DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

EXPERIMENTAL SUBSTATIONS

FORT VERMILION, ALTA.	FORT SMITH, N.W.T.
SALMON ARM, B.C.	FORT RESOLUTION, N.W.T.
BETSIAMITES, QUE.	FORT PROVIDENCE, N.W.T.

REPORT OF THE EXPERIMENTALISTS IN CHARGE

FOR THE YEAR 1926

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

FORT VERMILION, ALBERTA

REPORT OF THE SUPERINTENDENT, ROBERT JONES

THE SEASON

The season opened up earlier than usual, and by the end of March there was very little snow on the ground. Work on the land was begun on April 19, and on the 22nd the first wheat was sown, although seeding was not general until a much later date.

Much of the fall-sown grain was winter-killed, due to the fact the snowfall during the winter was very light, and was thawed by chinook winds in January and February. These mild spells were invariably followed by sharp frosts and the ground was covered with a thin coat of ice. There was comparatively little moisture in the ground in the spring, and this combined with the dry conditions in June and July retarded the growth of all crops, and hastened the maturity of all early grains. A few light showers which fell toward the end of July benefited roots and other late-sown fodder crops.

Frosts in May and in August damaged the wheat, garden vegetables and flowers.

Frequent showers in August and unfavourable weather throughout the month of September delayed harvesting operations, and very little threshing was done during this period. During a short spell of favourable weather early in October the ploughing at the Station was rushed to completion, but very little fall ploughing was done throughout the district.

From a farming standpoint the weather conditions during the past year were not at all favourable. There was only a very light snowfall, and chinook winds frequently left the ground quite bare with the result that for the first time in many years this district will have a percentage of frosted wheat.

TABLE OF METEOROLOGICAL OBSERVATIONS TAKEN AT FORT VERMILION, PEACE RIVER DISTRICT, ALBERTA, FROM APRIL 1, 1926 TO MARCH 31, 1927

Months	Maximum	Minimum	Range	Mean	Highest	Date	Lowest	Date	Rainfall	Snowfall	Total Precipitation	No. of days Precipitation	Heaviest in 24 hours	Date
	°	°	°	°	°		°		ins.	ins.	ins.		ins.	
April, 1926	48·3	23·6	24·7	35·9	72·0	18	1·0	8	0·50	0·5	0·55	4	0·39	30
May	63·6	36·9	26·7	50·2	82·2	13	22·0	2	0·78	.....	0·78	10	0·26	25
June	68·3	42·3	26·0	55·3	81·5	21	31·5	18, 19	1·47	.....	1·47	7	0·55	26
July	77·4	52·0	25·4	64·7	92·0	3	38·5	21	2·90	.....	2·90	10	1·34	7
August	71·8	42·6	29·2	57·2	83·9	18	28·5	16	1·27	.....	1·27	9	0·67	19
September	51·5	31·3	20·2	41·4	72·9	3	15·5	23	2·35	.....	2·35	8	0·81	4
October	42·3	25·5	16·8	33·9	71·0	5	11·9	15	0·42	8·0	1·22	6	0·70	8
November	18·7	5·5	13·2	12·1	49·5	1	−43·0	29, 30	0·15	3·0	0·45	4	0·15	17
December	5·7	−17·5	23·2	−5·9	40·4	8	−51·5	15	.....	8·0	0·80	5	0·30	24
January, 1927	2·1	−21·0	23·1	− 9·4	31·0	1	−50·5	21, 31	.....	0·7	0·07	3	0·05	21, 27
February	10·1	−19·5	29·6	− 4·7	38·0	9	−52·5	1	.....	3·0	0·30	1	0·30	10
March	29·2	3·6	25·6	16·4	47·0	20	−13·5	11	.....	1·2	0·12	2	0·10	12
									9·84	24·4	12·28	69		

SOME WEATHER OBSERVATIONS TAKEN AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA, COMPARED WITH THOSE TAKEN AT FORT VERMILION, PEACE RIVER DISTRICT, ALBERTA—*Concluded*

—	Mean temp.	Highest temp.	Lowest temp.	Total Precipitation	Heaviest in 24 hours	Total hours sunshine	Average sunshine per day
	°	°	°	ins.	ins.		
April—							
Ottawa	33·2	65·0	7·0	2·35	0·70	185·7	6·0
Fort Vermilion	35·9	72·0	1·0	0·55	0·39	176·1	5·8
May—							
Ottawa	51·9	81·0	26·0	1·44	0·44	252·2	8·1
Fort Vermilion	50·2	82·2	22·0	0·78	0·26	248·4	8·0
June..—							
Ottawa	59·9	85·0	35·0	3·48	0·87	248·2	8·3
Fort Vermilion	55·3	81·5	31·5	1·47	0·55	262·3	8·7
July—							
Ottawa	66·7	87·0	43·0	4·73	1·95	263·5	8·5
Fort Vermilion	64·7	92·0	28·5	2·90	1·34	312·0	10·0
August—							
Ottawa	65·3	85·0	41·0	1·96	0·38	210·7	6·8
Fort Vermilion	57·2	83·9	28·5	1·27	0·67	251·3	8·1
September—							
Ottawa	56·5	81·0	30·0	2·96	0·93	140·7	4·7
Fort Vermilion	41·4	72·9	15·5	2·35	0·81	152·6	5·0
October—							
Ottawa	44·3	79·0	21·0	2·89	0·84	99·7	3·2
Fort Vermilion	33·9	71·0	11·9	1·22	0·70	117·2	3·7
November—							
Ottawa	31·8	62·0	0·0	4·65	1·12	77·7	2·6
Fort Vermilion	12·1	49·5	43·0	0·45	0·15	56·1	1·8
December.—							
Ottawa	13·9	38·0	−13·0	3·06	0·45	69·6	2·2
Fort Vermilion	− 5·9	40·4	−51·5	0·80	0·30	68·5	2·2
January—							
Ottawa	11·2	42·0	−29·0	2·30	0·34	97·5	3·1
Fort Vermilion	− 9·4	31·0	−50·5	0·07	0·05	96·3	3·3
February—							
Ottawa	15·6	46·0	−17·0	4·41	1·20	102·3	3·6
Fort Vermilion	− 4·7	38·0	−52·5	0·30	0·30	138·2	4·9
March—							
Ottawa	29·7	47·0	− 2·0	1·95	0·49	162·4	5·2
Fort Vermilion	16·4	47·0	−13·5	0·12	0·10	122·8	3·9

RECORD OF SUNSHINE AT FORT VERMILION, PEACE RIVER DISTRICT, ALBERTA, FROM APRIL 1, 1926 TO MARCH 31, 1927

Months	Days with sunshine	Days without sunshine	Total hours sunshine	Average sunshine per day
1926				
April	27	3	176·1	5·8
May	30	1	248·4	8·0
June	27	3	262·3	8·7
July	31	0	312·0	10·0
August	30	1	251·3	8·1
September	23	7	152·6	5·0
October	27	4	117·2	3·7
November	14	16	56·1	1·8
December	21	10	68·5	2·2
1927				
January	22	9	96·3	3·3
February	25	3	138·2	4·9
March	25	6	122·8	3·9

HORTICULTURE

Weather conditions throughout the season were unfavourable for horticultural work. The extreme dryness of the early summer, the late frosts, and the high winds prevailing at the time of transplanting the vegetables and flowers made it extremely difficult to get the plants rooted. Growth, which had been retarded during May and June, was improved by showers during July and August. With rain and snow during the month of September much difficulty was experienced in harvesting some of the vegetable crop. The vegetable garden was again located on summer-fallowed land which had received a liberal application of manure just previous to its being ploughed in 1925.

VEGETABLES

LETTUCE

Eleven varieties of lettuce were sown in drills which were 33 feet long and 24 inches apart.

VARIETY TEST—LETTUCE

Variety	Seed	Date of seeding	Fit for use	Remarks
Big Boston	D. M. Ferry	April 23	June 3	Remained in use for a long period.
Big Boston	Henry Fields	" 23	" 3	Fair sized heads and remained fit for use most of summer.
Hanson	D. M. Ferry	" 23	" 10	Fair size, remaining fit for use for a very long period.
May Kind	Henry Fields	" 23	" 3	Quite large. Quality very fine.
Grand Rapids	O-3412	" 23	" 3	Quite large. Quality good.
White Heart Cos	Henry Fields	" 23	July 6	As these plants grew they were tied with string, and during the late summer they became fine large heads of an excellent quality.
Early Hanson	C.E.F. seed	May 7	June 28	Fine large plants, and not inclined to run to seed.
Paris White Cos	Graham seed	May 12	July 10	Fine large heads. Remained fit for use until well into the autumn.
Curled Black Seeded Simpsons.	Ewing Seed	" 12	June 26	This variety grown rather open, only of a medium quality.
Way-a-head	D.M. Ferry Seed.	" 12	" 26	Very large, and remained useable until late autumn.
Crisp-as-Ice	Wills Seed	" 12	" 26	Fine and large. Of a good quality.

RADISH

The period between the dates of seeding and the dates upon which the different varieties became fit for use may seem unusually long, but those varieties which were sown on April 23 did not appear above ground until May 6, and during the dry period in the early spring the growth was very slow. Later on the rains improved growth. The seed as sown in drills which were 33 feet long and 24 inches apart.

TEST OF VARIETIES—RADISH

Variety	Seed	Date sown	Fit for use	Remarks
Non Plus Ultra.....	Henry Fields...	April 23	June 3	Quite large. Remained fit for use for a long period. Quality very good.
Early Scarlet Turnip, White Tipped.	D. M. Ferry....	" 23	" 6	Fair size. Remained fit for use until the late summer.
Early Scarlet Turnip	D. M. Ferry....	" 23	" 6	Fair size. Very crisp and tender.
Long White Icicle....	Wm. Rennie....	" 23	" 3	Good size. This variety remained fit for use longer than many of the other varieties.
White Icicle.....	K. McDonald...	" 7	" 20	Quality very good. In use until the late summer.
Early Large Scarlet White Tipped.	Graham Seed...	" 12	" 16	Good size. Fine and crisp. Remained fit for use for a long period.
Sparkler or Perfection Novelty.	Madsen.....	" 12	" 19	Fair size. In use for a long period before going to seed. Quality was very fair.
Non Plus Ultra Novelty.	Madsen.....	" 12	" 19	Medium size. Very good quality. In use for a long period.

TABLE BEETS

The germination of the seed was quite timely. The plants were thinned to 8 inches apart in the drills on July 7, and the crop was harvested in fair condition on September 9.

Variety	Date sown	Fit for use	Yield per acre	Remarks
			tons lbs.	
Crosby Egyptian.....	May 12	July 24	16 1,240	Roots quite large when harvested. Fine and smooth.
Detroit Dark Red.....	April 26	" 16	16 40	Roots of a medium size when harvested.
Detroit Dark Red Turnip	" 23	" 16	10 1,600	Roots small, but of a very good quality.

TABLE CARROTS

Six varieties of carrots were tested this season. Germination was very good. As the roots became fit for use the plants were thinned to four inches apart in the drills. All varieties were harvested on September 9.

TEST OF VARIETIES—TABLE CARROTS

Variety	Seed	Date sown	Fit for use	Yield per acre	Remarks
				tons lbs.	
Forcing Carrots Nantee Imported	J. E. Ohlsens.....	May 12	July 24	21 1,200	Roots very large. Fine and cleanly rooted.
Half Long Scarlet Nantee.	Rennie.....	April 26	" 15	15 1,920	Roots quite large, quality very good.
Chantenay.....	Jene Harving.....	May 12	" 24	15 960	Roots while medium in size were of a very good quality, very clean and smooth.
Chantenay.....	McKenzie.....	April 23	" 13	15 300	Roots of a medium size, and a very good quality.
Half Long Scarlet Nantee.	A. E. McKenzie.....	" 29	" 18	15	Roots of a fair size, and excellent quality.
Danvers Half Long.....	Steele-Briggs.....	May 7	" 24	11 1,200	Roots of a medium size, very fine and smooth.

ONIONS

No remarkable difference in yields has been noticed between early and late sown onions. Growth was rather slow at the beginning of the season but with the heavier and more frequent rains in August more rapid growth was made. As the onions became fit for use the plants were thinned, eventually, to four inches apart in the drills. The crop was harvested on September 6 and 7, and while the yields were only moderate, the keeping quality of the bulbs was quite good. No trouble was experienced.

TEST OF VARIETIES—ONIONS

Variety	Seed	Date sown	Fit for use	Yield per acre	Remarks
				tons lbs.	
Prizetaker Yellow Globe.	Graham	April 26	June 20	180 10,800	Bulbs very large and well matured.
Giant Yellow Prizetaker.	Graham	May 12	July 14	135 8,100	Bulbs fairly large and well matured.
Yellow Globe Danvers.	McDonald	" 12	" 10	120 7,200	Bulbs of medium size, fairly well matured.
Extra Early Flat Red Weathersfield.	Graham	" 24	June 15	115 6,900	Bulbs quite large and fully matured.
Yellow Globe Danvers.	McDonald	" 26	" 18	110 6,600	Bulbs of medium size and very well matured
Large Red Wethersfield	Steele-Briggs	" 7	" 18	90 4,500	
McDonald Extra Select Red Wethersfield	McDonald	" 12	July 8	82 4,920	Bulbs fairly large and well matured. Yield reduced by cutworms.
Extra Select Large Wethersfield.	McDonald	April 24	June 13	80 4,800	Bulbs quite small but very well matured.

ONION SETS

The results obtained from onion sets this season were very much below the average. This is accounted for partly by the fact that the sets were a long time in transit and arrived in poor condition; the dry season also retarded growth. The sets were planted in drills 33 feet long.

TEST OF VARIETIES—ONION SETS

Variety	Seed	Date set out	Date fit for use	No. of drills	Yield	Remarks
					lbs.	
Onion Sets	McDonald	May 10	June 8	8	45	Quite small.
Onion Sets red	Steele-Briggs	" 5	May 28	6	42	Fair size.
Onion Sets red	McDonald	" 10	June 10	5	33	Small. Poor quality.
Onion Sets Yellow	Steele-Briggs	" 5	May 28	4	38	Small, quality fair.

GARLIC SETS

Garlic sets were grown this season for the first time. Two drills, 33 feet long, were planted on May 5 and May 10 respectively, and, considering the season, quite fair results were obtained when harvested on September 8.

GARLIC SETS

Seed	Planted	Yield	Remarks
		lbs.	
Steele-Briggs	May 5	10	Medium size.
McDonald	" 10	7	Quite small.

CULTURAL TEST—GARDEN BEANS

Two varieties, Improved Golden Wax and Stringless Green Pod, were sown on May 11 in drills which were 33 feet long and 30 inches apart. The seed was sown 2, 4 and 6 inches apart in the drills. Practically the only difference noticed was a slightly larger yield from the drills in which the seed was sown 2 inches apart. Thick or thin seeding apparently had no influence on the dates the beans became fit for use or on the dates of maturity.

GARDEN BEANS

Two drills of each of several varieties of garden beans were sown on May 11, one drill being for green pod production and the other for seed production. The drills were 33 feet long and 30 inches apart. Growth was rather slow in the spring and was further retarded by frosts in June and August, which also reduced the yields.

TEST OF VARIETIES—GARDEN BEANS

Variety	Date fit for use	Yield of green pods	Yield of ripe seed from duplicate plots	Remarks
		lbs.	lbs.	
Wardwell Kidney Wax	July 24	25	2½	Pods of goodly length, fine quality.
Extra Early Red Valentine	Aug. 4	21	3½	Very good. Pods fairly long.
Stringless Green Pod	Aug. 4	20	2½	Medium length and stringless.
Bountiful Green Bush	July 28	19	2½	Pods fine and crisp and of a medium length.
Improved Golden Wax	" 22	18	2½	Seed fair.
Plentiful French	" 24	17	3	Pods quite long, good quality.
Masterpiece	" 29	15	3½	Pods quite fine and tender.
Davis White Wax	" 27	15	1½	Very fine and tender pods.
Challenge Black Wax	" 24	14	1¾	Very fine, stringless.
Round Pod Kidney Wax	" 29	13	2½	Pods medium length.
Round Pod Kidney Wax	Aug. 2	9	1	Good quality.

BROAD BEANS

Broad beans were sown on May 11 in drills which were 33 feet long and 30 inches apart. Germination was slow and the first bloom did not appear until July 3. However, the plants eventually made good growth and a splendid yield of shelled green beans was obtained. The following varieties were sown and all were fit for use on July 29. Mammoth Broad Windsor, Long Green Pod, Taylor Windsor, Fan or Cluster, Green Windsor, Green Gem, Early Mazagan, Sharpe Conqueror, Common Windsor, Giant Four Seeded, and Harlington.

GARDEN PEAS

All the different varieties of peas were sown on April 26. As a consequence of the extremely dry weather in the early summer the growth was extraordinarily short. There was very little difference between the dates of ripening of the early and late varieties.

TEST OF VARIETIES—GARDEN PEAS

Variety	Fit for use	Length of vine	Length of pod	Average number of peas in pod	Remarks
		in.	in.		
Lincoln	July 8	17	3	9	Quite small. Quality quite good.
Gradus	" 5	30	2½	7	Very small. Yield low.
American Wonder	" 8	16	2	6	Quality very good. Yield good.
Pioneer Gregory	" 9	16	3	6	Quite large.
Alaska	" 3	18	2½	6	Quality very good. Yield fair. Medium size.
Early Morn	" 4	33	2½	5	Very fine quality. Yield medium. Very large.
Advancer	" 4	26	2½	7	Quality good. Yield good. Fair size.
Laxton Progress	" 9	16	4	7	Quality excellent. Yield medium. Quite large.
Prosperity	" 5	27	3	6	Quality fine, medium size. Yield medium.
Little Marvel	" 8	21	2½	6	Quality very fine. Yield good. Fair size.
English Wonder	" 8	15	2	8	Quality good. Yield medium. Very small.
Stratagem	" 9	25	4	8	Fair quality. Yield fair. Medium size.
Thomas Laxton	" 8	34	3½	8	Medium size. Quality quite good. Yield good.
Henderson Surprise	" 4	24	1½	6	Very fine. Yield fair. Peas small.

CULTURAL TEST—GARDEN PEAS

The object of this test is to determine the effect upon earliness and yields when the seeds are planted at the different distances apart. The drills were 33 feet long and the seed was sown one, two and three inches apart. The yields obtained were slightly below the average due to the frequent handling. The sowing at different distances apart did not influence the quality nor the length of time required for the crop to mature, but with the variety Stratagem slightly larger yields were obtained from the wider spacing, due to a stronger growth of vines with a larger number of pods per plant.

Variety	Distance apart	Date fit for use	Date of ripening
	in.		
English Wonder O-2347	1	July 12	July 31
" "	2	" 12	Aug. 6
" "	3	" 12	" 3
Stratagem	1	" 19	" 14
"	2	" 19	" 14
"	3	" 20	" 14

OUTSIDE SEEDING OF CABBAGE

The seed of several varieties of cabbage was sown in the open ground on May 13. Germination of the seed was very timely and there was a good stand. The first thinning out of the plants was done on May 30, and the second and final thinning was done on June 18, when the plants were thinned to 20 inches apart in the drills. Growth, however, was slow until late summer when there was a better supply of moisture.

While the results obtained this year were better than in previous years this method of seeding cannot be recommended for this district with its short seasons and late spring and early autumn frosts. Much better results are obtained from seed sown in hotbeds.

CABBAGE

The seed of several varieties and strains of cabbage was sown on April 6, in boxes such as are used in the outside hotbeds. These boxes were placed in a heated sunporch and were kept there until April 20, when they were moved to the outside hotbeds. By this time the plants had got nicely started. They were transplanted to the open ground during the last days of May and early in June. With the extremely dry weather and high winds which prevailed during the period of transplanting and for some considerable time after, much difficulty was experienced in getting the plants established, consequently growth was slow until after July 7, on which date there was a heavy rainfall. Frequent showers in August further assisted growth and a fair crop was harvested on September 17.

On September 18 a number of the late and larger varieties were stored in the cellars of the houses on the Station, and on December 18 these cabbages were just as fresh as when placed in the cellars.

TEST OF VARIETIES—CABBAGE

Variety	Seed	Fit for use	Average weight per head when harvested	Remarks
			lbs.	
Copenhagen Market	McDonald	Aug. 3	15	Stored for winter and spring use.
Danish Ballhead Intermediate	Harris	" 4	13	Heads very solid. Were used for storing.
Danish Ballhead Solid Emperor Strain.	Harris	July 30	12	Heads large and very solid. A good storing variety.
Dala	Henry Fields	Aug. 2	11	Heads very solid. A good storing variety.
Selected Jersey Wakefield	McDonald	July 18	8¼	None of this variety was used for storing purposes.
Early Winnigstadt	Steele-Briggs	Aug. 8	8	As this is an early variety it is more for summer use.
Round Red Danish	McDonald	" 6	7	Heads medium size but very solid.
Early Paris Market	Dupuy & Ferguson.	July 16	7	These would not have been suitable for storing.

CAULIFLOWER

The seed of two varieties, Snowball (Graham seed) and Extra Early Dwarf Erfurt (McDonald seed) was sown in small boxes on April 6, and moved to the outside hotbeds on April 20. They were transplanted to the open ground on May 30, but growth was rather slow during the early part of the season, however, with more favourable conditions later on a good number of fine large solid heads developed. As the heads developed the large outer leaves were tied up in order to protect the heads from the direct sun rays. This keeps the heads tender and crisp, and they remain fit for use for a longer period. The Extra Early Dwarf Erfurt were fit for use on July 24 and the Snowball on July 26.

CELERY

Four varieties were tested this season, the seed being sown in small boxes in the sun-porch on April 6. The boxes were moved to the outside hotbeds on April 20 by which time the seed had germinated nicely. Transplanting to the open trenches was done on June 7. The plants were set out 6 inches apart in trenches which were one foot deep, twenty feet long and six feet apart. They were frequently watered and earthed up and a strong healthy growth was made throughout the season.

The plants being protected by earth blanched exceedingly well, and were very crisp. The crop was dug on October 1 and although there had been much frost and snow the plants were in perfect condition. The surplus was taken to the cellars and placed in dry sand. Three months later the celery was found to be in prime condition.

TEST OF VARIETIES—CELERY

Variety	Seed	Date fit for use	Harvested	Length of stock	Weigh of 12 plan.s
				in.	lbs.
Easy Blanching	McDonald	Sept. 4	Oct. 1	17	19
Giant Self Blanching		" 6	" 1	14	15
Giant Pascal	McDonald	" 12	" 1	14	15
Golden Plume Novelty	Moore seed	" 1	" 1	12	9

ASPARAGUS

A very good crop of Conover Colossal asparagus was obtained this season.

Picking commenced on May 25 and continued to the end of July. The tips were quite large and of a very good quality.

The row is kept well cultivated with a fair amount of manure worked into the soil with a percentage of salt added from time to time.

HORSE RADISH

The rows of horse radish still continue to make good growth and provide a splendid supply of fine large roots each season.

RHUBARB

The new rhubarb plantation is now well established, and this season produced quite a number of fine large stalks. With the rains of the late summer and early autumn, the rhubarb remained in perfect condition until the end of September, when that which remained in the rows was harvested and stored for winter use. The varieties included Victory, Ruby Red seedlings, and St. Martens. The plantation is kept thoroughly cultivated and free from weeds. In the autumn the plants are mulched with a mixture of coarse and fine manure, the coarse being removed in the spring, while the finer is worked into the soil.

TOMATOES

The past season was an unfavourable one for the tomato crop. All the different varieties were grown from seed which was sown in boxes in the sun-porch on April 6. The plants were moved to the outside hotbeds on April 20, and were transplanted to the open ground on May 30.

Two of the varieties, Bonny Best and Hipper O-3040, were tied to a single stick and pruned to a single stem with all the trusses of fruit left on. The varie-

ties Earliest of All, Chalk Jewel, Danish Export, Alacrity O-4221, O-5460, and Alacrity O-661, O-5465 were supported with two sticks and pruned to two stems, with three trusses of fruit left on each stem. One variety, Sparks Earliana, was allowed to grow in its natural state, and was not staked or pruned.

The quantity of ripe fruit harvested was very much smaller than in previous seasons, and there was also a smaller yield of green fruit. The quality of the fruit also was greatly impaired by the late August frosts.

TEST OF VARIETIES—TOMATOES

Varieties	Seed Source	Date first ripe fruit picked	Yield from the plot (36 plants)	
			Green	Ripe
			lbs.	lbs.
Sparks Earliana	Ewing	Sept. 2	200	4
Danish Export	Wilbolt	Aug. 30	87	6
Alacrity 0661 0-5-465	Ottawa	Aug. 28	75	10
Chalks Jewel	Carter	None	70	None
Earliest of All	Steele-Briggs	None	65	None
Alacrity 4221 0-5469	Ottawa	Aug. 28	65	5
X X Hipper 0-3040 Alacrity	Ottawa	None	41	None
Bonny Best	Stokes	None	15	None

CUCUMBERS, CITRONS, PUMPKINS, SQUASH, AND MELONS

Although the yields from these vine crops this season were below average, yet considering the unfavourable season quite fair crops were harvested. The seeds were sown in boxes large enough to contain a hill of any of the varieties. The boxes are so made that they can be removed without disturbing the plants. Four hills of each of the varieties shown in the following tables were sown on May 17. The hills were 6 feet apart each way. By June 15 all the plants had made good growth and as weather conditions seemed favourable with little likelihood of any frost the boxes were removed. Unfortunately, frost did occur on the nights of June 18 and 19. The few plants that survived these frosts were greatly checked and were slow in getting a new start.

TEST OF VARIETIES—CUCUMBERS

Variety	Seed	Date fit for use	Date harvested	Number picked	Total weight
					lbs.
Early Russian	Burpee	July 28	Aug. 6	65	48
Prolific	McKenzie	" 28	" 6	41	37
Early Cluster	Henry Field	Aug. 2	" 2	39	21
Improved Long Green	K. McDonald	" 4	" 6	51	18
Cool and Crisp	Henry Field	" 12	" 12	24	15
Davis Perfect	Graham	" 9	" 21	18	13
Davis Perfection	Henry Field	" 9	" 21	15	10½

TEST OF VARIETIES—SQUASH AND MARROWS

Variety	Seed	Number of hills	Date harvested	Number picked	Remarks
Golden Hubbard	K. McDonald	3	Sept. 3	10	
Long White Bush	Ewing	4	" 3	27	Very good quality.
New Acorn or Table Queen.	Burpee	3	.....	.....	Fine quality.
English Vegetable	Steele-Briggs	11	.....	.....	Very good quality.
Musk Melon Emerald Gem.	Ottawa	9	.....	.....	Very small.

VARIETY AND STRAIN TEST—CITRON

Variety	Seed	Number of hills	Date harvested	Number picked	Remarks
Red Seeded	Rennie	4	Sept. 3	10	Quite matured.
Green Seeded	K. McDonald	3	" 3	12	Not perfectly matured.

TEST OF VARIETIES—PUMPKINS

Variety	Seed	Number of hills	Date harvested	Remarks
Connecticut Field	K. McDonald	5	Sept. 3	Average weight 17 lbs. Thoroughly matured. Quality very good.
King of the Mammoth	K. McDonald	4	" 3	Average weight 15 lbs. fully matured. Fair quality.
Sugar Sweet Pie Novelty	Moore	2	" 3	Average weight 8 lbs. Perfectly matured. Quality fine.
Small Sugar	Graham	3	" 3	Average weight 6 lbs. Very well matured. Quality fine.

TABLE CORN

Many varieties and strains of table corn were tested this season. The corn was planted on May 13, in one-thirtieth-acre plots, the hills being 3 feet apart with the rows 4 feet apart. The spacing allowed for the use of a horse cultivator. The dryness of the early spring, and the frosts which occurred late in June and early in August, and other unfavourable seasonal conditions throughout the whole season resulted in a very delayed and stunted growth, and with a very poor yield of cobs that became fit for table use, and a low yield of fodder.

When sufficient seed was available a duplicate plot was planted in drills. With the very backward growth of the season, the percentage of suckers was very low, and on many of the varieties nil, so that no suckering experiments were conducted this season. These crops were harvested on September 11.

The following were the varieties used:—

TEST OF VARIETIES—TABLE CORN

Varieties	Seed	Date in tassel	Date in silk	Date in use	Yield of fodder per acre	Length of stalk	Remarks
					tons lbs.	ins.	
Deluse Golden Giant	Steele-Briggs	July 20	Just in silk when cut.	No ears	6 800	56	
Early Burbank Novelty.	Nov-Burbank	" 28	No silk	No ears	5 1,520	39	
Golden Justice	Bruce	Aug. 2	No silk	No ears	3 1,410	34	
Early White Cory	Graham	July 28	Aug. 20	Not in use	3 1,200	34	
Sweet Squaw 0-6623		" 17	" 14	Not in use	3 1,200	45	The cobs in this variety not sufficiently advanced for table use.
Howling Mob	Burpee	Aug. 2	No silk	No ears	3 600	42	
Sixty Day Make Good.	Childs	July 20	Aug. 14	Not in use	3 0	42	
Early Malcolm 0-8205		" 24	No silk	No ears	2 1,340	23	The ears just forming when harvested.
Alaska Indian Corn	H. Field	" 10	July 18	Not in use	2 1,280	22	While the ears on this variety were quite large they were not sufficiently advanced when harvested to be useabls.
Extra Early Adams	D. M. Ferry	" 12	" 24	Aug. 14	2 1,280	40	The ears quite large, 30 lbs. fine useable ears picked from the plot from Aug. 14-Sept. 1.
Banting 0-8654		" 12	" 26	Not in use	2 720	20	Not sufficiently advanced when harvested, for table use.
Malakoff	Vaughan	" 19	Aug. 10	Not in use	1 1,780	36	Ears just beginning to form when harvested.
Pickaniny 0-6579		" 13	July 21	Aug. 14	1 800	36	None of this variety reached maturity, the cobs very small yield low.

POTATOES

Seven varieties of potatoes were included in the variety tests during the season of 1926, including two new varieties, viz., Early Hebron and Early Ohio. These two varieties were forwarded to this Station by request, from the Beaverlodge Substation, in three-pound lots. These potatoes were of fair size, very smooth, of a fine appearance and made excellent growth. Fair yields were obtained from the two short drills.

The land used for the potato test was land on which the experimental wheat, oats and barley was grown the previous season. After the cereal crop had been harvested, the land was given an application of twenty wagon loads of barnyard manure per acre, and was then plowed and left in that condition over the winter. In the spring the land was thoroughly cultivated in preparation for the planting. The usual cultural method was again used during the past season, with very good results.

The plots were planted on May 5, slightly later than usual, and the crop was harvested between September 18 and 21.

The tubers from all the varieties were quite large. The plots were given the first cultivation, crosswise of the rows, with the smoothing harrow, on June 12. The horse cultivator was used on June 19 to stimulate the growth. The plots were gone over with hand hoes on June 23. On this date all the weeds were removed and the plants slightly hilled up. On July 5 the hillers were attached to the cultivator and the plots cultivated and hilled on July 5 and 6.

The following were the yields obtained:—

TEST OF VARIETIES—POTATOES

Varieties	Size of plot	Date of emergence	Date fit for table use	Yield per acre marketable	Yield per acre unmarketable	Total yield
				bush.	bush.	bush.
Irish Cobbler	1-16 acre..	June 9	Aug. 12	405	75	480
Carman No. 1	1-16 acre..	" 7	" 12	400	76	476
Gold Coin	1-16 acre..	" 12	" 6	372	60	432
King Edward	1-16 acre..	" 13	" 12	370	50	420
Rochester Rose	¼ acre.....	" 12	" 21	300	60	360
Rochester Rose	1-16 acre..	" 12	July 21	290	46	336

COST OF GROWING A CROP OF POTATOES

The cost of production was slightly higher this season than usual, due to the fact that the potato crop followed a cereal crop. Such land requires much more extensive cultivation than would a potato crop that was being grown on well-prepared summer-fallowed land. Added to this was the extra cost of harvesting, due to the very unfavourable weather conditions which prevailed during the time these crops were being harvested.

A one-quarter-acre plot of Rochester Rose was planted for this experiment. Included in the cost of production was the cost of hauling and spreading manure, plowing of the land in the autumn of 1925, preparation of the land for planting in the spring of 1926, cost of the seed, cost of planting, rent of land, the frequent cultivation given during the season, and harvesting of the crop. This plot was harvested on September 21. The yield obtained was very much above the average, being at the rate of 360 bushels per acre, at a cost of 49 cents per

bushel. The tubers were quite large and of good quality. Despite the high cost of production, this crop was a profitable one, the prices which prevailed in the district at harvest time being 90 cents per bushel for the large and 60 cents per bushel for the smaller ones. Later many potatoes were frozen in the ground.

Cost of growing 360 bushels at 49 cents per bushel	$176 40
300 bushels of large potatoes at 90 cents per bushel	270 00
60 bushels of small potatoes at 60 cents per bushel	36 00
Total	$306 00
Cost of production	176 40
Profit per acre	$129 60

Profit over cost of production, 36 cents per bushel.

ORNAMENTAL GARDENING

THE ANNUAL FLOWER GARDEN

The flower garden containing both annuals and perennials was again surrounded by a hedge of sunflowers of different varieties. This season the hedge was further added to by a row of hemp, the hemp being planted slightly back of the sunflowers. This affords a very useful and attractive shelter, and has very special merits when a flower garden is situated in an open space, as is the present flower garden at this Station.

This season despite the unfavourable spring, many of the varieties commenced to bloom on June 3, and continued to bloom until September 8, making a very fine display throughout the summer.

The more tender varieties were sown under glass, from April 6 to 9, and were transplanted to the open flower beds commencing May 24. The hardier varieties were sown direct to the open ground commencing May 18, and continuing for a number of days, as time permitted.

In the list of varieties sown are a number of perennials. As these were moved from the hotbeds they were set out in the perennial border and a few came into bloom this season. The other varieties made good growth, and should make a good showing another season.

The following were the varieties tested with dates of coming into bloom.

The following varieties were sown under glass and transplanted to open ground later:—

Names of Varieties	Date in bloom	Remarks
Aster California Giant	July 15	
Aster Daybreak	" 15	
Aster Queen of the Market	" 17	
Aster Heart of France	" 15	
Aster Giant Grego Goliath	" 15	
Antirrhinum	" 21	A collection of many colours.
Acroliniium	" 13	Mixed many colours.
Cosmos	" 2	A collection of white, crimson and pink.
Coleus	.....	Potted Good growth.
Clematis	.....	Special University of Alta. seed.
Clematis Paniculata	.....	Perennial climber.
Clematis Bush Rec. O.S.N. 10978	.....	These three varieties of Clematis were just coming into bloom at the freeze up. They were planted in the perennial border, and should they survive the winter they will make a fine addition to the border.
Anchusa Dropmore variety	" 12	
Calliopsis. Drummondi Golden Wave	20	
Dahlia	.....	Developed fair sized roots.
Datura	" 30	A very fine strong growth.
Geranium. W. Ewing seed	.....	These were potted, and many given away to the visitors to the Station.

Name of varieties	Date in bloom	Remarks
Geranium. Our own seed	.....	
Helichrysum Monstrossum	" 13	
Helichrysum Rose Carmine	" 18	
Kochia	.....	These became quite large plants, quite showy.
Leptosyne Stillmanni Sea Dahlia	" 4	
Martynia	" 28	Very pretty.
Kenilworth Ivy	" 20	Picked out and planted into hanging baskets for the different houses. Became fine plants with many blooms.
Nigella, Miss Jakyll	" 13	Blue and white.
Nicotiana Sanderae	" 21	
Phlox	" 9	Many varieties and colours.
Pansies Masterpiece	June 25	One year old plants.
Pansies	" 28	Many colours mixed.
Petuna Giant of California	July 13	Very fine.
Rhodanthe Maculata-Everlasting	June 3	A rapid grower.
Salpiglossis New Emperor	July 17	
Sensitive Plant	.....	They became fair sized plants.
Shamrock True Small Leaved	July 30	Potted and became quite large plants with yellow bloom.
Thunbergia Climbers	Aug. 2	Fine growth.
Stocks	July 2	A fine collection of many colours.
Violas Tufted Pansies	" 12	Scotch strain mixed.
Xeranthemun	June	Quite large plants when set out June 28.

Varieties sown direct to the open ground from May 18 to 26:—

Names of varieties	Seed	Date in bloom	Remarks
Arctotis African Daisy	.....	July 19	
Aquilegia Columbine Mixed	Hort. Div.	.....	Three became fine large plants and will be moved to the perennial border.
Bartonia Aurea	McDonald & Ewing	June 20	Very fine.
Beans Scarlet Runner	Ewing	July 16	Cut down in August by frost.
Clarkia	McDonald	" 19	Fine showing.
Calliopsis	McDonald	" 15	Good.
Calliopsis Drummondi	McDonald	" 15	Very pretty.
Canary Bird Vine	Ewing	Aug. 9	A fine display.
Calendula Meteor	McDonald	July 24	
Calendula Lemon Queen	.....	" 24	
Candytuft Giant Hyacinth Flowered White.	McDonald	" 13	These two made a fine contrast.
Candytuft Crimson	Ewing	" 13	
Candytuft Mixed colours	Crosland Bros.	" 15	Very fine.
Centaurea Cyanus Minor Blue	McDonald	" 24	Much bloom.
Dianthus. Double mixed	McDonald	Aug. 9	These three strains of Dianthus were set out in the perennial bed and made very fair growth. Two of the strains came into bloom.
Dianthus. Heddewigii Scarlet Queen.	Sutton	.....	
Dianthus. Deltoides Garden Pink Dwarf.	Div. of Hort.	Aug. 12	
Eschscholtzia Cal. Poppy	McDonald	July 13	Very fine.
Eschscholtzia Geisha Novelty	McDonald	" 13	Very pretty.
Godetia Dwarf Compact mixed	McDonald	June 25	Very good.
Godetia mixed Crosland Bros	.....	Aug. 2	Excellent.
Godetia Gloriosa	Ewing	" 2	Fine display.
Gyrpophila	Div. of Hort.	June 21	
Helichrysum double mixed	Ewing	July 26	Abundance of blooms.
Hyacinth Bean Dolichos Lablab	Steele-Briggs	" 24	Good growth.
Humulus Japonicus	.....	.....	These made a very strong growth.
Ice Plant	.....	.....	This made a fine showing.
Jacobaea, Double mixed colours	McDonald	July 30	Fine showing.
Kochia Summer Cypress	.....	.....	Very attractive fine large groups of plants.
Lupines Tall Annual mixed colours	McDonald	June 23	Very fine display.
Lupines Self seeded from 1925	Sutton	" 4	Very fine.
Lavatera Rosea Splendens	McDonald	July 15	Very good.
Linaria Maroccana	McDonald	" 29	Very good.
Mignonette (Reseda Odorata) I	McDonald	" 15	Very good.
Mignonette Red Goliath	Ewing	" 15	Very pretty.

Names of varieties	Seed	Date in bloom	Remarks
Mignonette White Pearl	McDonald	" 15	Excellent.
Marigold French Dwarf	Div. of Hort	" 15	
Marigold African Mixed	McDonald	" 20	Both strains made fine showing.
Malope Grandiflora	Ewing	Aug. 5	Blooms very plentiful.
Nasturtium Dwarf mixed	McDonald	July 21	The different strains made a very strong growth and an excellent showing of blooms.
Nasturtium Dwarf mixed	Div. of Hort	" 21	
Nasturtium Fall finest mixed	McDonald	" 21	
Nigella Miss Jekyll	McDonald	" 13	
Portulaca Sun Plant double mixed	Ewing	" 27	Very pretty.
Poppies Shirley	Crosland	" 27	Very fine.
Poppies Shirley mixed	Div. of Hort	" 18	A fine display.
Poppies Rosy Giant double		" 25	Many colours.
Poppies Paeony Flowered	Div. of Hort	" 25	
Poppies. A mixture of single and double.	H. Field	" 21	
Sweet Sultan	Steele-Briggs	" 20	A fine array of blooms.
Salpiglossis New Emperor	McDonald	Aug. 6	Fine and large and many blooms.
Scabious many coloured	Div. of Hort	" 6	Much bloom.
Sweet Alyssum	Div. of Hort	July 19	Good
Sunflowers Multriple	Crosland	Aug. 6	All these varieties of sunflowers made a very fine showing.
Sunflowers Giant Yellow	Div. of Hort	" 20	
Sunflowers Dwarf Yellow	Div. of Hort	" 4	
Sunflowers Double Orange	Div. of Hort	" 4	
Virginian Stocks	McDonald	July 12	Many colours.
Wild Cucumbers	Ewing	" 19	Both varieties made very strong growth and completely covered the arbor.
Wild Cucumbers	Steele-Briggs	" 19	
Verbena Hybrida Mammoth	McDonald	June 28	Very fine.
Xeranthemum	McDonald	July 29	A very fine showing.
Zinnia Giant Dahlia Flowered mixed.	McDonald	June 29	Both made a fine showing.
Zinnia Mixed colours	Div. of Hort	July 1	

Sweet Peas Cupid mixed colours. Steel Briggs. The dwarf-growing habits of this variety make it very useful, as well as showy, for an edging plant. It was in bloom from July 27, until after the severe freezing.

Two packages of wild flower garden seeds, from Ewing and Steele Briggs, were sown in spare beds in the flower garden; all the different varieties were in bloom by August 11. The many shapes, sizes and colours were quite attractive.

SWEET PEAS

The following varieties of sweet peas were sown in double straight rows, with a name stake between each strain or colour; later, as the plants grew, long slender stakes were added. The growth in the early spring was rather slow, but with better growing conditions later, the vines grew to a goodly length. During the late summer they bloomed profusely, and continued in bloom until mid-September.

The flower garden was a revelation to the numerous travellers up and down the Peace river and was much admired. The different collections were planted on May 18 and 19.

SWEET PEAS

Name of varieties	Date in bloom	Color
Seed from Crosland Bros.		
Advance	July 27	White flushed rose pink.
Charming	" 29	A shade of deep rosy cerise.
Celeste	" 27	A shade of rich bright blue.
Constance Hinton	" 26	White.
Campfire	" 31	Scarlet sunproof.
Champagne	" 27	A new cream, very frilled.
Charity	Aug. 2	A fine brilliant crimson.
Doris	July 27	An orange cerise pink.
Daffodil McDonald Novelty	" 26	Cream.

SWEET PEAS—*Concluded*

Name of varieties	Date in bloom	Color
Hawlmark Pink Improved	" 27	A rich bright rose pink deeply flushed shaded salmon.
Jack Cornwell, V.C.	" 27	A deep navy blue.
King Mauve	" 27	A giant rosy mauve.
Mammoth Scarlet	Aug. 4	Infused burnished gold.
Powerscourt	July 27	A waved lavender.
Royal Purple	Aug. 2	A fine rich purple.
Royal Scott	July 27	A brilliant cerise scarlet.
Splendour	" 29	A fine red maroon.
W. J. Unwin	Aug. 2	A salmon pink on a cream ground.
Wembley	July 27	A fine shade of lavender.
Seed from Robt. Sydenham Grandiflora types		
Dorothy Eckford	Aug. 2	White self.
Mrs. Collier	" 4	Primrose self.
Mrs. Walter Wright	July 30	Large rich rosy mauve.
Miss Willmott	" 30	Large salmon red.
Lady Crisel Hamilton	Aug. 3	Lavender self.
Helen Pierce	" 2	Marbled blue.
Prima Donna	July 28	Blush pink.
Queen Alexandra	Aug. 5	Scarlet.
Elfrida Pearson	" 2	Pink.
Waved Varieties		
Annie Ireland	Aug. 5	White edged terra-cotta pink.
Daisybud	July 28	Soft rose-pink.
Edrom Beauty	Aug. 6	Bright orange and rose.
Elfrida Pearson	" 5	Pale pink fringed salmon.
Florence Nightingale	" 2	Lavender self.
R. F. Felton	" 2	Lavender shaded amethyst.
John Ingman	July 29	Rich rose carmine.
King Mauve	" 29	Rich rosy mauve.
Maud Holmes	" 30	Crimson self.
The President	Aug. 4	Orange-scarlet.
White Spencer	July 27	Pure white self.
Warrior	" 27	Rich chocolate maroon.
Charity	July 30	Brilliant crimson self.
Elegence	Aug. 5	Soft pure silvery pink.
George Sawyer	July 3	Large salmon-orange and pink.
Hawlmark Lavender	" 31	Pure lavender self.
Hawlmark Pink	" 30	Rich bright rose-pink.
King White	" 30	Large and best white.
Mrs. Tom Jones	" 27	Medium blue.
Mrs. A. Hitchcock	" 30	Pale pink flushed salmon.
Matchell	" 30	Deep cream self.
Rosabelle	Aug. 2	Rose self.
Royal Scot	July 28	Bright scarlet sunproof.
Royal Purple	Aug. 5	Deep purple.

SEED FROM THE EXPERIMENTAL STATION, SAANICHTON, B.C.

Picture	July 30	Pink.
Bridesmaid	" 24	Pink.
Colne Valley	" 26	Lavender blue.
Commander Godsal	Aug. 2	Navy.
Glory	" 2	Salmon.
Conquest	July 30	Navy
Caress	Aug. 2	White.
Dobbie Orchid	July 30	Purple.
Austin Fredrick Improved	" 30	Lavender.
Bunty	" 30	Scarlet and purple.
Valentine	" 30	Cream.
Le Mahdi	" 30	Navy.
Giant White	Aug. 2	White.
Felton Cream	July 26	Cream.
Annie Bownass	" 30	Pink.
Gloriosa	" 30	Deep red.
Mascotts Helio	" 31	Helio.

PERENNIALS AND BULBS

With the addition of new varieties to the perennial border from time to time, there is now a very fair collection.

Owing to the unfavourable weather conditions of the early spring when there was a lack of moisture causing much slower growth, the dates of coming into bloom of many of the varieties were somewhat later than usual. However, a very good showing was made during the midsummer. The peonies made a wonderful showing this season.

The Iceland poppies were in bloom May 17, and from this date and at very frequent intervals, other varieties came into bloom. The following were a few of the varieties that did bloom, and can be recommended for this north land: Aquilegia, Achillea, Arabis, Dianthus, Delphinium, Daisy Shasta, Fraxinella Dictamnus various colours. Lychnis, Phlox, Dicentra (Bleeding Hearts) Hesperis, Pansies, Hollyhock, Iceland Poppies, Sweet William, Papaver, Gaillardia, Dahlias, Cannas, Gladioli, and lilies.

With a small amount of labour, such a border can be made very attractive.

ORNAMENTAL TREES AND SHRUBS

The ornamental trees and shrubs continue to make very favourable growth. and many have reached a fair size and a good height. The different varieties of Caraganas came into bloom between May 30 and June 4. The first lilacs came into bloom on June 3, the later varieties a few days later. Lonicera alpina was in bloom June 8, while the other varieties of Lonicera did not come into bloom until June 12. The different varieties of Spiraea were in bloom by May 27 and the other flowering shrubs came into bloom by June 15.

The only varieties of roses to bloom this season were the different strains of Rosa Rugosa, the single dark red July 3rd and the double dark red and the double pink, on July 6. These strains of roses are the only varieties that have as yet proved sufficiently hardy to withstand the northern winters.

THE SMALL FRUIT PLANTATION

With the exception of the older plantation of the different varieties of currants, very little winter killing was noticed. This older plantation still continues to produce a fair amount of fruit. The past season was very favourable for the development of fruit on all the different varieties of currants in the newer plantation, and a very good crop was picked. The berries were large and of good quality.

The total amount picked from the twenty-seven bushes of black currants was 151 pounds, Ontario O-1631 again gave the highest yield, with Topsy O-1630 a close second.

BLACK CURRANTS

Variety		Yield
		pounds
Ontario O—1631	3 bushes	22
Topsy O—1630	3 "	20
Kerry O—1628	3 "	19
Magnus O—1627	3 "	18
Eclipse O—1629	3 "	16
Beauty O—1624	3 "	15
Saunders O—1633	3 "	14
Eagle O—1626	3 "	14
Buddenborg O—1637	3 "	13

The yield obtained from the twelve bushes of red currants was very satisfactory. The fruit was very large and of excellent quality.

RED CURRANTS

Variety		Yield
		pounds
Red Grape O—1650	3 bushes	21
Second Best Red Dutch O—1641	3 "	19
Knight Large O—1639	3 "	17
Holland O—1649	3 "	14

WHITE CURRANTS

Variety		Yield
		pounds
Climax White O—1659	3 bushes	17
White Cherry O—1638	3 "	15

Very little trouble was experienced this season with the leaf aphis. The currant fruit worms did not cause any trouble.

STRAWBERRIES

There was a very light snowfall during the winter of 1925-26, and the snow was very often turned into water by the very frequent chinook winds. These conditions with the severe freezing which invariably follows these warm spells, were very severe on the plants even though they were protected by a fair covering of mulch. As this water is turned into ice, it generally freezes the mulching to the ground which greatly prolongs the thawing period in the spring. As the mulching was removed the winter-killing was very much in evidence, fully fifty per cent of the plants being killed. The growth of the balance being very slow in getting started, the percentage of runners thrown out by these plants was very low, and it was quite late in the season before any ripe fruit was ready for picking. While some fair specimens of the different varieties were picked, the total yield was very low.

RASPBERRIES

A small plantation of a number of new varieties of raspberries was planted out during the late spring of 1925. The plants made but slow growth that season. The evidence of winter-killing was very noticeable this spring, when the canes were thinned out. The remaining plants made more vigorous growth this season, and fair results may be expected from this plantation another year. The small amount of fruit that was picked from these bushes was of a fair size, and the quality very good.

GOOSEBERRIES

Very little success can be reported from the gooseberry plantation this season. The evidence of winter-killing on these plants was very noticeable this spring, so much so, that the few choice plants of the following varieties, Downing, Houghton, Red Jacket, and Mabel, which were planted in the spring of 1925, were completely killed out. Considerable care and attention was given these plants during the season of 1925 to promote growth, but to no avail. A few bushes in the older plantation still survive, and despite the care and attention given them, they are invariably killed back to the ground each winter. The only variety to produce any fruit this season was one bush of Pale Red O-1208, from which some moderate sized fruit was picked.

APPLES

The collection of young apple trees suffered but slightly from the severity of the winter of 1925-26, with only the very extreme tips being killed back. The growth of the majority of these trees this season was very good, more especially the three in the group O-1007, these being the crabs. One out of this group produced three very fine specimens of fully matured fruit which were picked on September 25.

CEREALS

The spring of 1926 opened earlier than for a number of seasons. Much of the winter's snow had thawed by the end of March, leaving but very little moisture in the soil. Work on the land was possible on April 19, when ploughing commenced, the first wheat being sown on the 22nd.

Germination of the seed was slow, as grain sown on April 22 was not visible above the ground until May 7. This fact together with the very limited amount of rain during the three principal growing months of the season retarded greatly the growth of all crops, and straw of all cereals was much shorter than usual.

With the very unfavourable weather conditions of the autumn, with its frequent rains and much snow, the harvest operations were extended over a longer period than usual, and threshing extended well into October.

TESTS OF SPRING WHEATS

Wheat seeding commenced on April 22, but was not completed until May 12, as some of the newer varieties did not come to hand until the first mail in May.

The wheats were sown on land on which field corn had been grown the previous season. The seed was sown at the rate of two bushels per acre, in plots of one-fortieth of an acre.

The results obtained are given in the following table:—

TEST OF VARIETIES—SPRING WHEAT

Varieties	Number of days maturing	Average height	Strength of straw on a scale of 10 points	Yield per acre	
		ins.		bush.	lbs.
Red Fife O—17	102	39	10	54	40
Early Triumph O—78	103	34	10	54	0
Bishop O—8	108	35	10	52	0
Kota	110	42	10	50	0
Huron	111	31	10	48	0
Marquis O—15	111	33	10	47	20
Kitchener	115	36	10	46	40
Red Bobs	107	29	10	46	0
Kubanka	117	34	10	44	40
Reward O—928	104	33	10	43	20
Marquis	111	36	10	41	20
Garnet	107	34	10	40	40
Ruby	103	35	10	38	40
Club	111	31	10	35	20
Prelude	100	33	10	34	0

The following six varieties of wheat were sown at the request of Dr. R. Newton, of the University of Alberta, in connection with a study being conducted by him *re* the influence of environment upon quality. The seed was sown at the rate of two bushels per acre, in plots of one-fortieth of an acre in size.

A 6-pound sample from each plot harvested was forwarded to Dr. Newton later.

The field results obtained from the different varieties in this test are presented in the following table:—

Varieties	Average number of days	Average height	Strength of straw on a scale of 10 points	Yield per acre	
		ins.		bush.	lbs.
Red Fife	110	36	10	52	40
Kubanka	117	41	10	51	20
Renfrew	119	36	10	50	20
Huron	114	58	10	49	20
Marquis	114	36	10	48	40
Ruby	107	38	10	40	0

It will be noticed that the number of days between the dates of seeding and the dates of maturity of all varieties of wheats were much greater than usual. This was due to the many light showers of rain in the late summer, which gave the plants a new impulse to make further growth. In many of the later varieties a second growth sprang up, which caused a prolonged ripening period.

TEST OF VARIETIES OF OATS

Nine varieties were sown in uniform plots of one-sixtieth of an acre each, on April 28 and 29. The rate of seeding was from two to three bushels per acre, according to the varieties and size of seed used. All varieties were sown on land on which garden corn had grown the previous season.

With the frequent cultivation given during the previous season a fair percentage of moisture had been conserved, so that by seeding early in the spring the germination of the seed was timely and the growth throughout the season good.

A heavy yield both of grain and straw was harvested from all the varieties. A number of early varieties were ripe and cut during the latter part of July, while the heavier and later varieties were ready for cutting by August 7. Although the grain was perfectly ripe when cut, the straw was very bulky and slightly on the green side, which accounts somewhat for the heavy yield obtained.

The results obtained are presented in the following tables:—

TEST OF VARIETIES—OATS

Varieties	Average number of days maturing	Average height inches	Strength of straw on a scale of 10 points	Yield per acre	
				bush.	lbs.
Leader	102	48	8	114	24
Gold Rain	100	51	6	111	6
Banner O—49	100	44	8	109	14
Victory	102	44	7	107	22
Laurel O—477	97	40	9	98	28
Liberty O—80	97	44	9	95	0
Eighty Day	85	36	10	93	18
Daubeney	93	35	10	91	26
Alaska	87	36	10	88	8

YIELD OF STRAW PER ACRE

	Tons	Lbs.
Leader	4	1,600
Gold Rain	4	1,480
Banner O-40	4	1,360
Victory	4	1,300
Laurel O-477	4	820
Liberty O-80	4	700
Daubeney	4	340
Eighty Day	4	160
Alaska	4	100

TEST OF VARIETIES OF BARLEY

Fourteen varieties were tested this season. With the exception of Albert, Success, Black and Gold, all varieties were sown on land that grew a crop of field corn the previous season. The Albert, Success, and Black barley were sown on land on which a sunflower crop had been grown the previous season. The varieties Bearer and Gold were sown on sod breaking.

A much better growth was obtained on the corn land than on the sunflower land.

The different varieties were sown on the 6th and 7th of May on uniform test plots of one-fortieth of an acre.

While the yield of straw was quite heavy, the yield of grain of some of the varieties was greatly cut down by sparrows just previous to maturity.

The results obtained are presented in the following table:—

TEST OF VARIETIES—BARLEY

Varieties six-rowed	Average number of days maturing	Average height	Strength of straw on a scale of 10 points	Yield per acre	
		ins.		bush.	lbs.
Bark	100	35	10	73	16
Hulless White	94	23	10	80	10
Manchurian	93	44	10	78	16
O.A.C. 2	90	40	10	74	40
Chinese O—6	88	34	10	74	28
Success	92	36	10	70	32
Albert O-54	85	33	10	66	32
Black Six-rowed	93	26	10	56	32
Varieties Two-rowed					
Duckbill	98	47	9	80	0
Charlottetown C—80	94	36	10	68	16
Alberta Beardless	94	48	8	62	24

The following table gives the yield of straw of the different varieties of barley:—

Varieties	Tons	Lbs.
Alberta Beardless	3	80
Bark	3	...
Duckbill	2	1,680
Hulless White	2	1,600
Manchurian	2	1,520
Charlottetown C-80	2	1,480
Chinese	2	1,400
O.A.C.-21	2	1,120
Albert C-54	2	600
Black Barley	2	200
Success	2	120

TEST OF VARIETIES OF FIELD PEAS

Nine varieties of field peas were sown in duplicate plots but only four varieties gave comparable results. The duplicate plots each occupied one-sixtieth of an acre and were sown on May 6. The first plots were one-fortieth of an acre in size and were sown on April 24. The rate of seeding was from two to two and one-half bushels, according to the size of the seed of the different varieties.

With the ruinous weather conditions of the autumn, it was with great difficulty that any of the pea crop was saved.

The results obtained from the varieties saved are presented in the following table:—

TEST OV VARIETIES—FIELD PEAS

Varieties	Average number of days maturing	Average length of vines	Yield per acre	
		Inch.	bush.	lbs.
Chancellor O—26	106	66	40	00
Golden Vine, Sask. 625	104	44	38	40
Prussian Blue	109	50	38	00
Empire	109	40	34	00

It will be noticed that the growing season this year was much longer than usual. While the vines may have been slightly shorter than usual, they were very heavily laden with pods of normal length.

The yield of straw per acre from the above varieties is as follows:—

Varieties	Tons	Lbs.
Chancellor O-26	2	1,280
Prussian Blue	2	1,160
Empire	2	1,140
Early White Saskatchewan	2	1,120

SPELTZ

One variety of Speltz was grown this season. The seed was sown on May 6, the plot being one-fortieth of an acre in size. The germination of the seed was 100 per cent, and as dry conditions do not seem to effect its growth seriously, it reached a height of forty three inches. It also seems to be little effected by the late spring frosts, while its very thick husk seems to enable it to withstand a greater degree of autumn frost than any other variety of cereal. Considerable frost occurred before the plot was cut on August 23.

The straw harvested from this plot was at the rate of 4,760 pounds per acre, while the grain yielded at the rate of 5.4 bushels per acre. The crop matured in 100 days and produced a very strong straw.

TEST OF VARIETIES OF SPRING RYE

Two varieties of spring rye were under test this season. These plots were situated on the corn land, with similar preparations as given the other cereals. The plot was sown on May 7, and seeded at the rate of one and one-half bushels per acre.

While the early part of the season was comparatively dry, this variety of cereal seemed to be able to thrive under those conditions and produce a fair crop.

The date of cutting the two varieties was August 13 for the Common, and August 17 for the Select 0-12.

The following are the yields obtained for the straw and grain:—

SPRING RYE—YIELD OF STRAW

Select O—12	4,200 lbs. per acre.
Common	5,000 " "

TEST OF VARIETIES—SPRING RYE

Varieties	Average number of days maturing	Average height	Strength of straw on a scale of 10 points	Yield per acre	
		ins.		bush.	lbs.
Common	99	49	10	47	47
Select O—12	103	54	10	34	16

Owing to a considerable delay through unfavourable weather conditions, these plots were not threshed out until October 5.

TEST OF VARIETIES OF FLAX

Three varieties of flax were again tested this season. The plots were sown on May 7 for North Dakota and Premost, the fibre flax was sown on the 8th. The rate of seeding for each variety was forty-two pounds ($\frac{3}{4}$ bushel) per acre. The size of the plots being one-fortieth of an acre for North Dakota and Premost, and one-sixtieth of an acre for fibre flax.

These plots were slightly checked by the June frosts, and the growth was rather slow until the rains of the late summers. With these rains the plants took on a new lease of life, and many new blossoms were appearing on August 16, when the first plot was cut. The results obtained are given in the following table:—

TEST OF VARIETIES—FLAX

Varieties	Average number of days maturing	Average height	Strength of straw on a scale of 10 points	Yield per acre	
		ins.		bush.	lbs.
North Dakota					
Wilt Resistant No. 52	103	26	10	29	16
Premost No. 25	102	27	10	27	48
Fibre flax	112	29	10	20	20

TEST OF VARIETIES OF BUCKWHEAT

Two varieties of buckwheat were sown on May 12th, in uniform test plots of one-sixtieth of an acre. The seed was sown at the rate of one bushel per acre, on land that had been summerfallowed the previous season. The ger-

mination of the seed was timely and a good stand was obtained but this was cut down by the quite severe frosts which occurred on two occasions in June. After the plants had recovered from the effects of these frosts, a good growth was made until the occurrence of further frost in the early part of August, and by still later frosts and other unfavourable conditions. The final results obtained are presented in the following table:—

TEST OF VARIETIES—BUCKWHEAT

Varieties	Average number of days maturing	Average height	Strength of straw on a scale of 10 points	Yield per acre
		ins.		bush. lbs.
Japanese	95	44	10	22 24
Silverhull	95	44	10	17 24

WINTER GRAINS

In the fall of 1925 five varieties or strains of winter rye, and two varieties of winter wheat were sown in duplicate plots of one-sixtieth of an acre. The plots were seeded on August 8, on land that had been summerfallowed that same season, and kept thoroughly cultivated from the time it was ploughed in June until seeded. The germination of the seed was good, and good growth was made during the balance of the autumn. The frequent thawing of the snow, however, had the effect of badly winter-killing the crop so this was ploughed up, and the land sown to other crops.

While a large percentage of a field of six acres, sown on August 15 was winter-killed, the surviving plants were left to grow, but when harvested and threshed a yield of only seventeen bushels per acre was realized. The varieties of winter wheat sown were: Kharkow and O.A.C. 104. The varieties of fall rye sown were as follows: Rosen, North Dakota 959, Saskatoon, Mammoth White and Common. The same varieties of wheat and rye were again seeded in one-sixtieth of an acre plots on August 9, 1926.

FORAGE CROPS

With the comparatively dry conditions prevailing during the past year forage crops did not do as well as usual. Limited snowfall and thaws during the winter of 1925-1926 left the ground bare in many places and caused a large amount of winter killing with grasses, clovers, and alfalfa. Spring sown crops were adversely affected by continued dry weather during the spring and the early summer and it was not until July with its frequent showers that favourable growth was made. Roots and the second cutting of alfalfa responded well to these late rains.

ENSILAGE CROPS

CORN

Eleven varieties of ensilage corn were sown May 13 in one-thirtieth-acre plots. To allow for maximum horse cultivation seeding was done with rows 4 feet apart, part of the seeding being done in hills and part in drills. Owing to very unfavourable weather germination was uniformly poor, resulting in thin

stands. A frost in June greatly retarded the growth of these crops; by July 15th many of the varieties had made a growth of but fourteen inches. The first frost occurred on August 5 and a severe frost on the 15th and growth was severely checked. Unfavourable weather following, and more frosts, caused considerable drying out of the crop before harvest, and fodder of a comparatively inferior quality. All varieties were cut September 11 and yields obtained as recorded in the following table. Weights were taken 24 hours after cutting.

TEST OF VARIETIES—ENSILAGE CORN

Variety	Source	Stand	Height inches	Maturity when cut	Yield per acre	
					Hills	Drills
		%			tons lb.	tons. lb.
Burr Leaming	G. S. Carter	100		Tasselled	12 1,200	12 150
"	"	100	55	Tasselled		
North Western Dent	Exp. Farm Brandon	100	46	Silked	11 1,340	
Longfellow	J. O. Duke	100	38	Tasselled	11 1,400	
"	"	100	48	Silked		17 800
Compton's Early	J. O. Duke	85	56	Tasselled	7 400	
"	"	85	54	Starting silk		12 1,080
North Western Dent	Dakota Imp. Seed Co.	65	45	Silked	6 1,020	
"	" "	75	58	Starting silk		12 840
Twitchell's Pride	Exp. Farm Fredericton	55		Tasselled	6 960	
"	" "	55	48	Tasselled		5 1,710
Leaming	J. O. Duke	60	36	Untasselled	5 1,220	
"	"	90	56	Untasselled		19 1,600
White Cap Yel. Dent	J. O. Duke	50	36	Tasselled	4 1,240	
North Western Dent	A. E. McKenzie	50	52	Tasselled	4 400	
"	"	50	40	Tasselled		6 1,710
Quebec 28	J. L. Tood	60	44	Silk	3 1,800	
"	"	60	38	Silk		6 ..
Wisconsin No. 7	J. O. Duke	50	44	Untasselled	3 1,800	
"	"	50	50	Untasselled		5 1,520
Golden Glow	J. O. Duke	50	40	Tasselled	3 1,200	
"	"	65	38	Tasselled		10 400

SUNFLOWERS

Four varieties of sunflowers were sown in 1/30 acre plots. Seeding was done in drills 3 feet apart and plants later thinned to 8 inches apart in the row. This crop was not affected as severely as corn by the unfavourable weather conditions and frosts. Harvested September 15, yields, for which weights were taken 24 hours after cutting were as follows:—

TEST OF VARIETIES—SUNFLOWERS

Variety	Source	Height	Maturity	Yield per acre
				tons lbs.
Mammoth Russian	K. McDonald & Sons	6′ 7″	10% in bloom	18 150
Giant Russian	Dakota Improved Seed Co	6′ 7″	15% "	17 1,940
Manchurian	A. E. McKenzie	6′ 4″	25% "	16 700
Ottawa 76	Grown at Fort Vermilion	4′ 10″	25% "	6 1,800

A one-thirtieth-acre plot of broad windsor beans was planted alongside the sunflowers. These were harvested September 16 at which time the stalks were 36 inches long and heavily laden with pods about 50 per cent mature. This area yielded at a rate of 8 tons 760 pounds green material per acre.

FIELD ROOTS

Root crops were grown on land which was in garden corn in 1925 following a crop of potatoes. Manure at 20 loads per acre was applied for the potatoes in 1924 there being no subsequent application of manure or commercial fertilizers before the root crop was sown. The land was in splendid tilth, good fertility and, moisture being present in the soil, roots did not suffer as severely from dry weather as other crops.

SWEDES

Eight varieties of swedes were sown May 10 in one-sixtieth-acre plots. Rows were 24 inches apart. Necessary thinning was done June 15 and all varieties harvested between September 9 and 17, as weather conditions permitted. The highest yield was obtained from Selected Westbury as indicated by the following records:—

TEST OF VARIETIES—SWEDES

Variety	Stand	Yield per acre	
	Per cent	Tons	lb.
Selected Westbury	95	24	480
Improved Yellow Swedish	95	23	1,400
Good Luck	90	22	1,600
Jumbo	90	22	1,000
Ditmars	90	21	600
Hartley's Bronze Top	90	20	800
Shepherd's Golden Globe	90	20	400
Bangholm	85	19	1,000

FALL TURNIPS

The yields from eight varieties of fall turnips tested in 1926 were as follows:—

TEST OF VARIETIES—FALL TURNIPS

Variety	Stand	Yield per acre	
	Per cent	Tons	lb.
Red Paragon	100	33	1,120
Early Six Weeks	100	31	400
Greystone	95	27	..
Hardy Green Round	90	26	1,760
Pomeranian White Globe	90	23	560
Green Top Yellow Aberdeen	85	21	1,320
White Globe	85	21	1,080
Aberdeen Purple Top	85	21	700

MANGELS

Mangels, grown under similar conditions to swedes and turnips, on similar land and harvested at approximately the same time produced the following yields:—

TEST OF VARIETIES—MANGELS

Variety	Stand	Yield per acre	
	Per cent	Tons	lb.
Large Yellow Globe	100	30	1,200
Royal Giant Sugar Beet	95	30	300
Giant Yellow Intermediate	95	29	1,400
Giant White Sugar	95	29	680
Mammoth Long Red	90	26	740
Giant Rose Sugar	90	24	600
Colden Fleshed Tankard	90	23	1,400
Danish Sludstrup	85	22	160
Cate Post	85	21	1,400

FIELD CARROTS

Field carrots were sown on similar land as the other roots. Seeding was done May 8, but seed failed to germinate. The land was reworked on May 30 and reseeded to the same varieties May 31. Yields, obtained from the six varieties tested, were as follows when all were harvested September 15.

TEST OF VARIETIES—FIELD CARROTS

Variety	Stand	Yield per acre	
	Per cent	Tons	lb.
Half Long White	90	21	600
Danish Champion	90	18	..
Yellow Belgian	85	16	400
Mammoth Intermediate	85	15	720
White Belgian	85	15	300
Long Orange	80	14	1,340

SUGAR BEETS

Nine lots of sugar beets were grown in test plots. Six were sown May 8 and thinned to 8 inches apart June 29; three varieties were sown May 26 and thinned July 7. One hundred per cent stands were obtained with the earliest seeding whilst the late seeding gave only 80 to 85 per cent of a perfect stand. When harvested the following yields were obtained, the first six listed being from May 8 seeding.

TEST OF VARIETIES—SUGAR BEETS

Variety	Yield per acre	
	Tons.	lb.
Vilmorin's Improved	19	1,600
Horning	18	1,800
Waterloo	18	720
Kitchener	18	600
Klein Wanzleben	18	120
Henning & Harving	17	560
Dippe	8	560
Schreiber & Sons	6	720
Horning	5	800

ANNUAL FODDERS

Annual fodder plants have received considerable attention at this Station and have as a rule given good returns. This season fleshy annuals gave excellent results and when fed during the late summer were greatly relished by all classes of stock.

FLESHY ANNUALS

Seven fleshy annuals were tested, being sown May 14 in duplicate one-sixtieth-acre plots. Land had been summer-fallowed in 1925 and received an application of fifteen wagon loads manure per acre just previous to ploughing. Owing to conservation of moisture due to very thorough working during the fallow year, and a natural low lying situation, the land for these tests was supplied with a good amount of moisture.

Seeding was done in drills 7 inches apart (approximately a broadcast seeding) and a very heavy growth obtained. Livestock demands necessitated feeding one set of plots during the summer, the duplicates were cut for record September 30 when some varieties had made the extraordinary growth of 49 inches.

When cut, weights were taken green and the results are presented in the following table:—

TEST OF VARIETIES—FLESHY ANNUALS

Variety	Height	Yield per acre	
	inches	Tons	Lb.
Improved 1,000 Headed Kale	46	29	1,820
Green Stem Marrow Kale	47	28	1,600
Curled Sheep Kale	41	28	1,400
1,000 Headed Kale	49	27	1,860
Improved Dwarf Essex Rape	44	25	220
Dwarf Essex Rape	42	24	1,680
Purple Stem Marrow Kale	42	24	960

MISCELLANEOUS ANNUALS FOR HAY

Annual hay crops serve a very useful place in supplying hay in one season or as catch crops where permanent hay crops have killed out. Millets, cereals and miscellaneous crops have been tested here with some very satisfactory results which are presented in the following tables.

TEST OF VARIETIES—ANNUALS FOR HAY

Crop	Height	Yield per acre	
	inches	Tons	Lb.
Kursk Millet	42	13	1,840
Common Millet	52	13	1,600
Golden Millet	37	12	1,800
Siberian Millet	47	12	600
Early Fortune Millet	48	12	..
Japanese Millet	35	11	1,380
Hungarian Millet	48	10	280
Sudan Grass	42	9	840
Kaffir Corn	28	4	400
Canary Grass	38	3	150

All the plots listed were sown May 15 with the exception of canary grass which was sown May 26. Seeding was done in drills 7 inches apart, except Kaffir corn where 10 inches was allowed between drills. The latter gave a poor stand, all others producing heavy stands and leafy hay. Cutting was done September 25 after much snow and frost had been experienced. The fodder was stooked up, not being drawn in until October 1, when it was still quite green. Weights were taken when the material was drawn in from the field. Most of this material was fed during the very late fall and helped out greatly to supplement and replace failed pastures.

Quarter acre plots of oats and peas were sown May 16 on land in corn the previous season. Seeding was done at 2 bushels oats and 1 bushel peas per acre. Two seedings were made which gave the following results when cut July 10.

—	Length of plants	Maturity	Yield per acre	
	inches		Tons	Lb.
Leader oats	24	Med. dough	3	400
Empire peas	28	"		
Banner oats	20	Early dough		
Empire peas	26	Med. dough	2	1,720

These crops consisted approximately of 75 per cent oats and 25 per cent peas.

Two varieties of peas were sown at 3 bushels per acre and gave the following yields on July 10:—

—	Length of plants	Stage of maturity	Yield per acre	
	inches		Tons	Lb.
Russian Blue Pea	36	Med. dough	5	840
Arthur Peas	30	Firm dough	5	240

A mixture of 3 bushels of Banner oats and 10 pounds Early 76 sunflowers was sown on land in excellent condition following summer-fallow. When cut Aug. 11 the oats were in firm dough stage, the sunflowers well in bloom. Sunflowers formed about 20 per cent of the crop when cut and owing to slender growth were readily eaten by stock without noticeable waste. The mixture of oats and sunflowers yielded 6 tons 760 pounds per acre.

HAY AND PASTURE CROPS

The percentage of winter-killing occurring in grass and clover plots left them in such condition that the majority were considered unfit for record purposes. These plots were ploughed, given frequent cultivation and put in shape for 1927 seeding.

Alfalfa withstood winter conditions much better than grasses and clovers, perhaps due to the heavier autumn growth which gave better winter protection than on other hay plots.

In 1923 a series of Grimm alfalfa plots were sown without a nurse crop which have given yearly excellent crops of hay. These plots were again cut in 1926 and yields per acre of cured hay obtained as shown in the following table:—

Method of seeding	1st cut		2nd cut		Total	
	Tons	Lb.	Tons	Lb.	Tons	Lb.
Drills 30" apart	3	270	3	945	6	1,215
Drills 36" apart	2	1,430	3	480	5	1,910
Drills 24" apart	2	890	2	1,940	5	830
Drills 6" apart	2	605	2	1,880	5	485
Broadcast	2	395	2	930	4	1,325

A few plots of grasses where winter killing did not exceed 15 per cent were also cut for record and gave the following yields:—

Variety	Yield cured hay per acre	
	Tons	Lbs.
Brome Grass	1	1,480
Western Rye	1	1,240
Timothy	1	1,000
Kentucky Blue	1	400
Red Top	1	40
Meadow Fescue	..	1,800

CEREALS CUT GREEN FOR HAY

Duplicate plots of the varieties of wheat included in the following table, were sown on April 27 and 28.

Grain was sown as a nurse crop with the different varieties and mixtures of grasses and clovers, and was cut as green feed.

Duplicate plots of oats, barley, spelt, and one variety of field peas were also sown and handled in the same way, so that no matured seed was obtained from any of the new varieties of cereals with the exception of the McKay field peas.

The yields of green feed obtained from these plots are given in the following tables:—

PLOTS CUT FOR GREEN FEED JUNE 21, 1926

(Plots one-sixtieth acre in size)

Varieties wheat and grasses	Yield per acre	
	Tons	lbs.
Prelude O—135 and grazers western rye	4	520
Bishop and meadow fescue grass	4	40
Ruby O—623 and brome grass	3	900
Marquis O—15 and western rye grass	3	180
Huron O—3 and Canadian blue grass	3	0
Kubanka and Kentucky blue grass	3	0
Red Bobs and tall oat grass	3	0
University 222 and timothy and western	3	0
Garnet and alsike clover	2	1,880
Kitchener and red clover	2	1,400
Reward and white dutch clover	2	1,280
Red Fife O—17 and timothy	2	500
Renfrew III and timothy and meadow fescue	2	1,100
Red Fife O—17 and timothy	2	500

In estimating the percentage of fodder produced it was considered that fully twenty-five per cent was weeds.

Varieties of oats and grasses	Yield per acre	
	tons	lbs.
Liberty O—480 with timothy and white dutch clover	7	400
Alaska with timothy and brome grass	6	1,200
Leader with timothy and Kentucky blue grass	6	780
Laurel O—477 with timothy and alsike clover	6	600
Eighty Day with timothy and red top grass	6	300
Victory with timothy and Canadian blue grass	6	000
Gold Rain with timothy and grazers western rye grass	6	0
Daubeney with timothy and red clover	5	1,580
Banner O—49 with timothy and brome grass	4	1,180

Varieties of barley and grasses	Yield per acre	
	tons	lbs.
Hulless White with teff grass	4	580
Manchurian O—50 with Boons timothy	4	520
Black Barley with red top grass	4	400
Charlottetown O—80 with tall oat grass	3	1,320
O-A-C 21 with commercial timothy	3	1,200
Chinese O-60 with orchard grass	3	900
Alberta Beardless with Kentucky blue grass	3	120
Duckbill with Italino rye grass	2	800
Albert O—54 with awnless brome	2	440
Success with medium late Sweden red top	1	1,540

FORT SMITH, N.W.T.

The spring of 1926 opened up rather early and weather conditions appeared quite favourable and promising. The snow disappeared in April, and work on the land was started. Toward the end of May the weather turned quite cool and remained so until the end of the summer. During the growing season there was a fair amount of precipitation, but high, northerly winds seriously retarded the growth of all crops. Beets, rutabagas, and lettuce were practically a failure, while carrots, peas, and cabbage gave only a poor yield. Early in August severe frosts were experienced, and as a result, the potatoes which were still in bloom, were frozen and the yield was decidedly poor. The wheat, which was still in the milk stage, was so badly frozen as to be not worth milling; consequently it was cut for feed. At St. Bruno's farm, situated some twenty miles distant from Fort Smith, the wheat, although badly damaged by the frost, was not harvested until it had reached maturity. Three hundred and seventy-five bushels were obtained from 85 bushels sown, but the quality of the grain was exceedingly poor. It is interesting to note that cereals sown in the first days of May, when the ground was cold, withstood the frost better than those which were sown two weeks later when the weather was much warmer.

The hay crop was quite satisfactory and some 260 tons, of excellent quality, were harvested from the natural meadows.

During the year 20 head of cattle were shipped from the sub-station to the various missions located along the shores of the MacKenzie river, as far north as the Arctic coast. Thirty-eight steers, thirty cows, and thirty-two calves are being wintered in the stables.

The shorthorn bull supplied by the Department and shipped from Edmonton, is not yet acclimatized and does not appear to be as well adapted to the severe climatic conditions as the Hereford bull which was imported from the Peace River district.

FORT RESOLUTION, N.W.T.

A thaw which set in about the middle of April and lasted until the 25th of the month cleared the fields and gardens of snow, and the soil received the benefit of the first spring warmth. Advantage was taken of this favourable period and farming operations were begun. In late April and early May there was a lowering of the temperature, and a light snowfall. This was followed by a warm spell from May 5 to 10 when the land was ploughed in preparation for seeding. A period of splendid weather in June which raised bright hopes, unfortunately was attended by cold winds, resulting in the failure of several seedings. The summer temperature was inclined towards coolness, in fact during the months of August and September the nights were quite cold and the potato crop was badly frozen. In general the results obtained during the past season were not very satisfactory.

CEREALS AND FORAGE CROPS

Garnet wheat was sown about the 20th of May on some of the best land on the Station, and was not harvested until October. It produced firm kernels which were ripe enough to be used as seed.

Banner oats which were sown at the same time as the wheat, and on similar land, yielded five tons of good hay, and the balance of the crop was left standing to ripen.

Western rye, brome grass, red top, and timothy, yielded very poorly, while millet, clover and alfalfa were a complete failure. These poor results were due largely to the lack of warmth in the subsoil in the meadows as well as to the cool summer weather. Several additional years of deep ploughing will be required in order to put the surface and subsoil in shape.

VEGETABLES AND FLOWERS

Cabbage, cauliflower, onions, tomatoes, radish, and lettuce were sown in hotbeds during the last week in April and were transplanted to the open ground during the latter part of May and the early part of June. Carrots, beets, peas, corn and beans were sown outside on May 12. Cold winds were responsible for the failure of several seedings, particularly carrots, with the result that the final seedings were quite late and the plants did not have time to develop. The potato crop was badly frosted at blooming time; the 150 bushels planted yielded barely 200 bushels. The main causes of this poor crop were the frost in August and the poor condition of the soil which, bearing potatoes for the first time, was insufficiently prepared for such a crop.

Chantenay carrots, which had to be sown a second time, did not attain their usual size, but ten bags of them were harvested. Pickanniny corn did not mature, although the kernels were well formed. Cabbage did fairly well, some of the heads weighing from ten to fifteen pounds each. The yield of beets was fair, but all varieties of beans failed, having suffered much from the cold spell in August. Peas, being earlier than beans, did somewhat better, but tomatoes failed to ripen.

All varieties of flowers tested were a decided success. These include double chrysanthemums, white and yellow, daisies, poppies, lavateras, and white, red and violet marguerites, all of which were in bloom during July, August and the greater part of September.

FORT PROVIDENCE, N.W.T.

The past season, on the whole, was a fairly favourable one, and production was about average. Wheat and oats were sown on May 12, and potatoes between May 20 and 25. Garden crops were planted early in May, but their initial development was somewhat retarded by drought.

From three pounds of spring wheat sown, a yield of 110 pounds of grain was obtained, which, however, was slightly injured by frost in August.

A three-acre field of oats yielded seventy-five bags of grain of very good quality.

The potato crop yielded slightly below the average, 450 bags being obtained from four acres.

Carrots, parsnips, and beets yielded moderately well, but swede turnips and cabbage did very well indeed. The cabbage seed used is usually sown in boxes which are kept in a warm place until the end of April. The young plants are then transplanted. Small quantities of radishes, lettuce, peas, and beans also were grown. Corn was a very promising crop until it was completely frozen on September 17.

There is an abundance of fairly good quality hay in the natural meadows, but these are situated a considerable distance from the Fort and transportation is a very difficult problem. Some 60 tons of hay were harvested this year.

It is generally necessary to house the cattle from October until the end of April. There are twenty-three head on hand at time of writing, and six others were killed during the year.

The flock of poultry is increasing, but unfortunately accommodation and equipment are limited. Another handicap is the fact that grain for feed has to be shipped in from a considerable distance, and is, therefore, very expensive. The 160 hens on hand produced an average of 110.7 eggs per bird. Three hundred chickens were raised during the summer and furnished 619 pounds of meat.

SALMON ARM, B.C.

Variety tests with tree fruits constitute the principal line of work at this Substation. The soil in the orchards on the bench lands, however, is lacking in humus and nitrogen. With a view to remedying this condition soy beans are sown between the rows of trees and the green crop is ploughed under. The Oxheart carrot yields very well in this district, but almost invariably cracks to the core, reducing its keeping qualities. To overcome this the Oxheart has been crossed with the improved short white carrot, and it is hoped to produce a strain that will give a good yield and be free from cracks.

BETSIAMITES

Although more favourable to agriculture than previous years, it cannot be said that weather conditions during the year 1926 were ideal. Very little snow fell up to the end of March, consequently the ground froze to a fair depth. The spring was late and cool with an excessive precipitation, and the ground remained cold until towards the end of May, delaying seeding operations. Violent south-westerly winds prevailed throughout the summer, accompanied frequently by cold rains, which kept the soil too moist for the crops, especially garden produce.

FORAGE CROPS

In spite of the unfavourable weather conditions, forage crops gave fairly good yields. Timothy seems to thrive the best, and this year a yield of 1½ tons per acre was obtained.

Red clover, although fairly hardy in this locality, has never been a real success. The stand is usually thin and lacks vigour.

White clover, on the contrary, makes a fair growth and yields good results.

CEREALS

On account of the frequent spring rains and persistent cold weather, the germination of grain was very slow. However, by the end of July the grain crops looked quite promising, and hopes of a very good yield were entertained. Unfortunately, the cold became more intense in August and several heavy frosts occurred and all hopes of a ripe grain crop vanished. Wheat did not have a chance, but oats and barley were very well headed out, and made excellent forage.

GARDEN CROPS

Radishes, turnips, carrots, and parsnips did splendidly, fine specimens of each kind being obtained. Cabbages also did fairly well.

On the whole the past year was more encouraging than previous years. The land, having been neglected for a long period of years, is in a very impoverished condition, and is infested with weeds. An effort is being made to correct this condition by ploughing under green crops. This was done in July this year.

OTTAWA: Printed by F. A. ACLAND, Printer to the King's Most Excellent *Majesty*, 1927.