DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

EXPERIMENTAL STATION

SIDNEY, B.C.

REPORT OF THE SUPERINTENDENT

E. M. STRAIGHT, B.S.A.

FOR THE YEAR 1926

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EXPERIMENTAL STATION FOR VANCOUVER ISLAND SIDNEY, B.C.

REPORT OF THE SUPERINTENDENT, E. M. STRAIGHT, B.S.A.

THE SEASON

The winter of 1925-26 was such in name only. There was no snow and little frost. In fact many tender plants, that had been in the open all summer, remained in the open and continued to grow all winter. The rainfall was light, much less than usual for the season. Ploughing was continued to some extent during the entire winter. The first seeding was accomplished in March. The summer was practically without rainfall, a condition giving much concern to the farming community. The hay crop was abundant. Cereals furnished an abundance of straw but less grain than usual. The fruit crops were heavy, pears, plums and cherries especially so. Corn for ensilage was light, but mangels was the heaviest crop harvested on the Station farm.

METEOROLOGICAL RECORDS

Month	Highest temp.	Lowest temp.	Mean temp.	Precipitation	Sunshine	Possible Sunshine
	Deg. F.	Deg. F.	Deg. F.	Inches	Hours	Hours
January	52·0	29·0	36·6	3·92	50	273
February	53·5	33·0	43·3	3·21	62	286
March	61·5	34·0	46·5	0·85	186	370
April	71·0	35·5	51·8	0·93	211	411
May	80·5	36·0	53·8	1·60	202	473
June	85·0	43·0	61·4	0·25	328	482
July	88·0	46·5	64·6	0·08	297	486
August	81·0	43·0	64·4	1·09	212	444
September	74·0	35·0	55·0	0·66	234	377
October	64·0	38·0	51·6	3·91	117	335
November	58·0	34·0	47·9	3·93	73	276
December	57·0	21·0	39·2	5·17	36	259

PRECIPITATION AT SIDNEY, B.C.

Month	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	Average 11 years
January	5·52	4·07	3·75	4·45	3·28	4·23	1·86	6·80	3·06	5·50	3·92	4·22
February	5·49	2·97	4·78	4·02	0·61	3·97	1·81	3·62	6·00	3·88	3·21	3·67
March	4·85	2·72	4·68	3·42	2·33	1·68	1·20	2·09	0·47	1·46	0·85	2·34
April	1·52	4·09	0·21	2·05	1·45	1·13	0·71	1·68	1·08	1·75	0·93	1·51
May	0·73	0·70	0·44	1·08	1·24	1·57	0·54	1·29	0·16	0·51	1·60	0·90
June	0·55	1·06	0·45	0·77	1·17	1·36	0·27	0·51	0·33	0·37	0·25	0·64
July	1·72	0·18	0·96	0·27	0·67	0·04	0·00	0·92	0·31	0·23	0·08	0·49
August	0·32	0·44	1·41	0·06	2·52	1·02	0·92	0·65	0·77	0·81	1·09	0·91
September	0·66	1·35	0·16	1·85	2·96	2·74	1·96	1·62	3·12	0·59	0·66	1·61
October	2·01	0·61	2·73	1·52	4·03	4·80	2·21	1·95	3·35	1·06	3·91	2·56
November	3·18	1·85	3·34	5·94	3·36	4·40	1·47	2·58	5·80	2·49	3·93	3·49
December	6·59	9·21	6·77	4·75	3·78	3·60	9·08	6·88	4·61	5·43	5·77	6·04
Totals	33·14	29·25	29·68	30·18	27·40	30·54	22·03	30·59	29·06	24·08	26·20	28·38

HORTICULTURE

TREE FRUITS

Special attention is paid to the culture of fruit trees, small fruits, tender fruits, vegetables, flowers and nuts. No effort is being spared in the endeavour to obtain reliable information on cultural methods, varieties, yields and costs of many crops, the tests extending over a period of several years.

Trees throughout the whole of the orchard are remarkably clean and free from diseases and insect pests. Pear scab, which caused much loss during 1925, was very slight during the past season. The usual small amount of blossom blight and brown rot were in evidence among the stone fruits, but little loss was incurred except in a few varieties.

Cherries and pears gave very heavy yields. Plums also were good. Prices, especially for pears, were very low, hardly covering cost of handling.

The entire orchard was kept under clean cultivation during the growing season. Fall wheat (Red Rock) sown early in October gave a growth of about 15 inches for ploughing down at the end of March.

SPRAYING

The entire orchard, comprising apples, pears, cherries, peaches, apricots, nectarines, medlers, and quince, is given dormant and calyx sprays each year. For the past two years an autumn spray has been applied about the first of September with the object in view of controlling such diseases as apple and pear scab, and peach-leaf curl. Innumerable ripened spores of these and many other diseases are destroyed and thus prevented from causing further infection. The dormant spray keeps the trunk and branches of the trees in a healthy condition, destroying eggs of insect pests, and controlling disease. The combination spray applied as soon as the petals have fallen prevents diseases and insect pests from becoming established on the fruit and foliage. These last two sprays under ordinary conditions are sufficient to insure fruit of good quality.

The sprays are made up in the following manner:—

1. *Dormant*—Consisting of commercial sulphur, 10 to 100 and applied to all fruit trees while still in a dormant condition.
2. *Calyx*—Consisting of commercial lime-sulphur, 3 to 100; black leaf 40, 1 pint to 100 gallons, and arsenate of lead (powdered), 3 pounds to 100 gallons.

SPRAYING COSTS

Spraying during the past season has been done with a small power outfit which has given entire satisfaction. This sprayer sustains a pressure of 200 to 250 pounds on two lines of hose fitted with spray guns. Three men and team are required to operate this outfit. In reckoning the cost of operating, 35 cents per hour is allowed per man and 35 cents per hour for the team. Cost of materials used in spray-mixtures is as follows: Commercial lime-sulphur 45 cents per gallon, arsenate of lead 85 cents per pound, and blackleaf 40 $13.75 per gallon. Without allowing for any charges against the spray outfit the cost of operation per hour amounted to $4.40.

COST OF SPRAYING, 1926

		Apples		Pears	
		Dormant	Calyx	Dormant	Calyx
Number of trees sprayed		184	184	318	318
Quantity sprays used per application	gal.	200	330	300	300
Quantity spray per tree	"	1·08	1·79	0·94	0·96
Spray used per acre—50 trees	"	54	89·5	47·0	48·0
Cost of spray material per tree	cents	4·86	7·16	4·2	4·84
Cost of spray material per acre—50 trees	$	2·43	3·58	2·10	1·92
Time taken for spraying	mins.	150	240	240	240
Time to spray tree	"	0·81	1·2	0·75	0·75
Time to spray one acre	"	40·5	65·0	37·5	37·5
Cost of time applying spray	$	3·50	5·60	5·60	5·60
Cost of time applying spray 1 tree	cents	1·9	3·04	1·76	1·76
Cost of time applying spray 1 acre	"	95	1·52	0·88	0·88
Cost of labour and materials 1 tree	"	6·76	8·68	5·68	4·72
Cost of labour and materials, 1 acre	$	3·38	5·10	2·98	2·80

APPLES—VARIETY EXPERIMENT—PROJECT H 33

The apple orchard at the Station is now 12 years old. Of many of the less common commercial varieties, only two trees were set in the original plantings, in order to test out the variety. A few of these promise to become popular while others are almost useless. The yields of fruit have been compiled over a period of eight years in terms of total pounds per tree. Following is a list of the varieties under test:—

APPLES—VARIETY EXPERIMENT

Variety	When planted	Number of trees	Yield per tree, 1926		Total yield per tree for 8 years		Seasons
			lb.	oz.	lb.	oz.	
Alexander	1915	2	21	12	211	13	Sept.-Oct.
Blenheim Orange	1916	2	173	4	248	6	Nov.-Dec.
Carolin Red June	1916	3	39	7	59	9	Aug.
Charles Ross	1914	2	200	4	375	14	Sept.-Oct.
Cox Orange Pippin	1914	12	53	10	180	7	Dec.
Duchess of Oldenburg	1914	9	59	12	211	12	Aug.-Sept.
Early Colton	1916	2	55	0	235	4	Aug.
Goal	1916	1	..	..	80	8	
Gravenstein	1914	10	161	4	276	8	Oct.
Grimes Golden	1914	13	133	12	450	12	Jan.
Jonathan	1914	12	61	11	152	4	Dec.-Feb.
King David	1914	2	274	4	932	12	Dec.-Feb.
King of Tompkins Co	1914	10	185	11	424	9	Oct.-Jan.
Linton	1914	1	282	9	583	12	Aug.-Sept.
Lowland Raspberry	1914	7	28	0	183	9	Aug.
McIntosh Red	1914	6	193	0	442	0	Nov.
Melba	1921	2	81	0	124	2	Sept.
Melba	1914	1	..	..	259	15	
M. Gladstone	1914	2	13	8	55	8	Sept.-Oct.
Missing Link	1919	2	21	0	135	2	Dec.-Jan.
Newtown Pippin	1916	2	134	8	182	9	Jan.-April
Peasgood Nonsuch	1916	1	20	0	75	12	Sept.-Oct.
Northern Spy	1916	2	116	4	181	12	Jan.-Feb.
Red Astrachan	1914	14	92	1	229	8	Aug.-Sept.
Ribston Pippin	1916	1	16	0	17	6	Nov.-Dec.
Rome Beauty	1917	2	132	12	423	11	Jan.-Mar.
Percival	1914	1	154	8	440	2	Sept.
Petrel	1914	1	..	..	241	0	Aug.-Sept.
Saint Germaine	1914	3	4	12	27	13	

APPLES—VARIETY EXPERIMENT—*Concluded*

Variety	When planted	Number of trees	Yield per tree, 1926	Total yield per tree for 8 years	Seasons
			lb. oz.	lb. oz.	
Spitzenburg	1916	2	9 4	73 4	Dec.–Jan.
Sweet Bough	1914	2	20 10	57 10	Aug.
Transparent de Croncels	1914	2	7 4	193 1	Sept.
Trenton	1914	1	83 0	526 10	Aug.
Vanderpool	1916	2	65 8	116 4	Dec.–Jan.
Wagener	1914	11	80 0	362 2	Dec.–Jan.
Wealthy	1914	4	79 10	276 5	Sept.–Oct.
Winter Banana	1914	2	160 4	588 5	Jan.–Feb.
Winterstein	1919	2	76 4	98 12	
Wismer Dessert	1914	2	12 14	93 6	Oct.–Nov.
Yellow Transparent	1914	10	67 7	297 0	Aug.
York	1916	1	120 0	137 0	Sept.–Oct.

The highest-yielding varieties in order are: King David, Winter Banana, Linton, Grimes Golden, McIntosh Red, Percival and Rome Beauty. Some of the best varieties for planting in order of season are: Yellow Transparent, Trenton, Charles Ross, Melba, McIntosh Red, King, Wagener and Grimes Golden.

King David is too small for market in this country. Winter Banana is an apple of good size, appearance and of excellent quality.

APPLE—FERTILIZER EXPERIMENT—PROJECT H26

This experiment was undertaken to determine the effect of various fertilizers on the growth of apple trees and also on the production of fruit. The following fertilizers were used separately and in combination:—

Range 1—Nitrate of soda—4 pounds per tree.
Range 2—Muriate of potash—4 pounds per tree.
Range 3—Acid phosphate—8 pounds per tree.
Range 4—A mixture of the foregoing fertilizers used at the rate of 8 pounds per tree.
Range 5—Check—no fertilizer.

In the ranges of trees to which the fertilizers were applied, the following varieties of apples occur: King, Gravenstein, Red Astrachan, Lowland Raspberry, Grimes Golden, Cox Orange Pippin, and Wagener. The amount of growth made by each tree has been taken for the past five years, also measurement of the diameter of the tree in inches and gains recorded. The following table gives these records obtained over a period of five years.

EFFECT OF FERTILIZER ON GROWTH OF APPLE TREES

Fertilizer used	Season's growth		Gain in diameter		Total yield fruit for 5 years
	1926	For 5 years	1926	For 5 years	
	inches	inches	inches	inches	lb.
Nitrate of soda	9½	14·7	20/32	96/32	3,567·8
Muriate of potash	7	12·4	12/32	72/32	2,340·6
Acid phosphate	7¼	13·0	7/32	79/32	2,527·10
Mixed	6	11·0	8/32	72/32	1,173·12
Check	6	11·4	11/32	79/32	1,191·14

From the foregoing table it will be noted that the nitrate of soda has given the greatest growth as well as increased yield.

EFFECT OF FERTILIZER ON STORAGE APPLES

A quantity of apples from each tree in the range, on which fertilizers were used, were placed in storage until December 16, when an examination was made. These apples were examined for colour, firmness, shrivelling, number broken down and general condition. From the one year's work indications are that:

Fertilizers do not affect colour or keeping quality when applied in ordinary amounts or at the rate outlined in Project H26.

PLUMS—VARIETY EXPERIMENT—PROJECT H48

Some thirty varieties of plums and twenty varieties of prunes are under test at this Station, including most of the common varieties grown. In most cases there are at least two trees of each variety. During the past season a moderately good crop was harvested. The yield per tree for 1926 together with the total yield per tree over the past eight years is given in the following table:—

PLUMS—VARIETY EXPERIMENT

Variety	When planted	Number of trees	Yield per tree, 1926	Total yield per tree, eight years	Season
			lb. oz.	lb. oz.	
Apple	1922	1	2 0	2 0	
Bartlett	1922	2	0 2	0 2	
Black Diamond	1914	2	111 0	1,077 3	Aug. 26
Bradshaw	1914	2	84 12	584 7	Aug. 26
Burbank	1914	1	48 0	101 8	Sept. 4
Columbia	1914	2	47 4	326 0	Aug. 25
Combination	1916	2	31 4	68 13	Aug. 19
Conquest	1915	1	.. ..	42 6	
Drap d'Or	1914	2	127 4	256 3	Aug. 6
Early Gold	1916	1	428 12	1,220 8	Aug. 12
English Damson	1914	2	15 0	45 9	Sept. 14
First (Jap)	1916	1	.. ..	1 4	Aug. 15
Gaviota (Jap)	1914	1	.. ..	.. ..	
Giant	1916	3	127 5	252 7	Sept. 14
Gold	1916	2	.. ..	.. ..	
Greengage	1914	2	89 0	386 7	Sept. 18
Jaune Hâtive de Thoisey	1914	2	94 8	223 12	Aug. 4
Le Plus Précoce de Tous	1914	1	.. ..	1 12	Aug. 1
Mallard	1914	2	98 10	897 11	Aug. 11
Mammoth Gold	1916	2	.. ..	6 10	Aug. 16
Peach	1914	11	136 1	398 0	Aug. 8
Pond Seedling	1914	2	223 0	896 13	Sept. 8
Reine Claude de Bavay	1914	7	89 4	429 7	Sept. 14
Shipper Pride	1916	1	65 0	200 7	Sept. 5
Santa Rosa	1918	3	2 3	23 8	Aug. 13
Shropshire Damson	1914	5	95 2	244 1	Sept. 22
Victoria	1914	2	140 4	593 2	Sept. 4
Washington	1914	2	118 14	767 4	Sept. 1
Yellow Egg	1914	2	44 10	542 12	Sept. 14

PRUNES—VARIETY EXPERIMENT

Dosch	1916	2	27 8	30 11	Sept. 24
German	1914	3	191 7	475 7	Sept. 18
Golden	1916	2	42 8	86 8	Sept. 18
Imperial Epineuse	1919	2	12 4	12 4	Aug. 18
Italian	1914	17	151 0	397 3	Sept. 16
Miracle	1916	2	4 12	17 1	Aug. 8
Quetsche de Létrecourt	1914	2	199 2	458 8	Sept. 16
Quetsche précoce d'Ebersweier	1914	4	221 0	171 7	Aug. 22
Quetsche précoce de Buhlerthal	1914	4	292 0	560 4	Aug. 28
Quetsche précoce de Zimmer	1914	2	134 8	498 6	Aug. 23
Quetsche Minôt	1914	1	18 0	90 14	Sept. 16
Pacific	1916	2	54 12	184 12	Aug. 14
Silver	1914	2	91 12	192 0	Sept. 20
Standard	1915	2	10 0	71 14	Sept. 14
Sugar	1914	2	5 12	407 10	Sept. 20
Tennant	1916	2	5 0	20 10	Aug. 24
Tragedy	1914	1	121 0	406 15	Aug. 8

The six highest-yielding plums for eight years in order are: Early Gold, Black Diamond, Mallard, Pond Seedling, Washington, and Bradshaw.

The six highest yielding prunes for eight years in order are: Buhlerthal, Zimmer, German, Létricourt, Sugar, and Tragedy.

CHERRIES—VARIETY EXPERIMENT—PROJECT H 35

The largest cherry crop in the history of the Station was harvested during the past season. Brown rot which had been very troublesome on Sweet Cherries heretofore was confined to a few varieties. The most susceptible is Empress Eugenie.

The following table gives the yield for the season and also the total yield per tree for the past eight years:—

SWEET CHERRIES—VARIETY EXPERIMENT

Variety	When planted	Number of trees	Yield per tree, 1926	Total yield per tree, eight years	Season
			lb. oz.	lb. oz.	
Abbesse d'Oignies	1914	1	65 0	123 3	July 12
Abundance	1915	1	174 0	219 8	July 28
Belle de Choisy	1914	2	29 0	44 1	July 11
Bing	1914	10	165 0	306 13	July 10
Black Hawk	1914	1	255 0	392 13	July 10
Black Tartarian	1914	2	72 8	218 4	July 4
Black Republic	1916	1	99 0	180 10	July 20
Beauty of Ohio	1914	2	79 4	296 12	June 20
Belle of Orleans	1914	1	16 0	139 2	June 11
Choque	1914	1	192 0	438 8	July 6
Deacon	1916	1	118 0	248 0	July 15
Elton	1914	3	133 6	266 2	July 1
Empress Eugenie	1914	4	81 4	207 8	July 6
Emperor Francis	1914	1	162 0	318 11	July 14
Frühest der Mark	1914	1	140 0	256 7	June 4
Garrafal	1916	1	67 0	111 14	July 3
Garrafal Grand	1916	1	14 8	57 3	June 16
Gros Blanc	1914	1	.. ..	1 2	July 3
Gros Noir	1914	1	21 0	23 2	July 4
Guigne d'Annonay	1916	1	4 0	36 2	June 7
Guigne Pourpre Hâtive	1914	1	205 0	611 1	July 14
Guigne de Tarascon	1914	1	12 12	47 4	July 2
Guigne précoce Rivers	1914	1	129 0	355 7	June 14
Jaboulay	1914	1	101 0	148 7	July 20
Jeffery Duke	1914	1	31 0	60 2	July 7
Lambert	1914	2	173 0	528 10	July 18
Marjolet	1914	2	47 8	85 7	July 6
Napoleon	1914	6	168 0	308 2	July 14
Pélissier	1914	1	86 8	150 6	July 11
Reine Hortense	1914	2	53 0	120 13	July 16
Reine Hortense Hâtive	1914	2	.. ..	1 10	
White Heart	1916	1	55 0	101 1	July 16
Windsor	1914	6	122 0	229 2	July 10

SOUR CHERRIES—VARIETY EXPERIMENT

Baldwin	1914	1	650 0	102 2	July 10
Belle Magnifique	1914	3	100 1	223 1	Aug. 1
De Belleu	1914	1	68 0	110 8	June 22
Early Richmond	1914	15	55 3	189 0	July 2
English Morello	1916	1	16 0	104 10	July 14
Gros Gobert	1914	2	64 0	237 6	July 11
Griotte Archer	1914	1	77 0	172 0	July 12
Montmorency	1914	15	92 0	411 5	July 8
Montmorency Bretteneau	1914	3	70 5	219 11	June 26
Montmorency Pleureu	1914	2	44 0	150 9	July 6
Morello	1914	15	83 0	376 6	July 12
Nouvelle Royale	1914	1	75 0	188 6	July 11
Olivet	1914	18	105 4	263 1	July 24
Ostheim	1917	2	91 0	222 5	July 10

Some of the best sweet cherries in order of ripening are: Guigne précoce Rivers, Belle of Orleans, Beauty of Ohio, Elton, Black Tartarian, Empress Eugenie, Windsor, Bing and Lambert.

The best sour cherries at the Station: Montmorency, Morello and Olivet.

PEARS—VARIETY EXPERIMENT—PROJECT H 14

The pear orchard bore a tremendous crop of fruit during the past season. Great difficulty was experienced in keeping the trees from breaking down. Thinning is necessary to preserve the trees rather than to secure size of fruit. Most varieties of pears attain a good marketable size unthinned. Clean cultivation is practised throughout the entire orchard. The following table gives the yield for the past season, also the total yield per tree over the past eight years.

STANDARD AND DWARF PEARS—VARIETY EXPERIMENT

Variety	When planted	Standard		Dwarf		Season
		Yield per tree, 1926	Yield per tree, eight years	Yield per tree, 1926	Yield per tree, eight years	
		lb. oz.	lb. oz.	lb. oz.	lb. oz.	
Andre Desportes	1914	191 4	600 6	126 0	302 11	Aug.
Anjou	1914	161 11	352 11	114 0	186 0	Nov.-Dec.
Barry	1919	.. ..	.. ..	34 8	63 8	Nov.
Bartlett	1914	145 10	583 12	118 8	537 12	Aug.
Belle Lucrative	1914	156 8	473 2	.. ..	.. ..	Oct.
Besi de Chaumontel	1914	.. ..	84 8	26 8	173 4	Dec.
Beurre d'Amanlis	1914	529 0	1,773 10	106 0	394 4	Oct.
Beurre Bachelier	1914	265 8	1,321 4	21 0	171 0	Dec.
Beurre Diel	1914	290 4	602 13	163 0	590 8	Nov.-Dec.
Beurre Giffard	1914	210 4	362 0	145 4	234 4	Aug.
Beurre Hardy	1914	196 8	381 9	214 8	437 1	Oct.
Beurre d'Avril	1914	120 0	602 4	.. ..	.. ..	Mar.
Beurre de Naghan	1914	457 8	1,145 4	197 8	397 2	Feb.
Bosc	1914	173 10	506 13	.. ..	.. ..	Oct.
Boussock	1914	242 0	827 11	182 8	363 14	Sept.
Charles Ernest	1914	100 0	255 11	40 8	103 0	Nov.-Dec.
Clairgeau	1914	200 0	548 0	.. ..	.. ..	Nov.
Crocker Bartlett	1914	165 0	497 0	.. ..	.. ..	Sept.
De Cure	1914	241 5	823 13	261 0	926 4	Dec.
Doyenne d'Alencon	1914	114 4	320 11	159 0	419 11	Jan.
Doyenne de Comice	1914	31 8	78 8	28 4	186 0	Nov.
Dr. Jules Guyot	1914	94 1	485 5	48 6	314 9	Sept.
Favourite de Clapp	1914	147 8	817 7	146 2	545 2	Sept.
Flemish Beauty	1914	198 0	628 12	124 8	373 11	Oct.
Easter Beurre	1914	167 12	244 3	.. ..	.. ..	Jan.
Emile d'heyst	1914	197 0	503 1	.. ..	.. ..	Oct.
Fondante Thirriot	1914	9 4	426 4	73 0	542 14	Nov.
Forelle	1919	.. ..	.. ..	48 12	84 12	Nov.-Dec.
Glou Morceau	1914	170 12	312 13	161 0	557 8	Dec.
Howell	1914	.. ..	.. ..	157 4	240 4	Nov.
Jargonelle	1914	36 8	178 3	.. ..	.. ..	Aug.
Koonce	1914	91 0	180 8	.. ..	.. ..	Aug.
Le Lectier	1914	198 4	510 7	.. ..	.. ..	Dec.-Jan.
Lincoln Coreless	1914	206 4	522 11	.. ..	.. ..	Mar.
Louise Bonne de Jersey	1914	181 0	560 4	.. ..	.. ..	Oct.
Louise Bonne d'Avanches	1914	174 2	418 2	159 8	315 0	Sept.-Oct.
Madame Baltet	1914	107 0	307 2	178 9	439 13	Jan.
Madame Ernest Baltet	1914	42 0	147 0	215 8	624 10	Sept.-Oct.
Marguerite Marrillat	1914	125 4	489 6	.. ..	.. ..	Sept.
Nouvelle Fulvie	1914	83 0	211 8	.. ..	.. ..	Jan.
Passe Crassane	1914	85 12	266 8	64 4	384 8	Dec.-Jan.
Pitmaston Duchess	1914	66 0	256 7	.. ..	.. ..	Nov.
President Deviolaine	1914	209 8	237 8	165 8	333 14	Nov.
Princess	1914	190 0	321 0	.. ..	.. ..	Oct.
Rossney	1914	217 8	388 0	.. ..	.. ..	Sept.
Royale Vendée	1914	271 8	589 4	103 8	166 12	Jan.
Souvenir de Congrès	1914	274 8	1,143 0	49 8	323 9	Sept.
Seckel	1914	.. ..	.. ..	57 0	90 11	Oct.
Triomphe de Vienne	1914	216 0	623 0	157 8	455 4	Sept.
Virginie Baltet	1914	198 4	967 1	117 0	518 13	Nov.-Dec.
Wilder's Early	1914	13 4	84 8	.. ..	.. ..	Aug.
Winger Bartlett	1914	471 0	605 3	.. ..	.. ..	Dec.
Winter Nelis	1914	.. ..	.. ..	63 0	115 14	Dec.
Worden Seckel	1914	42 8	137 4	.. ..	.. ..	Sept.-Oct.

Some of the best varieties for planting are: Bartlett, Boussock, Bosc, Clairgeau, Anjou, Bachelier and Passe Crassane. Prices during the past season were much lower than usual for even the best grades.

FERTILIZER EXPERIMENT—PROJECT H 329

The object in undertaking this experiment was to determine whether chemicals should be used singly or in combination. Five ranges of these have been set aside in which the same varieties occur and fertilizers applied in the following manner:

Range 1. Nitrate of soda—4 pounds per tree.
Range 2. Muriate of potash—4 pounds per tree.
Range 3. Acid phosphates—8 pounds per tree.
Range 4. The foregoing fertilizers mixed and applied at the rate of 8 pounds per tree.
Range 5. Check—no fertilizer.

EFFECT OF FERTILIZERS ON GROWTH OF PEAR TREES

Fertilizer used	Season's growth		Gain in diameter		Total yield fruit, 6 years
	1926	For 5 years	1926	For 5 years	
	inches	inches	inches	inches	lb. oz.
Nitrate of soda	15	14	13/32	61/32	4,629 10
Muriate of potash	10	13·4	2/16	48/32	3,594 13
Acid phosphate	10	12·6	2/32	42/32	3,766 12
Mixed fertilizer	9·5	12·7	6/32	54/32	4,628 0
Check	7	9·8	8/32	40/32	2,340 8

From the preceding table it will be gathered that all fertilizers had a beneficial effect as compared to the check range of trees. Over a five year period nitrate of soda and mixed fertilizers ranges gave highest yields and greatest increase in diameter.

PEACH—VARIETY EXPERIMENT—PROJECT H 332

The past season was very favourable for the growing of peaches, and a heavy crop resulted. Peach leaf-curl which has always given trouble was not so common as in former years. In the fall of 1925 peach trees were given a spray of lime-sulphur about 1 to 16 some considerable time before the new buds began to swell. This spray, we think, was helpful in controlling leaf-curl. The buds are sometimes well advanced in January. Any spray put on after this date cannot be expected to assist in checking leaf-curl, as infection under the tiny bud-scales has already taken place. The following table gives a list of varieties under test with the total yield per tree for the past eight years:—

PEACH—VARIETY EXPERIMENT

Variety	When planted	Number of trees	Yield per tree, 1926	Total yield per tree, eight years	Season
			lb. oz.	lb. oz.	
Admiral Dewey	1919	1	22 0	47 2	Aug. 4
Alexander	1914	1	287 2	406 4	Aug. 6
Alton	1918	1	16 0	26 0	Aug. 26
Early Crawford	1914	2	.. ..	.. ..	
Early Elberta	1916	1	.. ..	.. ..	
Early Imperial	1919	1	.. ..	.. ..	
Fitzgerald	1914	1	.. ..	.. ..	
Hale Early	1914	2	180 8	434 11	Aug. 6
Krummel October	1916	1	38 0	38 0	Sept.
Mayflower	1919	2	24 12	71 6	Aug. 1
Muir	1919	2	47 14	153 6	Sept. 12
Red Bird	1916	1	20 8	49 6	July 26
Royal George	1919	2	16 2	50 12	Sept. 22
Triumph	1914	1	84 8	263 0	July 28
Triumph	1916	1	25 8	85 6	July 28

Varieties recommended at the present time are: Hale Early, Alexander and Triumph. These are the most promising varieties of those grown at the Station. The Rochester is recommended by some, and although plantings have been made it is too early yet for results.

QUINCE—VARIETY EXPERIMENT—PROJECT H 335

Several of the common varieties were planted at the Station in 1924 and while fruit of excellent quality is produced there seems to be a limited market and small chance of this fruit becoming popular.

QUINCE—VARIETY EXPERIMENT

Variety	When set	Number of trees	Yield per tree, 1926	Total yield per tree, eight years	Season
			lb. oz.	lb. oz.	
Champion Orange	1914	7	17 14	86 1	Oct.
De Bereczki	1914	4	52 5	267 8	Oct.
De Bourgeant	1914	4	31 0	279 8	Oct.
De Portugal	1914	3	73 0	351 2	Oct.
De Fabre	1914	4	43 6	181 4	Oct.
De Vranja	1914	2	24 4	61 8	Oct.
Ordinaire	1914	3	4 3	42 3	Oct.
Pineapple	1914	3	12 0	110 2	Oct.

De Portugal has given the highest yields and Ordinaire the lowest. Early harvesting while the fruit is still quite hard diminishes loss through cracking.

MEDLAR—VARIETY EXPERIMENT—PROJECT H 336

Trees of four varieties were planted in 1914 with the idea of trying out a fruit that was well known in England. There is a limited market for this fruit and they cannot be recommended for planting.

MEDLAR—VARIETY EXPERIMENT

Variety	When planted	Number of trees	Yield per tree, 1926	Total yield per tree, eight years	Season
			lb. oz.	lb. oz.	
De Holland	1914	4	44 0	77 2	Dec.
Large Dutch	1919	1	.. ..	8 12	Dec.
Ordinaire	1914	2	85 10	306 6	Dec.
Sans Pepin	1914	3	10 0	33 14	Dec.

APRICOT—VARIETY EXPERIMENT—PROJECT H 334

Several varieties are under trial including Moorpark, Superb, Royal, Tilton and Du Chancelier. Of these Moorpark and Tilton are most promising, the quality of Tilton being exceptionally good. There is little hope of this fruit being successfully grown here.

NECTARINE—VARIETY EXPERIMENT—PROJECT H 307

The following varieties are under test at this Station:—Early Newington, Boston, Early Violet, Stanwick and Lord Napier and of these the last two are the most promising. The trees are subject to the same diseases as the peach and the set of fruit is light. When grown on the wall of a building they do very well.

FIGS—VARIETY EXPERIMENT—PROJECT H 337

Some of the varieties at the Station have borne fruit of good quality but there is no prospect of figs becoming of any commercial importance here. Of the many varieties grown, Ladero, Doree and Mission continue to do well. During the past season Roude Noire did exceptionally well. A good crop might be obtained if water could be applied during the very dry period. Twenty-eight varieties are under test.

SMALL FRUITS

STRAWBERRIES—HILL SYSTEM VS. MATTED ROW—PROJECT H 16

The hill method of growing strawberries is the only one in general use on Vancouver island, but other systems are employed in other strawberry areas of Canada and the United States. This project was undertaken in the spring of 1923 to secure data as to the merits of these systems. The first plantation put down in the spring of 1923 produced two crops, when a new planting was made in 1925. These plots bore their first crop this past year and the results are shown in the table below.

STRAWBERRIES—HILL VERSUS MATIED ROW

Method of growing	When planted	Yield crate berries per acre	Yield jam berries per acre	Total yield per acre	Per cent of crate berries
		lb.	lb.	lb.	
Hill	1925	2,914	2,604	5,518	52·8
Hedge-row	1925	2,542	2,170	4,712	54·0
Half-matted row	1925	3,348	2,542	5,890	57·0
Full-matted row	1925	2,604	2,418	5,022	51·8

During the 1926 strawberry season more than the usual amount of moisture aided materially in producing heavy yields of splendid berries. Under these conditions the half-matted row gave the largest yield with the highest per cent of crate berries.

STRAWBERRY—VARIETY EXPERIMENT—PROJECT H 21

Some forty-three varieties are under test at this Station. These include the common varieties grown in many of the strawberry areas of America as well as many new varieties originated at the Central Experimental Farm, Ottawa. The plots have been in a location, the past two years, ill-suited to the growing of this berry, hence in many cases the low yields. A list of the best yielding varieties and their yields is to be found in the following table:—

STRAWBERRIES—TEST OF VARIETIES

Variety	Yield per acre, 1925	Yield per acre, 1926	Total yield per acre, two years
	lb.	lb.	lb.
Glen Mary	6,128·2	6,050,10	12,178·12
Mariana	4,335·10	2,903·14	7,239·8
Cassandra	3,878·8	2,787·2	6,665·10
Eugene Transon	3,111·0	3,526·4	6,637·4
Dora	3,205·6	3,318·10	6,524·0
Greenville	4,336·12	2,166·8	6,443·4
Bisel	4,148·7	2,132·2	6,280·3
Magoon	3,393·14	2,766·0	6,059·14
Arnout	3,289·10	2,715·14	6,005·8
Dr. Burrill	3,723·14	2,262·9	5,986·7
Givan Late Prolific	3,629·8	2,268·7	5,897·15
Lavinia	3,371·1	1,613·8	4,984·9
New Globe	2,786·15	2,074·0	4,860·15
Cordelia	2,203·10	2,527·11	4,731·5
British Queen	2,424·5	2,305·0	4,729·5
New Oregon	2,527·11	1,944·6	4,472·1
Madam Moulot	2,828·2	1,613·8	4,441·10
Parson Beauty	2,722·0	1,703·7	4,425·7
Desdemona	3,175·13	1,185·0	4,360·13
Oregon	2,689·12	1,490·11	4,180·7
Jucunda	2,451·2	1,607·2	4,058·4
Royal Sovereign	2,074·0	1,761·10	3,835·10
King George	1,743·15	2,009·3	3,753·2
Sharpless	2,365·10	1,185·0	3,550·10

BLACK CURRANT—VARIETY EXPERIMENT—PROJECT H 4

In 1922 two plantations of black currants were set out consisting of 200 plants of Boskoop Giant and 200 plants of Buddenborg. Plants were set 5 feet apart in the row with rows 6 feet apart. In the accompanying table, yields are given for the past three years.

BLACK CURRANT—VARIETY EXPERIMENT

Variety	Yield per acre 1924		Yield per acre 1925		Yield per acre 1926	
	lb.	oz.	lb.	oz.	lb.	oz.
Boskoop Giant	710	8	2,247	8	3,103	0
Buddenborg	667	0	957	0	1,856	0

A serious drawback to the growing of black currants is the attack by the maggot, causing wormy and unmarketable fruit. The remedy which has been applied for eradicating this pest is to spray bushes about first and second weeks of May with the following formula: ¼ ounce sodium arsenate, 1 quart molasses, 1 gallon water. Poultry running through the plantation aids somewhat, as the birds pick up many of the fallen fruits containing the larva.

GRAPES—VARIETY EXPERIMENT

Variety	When set	Number of vines	Yield per vine 1926		Yield per vine eight years		Remarks
			lb.	oz.	lb.	oz.	
Brighton	1915	1	4	4	9	4	Good.
Buckland Sweetwater	1915	11	4	8	.....		No use outside.
Campbell Early	1915	2	13	12	138	8	Very promising.
Concord	1916	1	11	0	79	8	Fair, but late.
Chasselas de Fontainbleau	1915	1	92	0	158	8	Too late.
Dattier de Beyrouth	1915	1	3	8	3	8	Useless.
Delaware	1916	2	6	12	51	0	Good quality, small.
Flame Tokay	1917	2	34	..	104	..	No use outside.
Gros Colman	1915	1	19	..	221	..	"
Hartford	1915	5	21	9	127	9	Fairly good.
Lindley	1915	3	12	10	161	2	Very good.
Moore Early	1915	1	2	8	8	..	Very sweet, poor yielder.
Peabody	1915	4	11	14	126	9	Fair.
Rose of Peru	1915	1	21	..	32	..	"
Trentham Black	1915	1	2	..	37	..	
Vergennes	1915	4	22	14	143	8	One of the best.
Winchell	1915	3	2	8	21	2	Excellent quality, poor yielder.
Brighton	1921	1	6	4	8	12	Fair.
Craig	1921	2	13	3	31	5	Very promising.
Early Daisy	1921	2	14	6	18	14	Small, but good.
Mary	1921	2	13	12	25	12	Promising.
Moyer	1921	2	4	10	4	10	Fair.
Read Hybrid (Loncoln)	1921	2	7	14	15	2	Good.
Wilkins	1921	1	8	12	20	..	Very promising.

Grapes growing at the Dominion Experimental Station, Sidney, B.C.

Of the many varieties tested some have been found to have little or no value. Canada and Brant are two such varieties. Winchell, Delaware and Brighton are of good quality but very low yielders.

Of the newer varieties added in 1921 and sent to the Station from Ottawa, some are very promising. Vergennes, Campbell Early, Lindley, Craig and Wilkins are varieties recommended for planting.

BLACKBERRY BREEDING—PROJECT H 1

In 1923 some 1,200 Himalayan blackberry seedlings were grown, planted out and trained on trellises. These plants have made a large amount of growth each year, bearing heavy crops in 1925 and 1926. A close study of the plants has shown some variation in habit of growth and in size, shape, etc., of the leaves, but nothing in the way of new types has been revealed. The fruit from all plants was reasonably uniform as to time of ripening, size, shape and flavour. From the work done so far, indications are that Himalayan blackberries come nearly true when grown from seed.

VEGETABLES

BEANS—DIFFERENT DISTANCES IN PLANTING—PROJECT H 58

This project has for its object the determining of the right distance apart to plant beans, when grown for pods, and also to determine the influence on the yield, earliness and quality of the product when sown at different distances apart in the row. Round Pod Kidney Wax and Stringless Green Pod were the two varieties used throughout.

The following table gives the results obtained during the 1926 season and also the average yield for the past four years. Yields are based on 30 feet of row.

BEANS—DIFFERENT DISTANCES IN PLANTING

Variety	Distance	Date sown	Ready for use	Weight per 30-foot row	Average 4 years 30-foot row
	inches			lb.	lb.
Round Pod Kidney Wax	2	April 26	June 1	16·8	17·3
	4	" 26	" 5	12·7	12·10
	6	" 26	" 5	10·4	10·7
Stringless Green Pod	2	" 26	" 5	13·0	13·4
	4	" 26	" 8	10·12	10·7
	6	" 26	" 8	10·1	8·3

Results obtained over a period of four years show that:—

1. The closer the plants the greater the yield up to at least 2 inches apart.
2. An earlier product by several days is obtained by close planting.
3. No difference in quality from the various plantings has been noticed.

BEET—DIFFERENT DATES OF SOWING—PROJECT H 65

The object of this project was to determine relative earliness, quality, and yield as a green table vegetable, and also as a ripened crop for storing when grown at different dates. Seed was sown at ten-day intervals, one row each date, 30 feet long. One half of the row was used to determine earliness, quality and yield as a green vegetable, and the other half of the row was left until the end of the season when the crop was harvested and stored. Detroit Dark Red was the variety used.

The results obtained in this project over the four years would show that:—

1. For early table use seed should be in by March 23.

2. For storing during late fall and winter, seed about the beginning of May.

3. Sown too early beets grow too large and coarse by the end of the season for table use.

4. When seeded about March 23 they were ready as a green vegetable early in July.

5. When seeded after May 25 yields were low, chiefly due to the dry summer.

CABBAGE—DIFFERENT DATES OF SEEDING FOR STORAGE PURPOSES

In order to determine the best date for seeding cabbage for storage purposes, seed was sown on six different dates about 10 days apart. The first sowing was made in the cold frame February 28 with successive sowings being made in the open. Danish Ballhead and Copenhagen Market were the varieties used. Ten heads resulting from each date of seeding were weighed, placed in storage and their condition noted from time to time.

CABBAGE—DIFFERENT DATES OF SEEDING FOR STORAGE PURPOSES

Variety	Date sown outside	Date transplanted	Date stored	Average weight ten heads, three years	Days in storage
				lb.	
Danish Ballhead	.....	April 6	Aug. 27	70·0	Splits.
	Mar. 23	May 3	" 10	66·0	54
	April 4	" 16	" 18	56·8	56
	" 14	" 16	Oct. 14	56·0	60
	" 24	June 4	Nov. 10	52·8	60
	May 5	" 12	" 22	41·8	70
	" 21	Too dry.			
Copenhagen Market	.....	April 6	July 24	52·0	Splits
	Mar. 23	May 3	Aug. 14	47·0	46
	April 4	" 16	Sept. 12	43·8	46
	" 14	" 16	" 25	40·8	50
	" 24	June 4	Nov. 16	37·0	50
	May 5	" 12	" 26	32·0	60
	" 21	Too dry.			

Results obtained over three years show:—

1. That the sowing made early in frames gave heaviest yields but were split too badly for storage purposes.

2. That sowing later resulted in loss of weight.

3. Later sowings produced heads that kept longer in storage.

4. That the best time to sow seed is about the end of March or early in April.

CARROTS—DIFFERENT DATES OF SEEDING—PROJECT H 79

The detail of this project is the same as that for beets. Selected Chantenay was the variety used. Seed was sown on different dates, beginning March 29, ten days apart. The object was to determine the best time to sow to obtain a green table vegetable and also a matured crop for storing. Results obtained over a period of four years would show that:—

1. The earliest sowing gave the heaviest yields, i.e., from the first to the middle of April.
2. To secure an average yield for storage do not seed after the first week in May.
3. Early sowings give good results for an early table vegetable.
4. Late sowings (May 15-June 10) give very poor results unless water for irrigation purposes is available.

CORN—SUCKERING EXPERIMENT—PROJECT H 101

Two varieties, Early Malcolm and Golden Bantam, have been used in this work. On plot 1, all suckers were removed as they appeared while on plot 2 all suckers were allowed to remain. Seed was sown April 30, 1925, and the following table shows the results obtained. Seed was planted in hills three feet apart each way:—

CORN—SUCKERING EXPERIMENT

—	Ready for use	Number of cobs	Weight 20 hills	Average four years
			lb. oz.	lb. oz.
Early Malcolm—				
Suckers removed	Aug. 12	74	9 14	25 12
Suckers left on	" 18	76	31 0	29 0
Golden Bantam—				
Suckers removed	Aug. 18	50	50 0	19 12
Suckers left on	" 20	54	22 4	23 7

Results over a period of four years show that the removal of suckers lessens the yield but slightly hastens maturity.

PEAS—DIFFERENT DISTANCES OF PLANTING—PROJECT H 148

This project was undertaken with the object of ascertaining the relative earliness, quality, yield as a green vegetable when planted 1 inch, 2 inches or 3 inches apart in the row. English Wonder, Thos. Laxton and Stratagem are the three varieties that have been used. Seed was sown in rows 30 inches apart. All varieties were seeded April 15. The accompanying table gives the results obtained during the past season and also the average yield for four years when when plants were 1 inch, 2 inches, and 3 inches apart in the rows:—

PEAS—DIFFERENT DISTANCES OF PLANTING

—	Distance apart in row	Ready for use	Height	Weight per 30-foot row	Average 4 years per 30-foot row
	inch		inch	lb.	lb.
English Wonder	1	June 23	15	8·7	12·7
	2	" 23	16	7·8	10·4
	3	" 23	16	5·6	8·9
Thomas Laxton	1	" 20	28	14·14	16·7
	2	" 23	26	13·0	14·0
	3	" 23	26	10·10	12·8
Stratagem	1	July 5	23	9·14	12·15
	2	" 5	22	7·6	11·8
	3	" 5	22	6·0	9·12

Over a period of four years results would indicate that:—

1. The closer the plants the greater the yield up to at least 1 inch apart.
2. Closeness in row has little influence, if any, on quality or earliness.

PEAS—DIFFERENT DISTANCES OF PLANTING FOR SEED PURPOSES

This project, undertaken this year for the first time at this Station, was conducted along the same lines as the preceding one, with the exception that the peas were allowed to mature, the object being to determine the best distance apart to plant for seed purposes. The accompanying table gives the results of this work.

PEAS—DIFFERENT DISTANCES OF PLANTING FOR SEED PURPOSES

Variety	Distance apart in row inches	Yield of seed 30-foot row	
		lb.	oz.
English Wonder	1	1	12
	2	1	12
	3	1	4
Thomas Laxton	1	2	9
	2	2	5
	3	1	14
Stratagem	1	1	8
	2	1	6
	3	..	14

It will be noted that plantings of 1 inch apart gave slightly higher yields, with the quality of seed being practically the same as for the other distances of planting.

RHUBARB—FORCING EXPERIMENT—PROJECT H 194

This work was undertaken to determine the best means of forcing rhubarb on a small scale, suitable to the needs of the average family, where a dark corner of a basement or root-house is used. One lot of two large roots was covered with soil, and another two roots covered with straw. The dates of storing, harvesting, along with the yields are reported in the following table. Roots were stored December 20.

RHUBARB—FORCING EXPERIMENT

—	Date stored	Feb. 20	Feb. 27	Mar. 6	Mar. 13	Mar. 19	Mar. 26	April 3	April 10	April 17	Yield	Average yield three years
		lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Roots covered with soil	Dec. 20	1 4	2 10	2 10	3 2	2 4	1 8	1 14	1 0	0 4	16 8	20 9
Roots covered with straw	" 2	.....	0 10	1 14	2 6	3 2	2 0	0 14	1 2	0 12	12 2	15 10

It will be noted that roots, over a period of three years, covered with soil gave heavier yield and also had some advantage as to earliness.

Another similar project has been conducted during the past year where sand was used instead of straw. Roots covering 16 sq. ft. of floor space were used in each lot, stored December 20 and a record kept of picking dates and yields. The following table sets forth the results obtained.

RHUBARB—FORCING EXPERIMENT, YIELDS IN POUNDS AND OUNCES

—	Date stored	Feb. 20	Feb. 27	Mar. 6	Mar. 13	Mar. 19	Mar. 26	April 3	April 10	April 17	Average yield
		lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.	lb. oz.
Roots covered with soil...	Dec. 2	2 8	6 8	8 14	10 0	11 4	5 8	4 10	3 4	2 0	56 8
Roots covered with sand..	" 2	2 2	4 4	4 14	7 6	7 12	4 2	2 4	4 0	1 12	38 8

The heavy yields, here again, were obtained from roots covered with soil with some advantage also gained with respect to earliness.

TOMATOES—METHODS OF TRAINING—PROJECT H 207

This experiment, begun in 1923, has for its object the determination of earliness, yield of total ripe, green, marketable and unmarketable fruit where plants were (1) not headed back, (2) stopped at third truss, (3) stopped at second truss, (4) stopped first truss. Rows were two feet apart with plants one foot apart in the row. Twenty-five plants of each of two varieties, Alacrity and Bonny Best, were used in each test plot. Seed was sown April 1 in frames and planted out May 5 and trained to a single stem. The following table gives the results obtained over a period of four years:—

TOMATOES—METHOD OF TRAINING

Variety	Date ready for use	Marketable fruits		Unmarketable fruits		Black spot		Green		Total yield, four years	
		lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.
Alacrity—											
Stopped at 1st truss.....	July 24	20	5	4	8	0	12	..	..	25	9
2nd truss.....	" 28	45	8	4	12	1	2	6	7	47	13
3rd truss.....	" 17	58	8	4	9	1	4	13	3	77	8
Not stopped.....	" 28	77	3	5	2	2	8	22	6	107	3
Bonny Best—											
1st truss.....	" 17	19	6	1	13	0	12	..	..	21	15
2nd truss.....	" 10	52	6	4	6	3	6	3	9	63	10
3rd truss.....	" 28	76	13	3	4	2	4	19	0	101	5
Not stopped.....	" 28	86	15	1	6	1	0	22	0	111	5

From the accompanying table for a period of four years results would show that the more trusses are allowed to remain the greater the yield. It will be noticed that very little difference is obtained in time of ripening of fruit.

TOMATOES—VARIETY EXPERIMENT—PROJECT H 211

Some thirty varieties of tomatoes were tested out for yield during the past season. The plants were not trained up in any way. Yield given in the following table are based upon five plants planted 4 feet apart each way.

TOMATOES—VARIETY EXPERIMENT

Variety	Yield ripe fruit		Yield unmarketable fruit		Yield green		Total yield 5 plants	
	lb.	oz.	lb.	oz.	lb.	oz.	lb.	oz.
Livingston Coreless	33	9	2	4	12	0	47	13
Greater Baltimore Strain	34	2	1	2	8	0	43	4
Early Mascot	28	11	2	4	6	0	36	15
No. 2 Ignocis Novelty	26	8	..	..	10	..	36	8
Bonny Best	29	6	..	..	4	..	33	6
Improved Stone	27	6	..	..	6	..	33	6
Early Detroit	23	6	1	4	6	8	31	2
John Baer	22	6	..	..	8	..	30	6
Early Market	22	13	..	8	7	..	30	5
John Baer	22	1	3	4	5	8	29	13
Alacrity	24	2	1	8	4	..	29	10
Burpee Self Pruning	22	1	1	2	6	8	29	10
No. 1 Novato Novelty	22	1	..	..	7	..	29	1
Livingstone Globe	20	8	..	..	7		28	..
Prosperity	21	12	..	..	6	..	27	12
Bonny Best	22	12	..	..	4	8	27	4
Selected Earliana								
Danish Export	24	4	..	..	3	..	27	4
Bonny Best	19	1	2	6	5	..	26	7
Marglobe	20	3	..	..	6	..	26	3
Selected Earliana	18	6	4	4	4	..	26	10
No. 6 Sonomoa	20	12	2	4	3	8	26	8
Alacrity X Hipper	10	..	..	..	..	..	..	..
Red Head	17	12	2	4	4	..	25	..
Kondine Red	19	10	..	..	4	8	24	2
Chalks Early Jewel	17	11	3	2	3	8	24	5
Abbotsford	18	4	..	..	5	..	23	4
Earliest of All	17	6	..	..	..	8	20	14
Petaluma	15	2	1	6	.	4	20	8
Earliana	14	14	..	..	3	8	18	6

PARSNIP—DIFFERENT DATES OF SEEDING—PROJECT H 132

Hollow Crown has been the variety used in this project for the past four years. The object is to determine the best date for seeding in order to secure highest yield. The various plots were seeded ten days apart beginning March 29 and ending June 10. Results obtained from 30 feet of row over a four-year period are shown in the following table:—

PARSNIP—DIFFERENT DATES OF SEEDING

Variety	Date sown	Quality	Bunches	Weight	Average number bunches four years	Average weight four years
				lb.		lb.
Hollow Crown	Mar. 29	Good	20	86	21	88
	April 9	"	21	79	22	79
	" 19	Fair	16	60	14	55
	" 29	"	13	50	12	48
	May 10	Poor	11	41	11	44
	" 19	"	9	35	9	35
	" 29	"	4	24	6	23
	June 10	"	2	12	5	15

To secure best results, parsnips must be sown early. Late seeding results in low yields of inferior quality.

POTATOES—VARIETY EXPERIMENT—PROJECT H 186

For many years a large number of varieties have been grown at the Station and reported on in previous reports. Because of this work having been fairly well covered, only a limited number of varieties were grown in test plots during the past season. Co-operating with the University of British Columbia, which supplied the seed, the following varieties were grown, for the past two years: Gold Coin, Up-to-Date, Sir Walter Raleigh, Jersey Royal, and Eureka. Two other varieties were grown; under test, Cowichan Leader and Bernadotte Sport, the former having been found in a lot of Gold Coin purchased from a seed-house, while the latter variety made its appearance in the Up-to-Date crop of G. M. Bernard, Parksville, in 1923. Bernadotte Sport gave such tremendous yields, the variety was sent here for trial. Since coming to this Station this variety has continued to do well. Results over the past two years give the standing of the various varieties according to yield as follows: Bernadotte, Up-to-Date, Eureka, Jersey Royal, Gold Coin, Sir Walter Raleigh, and Cowichan Leader.

POTATO—NORTHERN- VS. SOUTHERN-GROWN SEED

This experiment was begun in 1924 to collect information as to the relative merits of northern- and southern-grown seed. Seed of each of two varieties, Early St. George and Green Mountain, produced at Smithers in northern British Columbia has been grown beside local seed of the same varieties for three years. Results obtained over this period show that northern-grown seed did better and gave heavier yields on the average than the southern seed.

POTATO-BREEDING

Some 450 potato plants were grown from seed and planted out in the spring of 1925. Many of these plants did not survive the exceedingly dry summer weather. The small tubers resulting from each plant that remained were harvested, kept separately in hills in 1926. That is, the tubers produced from a single seedling plant in 1925 were planted in one hill in 1926. Throughout the season from time to time weak plants were removed and those showing disease. At the time of harvesting the tubers of each plant were studied carefully as to colour, size, smoothness, depth of eye, russeting and season. The following table sets forth the result of the examination of 283 plants.

1. Colour	White 195	Creamy 43	Pink 6	Red 26	Purple 13
2. Size			Large 21	Medium 118	Small 144
3. Smoothness			Smooth 110	Rough 96	Medium 77
4. Depth of eye			Shallow 92	Deep 70	Medium 121
5. Season			Early 103	Medium 56	Late 12
6. Russeting					10 plants.

The tubers of thirty of the most promising hills have been put into storage for further planting next season.

POTATOES—DIFFERENT DATES OF PLANTING TO OBTAIN BEST SEED—PROJECT H 161

An attempt is being made in this project to determine what influence, if any, the time of planting has on the resulting crop for seed. Seed of early St. George and Sir Walter Raleigh was planted on five successive dates, two weeks apart, beginning April 22. Seed from each plot was saved and planted May 19, 1926, with the results shown in the following table from 66 feet of row:—

POTATOES—DIFFERENT DATES OF PLANTING TO OBTAIN BEST SEED

Variety	Date planted	Amount	Date harvested 1926	Yield per plot 1926	Yield per acre	Average yield, three years
		Ft.		Lb.	tons lb.	tons lb.
Early St. George—						
Plot 1	April 22	66	Sept. 22	36·0	4 1,504	6 1,232
2	May 6	66	" 22	35·0	4 1,240	5 1,836
3	" 20	66	" 22	33·8	4 844	4 336
4	June 4	66	" 22	24·0	33 336	5 1,415
5	" 18	66	" 22	19·0	2 1,016	3 1,172
Sir Walter Raleigh—						
Plot 1	April 22	66	Nov. 9	68·0	8 1,952	7 1,488
2	May 6	66	" 9	59·0	7 1,576	8 808
3	" 20	66	" 9	74·0	9 1,536	10 238
4	June 4	66	" 9	96	12 1,344	11 660
5	" 18	66	" 9	59·8	7 1,708	8 1,420

Results over a two-year period would show that:—

1. With an early variety, early planting gave better seed as indicated in greater yield.

2. With an early variety, the later the planting the lower the vitality of the resulting crop.

3. With late varieties, results would show that from the middle to the end of May is the best time to plant to produce seed.

POTATO—DIFFERENT DATES OF PLANTING—PROJECT H 162

Two varieties, Burbank and Sir Walter Raleigh, were planted on five different dates at intervals of two weeks, the first planting being made May 8. This project begun in 1926 has for its object the determination of the best date to plant. The following table gives results obtained during the 1926 season and also the average yield for four years. Fields are based on 66 feet of row.

POTATO—DIFFERENT DATES OF PLANTING

—	Date planted	Date harvested	Yield per plot 1926	Yield per acre 1926	Average yield per acre, 4 years
			lb.	tons lb.	tons lb.
Burbank—					
Plot 1	May 3	Oct. 26	54·8	7 256	
2	" 17	" 26	62·0	8 368	
3	" 29	" 26	49·0	6 936	
4	June 12	" 26	49·8	6 1,056	
5	" 25	" 26	29·0	3 1,655	
Sir W. Raleigh—					
Plot 1	May 3	Nov. 19	74·0	9 1,536	
2	" 17	" 19	87·0	11 928	11 128
3	" 29	" 19	28·0	3 1,392	7 814
4	June 12	" 19	34·0	4 976	6 1,324
5	" 25	" 19	36·0	4 1,636	6 1,959

Results obtained over four years would not indicate any fixed date as being the best to plant. Sir W. Raleigh does well seeded any time up to the middle of June. Late plantings give good returns if there is sufficient moisture so that seed will grow, but under conditions which obtain here, planting later than the first week in June would hardly seem advisable.

POTATO—SPRAYING EXPERIMENT—PROJECT H 182

What is the relative value of dust and liquid sprays? This project was undertaken in 1925 to determine this point with reference to potatoes. Sir Walter Raleigh was the variety used, planted May 17. Plot 1 was sprayed with Bordeaux 4-4-40 twice during the season. Plot 2 was dusted twice with 9 parts sulphur to 1 part arsenate of lead. On plot 4 no treatment was given. The following table gives the results for the past season along with the average yield for four years from 66 feet of row.

POTATO—SPRAYING EXPERIMENT

Spray used	Date sprayed	Yield per plot 1926	Yield per plot 1926	Average 4 year, per acre
		lb.	tons lb.	tons lb.
Mixture 4-4-40	June 7	92	12 288	10 1,294
Dusted with 9 parts sulphur	July 6	86	11 704	9 1,143
1 part arsenate of lead	June 7	.....	.....	.....
No treatment	.....	.....	8 896	7 1,045

Sprays were applied on June 7 and July 6 and plots were harvested November 9. Over the four years' work Bordeaux spray has given best results as compared to dust spray in yield and general health of plants. Both sprayed plots show improvement over check plot.

POTATO—SPROUTED VS. UNSPROUTED SEED—PROFECT H 183

The chief object in this experiment was to determine the effect of sprouting on earliness and yield. Sixty-six sets each of sprouted and unsprouted potatoes of Rural Russet and Burbank varieties were planted on May 7. The sprouting was done by exposing the tubers to subdued light for six weeks at a temperature of about 50 degrees. The results, obtained during the past season along with the average yields for four years, are shown in the following table:—

POTATO—SPROUTED VS. UNSPROUTED

Variety	Marketable	Unmarketable	Yield per plot 1926	Yield per acre 1926	Average yield, four years, per acre
	lb.	lb.	lb.	tons lb.	tons lb.
Rural Russet—					
Sprouted	36·0	10	46·0	6 144	8 137
Unsprouted	23	8	31·0	4 184	6 1,107
Burbank—					
Sprouted	46·8	14	60·8	7 1,972	10 1,945
Unsprouted	28·8	11	39·8	5 428	8 1,754

Sprouted seed increased earliness by a week or more and also increased yield as shown by data collected over a period of four years.

VEGETABLES—FALL OR SPRING SEEDING—PROJECT H 218

Considerable work has been done at this Station with fall and spring seeding of many crops. For the past four years many kinds of vegetable seed have been sown in both fall and spring with the following results:—

1. Beets, turnips and carrots (seeded in fall), providing they live through the winter, go to seed in early spring.
2. Beets, cabbage, carrot, radish, lettuce, turnip and onion, kill out three out of four winters.
3. Spinach and radish do well when sown in fall.

CELERY—BLANCHING EXPERIMENT—PROJECT H 90

A comparison of the various systems of blanching is the objective in this project. Goldes Self-blanching is the variety used. Seed was sown in the frame March 16 and plants put out May 16. The various methods of handling together with results obtained are set forth in the following table:—

CELERY—BLANCHING EXPERIMENT

Cultural Method	Earliness	Flavour	Crispness	Blanching	Weight 12 heads 1926
					lb.
1. Bed 6′ x 6′ plants 6″ apart	Medium early	Poor	Poor	Fair	14·8
2. One row 15′ long—plants 6″ apart grown on level, earthed up	Late	Very good	Very good	Fair	22·0
3. Two rows 15′ long—Plants 6″ apart alternating with those in other row	Very good	Good	Good	Fair	21·0
4. One row 15′ long.—Plants 6″ apart. Started in trench 6″ deep and gradually earthed up	Late	Good	Very good	Fair	34·0
5. One row 15′ long—Plants 6″ apart. Grown on level blanched with boards. 12″	Early	Fair	Fair	Very good	25·0

After four years of work the results show that:—

1. Close planting is not satisfactory, plants on the inner side of the bed are undersized and have loose heads.
2. Blanching with boards is most satisfactory way.
3. Plants started in trench and earthed up give greatest weight.
4. Celery blanched with soil excels in crispness.

ONION—TRANSPLANTING VS. SOWN IN THE OPEN—PROJECT H 137

The object in this experiment is to determine the advantage, if any, of starting onion seed in frame or greenhouse and then transplanting in the open. Seed of each of three varieties was sown in the greenhouse March 11 and transplanted into the open April 8. Seed of the same three varieties was also sown in the open April 8. Records of yields obtained are shown in the accompanying table:—

ONION—TRANSPLANTING VS. SOWN IN OPEN

Variety	Transplanted yield per plot	Seeded in open. Yield per plot
	lb.	lb.
Ailsa Craig	11·5	10¼
Giant Prizetaker	19	14
Yellow Globe Danvers	18	15

For the two seasons this project has been conducted, considerably larger yields have been obtained from starting seed in flats and transplanting to open.

VEGETABLE SEED—EASTERN VS. BRITISH COLUMBIA SEED STOCKS—PROJECT H 590

This project has for its object the determining of the relative values of Eastern and British Columbia seed. String beans was the crop grown, from seed produced in the East and British Columbia. Fordhook Favourite was the variety seeded April 7. On the one season's work the British Columbia seed gave an increased yield by about 10 per cent over seed produced in the East.

THERMOGEN VS. DUST MULCH—PROJECT H 589

Much prominence has been given the past year or two to the use of thermogen for various crops as a means of (1) eliminating the necessity of cultivation during the growing season; (2) conserving moisture, etc. Thermogen tried out at this Station for the first time on beans has no value for this crop as indicated by the one season's work. Further work with thermogen will be reported on from time to time.

NUTS

WALNUTS—VARIETY EXPERIMENT—PROJECT H 351

The area in walnuts comprises some five acres on an eastern slope. In 1916 trees of eighteen grafted varieties and many seedlings were planted, but these have borne fruit only during the past two seasons. The two most promising varieties up to the present are the Franquette and Mayette. The seedlings are of the *Juglans regia* family and the product of two trees. Many of these are outstanding in yielding quality and thinness of shell. Some of the trees in 1926 bore 25 to 30 pounds of nuts.

The nuts are gathered just at the time they are falling from the tree and taken indoors, where they can be spread and dried. The nuts are then bleached. This consists of dipping in a solution of chloride of lime and sal soda to which sulphuric acid is added, the result being the liberation of chlorine gas which does the bleaching.

The following formula, which was given out by the University of California Experimental Station, illustrates the details of this process: "Six pounds of bleaching powder (chloride of lime), twelve pounds of sal soda, fifty gallons of water. Dissolve the sal soda in about four gallons of water, stirring well until dissolved. Dissolve the bleaching powder in about four gallons of water, stirring well until dissolved. Add one solution to the other and stir well. Let the carbonate of lime settle to the bottom and draw off the clear liquid and add water to make a total of fifty gallons. Put the nuts in large dipping box or lath crate, immerse in the fluid, and then add one and one-fourth pounds of 50 per cent sulphuric acid and agitate by raising and lowering the dipping box. The bleach should be reached in five to ten seconds and the nuts are then washed in clear water and put to dry. The liquor can be used with new batches of nuts so long as the proper effect is produced and small additions of acid will prolong the efficiency of the liquor."

ALMONDS—VARIETY EXPERIMENT—PROJECT H 352

The best crop of almonds ever produced at the Station was grown and harvested during the past season. Two Texas Prolific almond trees bore 34 pounds each. Other varieties in order of yield are: Paper Shell, Jordon, I X L, Nonpareil, Llewellyn, and Lanquedoc. The almonds were of good quality but small.

FILBERTS—VARIETY EXPERIMENT—PROJECT H 338

These nuts continue to do well, making considerable growth and yielding well. Loss through birds taking nuts at harvest time is always serious. Yields are given in the following table:—

FILBERTS—VARIETY EXPERIMENT

Variety	When set	Number of trees	Yield per tree since planted		Remarks
Avellana	1918	1	4	14	
Calyculata	1918	1	0	12	
Colurne	1918	1	..	..	
Common	1918	1	..	..	
California Purple	1916	2	..	..	
Barcelona Filbert	1916	2	4	12	
Du Chilly	1916	2	4	10	
English Filbert	1916	2	6	5	
Kentish Cob	1916	2	10	6	Large nut, very promising.
Merveille de Bollwiller	1915	6	39	6	Good but late.
Nottingham Filbert	1915	7	31	9	Small, very early.
Red Hazel	1916	1	20	4	Good.
Spanish Purple	1916	1	3	0	
Macrocarpa	1915	5	16	0	Fair.
" Daviana	1918	1	4	8	"
" a feuille pourpre	1916	2	29	0	Good, excellent foliage.
" lacinae	1916	1	4	6	
" d'Angleterre	1915	1	7	..	
" du Provence	1915	2	23	..	Promising.
" Emperor	1915	1	21		Good quality.
" du Bearn	1916	1	13	..	"
" Gosford	1916	2	6	10	Promising.
" Pellicule Rouge	1916	1	4	2	
" Prolific	1915	1	29	..	
" Fertile de Coutard	1915	7	70	..	Excellent.
" Fertile	1915	2	20	..	

GREENHOUSE

The greenhouse continues to give satisfaction, and the heating plant is ample for larger houses. The tomato is the most popular crop, greenhouse grown, on Vancouver island. The demand is keen, and the prairie market good, but not extensive enough to permit of great expansion.

TOMATO—VARIETY EXPERIMENT—PROJECT H 255

Kondine Red, a variety of tomato grown for a number of years on the coast, remains the most popular greenhouse sort. The trade demands a small tomato, regular and firm. The tomatoes were sown on November 14, potted in 3-inch pots, later in 5-inch pots, and transplanted to the beds on February 15. Beds were manured with horse manure, but no artificial fertilizer was used. Mildew was troublesome in June, but so late in season that the effect on crop was not great. The difficulty was controlled in some measure by sulphur on the pipes and by leaf stripping.

TOMATO—GREENHOUSE VARIETY EXPERIMENT

Variety	Fruit green	Yield per plant	Value for market	Plants pulled	Remarks
		lb.			
Kondine Red (Greenhouse grown)	April 21	6¼	First...	July 15	Of best quality.
Kondine Red (outside grown)	" 12	6½	First...	" 15	"
Abbotsford Argo	" 18	7½	Fair....	" 15	Too small for market.
Payne Victory	May 15	3½	Poor...	" 8	Poor yielder.
Livingston Globe	April 21	6½	Poor...	" 8	Poor colour.

Kondine Red is small for Eastern markets, but just right for Western trade. Other varieties are being tried from time to time as they come on the market.

The return per square foot with the Kondine Red amounts to about 62½ cents. Many other crops have been grown in the greenhouse supplementing the work of the farm for decorative and demonstrative purposes.

FLORICULTURE

TULIP—VARIETY EXPERIMENT—PROJECT H 290

In the 1925 report from this Station a comprehensive list of varieties of tulips grown here was published along with descriptions of each, as to colour, date of blooming, and height.

During the past year many of the same varieties were forced in the greenhouse and records kept as to the behaviour of each. The bulbs were buried September 28, 1925, in pots and flats, and taken into the greenhouse on the dates shown in the following table:—

TULIPS—FORCING IN GREENHOUSE

Variety	Taken in greenhouse	Date of first bloom	Quality of stem	Quality of bloom	Colour	Remarks
Early Flowering Single—						
Yellow Prince	Nov. 30	Jan. 2	Short	Fair	Golden yellow	Good for pots only.
"	Dec. 12	" 10	"	Good	Sweet scent	
Duchesse De Parma	Nov. 30	" 4	"	Fair	Dark red, margined.	
" "	Dec. 12	" 12	"	Good	Flushed gold	Good forcer, colour good.
" "	" 23	" 18	"	"		
Keizers Kroon	Nov. 30	" 2	Short	"	Scarlet edged gold	
"	Dec. 12	" 9	Fair	"		Excellent early market.
"	" 15	" 12	Good	"		
Parrott—						
Perfecta	Jan. 2	Feb. 1	Short	No good	Greenish and red marks when forced.	
Cottage Tulips—						
Orange Globe	Jan. 2	" 1	"	Good	Scarlet rose tinged	Long flowers.
Caledonia	" 15	" 11	Weak	Fair		Too weak for early forcing.
La Merveille	" 15	" 12	"			" " "
Ellen Willmott	" 23	" 19	Rather weak	Beautiful	Creamy yellow	Pointed flower.
Darwin Tulips—						
Pride of Haarlem	" 23	" 19	Excellent	Good	Red tinged purple	Fine upstanding forcer.
Philip Des Comines	" 23	" 19	Good	"	Purplish maroon	Good cut flower.
William Pitt	" 23	" 20	Excellent	"	Deep scarlet	Excellent cut flower.
Whistler	" 23	" 20	Good	"	Crimson scarlet	Good strong cut flower.
Farncombe Sanders	Feb. 10	Mar. 2	"	"	Scarlet rose-tinged	Sturdy forcer.
Yellow Perfection	" 3	Feb. 26	Trifle weak	"	Rich bronze	Beautifully perfumed.
Loveliness	" 3	" 26	Good	"	Soft, rosy carmine	Good selling colour.
Glow	" 10	Mar. 4	"	"	Brilliant vermillion, scarlet centre.	Good bloom.
Bartigon	" 21	" 15	"	"	Fiery red, white centre.	Excellent forcer.
Yellow Rose (double)	" 21	" 17	Useless	Flops		
Clara Butt	" 21	" 16	Good	Good	Salmon-rose	Favourite colour, forces well.
Sultan	Mar. 2	" 22	"	"	Glossy maroon-black.	Forces well. Not in demand.
Suzon	" 2	" 22	"	"	Deep blush-rose	Very good.
Madame Krelage	" 2	" 21	Very good	Very good	Rosy-carmine, silver margin.	Good.
Baronne De La Tonnaye	" 2	" 22	Good	"	Rose, silvery rose margin.	Very good.
Edmee	" 2	" 23	"	Good	Deep cherry rose, pink edge.	Nice colour.

The minimum temperature attained during the forcing period was 50 degrees, rising to maximum 70 degrees. The quality of the blooms for the most part was excellent. Considering the value of the bulb the price received on the Victoria market was very disappointing, much lower than that received in Vancouver.

A comparison of tulips grown in flats and pots was carried out at the same time as the above work, 5-inch pots being used. Three bulbs were grown to a pot, nine pots occupying a space of 16 square inches and containing 27 bulbs. In one flat 16 inches by 24 inches, 45 bulbs were planted. On the benches in the greenhouse 16 square feet accommodated 243 bulbs in pots and 270 bulbs in flats. Flats were easier to fill and handle but the stems of the blooms were weaker which offset any other advantage gained.

Some quantity of tulips about to open were placed in a dark cellar with a temperature of from 45 to 50 degrees. The tulip thus treated developed a stiffer, stouter stem and lasted longer when cut and brought to the light.

On reaching maturity, the tulip divides, forming two or more bulblets of various sizes which are removed and grown in a nursery row for flowering size.

During the past two seasons much data has been secured as to how the various grades multiply. Bulbs of Clara Butt were weighed before planting and increase at time of digging was weighed and graded. Bulbs in each plot were in 12-inch rows with rows 12 inches apart, plots being the same size throughout. Results over two years are shown in the following table:—

TULIP BULBS—RATE OF INCREASE

—	Weight before harvesting	Weight harvested	Weight increase	Number per cent large size	Weight	Number per cent 2nd size	Weight	Number per cent small size	Weight	Total number bulbs	Number when flowered
	lb. oz.	lb. oz.	lb. oz.		lb. oz.		lb. oz.		lb. oz.		
1st 50	2 4	4 10	2 6	50	2 12	60	1 4	68	0 10	178	50
2nd 100	1 2	3 15	3 13	50	2 4	40	1 0	114	0 11	204	65
3rd 200	0 12	3 3	2 7	30	0 14	90	1 8	160	0 13	280	44

Data collected over a period of two years show that (1) there is an increase in total weight of the second-grade bulbs over the first grade; (2) the small bulbs which are frequently discarded also gave a good increase.

NARCISSUS—VARIETY EXPERIMENT—PROJECT H 278

The narcissi are amongst the most popular spring flowering plants, being hardy, free blooming and of interesting form and colour. A complete classification of varieties grown at this Station was given in the report of 1925. During December, 1925, many of these varieties were forced in the greenhouse in order to obtain data on how each behaved under greenhouse conditions. These bulbs were placed in pots October 30 and buried; then brought into the greenhouse at a later date as outlined in the following table:—

NARCISSUS—VARIETY EXPERIMENT—FORCING

—	Number bulbs forced	Taken into greenhouse	Date bloom	Colour	Per cent good blooms	Remarks
Golden Spur	50	Dec. 23	Jan. 18	Yellow	98	
Glory of Leiden	50	Jan. 15	Feb. 10	Perianth-pale yellow Trumpet-rich yellow	84	Blossoms of excellent quality.
Sir Watkin	150	" 16	" 10	Perianth-primrose Trumpet-yellow	80	Foliage droops.
Grandis	150	" 16	" 12	Perianth-white Trumpet-yellow	74	Soft weak stems.

The Narcissus fly does much damage each year and many of the bulbs taken into the greenhouse showed infection. Blooms sell well during the early spring. Those of Sir Watkins averaging 53 cents per dozen throughout February when sold on the open market.

NARCISSUS FLY CONTROL—PROJECT H 570

Severe losses are sustained each year through the work of the Narcissus Bulb fly. The larvæ of these flies infect the bulbs, feeding freely upon the tissues and causing the bulb to decay. There are two species of this fly, the large Narcissus Bulb fly (*Merodon equestris*) and the small Narcissus Bulb fly (*Eumerus Strigatus*). The habits of these flies have been closely studied as to where and when eggs are laid, time eggs hatch and larvæ begin to feed on bulbs, etc. In 1925 this experiment was undertaken to evolve some successful means of exterminating larvæ inhabiting bulbs. Bulbs in various plots were treated as follows:—

Plot 1. With formalin.
Plot 2. With corrosive sublimate.
Plot 3. Crude naphthaline scattered under bulbs at time of planting.
Plot 4. Soaked in water for various lengths of time.
Plot 5. Soaked in solution of household ammonia.

Notes were taken as to the method of treatment and results obtained. These are shown in the following paragraphs along with notes taken in the field.

Plot 1. Bulbs treated with formalin, 10 ounces to 24 gallons of water, for 24 hours. No external appearances of larvæ. Those soaked in water for three days showing 1 per cent. This plot was dug over in spring to remove any weak or diseased bulbs and examined for larvae; 1.7 per cent were found infected. Extra plot of double strength 10 ounces to 12 gallons of water, soaked for two days, no larvæ. Dug in spring 9.7 per cent diseased and 1 per cent with larvæ

Plot 2. Bulbs treated with corrosive sublimate. Corrosive sublimate 1 ounce to 9 gallons of water for six hours, 1 per cent larvæ appeared; soaked in water for seven days 13.5 per cent larvæ emerged (1.5 per cent Merodon, ½ per cent Eumerus). Roguing disclosed 5 per cent disease; no larvæ.

Plot 3. Crude naphthaline, scattered under bulb at time of planting. The plot was rogued and 29.7 per cent removed; 1.4 per cent contained larvæ.

Plot 4. Bulbs soaked in water. Bulbs soaked in water for seven days with the results that in 6.2 per cent Merodon appeared and 7 per cent Eumerus. Plot rogued in spring .83 per cent of weak bulbs with 2.1 per cent containing larvæ, 3 bulbs had larvæ with heads appearing indicating that a longer period might be beneficial.

Extra plot. Soaked in water 10 days. 9.7 per cent larvæ emerged. No larvæ found in spring.

Plot 5. Bulbs soaked in household ammonia. 1½ pint to 9 gallons of water for 24 hours, 4 per cent larvæ. Rogued in spring results 3.3 per cent larvæ found.

After having had considerable experience in combating this pest we have found it advisable:—

1. To inspect each bulb before planting very carefully, sorting out the ones containing grubs and burning them. Infested bulbs can be detected at this time providing they have been out of the ground long enough to become cured. Sound ones are firm and hard while those containing larvæ are soft and pulpy.

2. Before planting soak in cold water for about eight days. With this treatment the larvæ crawl out of the bulbs, bringing about the destruction of large numbers before planting.

3. In the spring when the foliage is about 6 inches high the bed should be gone over and weak sickly plants taken out and burned. In most cases these plants will be infested with larvæ. The flies begin to appear about the second or third week in April and one must rogue early before they escape.

4. To cultivate the soil well during the pupation period, which in this locality is about the last two weeks in March, may destroy many pupæ.

SWEET PEA—VARIETY EXPERIMENT—PROJECT H 287

Many varieties of sweet peas have been grown for several years in the garden area and records kept. During the winter of 1926 several of these varieties were grown in the greenhouse in order to gather information as to the forcing quality of each. Seed was sown on the bench October 29 in 6 inches of soil. The following table gives the results obtained.

SWEET PEA FORCING

Variety	Colour	Quality of bloom	Date of bloom	Remarks
Picture	Flesh pink	Good	April 17	Good market colour.
Splendour	Dark maroon	"	" 16	Rather shy bloomer.
Commander Godsal	Dark blue	"	" 17	" "
Colne Valley	Bright blue	Very good	" 17	Beautiful colour for market.
Royal Scot	Scarlet	"	" 14	" " "
Constance Hinton	White	Good	" 10	Good white.
Hawlmark Pink	Salmon pink	"	" 16	Good market colour.
Doris	Soft pink	"	" 12	" "
Mrs. Tom Jones	Bright blue	"	" 17	" "

A large proportion of bloom resulting from this work was of second-grade quality. The best quality of bloom was during the four-week period beginning April 17 though the average price received was only 10 cents per dozen. The seed used was locally grown but the period between seeding and blooming is much too long for profit in a greenhouse. Of the colours grown pinks and blues were in most demand.

STUDIES IN SWEET PEA PRODUCTION—PROJECT 357

The work in the sweet pea seed production has been continued, as it interests more and more people with succeeding years on Vancouver island.

For the last four years, work has been undertaken covering many phases of sweet pea seed production. The yield per acre, variety tests, distance apart in row, effect of hilling, sticking, lime, inoculation, etc., have been studied. For report covering this work see the annual report for this Station for the past years. All these are of minor importance as compared with the problem of the breaking up of varieties, the crossing in the field, or whatever the nature of the break-up really is. One thing is certain, rogues continually appear with the best growers. Theoretically peas do not cross in the field, yet many things are difficult of explanation unless this crossing really takes place.

The work during 1925 was to secure information of a basic character to determine definitely whether natural crossing is possible, and if so, what insect or other agency is responsible.

Major Hurst has published a list of sweet pea colours arranged in order of dominance as follows:—

Cream is the lowest recessive colour.
White is dominant to cream.
Tinged white is dominant to white.
Pink to orange and salmon.
Crimson to pink.
Deep and pale blue to crimson and red.
Lavender to deep and pale blue.
Mauve to lavender.
Maroon to mauve.
Purplish maroon to maroon.
Wild purple bicolour is dominant to all other colours.

From this list it will be seen that cream, being the lowest recessive, should be made the basis of investigation for cross-fertilization.

In the spring of 1925 twenty-five varieties of sweet peas were grown in the greenhouse and later transplanted out. There was considerable volume to this work, the whole field amounting to about three-quarters of an acre. The peas were set in such a way that the row of Feltons Cream was flanked on the one side by Commander Godsal, a blue, and on the other by Splendour, a dark-red; the idea being to give the varieties as good a chance as possible to cross, and if crossing actually did occur to be able to detect it without failure the following season. Ten cages were constructed and placed over as many individual plants of Feltons Cream. The soil under the cage was treated with Tipulite, a soil-disinfectant. Later in the season plant lice developed in some quantity in some of the cages, but since there was but one plant in each cage there should be no crossing from this source. The cages were placed before the appearance of the first bloom, and kept on until all petals had fallen. The seed from each caged plant was kept separately and planted in 1926. It would seem that if the caged Feltons Cream showed no rogues in the next generation, and Feltons Cream grown without protection showed the effect of the blue and the red, the inference would be that crossing by some agency must have taken place.

The seed from the individual plants was given the greatest care, kept in the original seed pods under seal, and under the closest supervision to guard against any possibility of error, and planted during the spring of 1926. To the surprise of every one Feltons Cream, that had been grown in the cage, showed a few rogues, usually of the poorest type, as follows:—

Plant No. 1. One rogue, pink.
Plant No. 2. No rogue.
Plant No. 3. Two rogues, (a) bluish purple, (b) white with pink blotches.
Plant No. 4. One rogue, pink picotee, blotched.
Plant No. 5. No rogue.
Plant No. 6. "
Plant No. 7. "
Plant No. 8. "
Plant No. 9. "
Plant No. 10. "
NOTE.—By plant No. 1, 2, 3, etc., is meant the progeny of original plants No. 1, 2, 3, 4, etc.

The row of Feltons Cream, grown beside the pedigree plants, a good type of commercial seed, contained five white rogues, three of a pale pink and two of a bluish purple. It will be noticed that the colour of the rogues in both cases was the same. There was nothing to indicate that the commercial Feltons Cream was influenced by the juxtaposition of the reds and blues; or that, in either case, crossing by natural means had taken place.

CHRYSANTHEMUMS—VARIETY EXPERIMENT—PROJECT H 222

Many varieties of chrysanthemums have been grown outdoors at this Station for the past four years and lists of varieties that have done best published. During 1926 some thirty or more varieties were grown in the usual way from cuttings taken in early spring and grown outside during the summer and transplanted to the greenhouse early in September. In the house, plants were grown in pots as well as in beds. Below is a classified list of chrysanthemums grown, in order of merit:—

Pompom	Single	Large Double	Small Double
John	Molly Godfrey	Naomah	Pomona
Hilda Canning	Mrs. U. P. Hedrick	Marigold	Rose Perfection
Bronze Doty	Helen B. Evans	October Queen	Lilac Caprice
Mary Pickford	Eureka	Thanksgiving Queen	Champs d'Ar
Dainty Maid	Mrs. Loo Thompson	Earl Kitchener	
Button Rose	Golden Mensa	Mrs. O. H. Kahn	
Beth	White Mensa	Gertrude Peers	
	Genevieve	Mrs. Swinburne	
		New Jersey	
		Admiral Beatty	
		Hortus Tolsanus	
		Gaston Quineaux	
		Mrs. Wickerham	

FOREST NURSERY

In co-operation with the research division of the British Columbia Forest Service, some quantity of forest seeds were sown in March, 1926. These seeds were obtained in various places, from trees of different ages. The course of the germination was recorded in five-day periods.

The seedlings in some quantity are being set in the forest-tree nursery at the Station farm for demonstration purposes. (Project H 584.)

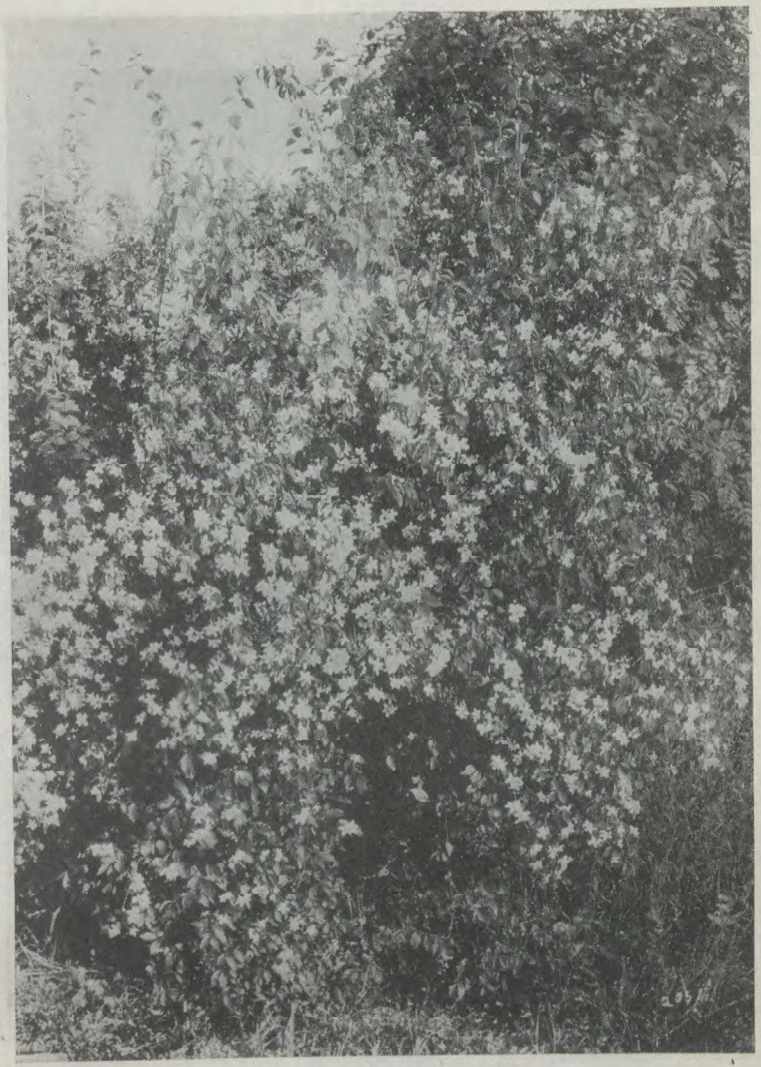
GERMINATION CHART—FOREST TREES

Species	Locality collected	Age of stand	Year collected	Clean seed per pound	Course of germination in five-day periods									
					5	10	15	20	25	30	35	40	45	50
Douglas fir	Reid River	250	1924	104,020	0	0	0	34	26	14	9	2	0	0
Douglas fir	Oyster River	60	1925	65,153	0	0	0	53	86	69	13	0	0	0
Hemlock	Reid Bay	60	1924	590,620	0	0	0	0	18	2	0	0	0	0
Hemlock	Eagle River	100	1925	302,000	0	0	0	46	42	110	28	12	5	0
Cedar	Nimpkish	300	1924	463,000	0	0	0	0	0	2	1	0	0	0
Cedar	Gordon Pasha	100	1925	335,000	0	0	249	102	46	12	8	0	0	0
Spruce	Oyster River	60	1925	154,000										
Pinus radiata	Imported		1925		0	0	0	33	4	0	0	0	0	0
Douglas fir	Black Creek	250	1925	92,000	0	0	0	52	12	8	16	32	0	2
Spruce	Oyster River		1925		0	0	256	98	65	15	3	0	0	0

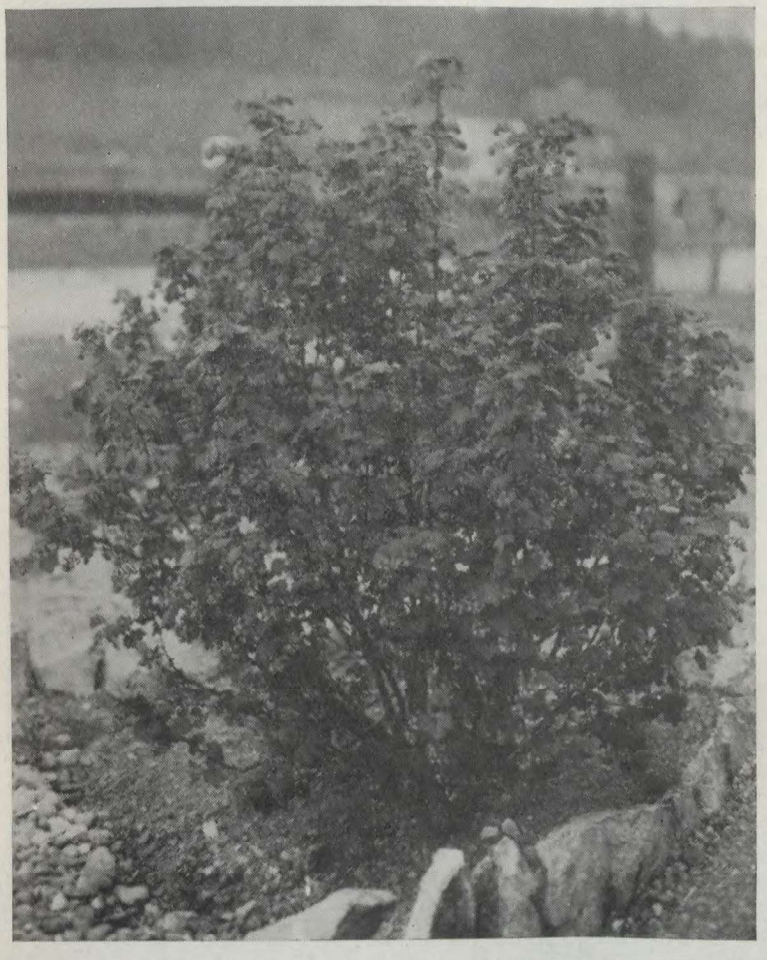
THE ARBORETUM

This area extending around the western part of the southern and northern ends of the Station forms a border 150 feet in width, occupying about ten acres. Plantings were made in the spring of 1914 of a very complete and comprehensive assortment of trees and shrubs secured from Oriental, American, and European nurserymen, with the result that there is on this Station one of the most extensive collections of trees and shrubs to be found in Canada. Many native species have been added to the arboretum from time to time. An attempt at a general classification of many of the plants to be found in the arboretum is here made under (1) flowering shrubs, (2) evergreen shrubs, (3) flowering trees, (4) deciduous trees, and (5) conifers. In each case the condition of the tree or shrub is given. Cases where trees or shrubs have been planted and since died no mention is made of them in the following tables. An attempt is made to give average growth for five years, blooming period, height of plant, and remarks as to merit or demerit as the case may be.

One of the finest Flowering Dogwoods (Cornus nuttallii) of Vancouver island at the Sidney station.



Mock Orange (Philadelphus gordonianus). Native to British Columbia.



Red Flowering Currant (Ribes sanguineum). Native to British Columbia.

FLOWERING SHRUBS

Variety	Condition	Average growth five years	Blooming period	Height	Remarks
		inch		feet	
Amelanchier alnifolia	Good	8	April-June	9	B.C. Native. Very pretty when in bloom.
Amorpha fruticosa	"	7	June-Aug	9	Fine Ornamental.
Ardisia japonica	"	8	April-June	8	Too straggly for individual planting.
Broussonetia papyrifera	"	10	June	12	Foliage has silky down on under side.
Berberis	"	10	May-July	8	Flowers negligable. All varieties do well.
Baccharis halimifolia	Fair	6	Sept	5	Very straggly. Not recommended.
Buddleia globosa	Good	6	May	4	Good ornamental. Compact bush.
Buddleia davidii	"	6	May	4	Good ornamental. Cut back every spring to ensure strong growth.
Caragana arborescens	"	8	May	11	Good ornamental. Good shape, hardy.
Cercis siliquastrum rubrum	"	10	April-May	13	" Make good specimen.
Colutea longialata	"	6	May	10	" Good shape, recommended.
Coronilla emerus	"	8	May	10	Good ornamental. Highly recommended.
Cytisus trifolius	"	5	April-July	6	Rather straggly. Flowers very fragrant.
Deutzia gracilis robusta	"	3	April-June	2	Good ornamental. All Deutzias are.
Deutzia Pride of Rochester	"	6	May-July	9	Highly recommendsd.
Forsythia intermedia	"	14	Mar.-April	10	Lovely shrub. Strongly recommended.
Genista anxanthica	"	6	Mar.-May	6	Very shapely. Profuse bloomer.
Genista scoparia Andreana	"	6	April-June	10	Highly recommended for mixed shrubbery
Genista praecox alba	"	8	April-June	9	" " "
Hypericum inodrum	"	4	June-Aug	5	" " "
Hibiscus anemonaeflorus	"	3	June-Aug	5	Good ornamental. Recommended.
Hibiscus boule de feu	"	3	June-Aug	4	" "
Hamamelis japonica	"	16	Feb.-April	7	Good blooms before leaves appear.
Indigofera dosua	"	6	June-July	7	Good. Its finely divided leaves give it a graceful appearance.
Jasminum revolutum	"	4	June-Aug	4	Good. Highly recommended.
Kerria japonica flore pleno	"	6	Mar.-June	5	Good for mixed shrubbery.
Lonicera nitida	"	3	May-June	7	Small leaves, largely used for hedges.
Lonicera standishii	"	4	Feb.-April	7	Very fragrant. Blooms twice in season.
Lonicera tatarica speciosa	"	4	April-June	8	Make good specimen. Recommended.
Lycium chinensis	"	5	May-June	10	Too straggly for specimen. Good for mixed shrubbery.
Ligustrum ibota	"	15	May-June	10	Fine shrub for hedge.
Magnolia longifolia	"	15	Mar.-April	10	Fine, well shaped shrub. Recommended.
Nuttallia cerasiformis	"	8	April-June	10	B.C. Native. Good for mixed shrubbery.
Physocarpis opulifolius	"	9	June-July	11	" "
Philadelphus gordonianus	"	10	June-July	12	" "
Philadelphus magdalenae	"	8	June-July	11	A good back ground for smaller shrubs.
Ptelea trifoliata	"	6	June-July	8	Too straggly. Not recommended.
Potentilla veitchii	"	2	April-May	4	Good for mixed shrubbery.
Pyrus (Cydonia)	"	10	Mar-May	9	" "
Ribes sanguineum	"	8	Mar.-May	10	B.C. Native. Good mixed shrubbery.
Rosa rubrifolia	"	10	May-June	12	Good for mixed shrubbery.
Spiraea van houttei	"	6	May-June	8	Fine for massing. Recommended.
Spiraea arguta	"	7	April-May	6	" "
Spiraea menziesii	"	5	May-Aug	8	Good for mixed shrubbery. B.C. native.
Spiraea discolor ariaefolia	"	6	May-July	10	" "
Stuartia pseudo-camellia	"	9	June	6	Good ornamental. Recommended.
Syringa vulgaris	"	6	April-May	8	" "
Syringa alba grandiflora	"	6	April-May	8	" "
Syringa Charles X	"	4	April-May	5	Good ornamental. All the French lilacs are recommended.
Stapyhlea colchica	"	8	April-June	7	Good ornamental. Highly recommended.
Spartium (Genista) junceum	"	8	May-Sept	15	Good for mixed shrubbery.
Veronica traversi	"	4	July-Oct	4	A pretty shrub, highly recommended.
Viburnum plicatum tomentosum	"	5	May-June	6	The Japanese snowball. Recommended.
Vitex agnus castus	"	6	June-Sept	6	Good for mixed shrubbery.

EVERGREEN SHRUBS

Abelia grandiflora	Good	10	July-Nov	7	Very ornamental, especially when in flower.
Camellia japonica red and white	"	4	Mar.-May	4	Beautiful shrub. Highly recommended.
Choisya ternata	"	5	April-Oct	5	Highly recommended, in bloom all summer
Cotoneaster simonsii	"	12	April-May	8	Highly recommended. Very pretty in winter with red berries.
Cotoneaster nitens	"	12	April-May	9	Rather straggly. Good for mixed shrubbery.
Cotoneaster pyracantha lalandi	"	15	April-May	10	Very showy with its clusters of brickred berries. Highly recommended.
Garrya thuretti	"	7	May	9	Good for mixed shrubbery.
Ilex aquifolium	"	6	May	7	Good specimen. Highly recommended.
Ilex alba argentea	"	4	May	3	Its variegated foliage make it very desirable.
Kalmia latifolia	"	4	May-June	3	Good for massing.
Ligustrum japonica	"	10	July-Aug	8	Good for hedges.
Laurus laurocerasus bruanti	"	8	May-June	10	Very symmetrical. Make good hedges.
Laurus laurocerasus myrtifolia	"	6		7	Very symmetrical. Portuguese laurel.
Photinia glabra rubens	"	6		8	Very symmetrical. Highly recommended.
Rhododendron	"	3	Mar.-May	4	Very good for massing or as specimens.
Viburnum laurustinus	"	6	Dec.-April	5	Highly recommended. In bloom during Winter and early Spring.

FLOWERING TREES

Variety	Condition	Average growth five years	Blooming period	Height	Remarks
		inch		feet	
Aesculus hippocastanum	Good	10		15	Good ornamental and shade tree.
Aesculus pavia	"	7	May 10—June 10	8	Good ornamental, small variety.
Catalpa speciosa	"	10	June-Aug	13	" Highly recommended.
Catalpa kaempferi	"	6	June-Aug	10	" Not so robust as speciosa.
Laburnum vulgare	"	8	May-June	13	" Very showy.
Liriodendron tulipifera	"	10	May-June	18	" Highly recommended.
Prunus oku miyaki	"	6	April-July	10	" Jap. flowering cherry.
Prunus mume	"	10	Mar.-April	16	" " apricot.
Prunus insititia	"	6	Mar.-April	10	" Black Plum. Very acid.
Prunus acida marasca	"	10	April-May	13	" Good shape. Fruit Cherry acid.
Prunus virginiana	"	12	May-June	17	" Highly recommended.
Prunus padus	"	16	April-May	19	" "
Prunus cerasifera atropurpurea	"	10	Mar.-April	16	" Attractive dark-red foliage.
Pyrus longipes	"	12	April-June	16	" Highly recommended.
Pyrus (Sorbus) aucuparia	"	14	May-June	18	" Attractive clusters of red berries in fall.
Paulownia imperialis	"	18	April-July	18	" Showy spikes of mauve fox-glove shaped flowers.
Robinia mexicana	"	10	May-July	17	" Highly recommended.
Tilia americana	"	14	June-July	14	" Makes good shade trees.

DECIDUOUS TREES

Variety	Condition	Average growth five years	Height	Remarks
		inch	feet	
Acer tataricum. Ginnals	Good	8	11	A good ornamental. Not so coarse in growth or foliage as common variety.
Acer heldreichii	"	10	15	" "
Acer saccharinum laciniatum wieri	"	12	18	" Its finely cut leaves make it very desirable.
Acer macrophylla	"	18	35	" B.C. Native.
Acanthopanax ricinifolia	"	6	11	An odd tree. Trunk covered with short thick thorns. Foliage scant.
Ailanthus glandulosa	"	10	19	Good ornamental. Highly recommended.
Celtis occidentalis	"	8	10	" Fine specimen.
Fraxinus americana	"	10	19	" "
Gleditschia ferox	"	9	8	" Noted for big thorns on trunk and branches.
Juglans cordiformis	"	15	18	" Fine shade tree. Large spreading branches.
Morus alba	"	15	13	"
Platanus orientalis	"	12	19	" Highly recommended.
Quercus pedunculata	"	15	40	" A splendid specimen of English Oak.
Quercus rubra	"	16	18	" Brilliant foliage in the fall.
Rhamnus cathartica	4	6	10	Growth too straggly for ornamental.
Sophora japonica	"	13	10	Good ornamental. Fine foliage.
Taxodium distichum	"	8	8	" Called deciduous cypress.
Ulmus vegeta	"	18	26	" Highly recommended.

CONIFERS

Cedrus atlantica	Good	16	18	4	Fine specimen tree. Recommended.
Cedrus libani	"	8	10		Compact growth. Recommended.
Cedrus Deodara	"	10	16		Symmetrical specimen. Recommended.
Pinus torreyana	"	9	12		Compact. Good specimen. Recommended.
Pinus sabiniana	"	16	16		Rangy. Good for parks. Recommended.
Pinus caultheri	"	18	14		" "
Pinus jeffreyi	"	15	16		" "
Pinus parryana	"	11	8		Compact. Good for specimen. Recommended.
Pinus radiata	"	13	27		Rangy. Good for parks. Recommended.
Pinus massoniana	"	10	12		" "
Pinus syacahuite	"	14	14		Upright, fine specimen. Recommended.
Sequoia sempervirens	"	20	21		Large symmetrical tree. Recommended.
Sequoia gigantea	"	15	16		" "
Cephalotaxus fortunei	"	3	4		Compact symmetrical tree. Recommended.
Torreya nucifera	"	12	8		" "
Taxus tardiva	"	4	4		" "
Cupressus lawsoniana	"	12	12		Rangy suitable for parks. Recommended.
Abies appolinis	"	6	6		Symmetrical specimen. Recommended.
Abies grandis	"	8	10		" suitable for parks. Recommended.
Abies nordmanniana	"	15	13		" good specimen. Recommended.
Picea sitchensis	"	12	16		" " "
Picea pungens kosteriana glauca	"	9	10		" " "

ANIMAL HUSBANDRY

There are no large herds of cattle of the beef breeds on Vancouver island, but some of the best dairy cows in Canada may be found there. Among these the Jersey is at once the most numerous and popular. The mildness of the climate and other conditions, so like those found in the south of England and on the Island of Jersey, have perhaps had something to do with popularizing the Jersey, the only breed kept on the Farm.

DAIRY CATTLE

MILK PRODUCTION

The breeding herd, insofar as numbers go, varies little from year to year. Individual records are kept of milk production and feed consumed, and the cost of milk production and the profit over feed determined. Changes are made in the meal mixture to suit individual animals in the herd, and the period of lactation. The following may be regarded as a basic mixture for the cows in full milk:—

	lb.
Bran	500
Ground oats	400
Gluten meal	100
Cottonseed meal	100
Oilcake meal	100

This mixture is fed at the rate of about one pound of meal to four pounds of milk. No reference is made to straw for bedding, manure, or calves in the following table.

As the price that was received for fat varied at different seasons of the year it was considered advisable to indicate the actual value of this constituent at the price received and also to give a corresponding comparison with the fat valued at 50 cents per pound. This is shown in the table.

Name of Cow	Age	Date of dropping calf	Days in milk	Total milk produced in period	Per cent fat in milk	Total fat produced	Value of fat when marketed	Value of fat at 50 cents per pound	Value of skimmilk	Total value received for product	Total value of product with fat at 50 cents per pound
	yrs.		dys.	lb.	%	lb.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Majesty's Honeymoon Bess	9	May 12, '25	304	8,336·6	4·68	390·13	213 18	195 06	21 11	234 29	216 17
White Robin's Queen.....	4	Aug. 18, '25	342	6,183·9	6·82	422·2	227 82	211 10	14 33	242 15	225 43
White Robin's Buttercup...	4	Nov. 26, '25	334	7,235·1	5·05	365·4	169 88	182 70	20 06	189 94	202 76
Aviator's Bess of V.I.S . .	2	Aug. 5, '25	309	3,660·7	6·09	222·86	115 11	111 43	8 75	123 86	120 18
Aviator's Lucille of V.I.S..	2	Nov. 7, '25	471	6,410·0	5·76	369·24	191 13	184 62	15 54	206 67	200 16
Fauvic's Lily of V.I.S.....	2	Oct. 12, '25	403	6,720·9	5·19	349·12	166 52	174 56	16 67	183 19	191 23
Aviator's Florence of V.I.S.	2	Nov. 18, '25	348	5,849·1	5·49	321·47	144 84	160 73	14 33	159 17	175 06
Totals.....	25	. . . . .	2,511	44,396·3	.....	2,440·42	1,228 48	1,220 20	110 79	1,339 27	1,330 99
Averages.....	3·57	.....	359	6,342·3	5·49	348·63	175 49	174 32	15 82	191 32	190 14

FEED CONSUMPTION AND COST

Name of cow	Age	Number of days fed	Meal	Roots and ensilage	Hay	Total cost of feed	Cost of one pound of fat	Actual profit over cost of feed
			lb.	lb.	lb.	$ cts.	cts.	$ cts.
Majesty's Honeymoon Bess	9	304	3,488	6,730	3,400	138 02	35·4	96 27
White Robin's Queen	4	342	2,955	6,000	3,030	119 18	28·2	122 97
White Robin's Buttercup	4	334	2,045	4,743	2,973	92 62	25·3	97 32
Aviator's Lucille of V.I.S.	2	471	4,142	10,100	5,031	179 11	48·5	27 56
Aviator's Bess of V.I.S.	2	309	2,368	5,376	2,796	100 60	45·1	23 26
Fauvic's Lily of V.I.S.	2	403	2,406	5,248	3,043	103 70	30	79 49
Aviator's Florence of V.I.S.	2	348	1,991	4,321	2,601	86 58	27	72 59

COST OF VARIOUS FEEDS

Meal, 100 lb.	$ 2 50
Roots and ensilage, 1 ton	5 00
Hay, 1 ton	20 00

Our herd bull, " Jessies Aviator of V.I.S.", is a young animal born February 18, 1924, the son of Plashes' Model Jessie, with a milk record of 16,018 pounds of milk in 1923-23, as already reported.

MINERAL FOOD FOR DAIRY CATTLE

Recently breeders have given much attention to mineral feeds in the ration of dairy cows. The mineral drain on the animal's body in producing milk and carrying a calf is very great, greater than the amount supplied in the meal and roughage. An attempt is being made to meet this deficiency by a mineral ration composed as follows:—

25 pounds bone meal,
25 pounds charcoal,
3 pounds sulphur.

This 53 pounds of mineral is being fed, mixed with 1,200 pounds of meal, varying the amount with the amount of meal fed. The work has not been carried far enough to speak definitely concerning this project.

FEEDING MINERALS TO CALVES AND HEIFERS

What has been said concerning mineral feed for cows applies, in some measure to calves. With calves there is not the daily drain of mineral through the milk pail as with cows. It has been argued that resistance to some diseases, such as abortion, may be built up by feeding the proper mineral food to calves and heifers, and cows when dry. For this purpose the following is being used:—

10 pounds calcium phosphate,
10 pounds sodium phosphate,
10 pounds Epsom salts,
10 pounds bonemeal,
10 pounds sulphur,
4 pounds Glauber salts,
4 ounces potassium iodide.

COST OF RAISING HEIFERS AND BULLS

The cost of rearing dairy heifers is a matter which concerns all dairymen. The following table gives the feed cost of raising a group of heifer calves, of varying ages, throughout the year. The results show the cost to be so high that it is quite evident that it can only be profitable to raise good animals.

COST OF REARING DAIRY FEMALES

Name of Calf	Date of birth	Monthly feed costs, 1926—in dollars												Total cost of feed to Dec. 31
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
Sidney Golden Friar Queen.....	Aug. 18, 1925	4·11	3·91	3·96	1·23	0·84	1·46	1·67	1·84	2·14	2·90	3·76	3·44	31·26
Sidney Aviator Flo	Nov. 18, 1925	10·37	5·46	5·12	3·54	3·24	1·45	1·71	1·84	2·29	2·75	3·76	3·34	44·87
Sidney Golden Friar Florence...	Dec. 7, 1925	12·43	9·52	6·45	4·38	4·36	5·40	3·86	4·19	3·45	2·98	3·76	3·39	64·11
Sidney Cowslip....	Feb. 20, 1926	.....	0·60	15·77	12·09	5·08	6·08	4·15	4·31	5·27	5·02	5·02	3·34	66·73

COST OF REARING DAIRY MALES

Name	Date of birth	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total cost of feed to Dec. 31
				$	$	$	$	$	$	$	$	$	$	$
Babbacombe Bright Raleigh..	Mar. 2, 1926	.....	.....	10·12	14·49	16·78	20·96	11·54	6·23	6·09	6·23	75·53	5·26	105·23

The cost of maintaining a mature sire has been determined for the last twelve months. It will be noticed that the cost runs from seven to eight dollars per period or about ninety dollars per year.

COST OF MAINTAINING HERD SIRE

Name of Herd Sir	Date of birth	Monthly feed costs, 1926												Total cost of feed to Dec. 31
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
		$	$	$	$	$	$	$	$	$	$	$	$	$
Jessie's Aviator of V.I.S.....	eb. 18, 1924	7·50	7·50	9·38	7·50	7·50	7·35	7·00	6·05	8·79	8·51	8·00	7·27	92·35

RELATION BETWEEN GROWTH AND AGE IN DAIRY CALVES

The relation between growth and age in dairy calves has recently received much thought from some investigators. Some have found that Jersey heifers mature normally and rapidly during the first year, and that the increase during the next six months is comparatively slow, after which increase slides up as during the first year. The weight of the small number of calves available has been determined month by month and the increase tabulated for each three month period. It would seem that the heifers increase rapidly at one time and slowly at another, as indicated.

RELATION BETWEEN GROWTH AND AGE IN DAIRY CALVES

Name	Date of birth	Weight at birth	Increase in weight each 3 month period									Total weight
			1-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24	24-27	
		lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Aviator's Queen of V.I.S.	Feb. 6, 1924	51	124	135	125	85	100	60	75	137	.....	892
Aviator's Blossom of V.I.S.	Feb. 13, 1924	59·5	157·5	124	99	70	71	45	49	107	.....	782
Aviator's Honeymoon of V.I.S.	April 9, 1924	57	113	207	103	72	43	30	40	90	.....	755
Sidney Aviator Flo.	Nov. 18, 1925	52	143	115	110	90	.....	.....	.....	.....	.....	510
Sidney Golden Friar Queen	Aug. 18, 1925	54	151	142	83	80	75	.....	.....	.....	.....	585
Sidney Golden Friar Florence	Dec. 17, 1925	57	153	120	130	75	.....	.....	.....	.....	.....	535
Sidney Aviator Cowslip	Feb. 21, 1926	50	110	190	102	.....	.....	.....	.....	.....	.....	452
*Jessie's Aviator of V.I.S.	Feb. 18, 1924	62·5	145	207·5	155	185	146	80	89	60	.....	1,130

*Bull.

It will be noticed that the age of some calves will not permit of complete comparison with others. However, when this is possible, the actual increase is consistent with the theory.

FIELD HUSBANDRY

ROTATIONS

The rotations as outlined in former reports have been followed. They fit the general scheme of things on the Saanich peninsula, and usually give satisfactory returns. Field operations are carried on under the serious handicap of high-priced land, too high for farm purposes. Since the areas given the rotations are small, it was found that the division of the field in three, four or five plots was not convenient, so the rotation in question produces one crop only in one year, and the rotation is completed at the end of the three, four or five years, as the case may be.

ROTATION "A" (THREE YEARS' DURATION)

1922—Wheat (winter).
1923—Timothy and clover hay.
1924—Roots.
1925—Wheat (winter).
1926—Timothy hay.

This rotation is one that is used to a considerable extent on Vancouver island. The field consists of 5.5 acres and the soil is for the most part a heavy clay loam. The wheat is usually sown during the latter part of September, at the rate of three bushels per acre. The seeding of the timothy is done by the grass-seeder attached to the drill at the time of seeding the wheat. Six pounds of timothy is sown per acre, and in February, ten pounds of red clover and four pounds of alsike are sown broad-cast per acre. The rotation has much to recommend it. The soil is always well stocked with humus and comparatively clean.

SUMMARY OF YIELD, VALUE AND PROFIT OR LOSS PER ACRE

Crop	Year	Yield per acre	Value	Cost of operation	Profit or loss
			$ cts.	$ cts.	$ cts.
Wheat (Sun)	1922	38 bush.	93 80	66 43	Prof. 27 37
Timothy and clover	1923	3·32 tons	83 00	54 24	Prof. 28 76
Summer-fallow	1924	.....	.....	46 65	Loss 45 65
Wheat (Sun)	1925	48·18 tons	75 90	49 52	Prof. 26 38
Timothy and clover hay	1926	3 tons	60 00	52 19	Prof. 7 81

Owing to unfavourable weather conditions, summer-fallow replaced the roots in the rotation, and the cost of operation entered as a loss. The average yield of wheat per acre for a two year period on this area was 40 bushels 9 pounds, giving an average profit of $26.87. The profit on the hay crop of 1926 is much less than that of 1923, due to the low value of hay on the market. The average yield for two years was 3.16 tons with a profit of $18.28. During the five years in which this rotation has been in operation the profit over the total cost of operations amounts to $44.67.

ROTATION "B" (FOUR YEARS' ROTATION)

1923—Winter wheat.
1924—Peas (green manure).
1925—Corn (manured).
1926—Wheat, oats and vetch (ensilage).

An attempt will be made to maintain the fertility of the soil without hay or grass appearing in the rotation. After the peas are harvested some such crop as dwarf Essex rape or rye is sown to be ploughed in as a green manure to supply humus, etc.

SUMMARY OF YIELDS, VALUE AND PROFIT OR LOSS PER ACRE

Crop	Year	Yield per acre	Value	Cost of operation	Profit or loss	
			$ cts.	$ cts.		$ cts.
Winter wheat	1923	25·2 bush.	84 86	67 10	Prof.	17 76
Peas (Maple)	1924	22 bush.	59 70	68 34	Prof.	8 64
Corn	1925	7·16 tons	42 96	90 19	Loss	47 23
Wheat, oats vetch, for ensilage	1926	11·93 tons	79 53	81 64	Loss	2 11

If the wheat crop of 1923 is valued for the grain only, the cost of production would be very high. The straw, however, always scarce and high in price, gave us a credit balance of $17.76 per acre. The high cost of production on the 1924 pea crop is largely due to the fact that harvesting was done by manual labour. A pea buncher and harvester would have accomplished the cutting at approximately one fifth of the cost. The yield of 22 bushels is below the average, which also adds to the cost of production, per bushel.

Due to the very dry season in 1925 the corn crop was very light, in fact, several tons per acre below the average. Much of the foliage, especially the lower leaves, were completely dried out before harvesting. Cutting took place on September 14. The corn crop reaped but little benefit from the application of 8 tons of manure per acre. This also was due to the drought.

The wheat, oats, and vetch, no doubt benefited considerably from the manure, as indicated by the yield of 11.93 tons. Corn cost $12.59 per ton to produce and wheat, oats, and vetch $6.48. The loss covering the whole rotation of 4 years is $40.20.

ROTATION "C" (FIVE YEARS' DURATION)

1923—Vetch.
1924—Corn.
1925—Peas.
1926—Wheat.
1927—Timothy or rye grass.

SUMMARY OF YIELD, VALUE AND PROFIT OR LOSS PER ACRE

Crop	Year	Yield per acre	Value	Cost of production	Profit or loss	
			$ cts.	$ cts.		$ cts.
Vetch	1923	16·7 bush. . . .	83 68	73 20	Prof.	10 48
Corn	1924	9·69 tons.	58 14	99 59	Loss	41 45
Peas	1925	27·0 bush.	73 20	66 71	Prof.	6 49
Oats (replacing wheat)	1926	34·0 bush.	34 25	59 50	Loss	25 25

Rotation C is conducted on an area of two acres. The soil changing from a heavy clay to a light gravelly loam. In 1923 the vetches cost $4.38 per bushel to produce and sold wholesale at eight cents per pound.

The feed value of corn ensilage is about one-quarter that of hay. With hay selling around $24 per ton, the value of corn ensilage is $6 per ton. This figure was used in computing the value of the crop. The cost of producing one ton of ensilage was $10.26.

The total value of the 1925 crop includes the straw valued at $15 per ton. Straw on Vancouver island is always high in price and often hard to get, large quantities being used every year in the strawberry fields. The cutting of the crop was done with a pea-harvester and buncher attached to the mowing machine, saving considerable hand labour.

Owing to the lack of rain during the early fall of 1925 it was impossible to plough and prepare the soil in time to sow the wheat. Banner oats, therefore, were sown on March 13 in the place of the wheat. The crop was very poor, the oats being thin and light.

ROTATION "D" (FOUR YEARS' DURATION)

1923—Winter wheat.
1924—Timothy and clover hay.
1925—Roots.
1926—Peas.

This rotation, similar to rotation "B" provides for the turning down of sod, the return of vegetable matter and fertility of the soil, and furnishes roots for the dairy cattle instead of an ensilage crop. This rotation is popular with men without a silo. Three acres of a light loam soil are given this work.

SUMMARY OF YIELDS, VALUE AND PROFIT OR LOSS PER ACRE

Crop	Year	Yield per acre	Value	Cost of production	Profit or loss	
			$ cts.	$ cts.		$ cts.
Wheat, Red Rock	1923	26·3 bush.	85 31	67 23	Prof.	18 08
Timothy and clover	1924	2·05 tons.	49 25	53 64	Loss	4 44
Mangels	1925	12·13 tons.	121 30	112 37	Prof.	8 93
Peas	1926	20 bush.	45 34	61 75	Loss	16 41

The cost of producing one bushel of wheat is nearly as great as in rotation "B", but the market value of straw considered, the credit return per acre is $18.08.

Owing to the very dry season, the 1924 hay crop was much below the average, and the cost per ton, $26.17, is consequently greater than usual.

The mangel crop, due to the very dry season and the gravelly character of the soil, was below the average yield. The value of the crop is placed at $10 per ton, mangels finding a ready sale at from $10 to $15 per ton throughout the district.

The pea crop of 1926 was much below the average. The price of peas and straw was much less than for many years past. These factors are chiefly responsible for the loss shown. Covering the four years of this rotation a profit of only $6.49 was obtained.

ROTATION "E" (FOUR YEARS' DURATION)

1924—Wheat, oats and vetch.
1925—Potatoes.
1926—Oats.
1927—Hay.

Potatoes continually become a crop of greater importance in British Columbia. The introduction of this crop in the rotation is intended to clean the ground, and keep the soil in good physical condition. The wheat, oats and vetch sown in the fall, cut for hay or ensilage, and the dairy cattle pasture on the second growth.

SUMMARY OF YIELDS, VALUE AND PROFIT OR LOSS PER ACRE

Crop	Year	Yield per acre	Value	Cost of production	Profit or loss
			$ cts.	$ cts.	$ cts.
Wheat, oats and vetch hay	1924	2·69 tons	61 78	63 38	Loss 1 51
Potatoes	1925	4·39 tons	131 61	137 61	Loss 5 91
Oats	1926	51 bushels	57 37	57 37	Loss 1 67

The cost per bushel to produce the oats in this rotation was 60 cents while the straw cost $13.39 per ton. The return values were: oats, 59 cents per bushel; straw, $13 per ton. The excessive cost of production is largely due to the high rental charged. The rent is obtained by multiplying the value of the land by the current rate of interest as obtained on the first mortgages and to this amount is added the taxes.

COMPARATIVE YIELDS OF CORN, SUNFLOWERS, AND CORN AND SUNFLOWERS

Plots one twenty-second of an acre were used for this work. The soil, a light loam, was manured and well ploughed in the fall. Previous to seeding the land was thoroughly cultivated to destroy the weeds. Both corn and sunflowers were planted in rows three feet apart and thinned to eight or ten inches apart in the rows. In the mixed plot two rows of corn and one of sunflowers were planted alternately.

HEIGHT AND MATURITY AT HARVEST AND YIELD PER ACRE

Crop	Date cut	Height when cut	Maturity at harvest	Yield per acre	Average yield per acre. 2 years
		ft. in.		tons	tons
Corn	Oct. 12	6 9	Dough	12·33	12·43
Sunflowers	" 12	8 2	Full bloom	17·24	15·22
Corn and sunflowers	" 12	5 10	Dough		
		7 6	Full bloom	14·05	13·13

Minnesota 13 was the variety of corn used; and the sunflowers, Mammoth Russian. Neither the corn nor the sunflowers do so well when planted together as when grown separately. This, however, is not conclusive as the figures are based on two years' records only. The mixed crop of corn and sunflowers are much more difficult to handle than the corn alone, especially when feeding to a small ensilage cutter.

COST OF PRODUCING MANGELS

Mangels find a ready sale on the Saanich peninsula at ten dollars per ton. If this figure is used to estimate the value of the above crop, a very handsome profit of $110.69 is obtained. But when estimating the value of the crop on the actual dry matter content of the roots, or in other words, the food value contained in the mangels, there is a loss of $30.51. Six hundred pounds of roots containing 10 per cent dry matter are equal to 100 pounds of hay. With hay selling at $20 per ton, one ton of mangels is worth $3.34. They cost $4.78 to produce, a loss of $1.44 per ton.

COST PER ACRE AND PER TON OF PRODUCING MANGELS

Item	Statement	Amount
		$ cts.
Rent and taxes	Rent or interest on the value of land plus taxes	32 66
Seed machinery	8 pounds at 45 cents per pound	3 60
Manual labour	143 hours at 35 cents	50 13
Horse labour	80½ hours	12 07
	Total cost per acre	101 31
Yield per acre	21·2 tons.	
Cost per ton		4 78

CEREALS

For several years the area devoted to the testing of varieties of cereal grains has been cropped under definite rotation, viz., twenty-five per cent to spring cereals, twenty-five to roots, twenty-five to summer-fallow and twenty-five to fall cereals. The fall cereals follow the summer-fallow, and spring cereals the roots. By this method the grain is sown on land that is fairly clean and the danger of volunteers in some measure overcome. The winter of 1925-26 was very mild; no snow and very little frost was registered. The wheat, oats and barley sown in the fall all wintered well; in fact growth continued throughout the season. The harvest was early; barley and oats were out in June and the wheat early in July. All the variety test work was conducted in rod row plots of three rows each replicated four times. The rows were sown seven inches apart and the rows eighteen feet six inches long. At harvest time one foot was cut off either end of the row, leaving a plot one rod in length. By this method the possible error arising from the outside row is eliminated. The yields are based on the centre row only, the other two rows being used as a guard against the effect that the stronger varieties would have over the weaker, and also to prevent the mixing of the varieties.

FALL WHEAT TEST OF VARIETIES

Sixteen varieties of wheat were sown on September 28. The records and yield in order of merit are given in the following table:—

Variety	Date ripe	Strength of straw on scale 10 lb.	Length of straw	Yield per acre
			inch	bush.
Dawson's Golden Chaff	July 12	10	50	31·6
Velvet (V.I.S.)	" 20	9½	46¾	28·7
Sun	" 23	10	48¾	27·7
Red Rock	" 8	8	52½	26·8
V.I.S. No. 131	" 17	9	40½	25·3
Golden Sun (V.I.S.)	" 20	10	47	24·3
Kanred	" 14	7½	45½	22·7
Yeoman	" 23	10	38	22·5
O.A.C. 104	" 17	8	53¾	22·4
Kharkov	" 17	7½	43	21·7
Victor	" 23	10	41½	20·7
V.I.S. No. 1	" 17	10	50¾	20·1
Minturki	" 17	8¼	46¼	19·7
Marshall Foch	" 26	10	40	16·4
Minhardi	" 20	8	38	13·6
Dr. Hart's Durum	" 12	9	50	12·6

Dawson's Golden Chaff.—The most popular winter wheat in Ontario, ripens early, straw strong and of good length, kernels white.

Velvet.—A cross made at this Station, between Burbank super and a plant found in a field of Sun. Heads very large, the outer glume being covered with a thick coat of fine hair, giving the head a velvety appearance. Medium-sized, soft, reddish kernels, straw of fair length and good strength.

Sun.—Variety originated in Sweden; grown on the Saanich peninsula for several years. Very strong straw, a consistent yielder, grain plump and soft.

Red Rock.—Introduced by Professor Sprague, of Michigan, U.S.A. Thin long bearded heads, red chaff. Long hard kernels of good quality. The earliest of the winter wheats to ripen. Straw very long and weak, inclined to lodge.

Golden Sun.—A cross made at this Station in 1916 between Dawson's Golden Chaff and Sun. Square head, slightly blunt, carrying a few short awns at the top, chaff smooth, reddish; grain, medium-sized and soft, straw strong and of good length.

V.I.S. No. 131.—Very similar to Golden Sun but straw not quite so strong. Shorter.

Kanred.—A variety received from Central Experimental Farm, Ottawa. Reported to have given splendid results in the United States. Heads small, bearded; yellow chaff. Straw weak.

Yeoman.—An English variety received from Marsters, King's Lynn, England. Grain pale red, hard and of medium size. Heads fairly long, with a smooth white beardless chaff. Straw short and very strong.

O.A.C. No. 104: Kharkov, Minturki, and Minhardi.—Varieties received from Central Experimental Farm, Ottawa, for test. Victor and Marshal Foch were received along with Yeoman from Marsters, England. The germination of these imported varieties was rather poor, which to some extent accounts for the low yield obtained. The Durum wheat was sent in for test by Dr. Hart, of Victoria, who brought it from the Balkan States. The V.I.S. wheats are introductions of the Experimental Station.

WHEAT—SPRING-SOWN

Seven varieties of wheat were sown in rod-row plots on April 8, 1926.

WHEAT, SPRING-SOWN—TEST OF VARIETIES

Variety	Date ripe	Strength of straw scale per 10 lb.	Length of straw	Yield per acre
			inches	bush.
Dicklow	Aug. 16	10	33¾	15·5
Early Red Fife	" 11	9	34	21·8
Huron	" 11	9	33¼	21·3
Kitchener	" 9	10	36¼	19·3
Red Fife	" 12	10	36	18·8
Marquis 015	" 7	10	35	19·9
Red Stone	" 9	9	32¼	17·6

Wheat seeded in the spring seldom yields a good crop on the southern portion of Vancouver island, the growing season being too dry.

Dicklow.—A variety received from Henry Brethour of Sidney, B.C. The stand was thin, due to the destruction of many of the growing seedlings by game birds, hence the low yield. Kernels, white; medium-size and soft. Straw fairly strong.

Early Red Fife.—A pure line selection made in 1903 from ordinary Red Fife. It is usually a few days earlier in ripening than is Red Fife, and the heads instead of being pointed at the tip are somewhat blunt. The heads carry short apical awns, the chaff is smooth and yellowish, the kernels are of medium size, red and fairly hard. The straw of fair strength and length.

Huron.—A cross between Ladogo and White Fife. Heads bearded with long spreading awns. Smooth reddish chaff. Long, red, hard kernels. Straw better than most spring wheats on poor soils and stands up well under adverse weather conditions. Straw of medium height and stiff.

Kitchener.—A beardless wheat, ripens early, straw strong and of good length, has a distinctly purplish colour just before maturity. Kernels large and red.

Marquis.—This well-known variety does not yield well on the Saanich peninsula. Heads small, small reddish kernels, fairly hard. Straw strong and of good length.

Red Fife.—Heads beardless but with a few short awns at the tip, smooth yellowish chaff; kernels red and quite hard. Straw of good length and strength.

Red Stone.—Obtained from Mr. Stone of Layritz Nurseries, Victoria, B.C.

OATS—FALL-SOWN—TEST OF VARIETIES

Eight varieties of oats were sown on September 30, 1925, in rod-rows. They all wintered exceptionally well, giving fair yields of both grain and straw.

OATS—FALL-SOWN

Variety	Date ripe	Length of straw	Strength of straw on scale 10 pounds	Yield per acre	Per cent germination
		inches		bush.	
Marvellous	June 24	44	10	60·6	98
O 713	" 27	46	10	53·6	95
Joanette	" 28	41	9	52·1	98
Kanota	" 22	41	10	46·6	100
Bountiful	" 26	47	9	42·5	96
Early Ripe White	" 28	35½	9¼	40·1	79
Winter Turf	" 24	48	8	40·1	91
Grey Winter	" 26	40	9	38·2	100

Marvellous.—A recent introduction of Messrs. Gartons, received from Marsters, King's Lynn, England. A cross between the wild oat and an unknown cultivated variety. It has a remarkably strong standing straw of good length, well furnished with numerous broad leaves. Large semi-branching panicles, awns few, chaff white. Very large bold white grain with rather thick hulls. A very promising variety.

0713.—A cross made at Macdonald College, Quebec, between Early Triumph and Alaska. Tall stiff straw, branching head, few awns. Grain white, plump and thin in the hull.

Joanette.—A black oat received from Macdonald College. Straw of medium strength and length. Joanette is the least hardy of the fall-sown oats.

Kanota.—Probably a selection from Fulghum. Received by the Station from the Experimental Farm, Manhatton, Kansas, in 1921. Ranks amongst the hardiest of the winter varieties. When grown on well-drained land it will survive fifteen or sixteen degrees of frost. The habit of the plant is erect, tillering well in the spring. The straw is of good strength, of a very even and medium height, well furnished with broad, dark green leaves, branching panicles of medium length, chaff yellow, grain grayish brown in colour, bosom oats plentiful.

Bountiful.—Received from Marsters, England. Branching panicles, awns few; grain large, very black; bosom oats few. Straw of medium length and strength.

Early Ripe.—Seed received from Macdonald College, Quebec. Straw of fair strength but inclined to be short. Grain rather thin, hull a brownish colour. Not as hardy as most of the winter varieties.

Winter Turf.—One of the hardiest varieties on test at this Station. Branching heads, grain of a grayish colour and small, resembling the wild oat. Bosom oats plentiful. Straw very thin and rather weak. The habit of this variety during winter is of a recumbent nature, resembling that of some of the winter wheats.

Gray Winter.—Much like Winter Turf, except that it has a little stronger straw and a more erect form of growth during winter.

OATS—SPRING-SOWN—TEST OF VARIETIES

Seventeen varieties of oats were sown on April 8 in rod-row plots, replicated four times. On the whole, the spring oats did not yield as well as did those sown in the fall.

OATS—SPRING-SOWN—TEST OF VARIETIES

Variety	Date ripe	Length of straw	Strength of straw scale of 10 pounds	Yield per acre
		inches		bush.
Longfellow	July 28	43¼	10	45·6
Leader A	" 30	42½	10	45·4
Conquerer	" 30	48½	10	41·6
Joanette	" 20	40½	9	40·9
O 713	" 16	37¾	10	38·6
Victory	" 30	35½	10	37·2
Garton's Abundance	" 30	41½	10	36·2
O A C 3	" 14	29½	9	36·2
Banner	Aug. 2	39	10	35·3
Garton	July 30	36	10	35·2
Alaska	" 14	39½	9½	34·5
Prolific	Aug. 7	33¼	10	33·7
Gold Rain	July 26	37½	9	33·5
O A C 72	" 30	31½	10	32·8
Victor	" 28	33	10	30·5
Columbian	Aug. 2	37¼	9	26·5
Laurel	July 21	33½	9	12·0

Longfellow.—A cross made at Ottawa between Tarter King and Banner. Heads sided; awns numerous; hulls white, bosom oats common. Straw long and of good strength.

Leader A.—A selection made at Ottawa from the standard variety Leader. Branching heads; awns numerous, hulls white, straw of good length and strength.

Conqueror.—A variety received from a local seed merchant. Branching heads. Grain plump, hulls white and of medium thickness. Straw of good length and strength. Has been a consistent yielder at this station for some years.

Joanette and 0713.—The same varieties as mentioned under the heading of fall-sown oats.

Victory.—A Swedish variety, which closely resembles Banner.

Laurel.—A hulless variety. Panicles branching, awns rare, kernels of fair size. Straw of medium length and strength. Has proved a very poor yielder, the per cent of germination being very low.

BARLEY—FALL-SOWN—TEST OF VARIETIES

Seven varieties of barley were sown on September 30, in rod-row plots, replicated four times.

BARLEY—FALL-SOWN—TEST OF VARIETIES

Variety	Date ripe	Strength of straw on scale 10 pounds	Length of straw	Yield per acre
			inch	bush.
Dean Bros	June 29	8½	37	44·6
Duckbill	" 22	9	36	44·2
Bark's	July 8	10	39	42·7
Bearer	June 24	10	48½	35·3
Hulless	" 22	7	34	30·0
Manchurian	" 29	77	36	28·3
Himalayan	" 19	9	42	25·1

BARLEY—SPRING-SOWN—TEST OF VARIETIES

The same seven varieties of barley as sown in the fall were planted in the spring in rod-row plots on April 8.

BARLEY—SPRING-SOWN—TEST OF VARIETIES

Variety	Date ripe	Strength of straw on scale 10 pounds	Length of straw	Yield per acre
			inch	bush.
Bearer	July 24	10	33¼	42·0
Manchurian	" 16	9	36	39·2
Duckbill	" 26	9	32½	36·0
Dean Bros.	" 30	9	31½	35·9
Himalayan	" 12	8	32	32·5
Hulless	" 12	9	33	27·5
Barks	Aug. 3	10	29½	19·9

Bearer (0.475).—A cross between Blue Longhead and Gordon. The latter is a cross-bred sort produced by crossing Baxter's six-row with Duckbill. Bearer belongs to the six-row group. Has rather long awns; strong straw of medium length; is somewhat late in ripening, and much more productive when sown in the spring than in the fall.

Manchurian (0.50).—A selection out of barley of Asiatic origin. Heads six-rowed, awns long, kernels yellow. Straw of good length and strength. Yields best when sown in the spring. Heads break off easily when mature.

Duckbill.—A two-rowed variety. Head broad at the base and tapering somewhat towards the tip, of medium length; awns long; straw of medium length and strength; kernels large and of good weight per measured bushel. Ripens rather late and gives a good yield whether sown in spring or fall.

Dean Bros.—Received for trial from Dean Bros. of Keating, B.C. Heads of the six-row type, bearded; awns long; kernels large and of a distinctly greenish colour; straw of medium length and strength. Does well when sown in the Fall.

Himalayan (0.59).—A pure line selection from the commercial sort called Guymale (or Guy Mayle). Six-row type, awns of medium length. The kernels thresh out free from hull and are of a greenish colour. The straw is short and rather weak. Inclined to lodge badly.

Hulless.—Short beardless heads; kernels free from hull and of a yellowish colour. Straw short and of medium strength.

Barks.—A selection made by Mr. Don Bark of Brooks, Alta. from Californian seed. Heads of the six-row type, short and wide at the base; awns very long; straw short and strong. Yields best at Sidney when sown in the fall.

PEAS—VARIETY TEST

Uniform test plots of fourteen varieties of field peas were sown on April 6. Each plot was replicated four times.

FIELD PEAS—LIST OF VARIETIES

Variety	Date ripe	Length of straw	Length of pod	Yield per acre	Average yield per acre for 2 years
		inch	inch	bush.	bush.
McKay	July 26	42	2	42·7	34·6
Stirling	" 20	48	3	41·6	43·1
Gryllen	June 30	40	2	41·6	36·7
Concordia	July 10	30	2	39·0	.....
Early Raymond	June 23	48	2¼	38·8	.....
Solo	July 14	38	2¼	38·7	36·7
Arthur O. 18	" 21	38	2	38·3	36·3
Capital	June 24	38	22	38·5	.....
New Zealand Maple	July 21	36	2	37·4	37·2
Cartier	" 26	38	1¾	36·3	30·5
Prussian Blue	" 26	46	2¼	35·6	37·5
O.A.C. 181	" 12	36	2	34·5	31·1
Chancellor O. 26	" 6	38	1¾	32·4	31·8
Champlain	" 26	38	1¾	30·6	27·6

McKay.—A cross between Mummy and Black-eye Marrowfat. Flower white, borne in axils. The peas are round, dark yellow, with a black hilum (eye). Ripens rather late, very productive.

Stirling.—Received from Mr. C. W. Stirling of Sidney, B.C. who won first prize with it at the Chicago Hay and Grain show in 1925. A large round smooth pea, seeds yellow, straw long, a good yielder.

Gryllen.—A variety obtained from Savlof, Sweden. Flowers white, leaves of a light green colour. Seeds yellow and of a medium and even size, ripens very early.

Concordia.—A Swedish pea. A pedigree sort of the old Blue Green English variety. Very productive; a good cooking pea.

Early Raymond.—A large white pea similar to Stirling but not quite as round; yields well and ripens early.

Solo.—A pedigree sort from Soalof, Sweden, out of Early Britain. It is especially good for soiling purposes. Seeds greenish grey, mottled with small purple specks. A consistent yielder.

Arthur 0.18.—A selection from the original Arthur which was a cross between Mummy and Multiplier. Flowers white borne chiefly at the tips of very coarse stems, seeds yellow, of medium size. Ripens rather early and gives a good yield.

Capital.—A Swedish pea noted for its fine cooking quality. Seeds small, white and round. Ripens rather late.

New Zealand Maple.—A very popular pea on Vancouver island. Flowers coloured, foliage dark green. Seeds brown slightly mottled with green, of medium size. A good pea for feed.

Cartier.—A cross made in 1903 between McKay and Arthur. Flowers white, borne terminally, seeds yellow, round and of medium size.

Prussian Blue.—An old standard variety. Seed of a bluish green colour and medium size.

O.A.C. 181.—A medium-sized white pea originally from the Ontario Agricultural College.

Chancellor 0.26.—A pure line selection from an old sort known as Chancellor. Flowers white, borne axially, seeds yellow, very small. Ripens quite early.

Champlain.—A cross between Arthur and Early Britain. The flowers are white borne terminally, seeds yellow, round and rather uneven in size.

FORAGE CROPS

The returns from all classes of forage crops was much better than during the past two years. A good crop of grass, clover and hay mixtures was harvested. The root crop was much above the average.

GRASSES—VARIETY TEST

Four strains of timothy and three of orchard grass were sown in duplicate plots on March 26 on land that had been summer-fallowed the previous year. The seed germinated well and the young seedlings were established before the dry weather set in.

TIMOTHY—TEST OF VARIETIES

Variety	Height on April 15, 1926	Height when cut	Date cut	Yield per acre				Average yield for 2 years	
				Green		Dry			
	inch	inch		tons	lb.	tons	lb.	tons	lb.
Boon	10	57	July 2	8	1,680	4	1,860	3	1,660
Ohio Commercial	7	54	" 2	8	480	4	640	3	720
3937 Ohio (Huron)	7	48	" 2	7	1,200	4	540	2	1,940
Commercial	9	45	" 2	7	80	3	1,000	3	700

Boon.—Seed received from the Central Experimental Farm at Ottawa. The variety grows a little taller and the grass is finer than the others. It is usually free from rust and makes a fine quality hay.

Ohio Commercial and *3937 Ohio (Huron)* were received from the United States Department of Agriculture. The variety Huron does not yield as well as the commercial Ohio.

Commercial seed was purchased from a local seed firm. Three strains of orchard grass were sown in uniform test plots on March 30, 1925.

ORCHARD GRASS—TEST OF VARIETIES

Variety	Height on April 15	Height when cut	Date cut	Yield per acre				Average yield for 2 years	
				Green		Dry			
	inch	inch		tons	lb.	tons	lb.	tons	lb.
Skandia Lot 4	12	44	June 2	6	1,080	2	820	1	1,320
Skandia Lot LL	9	44	" 2	5	1,920	2	300	2	320
Commercial	10	46	" 2	5	1,840	2	320	1	1,780

Orchard grass is very useful for early pastures. If used for hay it should be cut before the seeds form. When left too late, the hay is very wiry and much waste ensues when it is fed to stock. The figures in the average column in the table are for two years only.

ALFALFA—VARIETY TEST

Seven varieties and strains of alfalfa were sown in duplicate test plots of uniform size. The seed was sown on March 31, broadcast, and at the rate of twenty pounds per acre. The land was fallowed the previous year and thoroughly harrowed before seeding . It was, therefore, in good tilth, and fairly free from weeds, when the seed was sown.

ALFALFA—TEST OF VARIETIES

Variety	Height on April 15	Height when cut	Date cut	Yied per acre		Average yield for 2 years
				Green	Dry	
	inch	inch		tons lb.	tons lb.	tons
McCannus	16	26	May 31	6 560	1 1,800	2·25
Registered Grimm	14	26	" 31	7 240	2 100	.....
Ont. Variegated	18	28	" 31	8 320	2 720	2·38
Cossack	16	27	" 31	8	2 580	2·10
Turkestan	16	27	" 31	6 320	1 1,520	1·59
Shoobut	12	24	June 4	7 160	1 1,760	1·50
Yellow flower	2	16	" 7	6 480	1 1,540	0·94
Genuine Grimm	12	26	May 31	5 1,680	1 1,240	1·57

Of the several varieties and strains of alfalfa tested at this Station, the Ontario Variegated has proved the best yielder. It is of an upright habit and starts to grow a little earlier in the spring than the other varieties. The strain from McCannus, Registered Grimm from the Grimm Association of Alberta, and Cossack from the Paramount Alfalfa Farms have also proved their worth at this Station. The Grimm and Cossack are not, however, as erect in growth as the Variegated and McCannus. The Siberian Yellow flower is not a desirable type, being recumbent in habit, and not bearing as many leaves as the other varieties.

RED CLOVER—VARIETY TEST

Twelve strains of red clover were sown on March 18 in duplicate plots, one, one hundred and sixtieth of an acre each. The weather conditions were favourable and a good stand was obtained.

RED CLOVER—VARIETY TEST

Variety	Height on April 15	Height when cut	Date cut	Yield per acre		Per cent dry matter
				Green	Dry	
	inch	inch		tons lb.	tons lb.	
St. Clet	15	28	June 28	10 640	3 1,040	34·18
Alta Swede	9	25	July 2	8 800	2 1,360	31·93
Early Swedish	15	30	June 28	9 80	3 400	33·40
Late Swedish	10	24	July 2	9 1,680	2 1,520	29·78
Dauphine	17	26	June 28	8 1,760	2 1,660	31·93
Chateauguay	14	28	" 25	8 320	2 1,640	35·25
Emilia	16	22	" 19	7 240	2 1,160	36·33
Southern Italy	12	20	" 19	5 1,360	1 1,820	34·67
Umbria	12	20	" 19	6 1,080	2 340	30·86
Kenora	6	20	" 28	6 160	2 80	33·59
Spadone	10	18	" 14	6 640	2 180	33·20
Marche	14	24	" 19	7 400	2 400	30·66

St. Clet.—A variety received from Quebec. The best of the red clovers under test. The stand was thick and the plants made good growth. It belongs to the late-maturing class. Early and Late Swedish both gave good yields. The

seed of both these varieties was obtained from the General Swedish Seed Co., Savlof, Sweden. Dauphine, from Southeastern France, and Chateauguay from Quebec also did well. Emilia, Umbria and Marche were received from Northern Italy. The outstanding result of this year's test is that the Canadian seed from a dependable source can more than hold its own against foreign seed.

CRIMSON CLOVER

Three strains of crimson clover, *Trifolium incarnatum*, were sown in duplicate plots on October 9, 1925. Two of the strains were received from Europe and one was obtained from a local seedsman.

CRIMSON CLOVER—VARIETY TEST

Variety	Date of bloom	Date cut	Height when cut	Per cent dry matter	Yield per acre	
					Green	Dry
			inch		tons lb.	tons lb.
Padova	April —	May 1	22	20·51	9 1,040	1 1,900
Sicily	" 26	" 7	25	23·83	10 800	2 940
Commercial	" 26	" 7	22	19·92	7 1,360	1 1,040

Crimson clover should be drilled on the stubble in the fall for spring forage, using twelve to twenty pounds of seed per acre.

WHITE DUTCH CLOVER—VARIETY TEST FOR YIELD AND SUITABILITY

Five varieties of White Dutch Clover were sown in duplicate 1/160-acre plots on a light clay loam soil, which had been summer-fallowed the previous year.

WHITE DUTCH CLOVER

Variety	Date cut	Height when cut	Per cent dry matter	Yield per acre	
				Green	Dry
		inch		tons lb.	tons lb.
Commercial	June 1	9·5	26·56	3 1,840	1 81
Danish Morso	" 1	12·0	28·42	4 0	1 273
Danish Strino	" 7	12·0	29·78	5 240	1 1,049
Ladino	" 17	16·0	28·42	6 480	1 1,545
Scottish Wild	" 7	14·0	25·39	4 320	1 112

Ladino.—The heaviest yielding of the white clovers. Rather straggling in its habit, produces very large white flowers and large succulent leaves. It is a very promising variety.

ALFALFA—CULTIVATED VS. BROADCAST

The row-system permits of cultivation and is a success. The broadcasting system has some advantages in that it holds the weeds in check, and the crop is easier to mow and rake.

System	Yield per acre, green		Yield per acre, hay	
	1926	Average three years	1926	Average three years
	tons lb.	tons lb.	tons lb.	tons lb.
Cultivated	14 80	13 1,450	4 143	4 541
Broadcast	15 720	13 1,476	4 1,488	4 121

SUGAR BEET INVESTIGATION

To determine the suitability of the district for sugar beet production, several varieties of beets were grown in 1925. Representative samples of each variety were sent to the Division of Chemistry, Central Experimental Farm, Ottawa, for analysis.

SUGAR BEET—VARIETY TEST

Variety	Per cent sugar in juice	Co-efficient of purity	Yield per acre dry matter
			tons lb.
Dieppe	17·28	86·88	1 877
Horning	16·21	84·89	1 1,502
Schreiber & Sons	15·67	85·35	1 1,102

Dr. F. T. Shutt, the Dominion Chemist, in commenting on the results, states: "These results indicate a beet of very fair quality; they are not among the best nor could they be classed with the poorest. It would seem that the month of October was too wet and too cool for the highest sugar production. Evidently the beets did not get their growth until autumn—a time when they should have been ripening."

EXPERIMENTS WITH FERTILIZER

FERTILIZER FOR THE POTATO CROP—PROJECT C 50

This project was undertaken in the spring of 1923 to determine the influence of nitrogen, phosphoric acid and potash on crop-growth with especial reference to potatoes. This work also provided for a comparison of nitrate of soda and sulphate of ammonia as sources of nitrogen. All plots were in duplicate. Fertilizers were applied on May 23 at the time of planting. The following table gives the dates of application and yields obtained in 1925:—

FERTILIZER EXPERIMENT—POTATOES

Plot	Sulphate of Ammonia	Nitrate of soda	Super phosphate	Muriate of potash	Barnyard manure	Yield per plot, $\frac{1}{20}$ acre
	lb. per acre	lb. per acre	lb. per acre	lb. per acre	ton per acre	lb.
1A	.....	200	400	150	.....	489
1B	.....	300	400	150	.....	474
2A	.....	150	400	150	.....	440
2B	225	.....	400	150	.....	532
3	75	100	400	150	.....	506
4	.....	100	200	75	.....	431
5	.....	200	400	.....	.....	494
6	.....	200	.....	150	.....	433
7	.....	.....	400	150	.....	569
8	.....	.....	.....	.....	10	420
9	.....	200	400	150	10	537
10	.....	100	200	75	10	429
Check (average of 6 plots)	.....	.....	.....	.....	.....	452

The yields, as usual, were not consistent, the check plots often giving a greater yield than those where fertilizer was applied. Lack of uniformity in the soil and exceptionally dry conditions were undoubtedly factors contributing

to this result, but in general it may be said that farmers are not getting results from fertilizers on Vancouver island that one looks for in other parts of Canada. During 1926 no fertilizer was applied, but the residual effect of the chemicals applied to the potato crop the year before was studied. Again the results obtained do not speak favourably for the fertilizer, as will be seen by the following table. The crop following the potatoes, oats, spring seeded, was weighed when dry, grain and straw together.

FERTILIZER ON OATS

Plot	Yield per plot
	lb.
1A	116·5
1B	97·5
2A	122·75
2B	125·5
3	69·5
4	96·0
5	117·25
6	97·25
7	108·75
8	97·5
9	134·5
10	114·5
Check (Average 6 plots)	118·2

The check plots, six in number, well distributed over the field, gave an average yield practically equal to the majority of the fertilized plots, hence the residual effect of the fertilizer, if any has not been demonstrated.

GYPSUM EXPERIMENT

The objects of this experiment were, first to determine the value of gypsum as a fertilizer, second to ascertain if it may be profitably used as a substitute for lime in the production of farm crops. The plots were one square rod each in size, replicated four times, and the crop, oats, was sown March 13, 1926. In 1926 no fertilizer was applied, but the oats were grown on exactly the same area given to the gypsum experiment the year before, in order to study the carrying-over effect of the fertilizer.

GYPSUM EXPERIMENT—YIELD PER PLOT—OATS (Grain and Straw)

Plot, one square rod	Carbonate of lime 700 lb. per acre	Gypsum 1,100 lb. per acre	Sulphur 200 lb. per acre	Carbonate of lime 700 lb. Sulphur 200 per acre	Check	Shell 700 lb. per acre
	lb.	lb.	lb.	lb.	lb.	lb.
1	37	35	31	45	50	43
2	39	41	49	37	43	37
3	39	34	48	33	36	32
4	37	36	40	47	31	30
Total	153	146	168	163	160	142

	tons	lb.
Sulphur	3	739
Carbonate of lime and sulphur	3	520
Check	3	432
Carbonate of lime	3	120
Gypsum	2	1,859
Shell	2	1,712

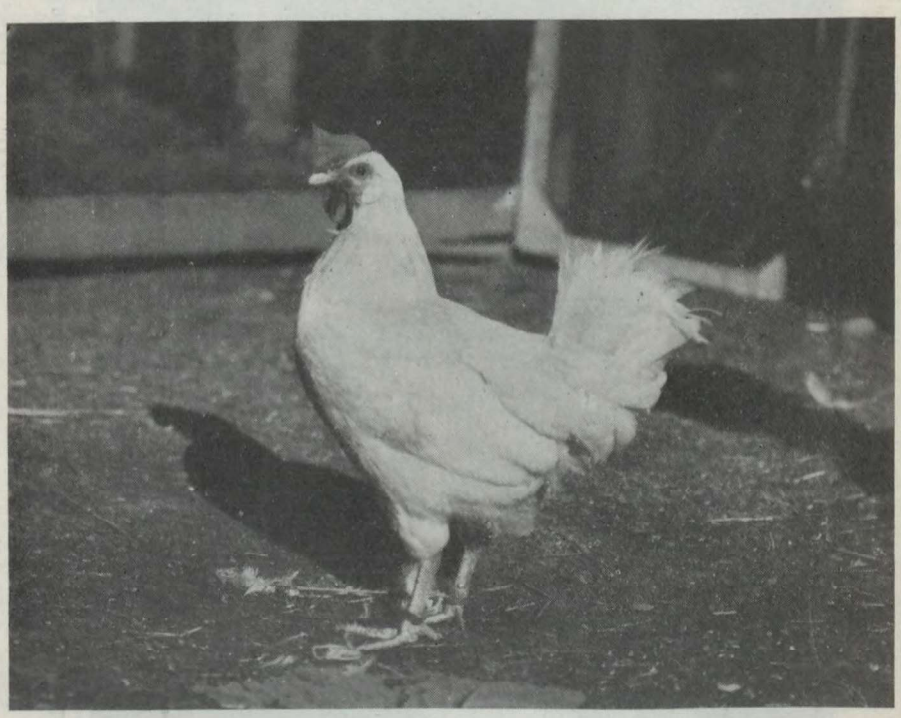
The lime and sulphur were applied to their respective plots in the same proportion as they are found in gypsum. Gypsum contains approximately 18 per cent sulphur and 34 per cent calcium oxide (quick lime) in the form of sulphate

of lime ($CaSO_4.2H_2O$). Therefore 1,100 pounds of gypsum would supply the equivalent to about 200 pounds of sulphur and 350 pounds of lime (calcium oxide) or 700 pounds of agricultural lime. Finely ground clam-shell from the canning factory was applied at the same rate as agricultural lime, it having been found on analysis to contain 94 per cent calcium carbonate.

The check plots again were high, indicating that the materials as applied to the preceding crop had little effect on subsequent yields.

POULTRY

During the season of 1926 it was found necessary to move the poultry plant to a new location. Experimental work was therefore suspended for some months and will not be reported upon in this year's report. Work on the various projects is again under way, and will be described in future reports.

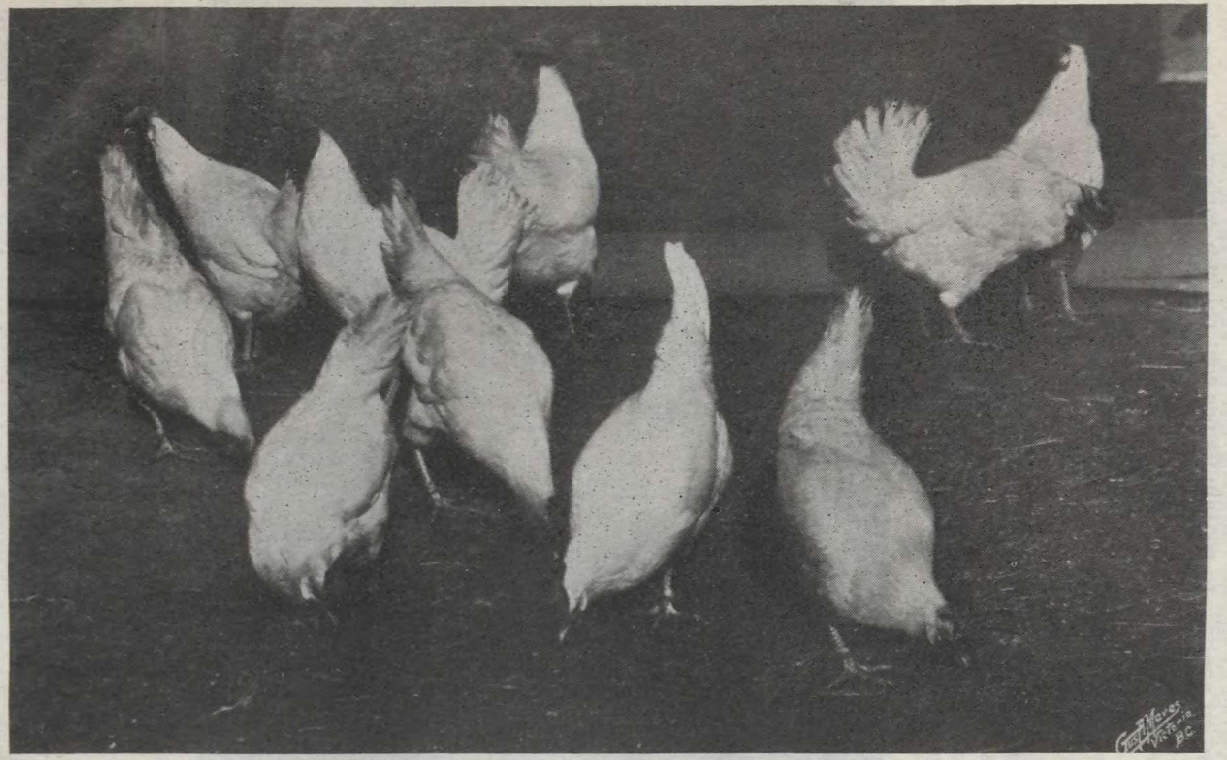


Leading bird in the Vancouver Island Egg-laying contest—309 eggs for 349.9 points.

VANCOUVER ISLAND EGG-LAYING CONTEST

The third Vancouver Island Egg-laying Contest was held at this Station from November 1, 1925, to October 30, 1926, and consisted of thirty-four pens of ten birds each, as in the two preceding years.

The records made showed an increase over both former contests, from every angle that comparisons could be drawn. The average production was 215.8 eggs per bird, the second highest average in any of the Canadian contests, and higher than any made previous to this year. The leading pen for eggs reached a total (2,692) eggs) never attained in Canada until this year, and only exceeded by two pens in all the Canadian 1925-26 contests. A new



Leading pen in Vancouver Island Egg-laying Contest, 1925-26. These ten birds laid 2,146 eggs for 2,232.2 points. Pen owned by J. C. Butterfield, Saanichton, B.C.

Canadian record was made for Rhode Island Reds with a pen total of 2,446 eggs—this same pen probably established a new world's record for winter production for any breed, with a total for the period November 1 to February 27 of 894 eggs, an average of over 52 eggs per week for the ten birds. Another new Canadian record was made here by a White Wyandotte laying 312 eggs. These eggs averaged 24¾ ounces to the dozen.

The rules of the contest were changed this year, and the order of positions was arrived at by points instead of eggs; points were awarded as follows:

For each egg averaging	20 oz.	to the dozen	0·6 points.
"	21	"	0·7 "
"	22	"	0·8 "
"	23	"	0·9 "
"	24	"	1·0 "
"	25	"	1·1 "
"	26	"	1·2 "
"	27	"	1·3 "

Eggs weighing over 27 ounces per dozen received no extra premium, and those below 20 ounces to the dozen were not credited—262 were disqualified for being underweight.

FIVE LEADING PENS

Owner	Address	Breed	Points	Eggs
J. C. Butterfield	Saanichton, B.C.	W. L.	2,771·6	2,692
R. T. Vyvyan	Saanichton, B.C.	W.L.	2,722·4	2,305
J. Burgess	Qualicum Beach, B.C.	R.I.R.	2,690·1	2,446
W. Bradley	Langford, B.C.	W. L.	2,682·0	2,472
J. J. Dougan	Cobble Hill, B.C.	W. L.	2,583·0	2,341

LEADING PENS IN THE OTHER BREEDS

P. J. Stebbings	Pender Island, B.C.	W.W.	2,397·6	2,203
L. Chaplin	Vesuvius Bay, B.C.	B.R.	2,298·5	2,160

LEADING HENS

J. C. Butterfield	Saanichton, B.C.	W.L.	349·9	309
P. J. Stebbings	Pender Island, B.C.	W.W.	344·4	296
R. T. Vyvyan	Saanichton, B.C.	W.L.	343·8	273
R. T. Vyvyan	Saanichton, B.C.	W.L.	339·4	283
H. C. Cooke	R.R. 1, Royal Oak, B.C.	R.I.R.	337·9	265
P. G. Stebbings	Pender Island, B.C.	W.W.	336·5	285
J. C. Butterfield	Saanichton, B.C.	W.L.	334·6	295
H. H. B. Cunningham	Shawnigan Lake, B.C.	W.W.	332·2	312
M. S. Stephens	Courtenay, B.C.	B.P.R.	319·7	301
Miss E. Gwynne	Sidney, B.C.	W.L.	318·6	273

AVERAGES, BY BREEDS

Breed	Number of Birds	Eggs	Points
White Leghorn	220	219·7	235·4
Rhode Island Red	30	207·1	225·8
White Wyandotte	50	215·8	225·1
Barred P. Rocks	40	201·4	212·1
All breeds	340	215·8	230·3

All breeds show an average of more points than eggs, signifying that their eggs weighed on the average considerably over 24 ounces to the dozen.

The primary object in holding this contest is to obtain registration for those birds entered which qualify. To register, a bird must lay 200 or more eggs during the 52 weeks of the contest, these to average at least 24 ounces to the dozen after the first four weeks; must be free from standard disqualifications, and typical of the breed. Birds not laying eggs characteristic of the breed are also disqualified.

Of the 340 birds entered, 220 laid over 200 eggs; of these, four had standard disqualifications and forty-eight did not come up to the requirements for egg size, none were disqualified for egg-colour.

Practically 50 per cent, 168, of the birds were registered, as against 132 a year ago, and 75 the first year. These were distributed among the different breeds as follows:

White Leghorn	116	birds registered.
White Wyandotte	25	"
Rhode Island Red	14	"
Barred P. Rock	13	"

Of these 168 birds registered, 46 were "second generation" hens, daughters of hens previously registered. The cockerels produced by these 46 "second generation" hens are eligible to be registered if they pass inspection as being vigorous, free from standard disqualifications, and typical of their breed.

As in the two previous years, no outbreak of disease occurred in the contest, and the mortality of 10.6 per cent was the same as a year ago.

Since this contest was started, the egg production has shown a very satisfactory increase each year, progressing from an average of 199.8 eggs per bird the first year to 210.5 the second, and 215.8 the 1925-26 contest. As this is the first year for awarding points according to egg-weight, a comparison cannot be drawn, but that the egg-weight has been increasing along with the production is very evident from the fact that in the first year 35.5 per cent of 180 birds laying more than 200 eggs were disqualified for laying underweight eggs; in 1924-25, 30.4 per cent of 204 birds did not come up to the requirement for egg-size, and in this contest only 21.8 per cent of 220 birds laid eggs averaging less than 24 ounces to the dozen.

The following table gives the same information in a more concise form:—

DISQUALIFICATIONS FOR UNDERWEIGHT EGGS

Year	Average production per bird	Number birds laying over 200 eggs	Number birds registered	Number birds disqualified, eggs under size	Per cent contest registered	Per cent laying 200 or more eggs disqualified for small eggs
1923–24	199·8	180	75	64	22·0	35·5
1924–25	210·5	204	132	62	38·8	30·4
1925–26	215·8	220	168	48	49·4	21·8

Since the egg-laying contests in Canada put the premium on egg-size in 1925-26 to an extent not attempted before, much discussion has arisen as to its advisability. Poultrymen have argued that eggs larger than 24 ounces to the dozen had little value from the breeders standpoint, as the hatchability was poor. In checking up egg-size in our breeding pens, and comparing with the

hatching results obtained from individual birds with averages from all birds used during the breeding season, we find that hatching results are good with one bird, poor with another, regardless of egg-size; but when considering averages, hatching results improve as egg-size increases up to 25.5 ounces per dozen, and only slightly falls from 25.5 to 30 ounces. Large eggs would appear superior, from the hatching standpoint, rather than the reverse.

HATCHING RESULTS FROM BIRDS LAYING VARIOUS-SIZED EGGS

Birds laying eggs from 22 to 23 ounces average per dozen

Bird No.	Size egg	Eggs set	Infertile	Died in shell	Hatched	Per cent hatched
	Oz.					
I.607	22	24	2	1	20	83·3
B.296	22	42	14	3	25	59·5
E.441	22	38	15	5	11	28·4
B.293	23	14	2	1	8	44·4
B.294	23	17	10	1	6	35·3
B.292	23	37	3	3	27	73·0
E.442	23	37	1	4	32	8·64
E.448	23	37	18	2	14	37·8
Average						56%

Birds Laying Eggs Averaging 24 ounces per dozen

G.142	24	17	5	1	11	64·7
H.28	24	33	1	4	26	78·7
H.30	24	23	9	2	12	52·1
H.118	24	42	3	6	32	76·2
H.171	24	34	5	4	15	44·1
H.192	24	37	1	7	26	70·2
I.627	24	31	1	2	24	77·4
I.642	24	14	3	2	7	50·0
I.651	24	33		7	24	72·7
I.660	24	36	3	5	24	66·6
I.730	24	25		3	20	80·0
I.739	24	29	1	5	21	72·4
I.755	24	29		7	19	65·5
Average						66·96%

Birds Laying Eggs Averaging 25·5 ounces to the dozen

D.450	25	12		3	9	75·0
G.50	25	33		7	24	72·7
G.144	25	15	1		14	93·3
G.203	25	15		3	10	66·6
H.55	25	41	2	13	21	51·2
H.90	25	17	1	3	12	70·8
H.98	25	26	2	10	13	50·0
I.691	25	26		2	22	84·6
I.698	25	42	1	7	27	64·2
I.730	25	25	3		20	80·0
I.738	25	20	2	2	14	70
I.753	25	40	1	12	26	65·5
B.299	25·5	22	1	5	15	68·1
I.774	25	25	7	1	13	52·0
I.776	25	25	1	2	21	84·0
E.449	25	26		11	12	46·1
Average						68·35%

Birds laying eggs averaging 26 to 30 ounces per dozen

Bird No.	Size egg	Eggs set	Infertile	Died in shell	Hatched	Per cent hatched
H.19	26	44	10	8	23	52·2
H.101	26	29	1	2	26	82·7
H.155	26	35	5	11	14	40·0
H.214	26	26	1	7	16	61·5
I.610	26	28	4	5	18	64·2
I.735	26	18	. . . . .	2	12	66·6
I.776	26	28	. . . . .	10	16	57·1
A.322	26	36	1	.....	25	70·0
B.291	26	29	. . . . .	7	20	69·0
H.79	27	20	4	5	9	45·0
I.669	27	35	.....	10	21	60·0
I.710	27	34	8	2	22	64·7
B.300	27	33	2	4	25	75·7
I.746	28	30	.....	7	19	63·3
I.712	30	28	.....	2	25	89·2
Average	.....	.....	.....	.....	.....	64·08%

APIARY

The apiary at the Experimental Farm has been maintained, but the number of colonies has been reduced somewhat. The southern end of Vancouver island is not well suited to the production of honey; however a few colonies will be kept more for demonstration purposes than for the production of honey.

Flowers are everywhere and continuous over a long period, but real honey-plants are not in sufficient quantity to carry any great number of colonies. The winters are mild and the spring changeable, bringing about a considerable amount of spring dwindling. It is very easy, in a country like this, to overstock a given area. We are convinced that this locality will not carry any great number of colonies until the amount of pasturage is increased. It is our intention to use the apiary at the Station for study and to provide for the increase with which to stock out-apiaries in more favourable locations.

The colonies at the Experimental Station, Sidney, are all run for extracted honey. All colonies are wintered outside in Kootenay cases. As soon as weather conditions permit in the spring, colonies are examined, and strength, quantity of stores and conditions of brood nest are noted. Thirty-three per cent sugar syrup is fed where needed, and weak colonies are strengthened by frames of brood and bees from stronger colonies. All colonies are examined about every nine days, watch being kept for queen cells, and every facility given to induce the queen to lay.

The mildness of the winter, in some respects, is a great drawback from the bee-keepers' standpoint. It is quite impossible to keep the bees in the cluster for any length of time, for every bright day they fly and are chilled before they can return, due no doubt to some change in climatic conditions.

The dearth of honey-plants on the Saanich peninsula renders spring feeding imperative, until the maple trees come into bloom, and from that time onward bees are able to maintain themselves until the time of white clover, when whatever supplies there may be is gathered. If extracting is done in July, and the bees are deprived of their stores, close observation must be maintained, as from this time onward they will not be able to do much more than gather enough to maintain themselves. Feeding for winter is commenced about September, as October is often very damp and prevents the bees maturing the syrup fed to them, and unmatured stores will result in mildewed combs and loss of bees from dysentery during winter.

TOBACCO

Tobacco is grown in some quantity on the mainland of B.C. but only in a small way on Vancouver island. For two years at the Experimental Station some work with tobacco has been attempted. That the plant will grow has been amply demonstrated, both with and without water.

Three varieties, one that had shown its worth the year before, and two others were sown April 9 and planted in field June 19. The plants were hoed weekly throughout the season. The height and length of leaf were recorded every two weeks. "Green weight" and "length of leaf" were determined at harvest. Plants were hung on laths and placed in shed to dry. Later the leaves were stripped and forwarded to Ottawa. Field planting before the advent of very dry weather is strongly recommended. The period of greatest growth was between July 15 and August 31. Flea beetles were very troublesome when the plants were small.

TOBACCO VARIETY TESTS

	Average height 25 plants		Average length leaf 25 plants		Yield cured leaves per acre	
	Irrigated	Non-Irrigated	Irrigated	Non-Irrigated	Irrigated	Non-Irrigated
	inch	inch	inch	inch	lb.	lb.
Connecticut Havana	31	30	26½	21	2,668	2,233
Belge	29	29	25	22½	1,365	1,147
White Burley	26	25	26	25	1,799	1,458

The irrigated plots were treated in precisely the same way as the dry land plots except that they were watered from time to time. The leaf was of fair quality.

FIBRE PRODUCTION

The profitable production of hemp and flax for seed and fibre can hardly be hoped for on Vancouver island. The dry summer season and cool nights are not conducive to best results. This, combined with the high price of land and labour, are the chief factors prohibiting the growing of these crops.

FLAX—VARIETY TEST—PROJECT NO. E 3

The object of this experiment was to determine the best variety for fibre and seed. The seed was sown in triplicate plots 18½ by 18½ feet. At harvest time one foot of the border was taken off in order to give field conditions, leaving a plot 1/160 of an acre. The crop was harvested by hand, pulled when the straw became a golden-yellow, tied in sheaves and air-dried in stooks. After drying, the sheaves were shipped to Ottawa for deseeding, retting and scrutching.

FLAX—VARIETY EXPERIMENT

Variety	Date sown	Date pulled	Height of plants at harvest	Yield per acre in dried straw
			inches	ton lb.
J. W. S.	May 8	Aug. 27	30	1 48
Pure line 6	" 8	" 27	27½	— 1,808
Riga Blue	" 8	" 27	23½	— 1,600

HEMP—TEST OF VARIETIES—PROJECT E. 4

This project was undertaken to determine the best variety of hemp for fibre. The procedure was the same as in project E 3 except that the crop was cut instead of being pulled by hand. The seed was sown broadcast on May 8 at the rate of 44 pounds per acre, and covered by a light harrowing. As soon as the first pollen appeared, the crop was cut and stooked until dry, and then shipped to Ottawa.

HEMP—VARIETY TEST

Variety	Date of harvest	Height at harvest	Yield per acre in dried straw	
		inch	ton	lb.
Kentucky	Oct. 5	48	1	80
Russian	" 5	49	1	160

FLAX—DATE OF SEEDING—PROJECT NO. E 7

The same method of procedure was followed as in Project E 3. The first series of plots were sown as soon as the land was fit. The second one week later, the third two weeks later, and the fourth three weeks later than the first sowing. The variety used in this test was Riga Blue.

FLAX—DATE OF SEEDING

Date sown	Date of harvest	Height at harvest	Yield per acre, in dried straw	Remarks
		inch	lb.	
May 8	Aug. 27	25	1,958	
" 15	Sept. 13	23	1,760	
" 22	" 13	22	1,260	
" 29	.....	.....	.....	Did not germinate.

On the southern end of Vancouver island, it is very necessary that all seeding be accomplished in early season. If left later the seed either does not germinate, or the young plants are affected by the drought, which usually commences in May and continues throughout the summer months.

HEMP—DATE OF SEEDING—PROJECT E 8

The method followed was the same as in Project E 4. Four sets of plots were sown on a heavy clay soil, the first two on May 8, the second series one week later, first, the third two weeks later, and the fourth three weeks later than the first.

HEMP—DATES OF SEEDING

Date of sowing	Date of harvest	Height at harvest	Yield per acre, air dried straw	Remarks
		inch	ton lb.	
May 8	Oct. 5	48	1 240	
" 15	" 14	42	— 1,920	
" 22	.....	.....	.....	Did not germinate.
" 29	.....	.....	.....	" "

The seed sown on May 22 and 29 did not germinate. It would seem that early seeding is necessary to obtain results.

GROWING HEMP SEED—PROJECT E 26

The object of this experiment was to ascertain if hemp seed could be successfully grown in Vancouver island. The plots used in this instance were one-tenth of an acre. Seed was sown on May 8 in hills four feet apart each way, on a well-cultivated sandy loam. This seeding was destroyed by California Quail and other game birds, and a subsequent seeding did not germinate.

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