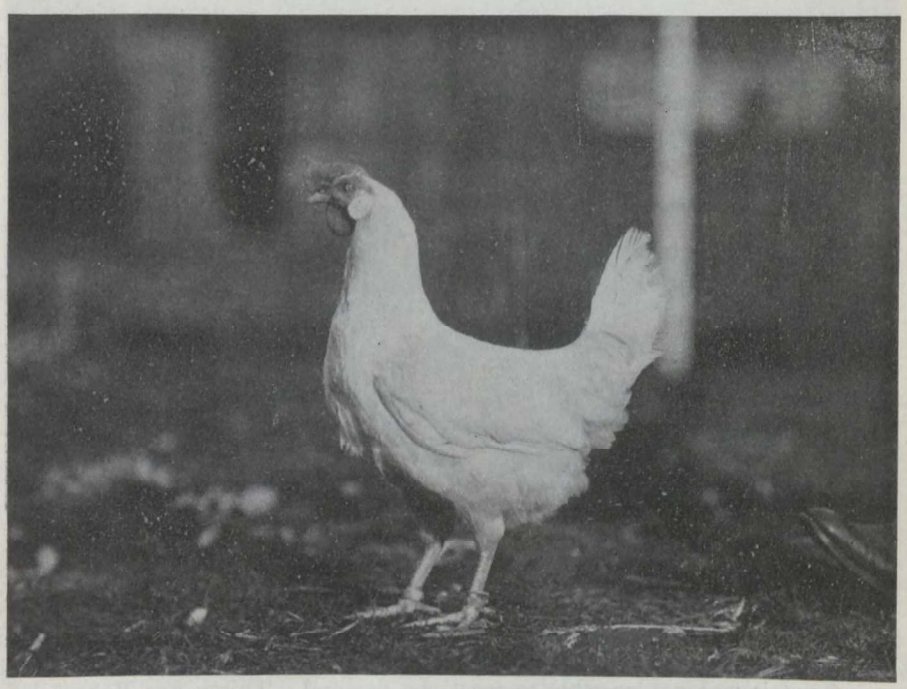
For the test a commercial fertilizer mixture No. 1 was made up of two parts of nitrate of soda, three of superphosphate of lime and one of muriate of potash applied at the rate of 500 pounds per acre. Against this mixture was made up No. 2 containing one third as much urea as nitrate of soda in No. 1, (and supplying the same amount of nitrogen) three of superphosphate of lime, and one of muriate of potash applied at the rate of 500 pounds per acre.

The plots were in duplicate. The average results of the mangel crop were as follows:—

Mixture No.	Source of Nitrogen	Yield per acre	
		tons	lb.
2	Urea	23	380
1	Nitrate of soda	24	10

POULTRY

The Farm flock, now consisting entirely of Barred Plymouth Rocks, totalled on December 31, 1926, four hundred and ninety-six birds. Pedigree breeding is of first importance; all hens are trap-nested and accurate records kept of every indivdual.



White Leghorn owned by the University of British Columbia. World's record hen for all breeds, laying 351 eggs in 364 days.

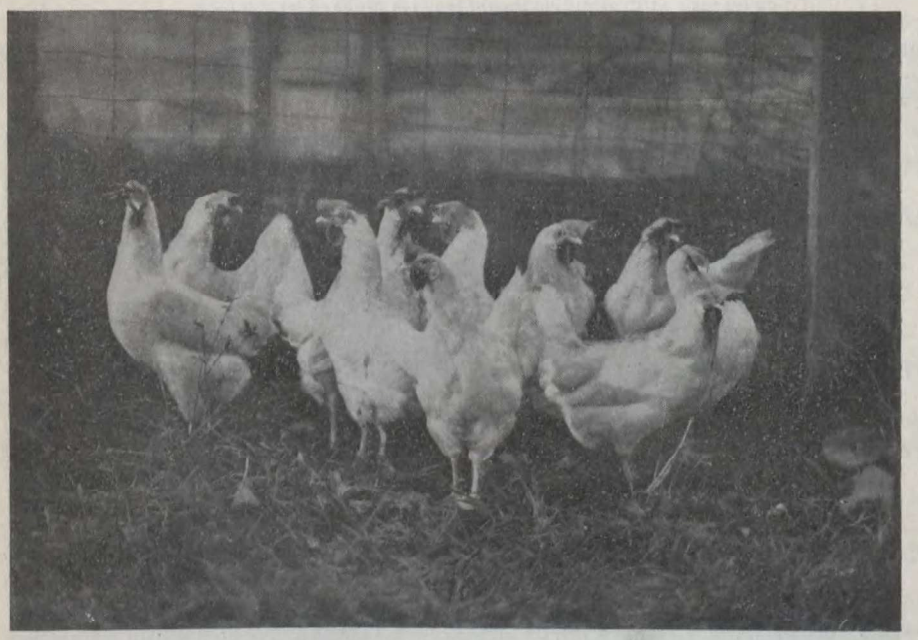
INCUBATION

Hatching commenced towards the end of February and finished towards the end of April the incubators used being the 1,200-egg Candee and the 100-egg Jubilee.

The average fertility was 88 per cent; of the total eggs set, 38 per cent hatched, while the fertile eggs there was a 43 per cents hatch. Of the chicks hatched, 80 per cent were alive when wing-banded.

In comparing hatching results for settings by the month, the month of March and April only being considered, the following figures are interesting. The percentage fertility during March was 81.2 and in April 81.6. Of the total eggs set during March 41.6 per cent hatched, while of those set in April, 41.4 per cent hatched. Of the fertile eggs, March recorded a 45.6 per cent hatch as contrasted with a 50.5 per cent hatch in April.

A comparison was made in hatching results from hens and pullets. The hen eggs showed a fertility of 82 per cent as compared to a fertility of 72 per cent from pullets. Of the total hen eggs set 39 per cent hatched whereas of the total pullet eggs set, only 28 per cent hatched. Of fertile hen eggs, 48 per cent hatched as compared to 39 per cent in the case of pullets. The number of chicks alive when winb-banded was 83.6 per cent of those hatched from hen eggs, and of those hatched from pullet eggs 83.1 per cent were alive and wing-banded.



White Leghorn pen owned by F. Appleby, Mission, B.C. Winners of the Agassiz contest and highest pen for points in Canada.

SALE OF HATCHING EGGS AND COCKERELS

The demand for Barred Rock hatching eggs was considerable as usual. Eighty-four settings or over one thousand two hundred eggs were sold for hatching and yet it was not possible to meet the demand. Thirty-five Barred Rock cockerels were sold for breeding purposes.

CONFINEMENT VERSUS RANGE

EFFECT OF EGG PRODUCTION.—This experiment, put into operation on November 29, 1921, and to be carried on yearly for five more years, has now completed its fifth period, this stage dating from October 1, 1925 until September

30, 1926. For this period two pens of Barred Rocks were selected, comprising ten pullets in each pen. The following table shows results for the fifth year. (Project P 55A.)

CONFINEMENT VERSUS RANGE—1925-26

—	Eggs per bird	Value of eggs per bird	Cost of feed per bird	Gain
		$ cts.	$ cts.	$ cts.
Barred Rocks confined	189·0	4·72	2·77	1·96
Barred Rocks on Range	183·1	4·58	2·76	1·82

Prices per 100 pounds: scratch grains $2.36; mash $2.70; skim-milk 25 cents; green feed 25 cents; grit $1.50; shell $2. Grain consisted of equal parts by weight of wheat, oats, and cracked corn. Mash consisted by weight of 100 parts of bran, 100 shorts, 100 corn meal, 100 crushed oats, 75 beef scrap and 2 per cent charcoal.

EFFECT OF HATCHING.—The average fertility of eggs from Barred Rocks on range was 95.7 per cent while that from Barred Rocks confined the previous year was 91 per cent. The number of chicks hatched in the former case was 35.7 per cent as compared with 38.3 per cent in the latter. Of the fertile eggs 37 per cent were hatched from the range birds and 42 per cent from the confined. Of the chicks hatched from birds which ran on range the previous season 64 per cent were alive when wing-banded as against 73 per cent from birds confined the previous season. (Project P 120.)

SUMMARY OF RESULTS WITH BARRED ROCKS—CONFINEMENT VERSUS RANGE

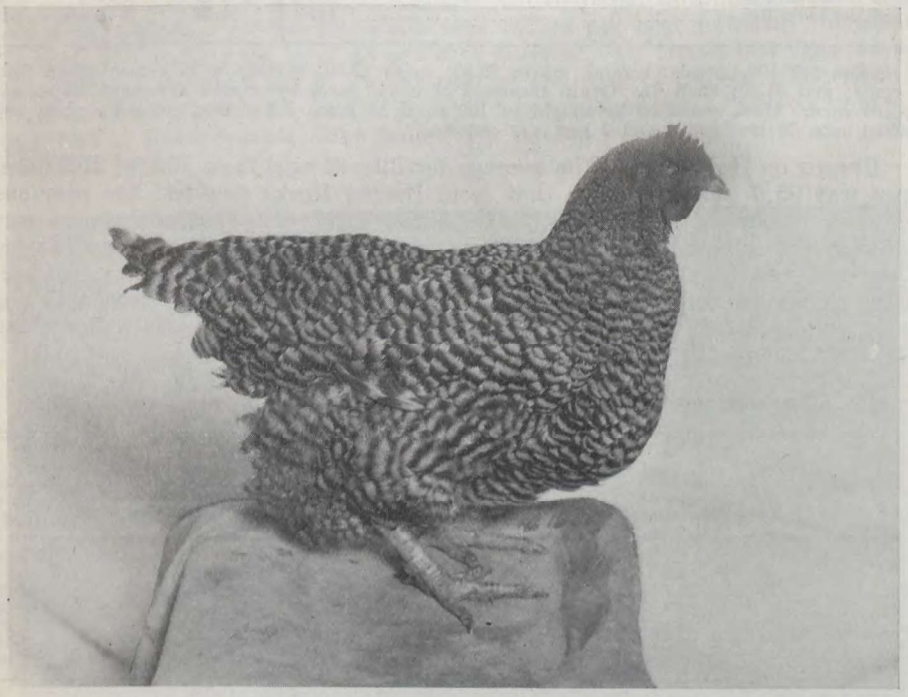
Year	Range				Confined			
	Number of birds	Total eggs	Death rate	Profit per bird	Number of birds	Total eggs	Death rate	Profit per bird
			p.c.	$ cts.			p.c.	$ cts.
1922	35	6,270	11·0	2·80	35	5,855	20	2·65
1923	17	2,810	20·9	2·74	17	3,284	5·8	3·33
1924	10	1,435	10·0	1·70	10	1,778	10	2·27
1925	10	1,650	10·0	3·30	10	1,770	10	3·76
1926	10	1,831	Nil	1·82	10	1,890	10	1·96
Average per bird for five years	.....	170	.....	2·47	.....	178	.....	2·77

SUMMARY OF HATCHING RESULTS WITH BARRED ROCKS—CONFINEMENT VERSUS RANGE

Year	Per cent fertility		Per cent fertile hatched		Per cent hatched wing-banded	
	Range	Confined	Range	Confined	Range	Confined
1924	88·9	60·04	41·44	30·7	54·34	56·41
1925	97·6	83·3	54·4	37·0	85·0	80·0
1926	95·7	91·0	37·0	42·0	64·0	73·0
Average for three years	94·0	78·0	44·0	36·0	68·0	70·0

DEDUCTIONS.—Results are quite conclusive evidence that Barred Rock pullets will lay more eggs confined than on range. The results are even more conclusive that range is necessary for Barred Rock breeding stock from a fertility and hatchability standpoint.

It should be explained here that pullets tested for egg-production in confinement were the progeny of females that had been confined during their first laying year, and pullets tested on range were the progency of females that ran on range during their first laying year. During the breeding season all breeders were handled under the same conditions. Breeders used were yearling hens in all cases, *i.e.* mated the spring immediately following the completion of their first laying year. Chickens were all raised under the same conditions until pullets were put into laying-houses when separation was made into confined pens and range conditions respectively.



Hen No. 400, owned and bred by the Agassiz Farm. This hen laid 326 eggs averaging 28 ounces per dozen. She scored 409 points, and thus is the highest hen in the world for points. She is sired by a full brother to E332, last year's world's record Barred Rock.

FEEDING LAYING PULLETS

Commencing November 1, 1925 a series of feeding experiments was started. These continued until the end of August 1926, *i.e.* for eight months. The pens involved numbered eleven, consisting of ten birds in each pen, all pullets.

The following outline describes the various experiments and the rations used in each:—

Pen 1. (Project P81.) Mash composed by weight of 4 parts ground wheat, 1 cornmeal, ¼ soybean meal, ¼ beef scrap, ¼ oil-cake meal, 2 per cent charcoal; scratch grain consisting of equal parts by weight of wheat, oats, and cracked corn; skim-milk, green feed; grit and shell also available.

Prices per 100 pounds: grain $2.36; mash $3.24; skim-milk 25 cents; grit $1.50; shell $2.

Pen 2. (Project P82.) Mash composed by weight of equal parts of bran, shorts, cornmeal, crushed oats, 2 per cent charcoal; scratch grain, same as Pen 1; skim-milk, green feed, grit, shell.

Prices: mash $1.96; remainder same as Pen 1.

Pen 3. (Project P82.) Same as Pen 2 except that 1 part beef scrap is added to mash and no skim-milk fed.

Prices: mash $2.77; remainder same as Pen 1.

Pen 4. (Project P87.) Same as Pen 3 except that fish meal replaces beef scrap.
Prices: mash $2.25; remainder same as Pen 1.
Pen 5. (Project P90.) Scratch grain same as Pen 1; mash composed by weight of 1 part bran, 1 shorts, 1 crushed oats, 1 cornmeal, ¼ beef scrap, 2 per cent charcoal and 10 per cent alfalfa leaves and blossoms; skim-milk, grit and shell being available.
Prices: mash $4.30; remainder same as Pen 1.
Pen 6. (Project P90.) Same as Pen 5 except that alfalfa leaves and blossoms was replaced by green feed such as mangels, clover or kale in season.
Prices: mash $2.70; remainder same as Pen 1.
Pen 7. (Project P95.) Same as Pen 6 except that Epsom salts replaced green feed.
Prices: mash $2.70; remainder same as Pen 1.
Pen 8. (Project P107.) Same as Pen 6 but both grain and mash fed in open hoppers.
Prices: mash $2.70; remainder same as Pen 1.
Pen 9. (Project P107.) Same as 8 only grain fed in litter.
Prices: mash $2.70; remainder same as Pen 1.
Pen 10. (Project P162.) Same as Pen 9 beef scrap supplying the animal protein.
Prices: mash $2.70; remainder same as Pen 1.
Pen 11. (Project P162.) Same as Pen 10 with the elimination of beef scrap, vegetable protein being supplied in the mash by 1 part soybean meal, ¼ oil-cake meal, ¼ alfalfa leaves and blossoms, and 1 per cent salt.
Prices: mash $2.42; remainder same as Pen 1.

EXPERIMENTS IN FEEDING—RESULTS FROM LAYING PERIOD NOV. 1, 1925, TO AUG. 31, 1926

Pen No.	Eggs per per bird	Value of eggs per bird	Cost of feed per bird	Profit over cost of feed per bird
		$ cts.	$ cts.	$ cts.
1	171·6	4 21	2 33	1 87
2	182·9	4 69	2 22	2 47
3	149·5	4 08	2 51	1 57
4	161·7	3 88	2 02	1 85
5	159·4	3 91	2 91	1 00
6	168·3	4 12	2 21	1 90
7	149·0	3 68	2 52	1 15
8	182·3	4 51	2 14	2 37
9	164·1	4 02	2 15	2 38
10	165·8	3 96	2 53	1 44
11	140·2	3 41	2 35	1 06

PEN- AND CRATE-FEEDING FOR BROILERS

During the month of July an experiment was carried on in fattening broilers under different conditions but with the same feed. One lot was crate-fed and another lot fed in a pen. The following ration was used: equal parts by weight of crushed oats, cornmeal, shorts, skim-milk. The price of the ration was 2 cents per pound. The accompanying table gives the results. (Project P34A.)

METHOD OF FATTENING BROILERS

—	Original weight of birds	Final weight	Gain	Feed used	Cost of feed	Value of gain	Profit
	lb.	lb.	lb.	lb.	cents	cents	cents
Fed in pen, 5 birds	12·0	14	2·0	9	18	36	18
Fed in crate, 5 birds	10·5	13	2·5	9	18	45	27

RATIONS FOR BROILERS

A comparison was made with different rations for fattening broilers, the following being the feeds used:—

Pen 1. Equal weights crushed oats, cornmeal, shorts; skim-milk. Price, 2 cents per pound.
Pen 2. Equal weights crushed oats, barley meal, shorts; skim-milk. Price, 2 cents per pound.
Pen 3. Equal weights crushed oats, cornmeal, shorts; soybean-meal; skim-milk. Price 2½ cents per pound. (Project P34B.)

RATIONS FOR FATTENING BROILERS

—		Original weight of birds	Final weight	Gain	Feed used	Cost of feed	Value of gain	Profit
		lb.	lb.	lb.	lb.	cts.	cts.	cts.
Pen 1	5 birds	12·0	14	2·0	9·0	18	36	18
" 2	5 "	13·0	15	2·0	9·0	18	36	18
" 3	5 "	12·5	16	3·5	10·0	25	63	38
Crate 1	5 birds	10·5	13	2·5	9·0	18	45	27
" 2	5 "	8·5	13	4·5	9·0	18	81	63
" 3	5 "	8·5	12	3·5	8·5	21	63	42

NOTE.—Birds in crates were fed the same rations as birds in pens numbered correspondingly.

BEEF SCRAP VS. MILK FOR BROILERS

An experiment was conducted comparing beef scrap as a substitute for milk in fattening broilers, the following being the rations used.

Crate 1. Equal weights crushed oats, cornmeal, shorts, mixed with skim-milk. Price 2 cents per pound.

Crate 2. Equal weights cornmeal, shorts, ½ beef-scrap mixed with water. Price 2½ cents per pound.

The accompanying table gives the results. (Project P 47.)

BEEF-SCRAP AS A SUBSTITUTE FOR MILK IN FATTENING BROILERS

—		Original weight of birds	Final weight	Gain	Feed used	Cost of feed	Value of gain	Profit
		lb.	lb.	lb.	lb.	cts.	cts.	cts.
Crate 1	5 birds	12·0	14	2·0	9·0	18	36	18
" 2	5 "	10·5	13	2·5	9·5	21	45	24

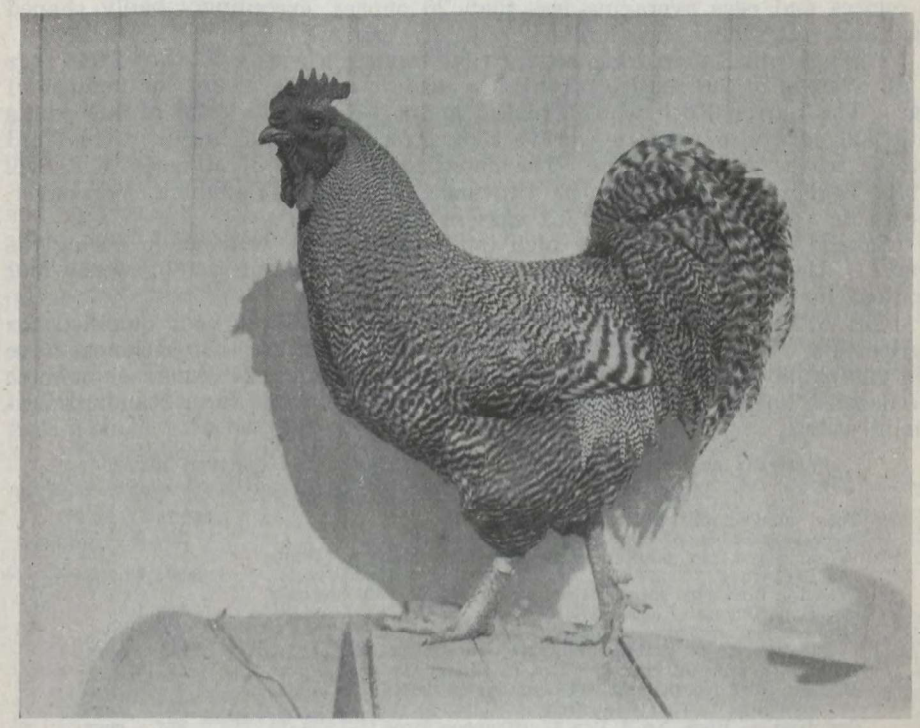
FEEDS FOR FERTILITY, HATCHABILITY, AND VIABILITY

During the hatching season of 1926 experiments were carried on to determine the effects upon fertility, hatchability and viability of supplementary feeds, such as cod-liver oil, raw liver, bone meal, etc., added to the regular ration of breeding stock. Project P. 104 (*b*).

Seven pens, ten birds in each pen, were used in this experiment. The birds were housed, handled and fed alike except for the special feeds added to the regular ration when fed singly, the supplementary feeds were added in the following amounts:—cod-liver oil, 1c.c. per bird (1 teaspoonful for 4 birds) daily; raw liver, ½ ounce per bird daily; bone meal, 5 per cent by weight of dry mash. When fed in combination only half these quantities were given. The regular ration consisted of scratch grain composed of equal weights of wheat, oats, and cracked corn; mash composed of equal weights of bran, shorts, ground oats, corn-meal, 15 per cent beef scrap; skim-milk at the rate of two pounds per day to ten birds.

The results as recorded in the following table are not to be taken as conclusive as they are the result of one trial only.

—	Per cent fertile	Per cent fertile hatched	Per cent mortality in 3 weeks
Regular ration plus cod-liver oil and liver	95·2	67·6	16·1
" " cod-liver oil and bone meal	95·7	61·4	18·5
" " liver and bone meal	94·4	49·7	10·5
" " cod-liver oil	74·6	42·4	29·2
" " liver	75·4	34·0	24·4
"	92·7	29·9	21·0
" " bone meal	86·4	28·5	12·5



Parks 736. One of the Barred Rock male birds that proved so valuable in building up the Agassiz flock.

EGG-LAYING CONTEST

The sixth British Columbia Egg-laying Contest conducted at Agassiz by the Experimental Farm Branch terminated October 30, 1926. The contest contained forty-six pens of ten pullets in each, the five breeds entered being represented as follows:—

	Pens
Anconas	2
S.C. White Leghorns	36
Barred Plymouth Rocks	3
Rhode Island Reds	2
White Wyandottes	3

It was reported a year ago that the production at the Agassiz contests had risen year after year. The results of the 1925-26 contest, however, have more than lived up to that reputation in that the records have to a large extent

eclipsed even those of the previous year when the average production of 215 eggs per bird seemed as high as could be looked for. The contest just completed finished up with an average record per bird of 231 eggs, i.e. 106,226 eggs from 460 birds, which is considered to be a world's record.

Apart from this, several other world's records were made both as to pen production (ten birds to a pen) and production from individual birds. The pen which won the contest with a score of 3057.5 points has established a world's record. Points are awarded on the following basis: one point for each egg averaging 24 ounces to the dozen; one-tenth of a point deducted for each ounce that eggs average less than 24 ounces to the dozen; bonus of one-tenth of a point for each ounce that eggs average more than 24 ounces to the dozen. Eggs averaging more than 27 ounces to the dozen are considered as averaging 27 ounces and eggs averaging less than 20 ounces, exceedingly badly shaped eggs, and soft-shelled eggs are not officially credited.

The pen which scored highest for egg-production with a total of 2,946 eggs or an average of 294 eggs per bird, has made a world's record for number of eggs. The Barred Rock which finished in the lead with a total of 409 points with 326 eggs also made a world's record for points, all breeds. This bird belongs to the Agassiz Farm. The outstanding record of all goes to a S.C. White Leghorn belonging to the University of British Columbia, Vancouver. She made a world's record of 351 eggs in 364 days.

Several more exceptionally high individual records were made during the year. Of these high producers 36 laid over 300 eggs, and of the 36, twenty-four qualifed for registration.

Out of the 460 birds in the contest, 266 or 57.8 per cent qualified for registration. The qualifications for a bird to register are that she must have laid 200 or more eggs in a contest, these eggs to average 24 ounces or more to the dozen after the first four weeks, and she must be free from Standard Disqualifications.

SUMMARY OF RESULTS—BRITISH COLUMBIA EGG-LAYING CONTEST, 1925-26

Dominion Experimental Farm, Agassiz, B.C.

Total number of eggs	106,226	
Average number of eggs per bird	230.9	
Winning pen (by points), F. W. Appleby, Mission (White Leghorns)	3,057.5	
Winning bird (by points; also registered) No. 10 (Agassiz Experimental Farm, B.R.)	409.1	
Highest pen according to egg-production:— University of British Columbia, Vancouver (W.L.)	2,946	eggs
Average number of eggs per bird in University pen	294.6	
Highest Bird, No. 6 Pen 32 (University of British Columbia) according to egg production	351	eggs
2nd Highest Bird, No. 1 Pen 27 (Shannon Bros.)	337	eggs
Highest registered bird, No. 9 Pen 31 (Tozer)	335	eggs
Number of birds laying 200 to 225 eggs	74	
Number of birds laying 225 to 250 eggs	111	
Number of birds laying 250 to 275 eggs	85	
Number of birds laying 275 to 300 eggs	86	
Number of birds laying 300 and over	36	

BREED AVERAGE PER BIRD

White Leghorns	237.9	eggs
Barred Rocks	210.6	eggs
White Wyandottes	204.6	eggs
Rhode Island Reds	204.	eggs
Anconas	202.	eggs

RATION USED IN THE EGG-LAYING CONTEST

Scratch grains, consisting of equal parts by weight of cracked corn, whole wheat and oats, were fed twice daily, morning and evening, at the rate of from 12 to 14 pounds per 100 birds or from 4 to 6 pounds in the morning and 8 pounds in the evening.

Dry mash was kept in a self-feeding hopper before the birds at all times. The mash consisted of a mixture by weight of bran 100 parts, shorts 100, crushed oats 100, cornmeal 100, beef scrap 75, oil-cake meal 15, charcoal 10. Grit and oyster shell were also available at all times in a small divided hopper.

Green feed was provided in the form of kale, mangels or cut clover at the rate of from 2 to 3 pounds daily per ten birds. Skim-milk was fed daily at from 3 to 4 pounds per ten birds and water was before the birds almost continually.

When mangels were used 25 pounds of alfalfa leaves and blossoms were added to the mash mixture.

Epsom salts were given from time to time as was deemed necessary.

BEES

The past winter was a very mild one and in general the bees wintered well. Eleven hives were wintered out of doors, five in Kootenay cases and six in double cases. The first spring examination was made on February 13 when it was found that number four hive had been robbed out and the bees were dead, and number eight was queenless. This hive was united with number five and a nuclei taken from number eleven to form a new number eight. Number four hive was made from nuclei from number seven hive and headed by a Peterman queen, thus making two increases from the nine remaining hives. The average number of frames covered by bees on the first examination was seven and the average amount of stores per hive was fourteen pounds. The season was a favourable one for a good honey flow, a net total of 1,133 pounds being extracted giving an average of 125.88 pounds per hive. The highest yield from a single hive was 218 pounds extracted honey.

The following indicates the net yield from each hive:—

Hive No.	Kind of Hive	Weight of honey extracted
		lb.
1	10-frame Kootenay Langstroth	149
2	" " "	93
3	" " "	200
4	" " "	50
5	" " "	163
6	" single-wall Jumbo	58
7	" " Langstroth	60½
8	" " "	10
9	12 " " "	70½
10	12 " " "	71
11	10 " " "	208

The surplus from number four is credited to number seven and from number eight to number eleven as four and eight were increase from seven and eleven.

METHODS OF DETECTING PREPARATIONS FOR SWARMING

The method involved in this project is the use of a double brood-chamber by adding a shallow super without a queen-excluder as early in the spring as early in the spring as the strength of the colony will permit. By using the shallow super it has been found under some conditions that the queen cells will be built along the bottom bars of the shallow super. This project was carried out with three colonies. A considerable number of pips were found

along the bottom bars of the shallow supers but in no case were eggs or larva noticed. On July 3 one queen cell with larva was found in colony five in the lower brood-chamber. On examination seven days later no cell could be found. No swarming took place. (Project Ap. 5.)

WINTERING IN SINGLE-COLONY CASES VERSUS WINTERING IN DOUBLE-COLONY CASES

The bees wintered well in both the single-colony cases (Kootenay Hive) and in the double-colony cases. It has been noticed that the hives in double-colony cases build up quicker in the spring but lose this advantage soon after being brought out. The winter packing case was taken from the single-wall hives on April 14. Two hives of each were used. The two hives in Kootenay cases, numbers three and five, yielded 363 pounds of honey and the two single-wall hives, numbers seven and eleven, yielded 328½ pounds of honey. These results are the reverse of those obtained in the same experiment in 1924. The highest individual hive was number eleven, single-wall. In 1924 the queen in one Kootenay hive failed with the result that only 66 pounds of honey were produced. (Projects Ap. 9, 10.)

COMPARISON OF DIFFERENT SIZES OF HIVES

This experiment has been run for the last three years with different sizes of hives, the ten- and twelve-frame Langstroth and the Jumbo hive with brood-chamber only. In an apiary it is advisable to have all the hives of a uniform standard so that all parts are interchangeable. The frames in the Jumbo hive are two inches deeper than those in the Langstroth hive but not equal to a Langstroth plus a shallow super. Using the Jumbo brood-chamber, the frames are not interchangeable with Langstroth hives or supers, with the result that the brood-chamber cannot be relieved of brood or honey. A Jumbo super filled is too heavy for convenient handling. The chief fault with the twelve-frame Langstroth is that the brood-chambers are too large, the disadvantage being in width in the spring time for the average or a weak colony, it being difficult for the bees to keep warm. The comb frames are the same size as the ten-frame Langstroth but other parts are not interchangeable. With the added width this type of hive offers an advantage for queen-rearing. The ten-frame Langstroth with Kootenay cases has proved itself to be the most satisfactory type of hive. (Project Ap. 21.)

THE VALUE OF STIMULATIVE FEEDING FOR BROOD REARING

Results so far have shown that there is considerable benefit from stimulative spring feeding as it produces larger and more vigorous colonies. Spring feeding of sugar syrup was commenced on February 13 and continued until nectar commenced to flow. Eight hives were selected for this experiment, four Kootenay hives, the two weaker colonies being fed four pounds of sugar syrup and the two stronger used for comparison, and four single-wall hives given the same treatment as the Kootenay hives. The average number of combs covered by bees in the Kootenay hives fed sugar syrup was seven; the check hives nine and a half; single-wall hives fed sugar syrup, five and a half; the check hives seven. The results obtained from the Kootenay hives fed sugar syrup were 363 pounds of extracted honey and from the colonies not fed, 242 pounds. The results from the single-wall hives fed were 170½ pounds and from the colonies not fed 129 pounds. One of the colonies used as a check in the latter case was the weakest hive in the apiary though it was in good condition early in the spring. One of the single-wall fed colonies is also credited with an increase. (Project Ap. 25.)

PROTECTED VERSUS UNPROTECTED HIVES DURING SUMMER

This experiment has been run during the last five years and though in four of these years Kootenay hives have given the best results, some limiting factor has cropped up each year. In 1921 and 1922 the Kootenay hives gave the best result but the single-wall hives were given no winter protection and consequently were not as strong in the spring as the colonies in Kootenay hives. Again in 1923 the Kootenay hives did best though the single-wall hives were given protection in double packing cases. In this year, however, one of the single wall colonies gave no spring surplus due to an unprolific queen. In 1924 the single-wall hives gave the best result, but one of the queens in a Kootenay hive failed. During 1925 the Kootenay hives gave the highest yield but treatment was slightly different which may in some measure account for the surplus. In 1926 two Kootenay hives were selected one having only the brood-chamber protected and the second having the lifts continued up with the supers. Two single-wall hives were used for comparison. The two Kootenay hives yielded 363 pounds of honey and the two single-wall hives 328½ pounds of honey, each hive also giving one increase. One of the single-wall hives gave the highest yield of 218 pounds of honey. The highest yield in Kootenay hives was the one with only the brood-chamber protected. We are inclined to favour the Kootenay hive with brood-chamber protected. The single-wall hives need the outer packing case for winter protection and this operation involves considerable labour in the fall and again in the spring. So far no benefits have been observed in continuing the lifts with the supers in the Kootenay hives, and this operation entails added equipment and extra labour during examination of the hives. This experiment will be continued. (Project Ap. 42.)

RETURNS FROM APIARY

Value of extracted honey 1,235½ lb. at 15c	$185 32	
Gross returns		$185 32
Value of honey fed to bees 102 lb. at 15c	15 37	
Value of queens purchased	5 00	
Value of supplies	31 10	
Gross expenditure		$51 47
Net balance or returns for labour		$133 85

STUDY OF HONEY FLOWS

The chief source of nectar in the spring is from fruit bloom, dandelion and maple. The amount of honey produced depends largely on the weather and the strength of colonies at that season. The main flow in June and July is chiefly from clover and Canada thistle. There are a number of lime trees on the farm which the bees work well when they are in bloom. Acacia trees are also a source of nectar in May and early June; weather however, is often unfavourable at this season. There is one angelica tree *Acanthopanax ricinifolium,* growing in this district which blooms in September, the bees were very active working this and due to its season of bloom it has considerable value. (Project Ap. 28.)

FIBRE PLANTS

Experimental work pertaining to the suitability of this district for growing flax and hemp for fibre was carried on. Three varieties of flax were grown and two varieties of hemp. Plots were one-sixtieth-acre in size and were in triplicate.

FLAX—TEST OF VARIETIES

Of the three varieties tested, J.W.S., Pure Line 6, and Riga Blue, J.W.S. gave the highest yield of total crop per acre, with the others following in the order named. (Project E 3.)

VARIETY TESTS

Variety	Dry straw per acre	Retted straw per acre	Long fibre per acre	Tow per acre
	lb.	lb.	lb.	lb.
J. W. S.	6,300	4,200	930	140
Pure Line No. 6	5,460	3,600	840	120
Riga Blue	5,340	3,210	750	120

Hemp grown at Agassiz for seed production. The crop made strong growth, but did not ripen seed.

FLAX—DATES OF SOWING

In order to determine the most satisfactory date to sow flax four different sowings of Riga Blue were made. (Project E 7.)

Throughout all the growing season the good quality of the flax was particularly noticeable.

DATES OF SEEDING FLAX

Date sown	Dry straw per acre	Retted straw per acre	Long fibre per acre	Tow per acre
	lb.	lb.	lb.	lb.
1st seeding, April 30	5,340	3,210	750	120
2nd seeding, May 7th	4,938	2,400	540	90
3rd seeding, May 14th	5,580	2,940	648	126
4th seeding, May 21st	4,320	2,048	414	240

HEMP—TEST OF VARIETIES

Two varieties of hemp, Russian and Kentucky, were tested. The former was an entire failure while the latter, sown on same date, gave a total yield per acre of 4 tons 1,200 pounds. (Project E 4.)

HEMP—DATES OF SEEDING

Similarly to the flax, four different dates of seeding of hemp were made with results as follows. (Project E 8.)

DATES FOR SOWING HEMP

Variety	Date of sowing	Yield per acre total crop	
		tons	lb.
Kentucky	First sowing, April 30	4	1 200
"	Second sowing, May 7	6	1,060
"	Third sowing, May 14	6	140
"	Fourth sowing, 21 May	5	1,380

The growing of hemp in this district is rather precarious in that a great difficulty exists in the harvesting due to the wet weather which usually is experienced at that time.

HEMP FOR SEED

Seed of Kentucky hemp was sown in hills five feet apart each way with a view to finding out the possibilities of growing hemp for seed in this district. The seed was sown on May 6, but although there was quite a fair crop, yet it did not ripen up into a stage of maturity early enough to allow of harvesting. In order to harvest the crop, sowing in the spring should take place as early as possible.

GENERAL NOTES

Much attention has been drawn to the work of the Farm this year by the outstanding results secured in the egg-laying contest. Several world's records were made, paramount among which was the 351-egg record made by hen number six. The record of 2,946 eggs from ten birds; the average of 231 eggs from 460 birds; the 326-egg record for a Barred Rock hen; and the high records made by points were reported throughout the world.

In co-operation with the Summerland and Invermere Stations an agricultural exhibit was staged at Vancouver Exhibition. Sixteen Holstein cattle were also displayed at the same show. Nine Holstein cattle and five Clydesdale horses were exhibited at New Westminster. At this show the horses succeeded in winning five first prizes, two reserve championships, and one grand championship. The cattle won grand champion male, reserve grand champion female, and minor prizes. The head teamster at the Farm won the grand championship at the Chilliwack Annual Ploughing Match. The Superintendent, besides attending the class A Fairs in this province, judged Clydesdale horses at Regina and Holstein cattle at Victoria Exhibitions. Considerable time was given to directorate work of the Dairymen's Association, Stock Breeders' Association, Provincial Seed Growers' Association and Holstein Association. The Superintendent and Assistants addressed many Institute meetings, attended several conventions, conferences, fairs and poultry meetings.

The annual get-together picnic of the Fraser Valley Milk Producers' Association was held again this year on the Farm on June 9. An excellent lunch was provided on the lawn by the Ladies Aids of the local churches. A stock-judging demonstration, a dairy cow production competition, a live stock weight-guessing contest and a stock parade were popular and instructive features. An open-air business meeting of the Milk Producers' Association was held at which several instructive addresses were given.

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