DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

DOMINION EXPERIMENTAL FARMS

EXPERIMENTAL SUBSTATIONS

FORT VERMILION, ALTA.

FORT GOOD HOPE, N.W.T. FORT RESOLUTION, N.W.T.

FORT SMITH, N.W.T. FORT PROVIDENCE, N.W.T.

BETSIAMITES, QUE.

REPORT OF THE EXPERIMENTALISTS IN CHARGE

FOR THE YEAR 1930

Published by authority of the Hon. Robert Weir, Minister of Agriculture, Ottawa, 1931

TABLE OF CONTENTS

	PAGE
Fort Vermilion	3
The season	3
Horticulture	6
Cereals	32
Forage crops	38
Fibre crops	47
Fort Good Hope	47
Fort Resolution	48
Fort Smith	49
Fort Providence	49
Betsiamites	50

FORT VERMILION, ALBERTA

REPORT OF THE SUPERINTENDENT, ROBERT JONES

SEASONAL NOTES

For this Northland the winter of 1929-30 was not unusually cold or severe. Only on nine occasions during the month of November, 1929, did the temperature drop below the zero mark. The lowest temperature, —20, was recorded on the 20th, and 4½ inches of snow fell during the month.

December was on the whole a comparatively mild month, the temperature was below zero on twenty-six days. The coldest day of the month occurred on the 10th when it was 51·5 below zero. Four and one-half inches was the total snowfall for the month, making a total of nine inches of snow on the level at the end of the month. This amount afforded fair protection for the grass, clover and alfalfa plots, as well as for the fall-sown cereal crops.

While January was even much milder than the previous month, the temperature was below zero on twenty-five days, the lowest recorded was —39·0 on the 2nd and again on the 15th. Only 2 inches of snow fell during the month, making 11 inches of snow on the ground at the end of the month. This extra snow added further protection for the grasses and other crops.

February was the coldest month of the winter, it was well below zero on twenty-five days. The lowest temperature occurred on the 13th when it was —54·0. Eleven and one-half inches of snow fell on eight different occasions, making a total of 22¼ inches of snow on the ground at the end of the month.

The month of March was comparatively cold. Zero weather continued until the 22nd, and the coldest day was on the 1st when the temperature was —39·0. Snow fell on only 2 occasions, on the 4th and the 10th, amounting to 3½ inches. By that date there was 25¾ inches of snow on the ground. From the 22nd to the end of the month it was sufficiently mild to start the snow to thaw, and by the end of the month there was only 12 inches of snow remaining. Only on three days was it overcast.

April was moderately mild. No snow fell during the month, and all the remaining snow from March had disappeared by the 19th. The first ducks were seen on the 3rd and geese on the 7th, and many other migratory birds by the 15th. The ice in the Peace river moved out on the 24th, and the first vegetable and flower seeds were sown in the hot-beds on the 24th. The first sowing of the early varieties of vegetables took place in the open ground on the 29th. From the 22nd to the end of the month ideal weather conditions prevailed, with comparatively high temperatures both maximum and minimum, which conditions soon put the land into fine shape to start general farming operations, as on the 30th one-half acre of Rochester Rose and one-sixtieth acre of Snow Flake potatoes were planted, as well as a number of plots of cereals. The planting of these crops on these dates was considered most extraordinarily early for this northern district.

May was an extraordinarily fine month with little or no interruption of the work after the 5th. All farm operations proceeded quite favourably and seeding was quite general throughout the district by the 6th. Early sown vegetables, lettuce and radish, were fit for table use on the 30th.

The moisture from the winter's snow was sufficient for fairly rapid germination of all crops, and the added 0·66 of an inch of rain that fell during

the month stimulated good growth. The last spring frost occurred on the 22nd when the temperature was 21·5. This frost, however, did not cause any great material damage.

June was an ideal month, with its long hours of sunshine and moderately high temperatures both maximum and minimum, the maximum temperature reaching 85·0 on many occasions with an unusually high minimum temperature throughout the month, and with a bountiful rainfall of 3·32 inches which fell on ten different occasions. With these ideal conditions all crops made wonderful growth. By the 28th many varieties of wheat had reached the height of 30 inches, with the other cereals in like proportion. Wheat, oats and barley were fully headed out by the 25th.

All varieties of early seeded vegetables were fit for table use by the end of June. The transplanting of the vegetables and tender flowers from the hot-beds was commenced on the 3rd and continued until the last of the flowers were set out on the 9th. Many of the hardier varieties of flowers that had been sown direct to the open ground during early May were in full bloom by the 12th. Cutworms, wire worms and insect pests were much in evidence this season, causing much damage, which greatly reduced the yields of the vegetables and root crops. No frost was recorded during the month of June.

A new series of grass, clover and alfalfa plots was sown on the 10th and with the rain that followed on the 12th, the germination of the seed was quite timely, and the growth throughout the season of these plots was excellent.

The month of July was extremely hot and dry, the total rain-fall being 0·82 of an inch which fell on seven different occasions in very light showers. The highest maximum temperature was 91·7 and 91·0 on the 13th and 30th respectively and ranging well into the eighties during the balance of the month. A very hot west wind prevailed from the 10th to the 15th which caused a slight pre-maturity of some of the earlier cereal crops, and also prevented the full development of the heads of the later varieties which tended to lower the yields. Had it not been for the timely rain-fall of 0·20 of an inch on the 21st the conditions of the cereal crops might have been grave. While this unusual heat affected the cereal crops, it was ideal for the corn and other heat-loving plants. Haying commenced on the 10th and the yields were well up to the average. April-planted potatoes were fit for table use on the 14th and were of a medium size at that date. The first oats were cut on the 28th and barley on the 31st, and a very excellent crop of field peas was harvested on the 29th.

August was also exceptionally warm with the maximum temperature ranging from 84·5 to well into the seventies, but the growing conditions were greatly improved by the timely rainfall of 1·18 inches which fell on seven different occasions quite equally distributed throughout the month. These rains were of great benefit to the late-sown fodder crops, sunflowers and roots.

The earliest variety of garden corn was fit for table use on the 16th, and the cobs at that date were well developed. The harvesting of the oats and barley was in full swing at the Station by the 5th, and of wheat on the 9th. Harvest was general throughout the district by the 15th. The cutting of all cereal crops at the Station and throughout the district was completed by the end of the month, and at that time the experimental plot threshing was well under way.

No frost was recorded during August, and the flowers bloomed most profusely throughout the month.

The first autumn frost occurred on the 2nd day of September when three degrees of frost were recorded. The first real killing frost did not occur until the 19th, on which morning 9 degrees were recorded. The balance of the month was comparatively mild. Field threshing throughout the district commenced on the 3rd, and the potato and field root crops and garden vege-

tables were harvested during the latter part of the month. The field roots and garden vegetables were slightly below the average in yields, but of an excellent quality. The potato crop was good. The total precipitation for the month was 1·68 inches which was of great assistance to our fall ploughing, as the land had become comparatively dry.

This season had a growing frost-free period of 102 days, and the total precipitation for this period, May 1 to August 31, was 5·98 inches. With the exception of the slight damage done by the worms and insect pests and the prematurity of some of the early cereal crops, the summer of 1930 should go on record as being one of the longest, finest and warmest summers that this Lower Peace River District has experienced for many years or perhaps in the history of this Station. With the precipitation for June much above the average and July with its prevailing southwest and westerly winds resulting in a long period of warm, sunny days which gave abnormal stimulus to all vegetation and crops, corn grew and ripened to a remarkable extent, and sweet corn which usually attains only a small size at this Station grew to a size and quality equal to that grown in the southern part of this province. Tomatoes grew and ripened out of doors, while the cucumbers, citron, marrows and squash beds were amazingly prolific, as this season's reports go to show.

While October was fine in regard to sunshine and light rainfall, it was unusually cold, as quite severe frosts occurred each night during the month, and often as much as 25 degrees of frost was recorded.

Good progress was made with the experimental threshing as was also the case throughout the district. As there was only 0·52 of an inch of rain recorded for the whole month, the severe freezing of the land somewhat earlier than usual shortened the fall ploughing period, and while the experimental ploughing was fully completed, not more than one-third of the fall ploughing was accomplished in the district on account of the early freeze-up.

While November to date has been quite cold, in other respects it has been quite pleasant, with bright sunshine and freedom from wind. On seven occasions to date the temperature has dropped to below zero, and on the 14th —24·5 was recorded. The first snowfall blanketed the landscape on the 12th, and at this date there is two inches of snow on the ground. This small amount will afford some slight protection for the newly seeded grass plots.

METEOROLOGICAL RECORDS FROM THE FORT VERMILION EXPERIMENTAL STATION

(From October 1st, 1929, to September 30th, 1930)

Month	Maximum temperature			Minimum temperature			Rainfall	Snowfall	Total precipitation	Total hours of sunshine
	Highest	Date	Mean	Lowest	Date	Mean				
	°F.	°F.	°F.	°F.	°F.	°F.	in.	in.	in.	
October.....1929	75·0	2nd	56·7	15·0	31st	25·5	0·18	.....	0·18	187·9
November.....1929	47·0	1st	27·9	— 20·0	20th	5·9	.....	4½	0·45	57·3
December.....1929	36·0	3rd	3·4	— 51·5	10th	— 16·5	.....	4½	0·45	62·1
January.....1930	29·0	23rd	2·3	— 47·5	5th	— 16·3	.....	2	0·20	61·2
February.....1930	29·9	6th	6·1	— 54·0	13th	— 16·3	.....	11¼	1·12	100·3
March.....1930	57·9	31st	33·5	— 39·5	1st	— 5·6	.....	3½	0·35	192·5
April.....1930	64·2	20th	47·7	11·5	20th	24·6	.....	5	0·50	200·7
May.....1930	73·2	8th	59·3	25·0	9th	35·2	0·66	.....	0·66	239·0
June.....1930	85·0	7th	70·4	32·0	2nd	45·6	3·32	.....	3·32	219·6
July.....1930	91·7	13th	74·3	42·0	6th	49·2	0·82	.....	0·82	324·6
August.....1930	85·0	14th	75·1	31·2	31st	46·4	1·18	.....	1·18	277·9
September.....1930	81·5	2nd	58·2	24·0	19th	35·9	1·68	.....	1·68	142·5
Totals.....	.....	.....	.....	.....	.....	.....	7·84	30¾	10·91	2,065·6

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DATES OF FARM OPERATIONS AT FORT VERMILION EXPERIMENTAL SUBSTATION AND FOR THE DISTRICT

Operation	Began	Completed
Seeding of hot-beds for vegetables and flowers	April 24	April 26
Garden vegetables sown in the open ground	April 29	May 16
Spring ploughing for wheat and other crops	May 2	May 24
Seeding wheat	April 30	May 17
Seeding oats	April 30	May 24
Seeding barley	May 1	May 28
Seeding spring rye and speltz	May 5	May 15
Seeding green feed mixtures and millets	May 1	May 19
Seeding field peas	May 5	May 13
Seeding flax and hemp	May 6	May 19
Seeding field and garden beans	May 12	May 15
Seeding field roots, mangels, sugar beets, carrots, swede turnips and fall turnips	May 12	May 16
Seeding buckwheat	May 12	May 14
Seeding sunflowers	May 17	May 19
Planting field and garden corn	May 9	May 15
Planting potatoes	April 30	May 22
Transplanting vegetables from hot-beds	June 3	June 10
Transplanting flowers from hot-beds	June 4	June 12
Seeding grasses, clovers and alfalfa	June 10	June 12
Ploughing summer-fallow	June 14	July 18
Breaking new land	June 20	July 24
Cutting of grasses, clover and alfalfa 1st crop	July 10	July 12
Haying general	July 14	Aug. 20
Cutting of alfalfa 2nd crop	Aug. 29	Aug. 30
Cutting oats plots	July 28	Aug. 14
Cutting oats field crops	Aug. 4	Aug. 29
Cutting barley plots	Aug. 1	Aug. 14
Cutting barley field crops	Aug. 4	Aug. 26
Cutting wheat plots	Aug. 11	Aug. 23
Cutting wheat field crops	Aug. 14	Aug. 25
Cutting other miscellaneous cereal crops, spring rye, speltz, flax and buckwheat	Aug. 14	Aug. 25
Seeding fall rye. In 1929 August 28, and in 1930 August 26.		
Cutting fall rye	Aug. 12	Aug. 15
Threshing experimental cereals	Aug. 13	Oct. 22
Threshing throughout the district	Sept. 3	Nov. 10
Cutting field peas	July 29	Aug. 19
Potato digging	Sept. 10	Sept. 27
Fall ploughing	Sept. 1	Oct. 20
Harvesting field roots	Sept. 12	Sept. 30
Ice in the Peace River stopped running. November 5.		
Crossing was possible on November 8.		

NOTE.—While the fall ploughing on the experimental area was fully completed, not more than one-third of the fall ploughing was accomplished throughout the district on account of the land freezing up somewhat earlier than usual.

HORTICULTURE

The season of 1930 was most favourable for the growing of all horticultural crops. There was an abundance of moisture in the land, and all crops got away to a fair start.

The first vegetable and flower seeds were sown in the hot-beds on April 24 and completed on the 26th, and outdoor seeding was commenced with the first date of seeding of vegetables on April 29, and some slight damage was done by cut-worms before they were got under control by the use of poisoned bran.

The seeding of the more hardy varieties of flowers was commenced on May 20, and continued as time permitted from the seeding of other crops until the end of the month.

The transplanting of the vegetables from the hot-beds commenced on June 3, and by this date all varieties were very strong and sturdy, therefore no shades were necessary for protection. Should it not be cloudy, when this transplanting is done during a number of evenings better results are obtained than if they had been placed out in the strong sunlight during the day. The plants are watered a number of times after being set out, which promotes a strong and vigorous development.

The transplanting of the tender varieties of flowers from the hot-beds was commenced on June 4, and continued at intervals until completed on the 10th.

VEGETABLES

VARIETY AND STRAIN TEST WITH ASPARAGUS

Two varieties, Colossal and Burbank Quality, are included in this test. These two rows have made very vigorous growth, and furnished a good supply for table use during the latter part of May. This plantation was added to this spring by another row of Burbank Seedlings from the 1929 seeding.

During the spring of 1930, seed of the three following varieties were sown in the open garden on May 12:—

Mary Washington. (Steele Briggs.)
Mammoth White. " "
Palmetto. " "

The percentage of germination of the seed of all three varieties was high, and good growth was made during the season. These seedlings will be moved into the plantation during the spring of 1931.

GARDEN BEANS—TEST OF VARIETIES

Eight varieties of garden beans were planted on May 12, in duplicate drills 33 feet long, with the drills 30 inches apart, and the seed spaced 2 inches apart.

The original rows were for green pod production, and the duplicate rows for seed production.

While the percentage of germination was high, the emergence date was prolonged, being June 4, and with the dry and hot July the growth was slow, the pods small, and the yields of green beans much below the average.

It will be noted in the table of yields, that the yield from the variety Masterpiece was very much lower in comparison with the other varieties. This was caused by the bean disease pod-spot or anthracnose, this being the first season that this disease was noticeable on any of the bean crops.

In the following table are presented the varieties tested, and the results obtained:—

GARDEN BEANS, TEST OF VARIETIES

Variety and source of seed	Date ready for use	Length of plant	Length of pod	Yield of green pods	Yield of ripe seed from duplicate plot	Comment
		in.	in.	lb.	lb. oz. %	
Plentiful French 0-2824	July 29	18	6	10	2 8 85	Very good
Wardwell Kidney Wax 0-2823	" 29	21	5	9	1 14 90	Fine
Impr. Golden Wax. Vermillion Seed	" 29	20	4½	11	2 2 90	Excellent
Masterpiece 0-2746	" 28	17	5	5	.. 6 20	Poor
Princess of Artois C.E.F	" 25	22	7	12½	2 4 100	Very fine
Stringless Green Pod 0-11402	" 29	20	7	10½	2 4 90	Fine
The Prince (Sutton)	" 30	21	6½	8½	.. 12 50	Fair
Swedish	" 30	25	6	8	1 .. 25	Medium

Twelve drills of mixed garden beans, Improved Golden Wax and Davis White Wax were planted on May 12; the emergence date for this seeding was June 6. They came into bloom on July 12, and picking commenced from this plot on July 28, was picked from freely during the season, and when harvested produced 17 pounds of fully matured seed.

GARDEN BEANS—CULTURAL TEST

Two varieties were planted on May 12, three drills of each variety, the drills 36 inches apart, with the seed spaced at 2, 4 and 6 inches apart in the drills.

No material difference was noticed in the dates of becoming fit for use or in the dates of reaching maturity, but a difference in yields was in favour of the closer planting.

Owing to the very hot and dry weather conditions of July and August the maturity of the beans was hastened somewhat, therefore shortening the season in use as green beans.

BROAD BEANS—TEST OF VARIETIES

Eleven varieties or strains of broad beans were under test again this season. One drill 33 feet long and 30 inches apart of each variety was planted on May 12, the seed being spaced three inches apart.

While the germination of the seed was quite timely, the growth throughout the season was slow, and the plants did not make their usual strong vigorous growth, the yields being greatly below the average. Half of each drill was used as green beans during the season, and the remaining half allowed to ripen for seed.

In the following table are presented the yields of both green beans and matured seed obtained, with dates when fit for table use.

BROAD BEANS, RESULTS OF TEST OF VARIETIES

Variety	Date ready for use	Length of pod	Yield of shelled beans from the half drill picked during season	Yield of ripe seed from remaining half drill
		in.	lb.	lb. oz.
Beck Green Gem	July 29	5	5½	3 ..
Sutton Giant Green	" 29	5	7½	3 3
Sharpe Conqueror	" 28	5½	9	3 4
Giant Four Seeded	" 27	4	7	3 ..
Early Mazagen	" 29	4	12½	3 10
Fan or Cluster	" 29	5	10½	3 ..
Green Windsor	" 28	6	8	2 8
Taylor Windsor	" 28	5½	8¾	3 4
Harlington	" 26	6	7¾	2 13
Mammoth Broad Windsor	" 27	6	7½	2 12
Common Windsor	" 27	5	6¾	3 ..

An extra six drills were all planted on May 12. The emergence date from this seeding was May 28. Picking from these drills commenced on July 27 and the beans were picked from most freely during the period they remained usable as green beans. When harvested on August 20, nine pounds of fully matured seed was obtained.

TABLE BEETS—TEST OF VARIETIES AND DATES OF SEEDING EXPERIMENTS

Owing to loss caused by the beet flea beetle and cutworms, which necessitated the reseeding of each series of plots, the dates of seeding and thinning experiments were greatly upset. These numerous seedings caused an irregular stand, thereby lowering the yields and quality of these vegetables.

The dates given in the following tables for "fit for table use" are taken from the latter date of seeding in each series of plots, as are also the emergence dates.

The date of seeding for the first series of plots numbered from 1-4 was May. They were reseeded on May 26. The date of seeding for the second series of plots numbered from 5-9 was May 12, and were reseeded on June 4.

All the plots were harvested on September 24, and all other data are given in the following table:—

TABLE BEETS—RESULTS OF TEST OF VARIETIES AND DATES OF SEEDING EXPERIMENTS

Variety and source of seed	Date sown	Date of emergence	Date ready for table use	Yield per acre	Size	Quality
				ton lb.		
1. Early Flat Egyptian. Moore	May 26	June 10	July 18	9 1,080	Medium	Fair
2. Improved Dark Red. Webb.	" 26	" 10	" 21	9 840	Small	Good
3. Detroit Dark Red Blood. Moore	" 26	" 12	" 23	12	Fairly large	Medium
4. Detroit Dark Red. Rennie.	" 26	" 12	" 20	8 1,760	Small	Very good
5. Crimson Globe. McDonald.	June 4	" 16	Aug. 7	8 800	Small	Very good
6. Eclipse. Steele Briggs	" 4	" 16	" 9	8 1,880	Medium	Fair
7. Detroit Dark Red. Steele Briggs	" 4	" 16	" 10	9 240	Medium	Good
8. Crosby's Egyptian. Steele Briggs	" 4	" 16	" 10	9 1,800	Medium	Fair
9. Detroit Dark Red. O-285 A.	" 4	" 16	" 8	10 160	Large	Very good

TABLE CARROTS—TEST OF VARIETIES AND DATES OF SEEDING EXPERIMENTS

Six varieties or strains of table carrots were tested this season. Of these Oxheart and Danvers Half-Long were the earliest.

In the dates of seeding tests, sowing as early as the soil can be worked in the spring has produced the earliest carrots, but the second seeding made ten or twelve days later, when the soil and other conditions are more favourable, has usually given a better stand of plants which produced a heavier yield of smoother roots.

This season the carrots were thinned to 1, 2 and 3 inches apart in the drills to determine the effect on the yields and quality of the crops, and the results of this test show that it is quite unnecessary to thin the earlier sown carrots to more than one inch apart in the drills, while the second seeding which would be the main crop for winter storing, need not be thinned to more than two inches, as wider spacing will reduce the yields, and under favourable autumn growing conditions will increase the percentage of over large roots that are inclined to crack or split and are therefore unmarketable.

All varieties were harvested on September 24, and in the following table are presented the yields obtained from both series of plots:—

TABLE CARROTS—RESULTS OF TEST OF VARIETIES AND DATES OF SEEDING EXPERIMENTS

Variety and source of seed	Date sown	Date of emergence	Date ready for table use	Yield per acre	Size	Quality
				ton lb.		
1. Amsterdam. Steele Briggs.	May 1	May 21	June 15	5 200	Small	Fair
2. Chantenay. Steele Briggs	" 1	" 21	" 18	8 800	Large	Very good
3. Danvers Half-Long. Steele Briggs	" 1	" 21	" 12	5 1,280	Small	Medium
4. Half-Long Scarlet Nantes S.B.	" 1	" 20	" 19	5 1,760	Small	Good
5. Oxheart. Steele Briggs	" 1	" 20	" 14	6 1,800	Medium	Quite fair
The 2nd date of Sowing						
1. Amsterdam. Steele Briggs.	May 12	May 28	July 20	8 220	Large	Fine
2. Chantenay O-285 A.	" 12	" 28	" 22	7 1,360	Medium	Very good
3. Danvers Half-Long. Steele Briggs	" 12	" 28	" 18	7 1,600	Fair	Good
4. Half-Long Scarlet Nantes. Steele Briggs	" 12	" 28	" 20	8 440	Large	Medium
5. Oxheart. Steele Briggs	" 12	" 28	" 17	7 1,480	Medium	Fair
6. Chantenay. Steele Briggs	" 12	" 26	" 21	8 1,400	Large	Good

GARDEN CORN—TEST OF VARIETIES

Thirty-one varieties and strains of garden corn were grown this season, in test plots of hills and drills 1/120 of an acre, the hills 30 inches apart each way, and the drills 30 inches apart and 33 feet long.

Owing to the cool weather conditions, the period between dates planted and dates of emergence was quite lengthy, and for the same reason the growth was very slow until June 20, when with better weather conditions throughout July and August, heat and bright sunshine, most remarkable growth was made throughout the balance of the season, and with the month of August quite frost free, a fine crop of large usable ears were picked from some of the earlier varieties.

The crop was harvested during a period from September 15 to 23, after much severe frost occurred and the fodder was comparatively dry when the weights were taken.

The land used for the garden corn tests was land that had grown crops of cereals the previous season. After the crops of 1929 had been removed and before the land was ploughed, twenty wagon loads of well rotted barn-yard manure per acre were applied. The land was then ploughed to a depth of five inches, and after being ploughed was cultivated with a spring-tooth harrow, and left in that condition for the winter. The land was thoroughly cultivated in the spring previous to the corn being planted, and the crops were thoroughly cultivated during the growing season to promote good growth.

The Suckering Tests with the corn were conducted with the varieties Golden Bantam and Early White Cory. The suckers were removed on August 2, and as these two varieties proved to be late varieties and did not produce any usable cobs, no actual results were obtained from this season's test. Many of the varieties that gave a heavy yield of cobs were not suckered, and this season the percentage of suckers was very low, in fact almost nil on some of the varieties.

In the following table are given all particulars of these crops:—

Garden Corn—Results of Test of Varieties

Variety and source of seed	Date planted, and method of planting	Date of emergence	Per cent germination	Date in tassel	Date in silk	Date in use	Height of cobs		Weight of useable cobs from plot	Yield of fodder per acre	Height of plant	Comment
							Lower	Upper				
							in.	in.	lb.	tons lb.	in.	
1. Golden Bantam, McDonald.	May 9, hills	June 2	75	July 28	Aug. 8	.....	16	20	.....	5 1,160	49	Not sufficiently advanced to be useable.
1. " " "	" 9, drills	May 29	75	.....	.....	.....	18	26	.....	12 1,200	52	
2. Early White Cory, Graham.	" 9, hills	" 30	90	Aug. 4	Just in silk	.....	17	26	.....	7 1,120	72	Did not become usable.
2. " " "	" 9, drills	" 28	100	.....	as cut.	.....	20	27	.....	12 1,920	58	
3. Sixty Day Makegood, Childs	" 9, hills	" 30	85	July 28	Aug. 9	Aug. 24	16	24	27	4 1,720	57	Cobs fine and large.
3. " " "	" 9, drills	" 28	100	.....	.....	" 24	21	28	39	9 –	60	
4. Early Bantam, Harris.....	" 9, hills	" 30	90	July 26	Aug. 7	.....	15	24	.....	7 400	66	Cobs just in early milk.
4. " "	" 9, drills	" 27	100	.....	.....	.....	17	29	.....	9 720	60	
5. Early Mayflower, McDonald	" 9, hills	" 30	100	July 19	Aug. 2	Sept. 15	17	24	39	9 –	59	Cobs very sweet and large.
5. " " "	" 9, drills	" 26	100	.....	.....	" 15	19	27	54	10 880	68	
6. Early Adams, Ferry.....	" 9, hills	" 30	85	July 14	July 26	Aug. 14	13	18	25	2 320	52	Cobs very sweet and a good shape.
6. " "	" 9, drills	" 26	100	.....	.....	" 14	16	23	57	4 1,000	57	
7. Gills Early Market, Harris..	" 9, hills	" 28	100	July 15	July 28	" 22	14	19	61	4 1,720	60	Cobs very fine and sweet, of an excellent quality and yield.
7. " " ..	" 9, drills	" 26	100	.....	.....	" 22	15	22	76	5 800	58	
8. Malakoff, Vaughan.....	" 9, hills	June 2	80	July 18	Aug. 2	" 30	14	18	18	5 1,160	52	In late milk, very good, the ears quite large.
8. " "	" 9, drills	May 20	75	.....	.....	" 30	12	18	25	9 720	56	
9. Early Whipple, Harris.....	" 9, hills	" 28	100	July 28	Aug. 11	Sept. 13	20	28	17	7 1,120	64	Tender, good flavour and a fair yield.
9. " "	" 9, drills	" 26	100	.....	.....	" 13	23	32	26	12 1,920	60	
10. Assinaboine, Wills.....	" 9, hills	" 28	100	July 14	July 31	Aug. 30	14	22	6	7 1,120	58	Cobs of medium size, of a fair quality.
10. " "	" 9, drills	" 26	100	.....	.....	" 30	16	25	14	12 1,920	56	
11. Alpha, Ferry.....	" 9, hills	" 30	50	July 19	July 30	" 30	20	26	19	4 1,000	58	Very fine quality, a fair yield.
11. "	" 9, drills	" 26	75	.....	.....	" 30	16	20	23	9 –	54	
12. Gehu, Wills.....	" 9, hills	" 29	100	July 26	Aug. 9	.....	19	27	.....	9 720	66	Just coming into use when cut, first milk.
12. "	" 9, drills	" 26	100	.....	.....	.....	23	30	.....	13 1,000	64	
13. Early Dighton, Maules.....	" 9, hills	" 30	70	July 28	Aug. 10	Sept. 12	19	22	26	7 1,840	50	Good variety, sweet with medium sized cobs.
13. " "	" 9, drills	" 26	90	.....	.....	" 12	15	28	51	11 1,400	56	
14. Improved Squaw, Patmore.	" 9, hills	" 28	100	July 14	July 26	Aug. 27	11	19	32	4 520	52	Moderately sweet, with an excellent yield.
14. " " ..	" 9, drills	" 26	100	.....	.....	" 27	12	17	36	7 760	49	
15. Improved Early Dakota, Wills.	" 9, hills	" 30	100	July 24	Aug. 9	Sept. 18	18	23	45	3 120	52	A good variety, the ears quite large.
15. " " ..	" 9, drills	" 27	100	.....	.....	" 18	20	26	20	7 1,800	54	
16. Early June, Wills.....	" 9, hills	" 30	100	July 15	Aug. 6	" 18	13	18	35	5 1,520	49	Very tender and sweet, a good yielder.
16. " "	" 9, drills	" 28	100	.....	.....	" 18	14	20	50	7 400	50	

GARDEN CORN—RESULTS OF TEST OF VARIETIES—*Concluded*

Variety and source of seed	Date planted, and method of planting	Date of emergence	Per cent germination	Date in tassel	Date in silk	Date in use	Height of cobs		Weight of usable cobs from plot	Yield of fodder per acre	Height of plant	Comment
							Lower	Upper				
							in.	in.	lb.	tons lb.	in.	
17. Sunshine, Wills	" 9, hills	" 28	100	July 23	Aug. 4	" 3	16	20	30	11 1,400	64	An excellent variety, a good crop.
17. " "	" 9, drills	" 26	100	.....	.....	" 3	19	23	35	10 1,600	66	
18. Sixty Day Golden, Childs	" 9, hills	" 26	100	July 19	July 31	Aug. 30	22	26	48	5 1,520	60	One of the best, an excellent crop.
18. " "	" 9, drills	" 24	100	.....	.....	" 30	22	26	43	9 -	60	
19. Peep-O-Day, Schell	" 9, hills	" 30	100	July 28	Aug. 9	Sept. 23	18	22	35	4 1,800	56	Cobs picked as harvested, a good yield.
19. " "	" 9, drills	" 26	100	.....	.....	" 23	20	24	45	9 1,080	58	
20. Golden Tom Thumb, Wills	" 9, hills	" 27	100	July 25	Aug. 7	" 20	16	18	36	4 1,720	48	A large percentage fully matured.
20. " "	" 9, drills	" 24	100	.....	.....	" 20	15	20	47	7 700	47	
21. Golden Bantam, Moore	" 9, hills	" 30	80	July 26	Aug. 9	" 23	17	27	35	8 560	60	Very fine flavour, a good crop of cobs.
21. " "	" 9, drills	" 27	100	.....	.....	" 23	21	31	72	11 680	65	
22. White Cory, McDonald	" 9, hills	June 2	80	July 28	Sept. 4	.....	17	27	.....	7 400	50	Cobs just nicely formed when harvested.
22. " "	" 9, drills	May 27	85	.....	.....	.....	15	28	.....	11 1,010	47	
23. Early Cory, Moore	" 9, hills	June 2	50	July 29	Aug. 7	Sept. 23	14	16	16	4 640	40	Very fine and sweet cobs picked as harvested.
23. " "	" 9, drills	May 30	50	.....	.....	" 23	12	17	43	9 1,440	42	
24. Banting, C.E.F	" 9, hills	June 2	70	July 23	Aug. 7	" 23	15	16	22	3 1,080	40	Cobs picked as harvested, a good yield.
24. " "	" 9, drills	May 30	70	.....	.....	" 23	13	15	36	7 400	40	
25. Early Malcolm, C.E.F	" 9, hills	" 31	50	Aug. 1	Well silked	.....	12	14	.....	4 640	39	The ears not sufficiently advanced to be fit for use.
25. " "	" 9 drills	" 29	50	.....	as cut.	.....	12	13	.....	4 1,000	36	
26. Pickaninny, C.E.F	" 9, hills	" 30	50	July 19	July 28	Aug. 20	12	14	12	2 320	34	Ears small, kernels dull, but of good flavour.
26. " "	" 9, drills	" 27	90	.....	.....	" 20	11	13	14	4 1,720	32	
27. Early (Sutton)	" 9, hills only.	" 27	90	Aug. 2	Just silked Sept. 23	.....	28	33	.....	7 1,240	70	In early milk, not usable.
28. First of All (Sutton)	" 9, hills only.	" 30	90	July 29	Aug. 12	.....	13	15	.....	4 400	42	Cobs well formed but not usable.
29. Howes Alberta Flint, F. Vermilion.	" 9, hills	" 30	90	July 15	July 26	Aug. 10	10	12	8	2 320	35	Yellow ears, a flint variety.
29. " "	" 9, drills	" 27	100	.....	.....	" 10	8	11	10	3 480	32	
30. Rennies Squaw	" 9, hills only.	" 31	85	July 28	Aug. 9	" 30	12	15	18	5 800	42	Quite good, early.
31. White Pyrenean (Sutton)	" 9, hills only.	" 30	45	July 28	Aug. 9	.....	18	22	.....	4 520	56	A late variety, not usable.
32. Mixed Garden Varieties 1/60 Acre.	" 9, drills only.	" 30	90	July 24	Aug. 10	Sept. 10	14	20	30	10 100	48	Cobs of fair size, quite good.

CABBAGE—TEST OF VARIETIES

During the past four seasons this test of seeding direct to the open ground has been conducted, in order to find if there is an advantage in sowing cabbage, in hot-beds instead of sowing direct to the open ground, and while fair results have been obtained by this method, it is not to be recommended for this north land. Much better results can be obtained by the hot-bed method, as cabbage grown from plants raised in the hot-beds produce heads fit for table use much earlier than those sown direct to the open ground, also a cabbage of a better keeping quality.

The eleven following varieties were sown in the hot-beds on April 24, and twenty-six plants of each variety were transplanted to the open ground on June 3 and 6, in drills 33 feet long and 30 inches apart and the plants set at 30 inches apart.

As the plants were very sturdy when set out, quite vigorous growth was made throughout the season, and the final harvesting of all the varieties was done on September 25.

Extra Amager Danish Ballhead O-8937, Copenhagen Market (Strandholm) and Danish Ballhead (Strandholm), were the three varieties used for storing purposes, two methods were used, one by placing the heads on slatted shelves, and by leaving the roots on and wrapping paper around the heads and hanging them up. The two methods have proved equally successful.

CABBAGE—TEST OF VARIETIES—HOT-BED SEEDING

Variety and source of seed	Date fit for table use	Average weight per head when harvested	Comment
		lb.	
EARLY SEASON VARIETIES			
Early Jersey Wakefield (Steele Briggs)	July 18	4	Very compact heads
Henderson Early Summer (Bruce)	" 21	8	Large firm heads
All Head Early (Steele Briggs)	" 30	13	Very large, fine
MID SEASON VARIETIES			
Golden Acre (Bruce)	" 25	8	Good solid heads
Danish Hollander (Strandholm)	Aug. 5	13	Large, very solid
Danish Round Head (Strandholm)	" 15	16	Very large heads
Copenhagen Market (Steele Briggs)	" 1	12	Excellent
Copenhagen Market (Strandholm)	" 6	12¾	Fine solid heads
LATE SEASON VARIETIES			
Ex. Am. Danish Ballhead O-8937	" 28	19	Very good
Danish Ballhead (Strandholm)	" 30	16	Fine solid heads
Red Dutch Pickling (Vaughan)	Sept. 5	11	A good pickling variety

CABBAGE SOWN DIRECT TO THE OPEN GROUND

One drill 33 feet long and 30 inches apart of the nine following varieties were sown to the open ground on May 13. The plants were thinned on June 24 to 20 inches apart in the drills, leaving twenty plants to each drill.

These varieties of cabbage did not receive any artificial watering during the growing season, but were given frequent cultivation during the early season to promote good growth.

While these varieties reached a usable size during the late summer, they were left to grow until the final harvest on September 25, and the weights were taken at that time.

CABBAGE—RESULTS FROM SOWING IN THE OPEN

Variety and source of seed	Average weight per head when harvested	Comment
	lb.	
Early Jersey Wakefield Steele Briggs	4	Quite firm
All Head Early (Steele Briggs)	5	Good
Golden Acre (Bruce)	5	Fine heads
Copenhagen Market (James)	8	Very good and solid
Copenhagen Market (Graham)	7	Fine firm heads
Danish Ballhead (Burpee)	9	Excellent heads
Danish Ballhead Short Stem (Harris)	5	Medium loose heads
Danish Hollander (Strandholm)	8	Very fine heads
Delicatessa Red (Dupuy & Ferguson)	5	Very solid heads

Six extra drills of mixed varieties of cabbage, good strong plants from the hot-beds were planted on June 4, and from this plot the many households were supplied during the season commencing from July 15 to the late autumn.

CHINESE OR CELERY CABBAGE—TEST OF VARIETIES

Two drills each 33 feet long and 30 inches apart of the Chinese cabbage Wong-Bok and Pe-Tsai were sown on April 29.

Both varieties made good strong growth and became fit for table use in the following order: Wong-Bok on June 15 and Pe-Tsai on June 18.

As these varieties of vegetables grow very rapidly and become usable before many of the other varieties of vegetables, and make very palatable greens during the period that other vegetables are scarce, they are quite worthy of a place in any garden, and of the two varieties Wong-Bok is to be preferred.

CAULIFLOWER—TEST OF VARIETIES

Three varieties were under test this season. The seed was sown in the hot-beds on April 24, and plants transplanted to the open ground on June 6, in drills 33 feet long and 30 inches apart, the plants being set 24 inches apart. With the frequent watering during the early season the plants made very vigorous growth.

The first variety to become fit for table use was Early Snowball on July 20 with Early Dwarf Erfurt on July 26 and Danish Perfection on July 30. All varieties were of a fair size on these dates, and were of an excellent quality.

In the following table are given the weights of the heads when harvested on September 25:—

CAULIFLOWER—RESULTS OF TEST OF VARIETIES

Variety and source of seed	Average weight per head when harvested	Comment
	lb.	
Early Snowball (Steele Briggs)	9	Very fine quality
Early Dwarf Erfurt (McDonald)	8	Fine solid heads
Danish Perfection (Madsen)	10	Fine large firm heads

A mixed plot of the three above varieties was set out on June 8, and from which a continuous supply was picked throughout a lengthy season.

BRUSSELS SPROUTS—TEST OF VARIETIES

Only one variety of Brussels sprouts were under test this season, Danish prize, Burpee seed.

Sown under glass on April 24 and plants transplanted to the open ground on June 7 in one drill 33 feet long with the plants set 24 inches apart.

The past season was very favourable for this variety of vegetable. With a frost-free spring, good vigorous growth was made, and with the long open fall which gave the plants a longer growing period to reach a greater stage of development, and when harvested on September 26 the sprouts were of a fair size, very solid, and of a good quality.

One drill of Brussels sprouts was also sown to the open ground on May 13, and these also made very fair growth, and the following were the yields obtained: The transplanted drill yielded 6 pounds, and the outside-sown drill, 4 pounds.

KALE OR BORECOLE

One variety, Tall Green (McDonald) was sown on the hot-beds on April 24, and two drills were transplanted to the open ground on June 7, and with the same method of cultivation as was given the Brussels sprouts, the plants made very vigorous growth, and were fit for table use on July 16. An extraordinary growth was made during the late season, and when harvested on September 27 individual plants weighed 16 pounds.

Much of this crop was taken away by some of our new settlers, who had arrived in the district too late to put in vegetable gardens, it being greatly appreciated by them.

KALE, SOWN DIRECT TO THE OPEN GROUND

One drill of kale, Tall Green (McDonald), was sown direct to the open ground on May 13. This made very favourable growth, and was fit for table use on July 26, and a considerable amount from this drill was used during the season.

The remaining plants were harvested on September 23 and had an average weight of 10 pounds.

BROCCOLI

The variety, Curtis Nine Star Perennial, was sown in the hot-beds on April 24, and transplanted to the open ground on June 7. They became strong, sturdy plants by the autumn, but did not develop any real heads.

CUCUMBERS AND OTHER VINE PLANTS SOWN UNDER GLASS

Seven varieties of cucumbers were under test this season, under two methods, under glass versus sowing direct to the open ground. Both series of hills were planted on the same date, May 16.

For the different varieties of vine plants sown under glass the usual method was used, which is as follows:—

The small pits are filled to within three inches of the top with heated manure, then small frames are placed on top of this manure. The outsides of the frames are banked up with soil to prevent the escape of the heat; then three inches of good garden soil is placed in the frames on top of the manure, into which the seed is planted. The glass is then placed on the frames during the cool nights, but is removed during the heat of the day. The use of the glass is continued until the plants have got a good start and all danger of frost has passed, when the glass and the frames are removed.

As the seed is sown rather thickly in the beginning, they are then thinned out if necessary, or should the cucumber and melon aphis not have been too destructive, as they are quite troublesome each season, the plants are hilled up and the land between the hills thoroughly cultivated. From year to year for many seasons the finest results have been obtained by this method.

In the following table are given the yields obtained from the varieties raised under glass, and with the exception of Giant Pera, which was sown in two hills only, the varieties were all sown in four hills for each variety.

CUCUMBERS AND OTHER VINE PLANTS SOWN DIRECT TO THE OPEN GROUND

Two hills of each of the seven varieties of cucumbers were seeded direct to the open ground on May 16, the hills being spaced 4 feet apart each way, and for the larger varieties of vine plants the spacing was 6 feet apart each way.

This outside seeding experiment was conducted on summer-fallowed land in a high state of fertility. The seed-beds were hollowed out to a depth of eight inches, and in the bottom of these hollows three inches of well-rotted manure was placed. Three inches of good garden soil was then placed on the manure, the seeds planted at a depth of one inch, and the soil pressed down firmly on the seed. This left a slight depression to retain any water given the plants or the rainfall.

It was observed that there was a difference of four days in the emergence dates between those planted under glass and those planted direct to the open ground, the four days being in favour of those planted under glass.

While the yields from all the varieties planted in the open were quite fair, the growth throughout the season was not as vigorous as those planted under glass.

None of the varieties planted in the open received any protection at any time during the season, and the yields given for all the varieties were taken when harvested on September 1.

CUCUMBERS—TEST OF VARIETIES SOWN UNDER GLASS

Variety and source of seed	Date ready for use	Number picked during season	Size then	Number harvested on August 27	Season's total picking	Comment
Davis Perfection (Steele Briggs)	Aug. 20	28	Large	37	65	A splendid yield, fine and large
Early Russian (Steele Briggs)	July 30	41	Medium	49	90	A good yield, all of a medium size
Early Fortune (Steele Briggs)	Aug. 14	36	Very large	105	141	An extraordinary yield, all fair size.
Boston Pickling (Steele Briggs)	" 2	46	Large	40	86	Quite large, of an excellent quality.
Early Arlington White Spine (Steele Briggs)	" 6	56	Very large	44	100	An excellent crop, very good quality.
Imp. Long Green (Steele Briggs) 2 hills only	" 18	39	Extra large	26	67	All extraordinary large
Giant Pera (Dupuy & Ferguson)	" 16	26	Large	16	42	A fine quality, very large

One specimen of the variety Imp. Long Green, when picked on August 26, weighed $4\frac{1}{2}$ pounds, and was $12\frac{1}{2}$ inches in length and 4 inches in diameter.

CUCUMBERS—TEST OF VARIETIES—PLANTED IN THE OPEN

Variety	Number of hills	Total number harvested	Comment
Davis Perfect	2	21	Of a fair size, quality fine
Early Fortune	2	24	Fairly large, good quality
Early Russian	2	26	Large, excellent quality
Boston Pickling	2	19	Extra large, fine quality
Arlington White Spine	2	17	Large, very good
Improved Long Green	2	28	Very large, extra good
Giant Pera	2	22	Large, very fine quality

CITRON—TEST OF VARIETIES

Variety and source of seed	Number of hills	Total number harvested	Average weight	Comment
			lb.	
Planted under glass May 16, harvested August 30:—				
Red Seeded (Steele Briggs)	4	62	4¾	Sufficiently matured for preserving
Green Seeded Colorado Mammoth (Steele Briggs)	4	56	8¼	Extra large, good quality
Planted to the open ground, May 16, harvested September 1—				
Red Seeded	2	33	4	An excellent yield
Green seeded	2	27	4½	Very good, quality fair

Most excellent results were obtained this season from the variety Colorado Mammoth Green Seeded.

CELERY

Six varieties and strains of celery and one of celeriac were tested this season, the seed being sown in the hot-beds on April 24, and the plants transplanted to the open ground on June 17. By this date the young plants were quite sturdy and strong.

The young plants were set out in shallow trenches into which had been placed three inches of well-rotted manure, with four inches of soil on top of the manure, one trench for each variety 16½ feet in length. The plants were kept well watered throughout the season, especially during the dry spells.

The different varieties made excellent growth, and produced very high yields of a very good quality. While the final harvesting of these vegetables did not take place until September 27, Paris Golden Market was fit for use on September 15 and was nicely blanched and of a very good flavour. Golden Self Blanching, Easy Blanching and Golden Plume were in prime condition by September 20, while Giant Pascal and Rose Ribbed usually require further blanching after harvesting, therefore making them more suitable for winter storing.

Experiments have again taught us this season that celery can be bleached with earth more satisfactorily than by any other method.

While the variety celeriac is turnip rooted, and is seldom grown in the average gardens, still it is well worth a place in any garden, as the roots have always grown to a fair size at the Station. In soup making it gives a very decided celery flavour, and will keep throughout the winter in good condition with very little care.

In the following table are given the results obtained:—

CELERY—TEST OF VARIETIES

Variety and source of seed	Average length of plant	Weight of 12 heads	Comment
	in.	lb.	
Giant Pascal, Graham	22	19	A good variety
Rose Ribbed, Bruce	24	18	Very fine and crisp
Golden Self Blanching, McDonald	24	14	Quite good, well blanched
Easy Blanching, Dreer	19	17	Very good, quite crisp
Golden Plume, Dreer	16	15	Good, well blanched
Paris Golden Yellow D & F	19	22	Very good, fine flavour
Celeriac—Large Smooth Prague, Harris	22	17	Roots of a fair size

KOHL RABI—TEST OF VARIETIES

Two drills of Early White Vienna and Early Purple Vienna were sown on April 29, the drills being 33 feet long and 24 inches apart. The plants were thinned to six inches apart in the rows. Both varieties were fit for table use on July 30, and were of a medium size then.

These varieties of vegetables are seldom grown in the majority of Canadian gardens, not because they are not appreciated but because they are but little known. They are, however, worthy of a place in any garden as they are good keepers and would take the place of other vegetables at a time of year when other vegetables might be short.

The following were the yields obtained from each two drills:—

Variety and source of seed	Yields	Comment
	lb.	
Early White Vienna, Steele Briggs	78	Of a fair size, quality good
Early Purple Vienna, Steele Briggs	85	Large, excellent quality

SALSIFY—TEST OF VARIETY

Only one variety of salsify, Mammoth Sandwich Island, was tested this season. Four drills 33 feet long and 24 inches apart were sown on April 29. The germination of the seed was quite timely, and good growth was made throughout the season.

The plants were thinned on May 30 to two inches apart in the drills. The roots were ready for use on July 25, and were harvested on September 27, with a yield of 166 pounds from the four drills.

LETTUCE—TEST OF VARIETIES

Ten varieties or strains of lettuce were tested this season, two drills 33 feet long and 24 inches apart of each variety being sown on different dates of seeding.

The germination of the seed was quite timely, and the after-growth very good, and with the favourable weather conditions during June, the season of use was quite lengthy.

The different dates of seeding and other particulars are given in the following table:—

LETTUCE—RESULTS OF TEST OF VARIETIES

Variety and source of seed	Date sown	Date of emergence	Date ready for table use	Comment
1. All Heart, Steele Briggs...	April 29	May 12	May 31	Developed into fine solid heads
2. Iceberg, Steele Briggs.....	" 29	" 13	June 1	Quite large then, a long season variety
3. Big Boston, Steele Briggs.	" 29	" 15	" 2	Very fine and crisp, fair heads
4. Toronto Gem, Steele Briggs.....	" 29	" 13	" 3	An excellent variety
5. Cos or Trianon, Steele Briggs.....	" 29	" 12	" 9	A late summer variety, forms heads when tied
6. New or Wonderful, Steele Briggs.....	" 29	" 15	" 5	An excellent head variety
7. Improved Hanson, Ewing.	" 29	" 14	" 4	A very fine strain, fair heads
8. May King, Vaughan.....	" 29	" 14	" 8	Very good.
				The above varieties remained in use throughout June.
Second Seeding—				
1. Toronto Gem, Steele Briggs.....	May 12	May 24	June 24	
2. All Heart, Steele Briggs...	" 12	" 24	" 24	On the dates given as fit for table use these six strains were of a good size, and any of these varieties can be recommended for this district.
3. Iceberg, Ewing.....	" 12	" 25	" 25	
4. Trianon Cos, Vaughan.....	" 12	" 26	" 28	
5. Trianon Cos, Steele Briggs	" 12	" 27	" 28	
6. Early Paris Market O-4459	" 12	" 24	" 25	

ONIONS—TEST OF VARIETIES

Nine varieties and strains of onions were sown on April 29, two drills of each variety, the drills 33 feet long and 24 inches apart, and were thinned as they became usable commencing from June 4, they were thinned to two inches apart in the drills.

While the seed of all the varieties was soaked in luke warm water for twenty-four hours previous to being sown, still germination was comparatively slow, the emergence date being May 20. The very limited rain-fall of July and August, and the extreme heat of these two months greatly retarded the growth of these crops, and during the dry weather the onion root maggots were quite troublesome, and helped to cut down the yields somewhat. When harvested on September 25 a greater percentage of thick necks were found than usual.

The yields and quality were slightly below the average. These conditions were brought about by the rains of early September which caused a new growth to start.

In the following table are given the varieties tested, and the yields obtained from the two drills of each variety:—

ONIONS—RESULTS OF TEST OF VARIETIES

Variety and source of seed	Yield from two drills
	lb.
Large Red Wethersfield, Steele Briggs	85
Yellow Globe Danvers, Steele Briggs	82
Extra Early Flat Red, Steele Briggs	60
Southport Yellow Globe, Steele Briggs	63
Prizetaker Red Globe, Steele Briggs	57
Southport Red Globe, Steele Briggs	48
Early Australian Brown, Steele Briggs	49
Ailsa Craig, Steele Briggs	42
Ebenezer, Steele Briggs	50

ONIONS—DATE OF SEEDING

The following varieties were sown on May 13. The emergence date for this seeding was June 3, and the onions were fit for table use on July 10.

These varieties were also harvested on September 25, and the following were the yields obtained from the two drills of each variety:—

Variety and source of seed	Yield from two drills
	lb.
Large Red Wethersfield O-3882	58
Yellow Globe Danvers O-3914	53
Large Red Wethersfield, Steele Briggs	65
Yellow Globe Danvers, Steele Briggs	70
Extra Early Flat Red, Steele Briggs	55

PARSNIPS—TEST OF VARIETIES

The three following varieties of parnsips were sown on May 1 and 2 in 1/120 acre plots.

The parsnips were fit for table use on August 15. The plots were harvested on September 20, and while the quality of the different varieties was good, they were slightly below the average in size. It will be noted that the wider spacing produced the heavier yields. The following were the results obtained:—

Variety and source of seed	Distance apart of plants	Weight from plot	Yield per acre	
	in.	lb.	ton	lb.
Hollow Crown, C.E.F	2	84	5	80
Guernsey Steele Briggs	3	105	6	600
Elcombes Giant, Steele Briggs	4	126	7	1,120

One drill 66 feet long and 24 inches apart of three strains were sown on May 12, and were thinned to only two inches apart in the drills on June 26. These came into use on August 20, and were harvested on September 24, and were of a fair size and very good quality.

The following were the varieties tested, and the yield from each drill:—

Variety and source of seed	Yield from 66 foot drill	Comment
	lb.	
Hollow Crown, C.E.F	56	Of a medium size, but smooth
Guernsey, Steele Briggs	70	Fairly large, quality very fine
Elcombes Giant, Steele Briggs	84	Very large, quality good

PARSLEY—TEST OF VARIETIES

Five varieties or strains of parsley were under test this season, one drill 33 feet long and 24 inches apart of each variety.

The seed was sown on April 29, and the different leaf varieties were ready for use on June 30, and were used from most freely during the season. The rooted variety was not ready for use until July 15.

All varieties made excellent growth and gave good yields when harvested on September 27. The moss curled varieties were the more productive.

The following were the varieties tested, and yields obtained when harvested:

PARSLEY—RESULTS OF VARIETY TEST

Variety and source of seed	Weight	Comment
	lb.	
Champion Moss Curled, Ewing	52	The plants were quite large
Fine Triple Curled, Steele Briggs	41	The leaves small, dark colour
Turnip Rooted, Steele Briggs	38	Fine for winter use
Champion Moss Curled, Steele Briggs	49	Very good
Perfecta, McDonald	43	An excellent variety

HERBS—TEST OF VARIETIES

One drill each of the following varieties of herbs McDonald Seeds, were sown on May 13.

With the exception of the Mint, the seed of which failed to germinate, all the other varieties made the usual sturdy growth, the sage, summer savory and dill being the most vigorous.

The following were the varieties: Sage, Thyme, Carraway, Summer Savory, Sween Marjorum and Dill.

GARDEN PEAS—TEST OF VARIETIES

Seventeen varieties and strains of garden peas were planted on May 8 in single drills, two drills for each variety, the drills being 33 feet long and 36 inches apart, one drill for green pea production for summer use, and the duplicate drill for ripe seed production, in these tests the seed was spaced two inches apart.

The germination of the seed of all varieties was high and quite timely, and the early season's growth was quite vigorous, but with the hot dry weather conditions of late July and throughout August all the varieties ripened very quickly, therefore shortening the period of use as green vegetables considerably.

With the exception of the varieties, Gradus x English Wonder and English Wonder x Gradus which were new seed and planted in a single drill only and left to ripen for seed, the seed of all other varieties was from our own 1929 crop.

In the following table are given the yields obtained from each variety, of green and ripe seed, and in the tables it will be noted that the later varieties are placed at the head of the list, the mid-season in the middle, with the earlier varieties at the foot.

GARDEN PEAS—TEST OF VARIETIES

Variety	Date ready for use	Yield of shelled green peas	Date pulled	Length of		Size and number of peas in pod	Yield of ripe seed	Comment
				Vine	Pod			
		lb.		in.	in.		lb.	
Invermere No. 6	July 22	9	Aug. 10	33	3	9, medium		
Duplicate Drill							7½	Good quality.
Invermere No. 42	" 24	8½	" 8	52	3	8, large		
Duplicate Drill							6¾	Very fine quality.
Gradus x American Wonder, Ott. 8624	" 27	10¼	" 8	50	2½	5, large		
Duplicate Drill							7¾	Peas large, good quality
Gradus x English Wonder, Ott. 2330	" 21	12	" 6	48	2½	7, medium		
Duplicate Drill							7¼	Very fine.
Little Marvel	" 24	8½	" 6	36	3	7, large		
Duplicate Drill							5¾	An excellent pea.
Gregory Surprise x Eng. Wonder, Ott. 8623	" 22	9¾	" 6	48	2½	5, very large		
Duplicate Drill							6½	A fine quality.
Alaska	" 21	8½	" 6	38	3	8, medium		
Duplicate Drill							5½	Quite good.
Pioneer	" 21	8¾	" 11	29	3	5, large		
Duplicate Drill							4¾	Quality good.
Early Morn	" 22	9	" 8	46	2½	7, medium		
Duplicate Drill							4½	Very good.
Advancer	" 19	7⅞	" 11	35	2	4, large		
Duplicate Drill							4¾	A fair quality.
American Wonder	" 22	8	" 6	25	2½	6, large		
Duplicate Drill							3½	Good quality.
Lincoln	" 23	9¾	" 10	33	3¼	10, medium		
Duplicate Drill							6	A good yielder.
Thomas Laxton	" 20	9¼	" 4	36	2½	5, large		
Duplicate Drill							6¾	An excellent variety.
Swedish Pea	" 24	11	" 16	54	3	7, very large		
Duplicate Drill							7½	Very large, fair quality.
Gradus x English Wonder, C.E.F	" 24	.....	" 12	32	2½	8, medium	6	Fine quality seed.
English Wonder x Gradus C.E.F	" 22	.....	" 8	48	2½	5, large	4¼	Excellent seed.
One variety of edible peas, 4 Drills	" 5	Fourteen pounds of pods were picked during the season, the remainder was left to ripen, and when harvested 8 pounds of fine quality seed were obtained.						

Ten drills of mixed garden peas were planted on May 4, and the early varieties in this mixture became fit for table use on July 3. The later varieties were not ready until July 24, thereby lengthening the period in use considerably. This plot was used from most freely during the season, and on being harvested 37 pounds of fine fully matured seed was obtained.

GARDEN PEAS—CULTURAL TESTS

Four varieties were used in this test this season. The object of this experiment is to determine the relative earliness, quality and yields of peas whether used as green table vegetables or left to ripen for seed, when sown at 1, 2 and 3 inches apart. The results obtained this season, with its limited rain-fall during the most critical time of the plants growth and development, would favour the wider spacing of the seed.

PEPPERS—TEST OF VARIETIES

The seed of four varieties of peppers was sown in small boxes and placed in large hot-beds on April 24. The plants were left in the small boxes to grow until all the other vegetable plants had been transplanted from the large hot-beds; then these large hot-beds were filled with soil, into which the younger pepper plants were set on June 10. They were protected for a few days with the glass or until they had taken root.

Twenty-four plants of each variety were set out, and were spaced ten inches apart each way. By supplying the plants with sufficient moisture during the season very vigorous growth was made, with the exception of the

variety Panama which is rather a late variety and did not produce any fully matured fruit. The other three varieties produced a fair yield of fully matured fruit, and the ripening of these vegetables was made possible by the long open fall, and some slight protection from the September frosts.

The following were the varieties under test and the results obtained when harvested on September 12.

PEPPERS—RESULTS OF TEST OF VARIETIES

Variety and source of seed	Yield	Comment
	gal.	
Hamilton Market, Moore	1½	Quite large and fully matured
Earliest, Harris	1¼	A large percentage fully matured
Neapolitan, McDonald	1	All fully matured
Panama, Stokes	1	Small and green

POTATOES

Nine varieties and strains of potatoes were tested this season, the dates of planting ranging from April 30 to May 22.

The one ½-acre plot of Rochester Rose was planted on land that had been summer-fallowed the previous season, the land having received an application of barn-yard manure at the rate of twenty wagon loads per acre just previous to its being ploughed in 1929.

The varieties planted in the 1/16-acre and smaller plots were planted on land that had grown a crop of cereals the previous season. This land also received an application of barnyard manure at the rate of twenty wagon loads per acre, in the fall of 1929 after the cereal crop had been harvested, the land was then ploughed and left in that condition for the winter.

The potatoes were planted by the usual method, the land thoroughly cultivated in the spring with spring-tooth and smoothing harrows, and the furrows ploughed out deeply with a walking plough. By ploughing the furrows deeply it tends to incorporate the manure with the soil, or places it in direct contact with the seed, and the seed roots will get the benefit later. The usual methods of cultivation were given. The frequent cultivation with drag harrows during the early season, and later with a horse cultivator, the hilling of the potatoes being done by attaching the hiller attachments to the horse cultivator.

The harvesting of the potato crops extended over a period from September 15 to 25.

In the following table of yields will be noted the great variation in yields of the different varieties. As the potatoes were not planted in a solid block, the variation in the soil and the different dates of planting will account somewhat for the difference in yields.

POTATOES—TEST OF VARIETIES

Variety and size of plot	Method and date of planting	Date ready for use and size then	Total yield per acre	Comment
			bush.	
Rochester Rose..... ½ acre	Drills, April 30	July 14, small	228	Medium size. 75 per cent marketable.
Carman No. 1.....1/16 "	" May 6	" 28, medium	288	Medium size, good quality, 85 per cent marketable.
Gold Coin.....1/16 "	" " 6	" 23, large	312	Large, fine and smooth, 90 per cent marketable.
Irish Cobbler.....1/16 "	" " 6	" 23, large	350	Very large, fine quality, 90 per cent marketable.
King Edward.....1/16 "	" " 6	" 25, large	384	Very large, fine quality, 90 per cent marketable.
Early Hebron.....1/16 "	" " 7	" 26, very large	432	Unusually large, good quality, 100 per cent marketable.
Irish Cobbler.....1/20 "	Hills, " 14	" 30, large	405	Large, very fine and smooth, 80 per cent marketable.

The following varieties are a new importation of seed. Snow Flake from an Edmonton Seed House, and a small sample of the varieties Dooley, Early Ohio and Irish Cobbler which was presented to the Station by a Mr. Richard Smith who arrived at Fort Vermilion from Ontario on May 22. The seed of the variety Snow Flake was in bad condition when received.

Variety and size of plot	Method and date of planting	Date ready for use and size then	Total yield	Comment
			lb.	
Snow Flake.....1/20 acre..	Drills, May 2..	July 14, small	112	Very small, 40 per cent marketable.
Dooley.....12 foot drill..	" 22..	Not used on.....	10	Medium size, of fine appearance.
Early Ohio.....24 "	" 22..	"	19	A fair medium size, fine quality.
Irish Cobbler..12 "	" 22..	"	8	Large, fine and smooth.

PUMPKINS—TEST OF VARIETIES HARVESTED AUGUST 30

Variety and source of seed	Number of hills	Date ready for use	Number harvested	Average weight	Comment
				lb.	
Planted under glass, May 16—					
Connecticut Field (Steele Briggs)...	4	Aug. 23	34	24	Large and of a fine quality.
Jumbo or Mammoth " ..	4	" 23	18	27	Very large, excellent quality.
Sweet or Sugar " ..	4	" 20	72	12	An excellent crop, very good quality.
Sweet or Sugar, Ott. 11015.....	2	" 22	22	10	Medium size, fine quality.
Planted direct to the open ground—					
					Harvested September 3.
Connecticut Field.....	4	" 28	25	7½	Of a fair size, and fair quality.
Jumbo or Mammoth.....	4	" 28	19	7	Medium size, medium quality.
Sweet or Sugar.....	4	" 26	20	5½	Fair size, good quality.

RADISH—TEST OF VARIETIES

The variety test of this garden vegetable from season to season shows that most of the commercial varieties produce radishes of good table quality if the weather conditions are suitable.

During the season of 1930, the first seeding was done on April 29, the emergence date being May 10, and they were ready for table use from June 4 to June 30. During this period the weather was moderately cool and quite moist, and as a result all the varieties from this early seeding produced roots that were firm fleshed and of good flavour.

The following were the varieties that were under test:—

Scarlet Turnip White Tipped, McDonald.
Ne-Plus-Ultra, Ewing.
Rapid Forcing, Henderson.
White Icicle, Patmore
French Breakfast, McDonald.

The following strains were used in the second seeding which was made on May 12. The emergence date was not until the 23rd, and they were not ready for use until June 25, so with the very hot and dry weather conditions of early July, the length of the time in use was comparatively short, as they soon went to seed.

The following were the strains tested in this second seeding:—

Rosy Gem, Steele Briggs.
Early Scarlet Globe, Steele Briggs.
Early White Turnip, Steele Briggs.
French Breakfast, Steele Briggs.
White Icicle, Steele Briggs.

RHUBARB—VARIETY AND STRAINS TEST

Very excellent results were obtained this season from the numerous varieties and strains of rhubarb.

The earlier varieties were usable by May 20, the larger and later varieties at a later date, and with the size of the plantation at present there is a continual supply throughout the season.

More Ruby Ott-45 seed was sown in the open ground on May 12. These young plants will be used for filling in the vacant spots within the plantation, and for distribution to the many new settlers, as there is always a great demand for rhubarb plants.

HORSE RADISH

The horse radish plantation is still maintained, and continues to thrive, and from this a great number of roots are harvested, especially during the autumn for winter use.

TOBACCO

One variety of tobacco, Canelle or Quesnel (McDonald seed), was sown under glass on April 24, and transplanted to the open on June 10. The plants made very vigorous growth throughout the season, and by the end of August they had reached a height of three and a half feet, and had almost reached the curing stage when ruined by the first frost in early September.

SPINACH—TEST OF VARIETIES

Two drills 33 feet long and 24 inches apart of each of the following varieties of spinach were sown on April 29: Bloomsdale (Steele Briggs), and King of Denmark (Steele Briggs).

The emergence date for both varieties was May 13, and they were sufficiently large to be usable on May 28. Both varieties grew to a large size and remained in use until the very late autumn, and while being harvested a large amount was taken away by some of the settlers for canning purposes for winter use.

SWISS CHARD—TEST OF VARIETIES

Two strains of Swiss chard, one of Steele Briggs and one of Rennies, were grown this season, two drills of each variety. The first seeding was done on April 29. They came into use on June 15, by which date the plants were quite large, and remained usable throughout the summer before going to seed.

A second seeding of the same varieties was made on June 3. These did not come into use until July 20, and with the dry weather of July the growth was not so luxurious as from the early seeding, as with the dry weather they soon went to seed, but from both seedings sufficient was obtained to supply the demand at the Station.

SQUASH AND VEGETABLE MARROW—TEST OF VARIETIES—HARVESTED AUGUST 30

Variety and source of seed	Number of hills	Date ready for use	Number picked during season	Total number picked	Average weight	Comment
					lb.	
Planted under glass, May 16—						
Long White Bush Marrow (Steele Briggs)	4	Aug. 26	4	42	12	A good crop, fine quality.
English Vegetable Marrow (Steele Briggs)	4	" 13	13	59	16	Extra large, good quality.
Golden Hubbard (Steele Briggs)	4	" 25	6	29	8	Medium size, quality good.
Giant Summer Crookneck (Steele Briggs)	4	" 30	.....	48	6	A fair size, fair quality.
Blue Hubbard, Stokes Novelty	2	" 30	.....	24	9	Large, good quality.
Cocozelle Bush Italian Marrow, Henderson	2	" 30	.....	18	6	Medium size, quality fair.
Golden Hubbard, Ott. 4884	2	" 30	.....	17	10	Very large, quality excellent.
Planted direct to the open ground—						
Long White Bush Marrow	2	" 28	10	20	10	Good results.
English Vegetable Marrow	2	" 30	.....	30	8	Medium size, quality good.
Golden Hubbard	2	" 30	.....	26	9¾	Large, quality fine.
Giant Summer Crookneck	2	" 30	.....	14	5	Of a fair size.
Summer Cocozelle	2	" 30	.....	24	7	Fairly large, good quality.

SUMMER TURNIPS—TEST OF VARIETIES

Four drills 33 feet long and 24 inches apart of each of the following varieties of summer turnips were sown on May 13. The germination of the seed was very timely, and of a full 100 per cent, the emergence date being May 22. The plants were thinned on June 18 to five inches apart in the drills.

All varieties were fit for table use on July 21, and were of a fair size then. The plots were used from quite freely during the early summer, and when harvested on August 18 they were beginning to deteriorate in quality.

The following were the yields obtained from each variety when harvested:—

SUMMER TURNIPS—RESULTS OF TEST OF VARIETIES

Variety and source of seed	Yield from plot
	lb.
Snowball or White Stone, Steele Briggs	198
Golden Ball or Orange Jelly Steele Briggs	220
Extra Purple Top Milan, Steele Briggs	216
Red Top Strap Leaf, Steele Briggs	202

TOMATOES

Fourteen strains and varieties of tomatoes were tested this season. The seed was sown in the hot-beds on April 24, and the plants were transplanted from the hot-beds to the open garden on June 7. One drill of each variety, 33 feet long and 36 inches apart, was planted, the plants being set 30 inches apart, and thirteen plants to each row.

With the fairly favourable weather conditions of June, warm nights and frequent showers of rain, most vigorous growth was made, and with the month of August absolutely frost free a much larger percentage of ripe fruit was picked than usual, and commencing from a much earlier date.

In the following table are given the different methods of training and pruning, each variety being staked and tied. It will be noted that the varieties stopped at the first truss of fruit and pruned at an earlier date, produced ripe

fruit at an earlier date than did the varieties that were given other methods of training, and while the date of ripening was earlier, it will also be noted that their total yields were considerably lower than the other varieties trained under other methods.

The date of harvesting all varieties was September 1.

TOMATOES—TEST OF VARIETIES AND METHODS OF TRAINING

Method of training	Variety and source of seed	Date first ripe fruit	The season's total picking		Comment
			Ripe	Green	
			lb.	lb.	
Stopped at first truss of fruit...	Alacrity, Ott. 3531-41 Pro. H. 431	Aug. 27	15	16	Fine large smooth fruit.
Stopped at first truss of fruit...	Bonny Best, Stokes Pro. H. 431	" 25	17	20	Very fine and large.
Stopped at second truss of fruit	Pink No. 1, Ott. 11588	" 25	20	25	Medium size, good quality
Stopped at second truss of fruit	Alacrity x Earlibell, Ott. 11385	" 22	16	32	Medium size, fine quality.
Stopped at second truss of fruit	Matchless, Graham	" 30	18	27	Large smooth, fine quality
Stopped at second truss of fruit	Pink No. 2, Ott. 11387	" 29	19	32	Very large and smooth.
Stopped at third truss of fruit..	Wayahead, Bruce	" 30	14	41	Of a medium size.
Stopped at third truss of fruit..	Red Rock, Langdon	" 22	22	40	Very good, fair size.
Stopped at third truss of fruit..	Select Earliana, Moore	" 30	15	51	Of a medium size.
Stopped at third truss of fruit..	A. B. B. Ott. 11389	" 29	23	45	Medium size, fair quality.
Headed back, but all trusses left on	L. G. B. B. Ott. 11392	" 22	20	47	Very fine quality.
" "	Alacrity, Ott. 3531-41	" 27	26	43	Excellent quality.
" "	Herald, Ott. 11386	" 25	30	47	Small, but good quality.
" "	Early Canadian, Bruce	" 24	25	60	Quite small, fair quality.

FLORICULTURE

ANNUAL FLOWERS

The weather conditions of the past season were ideal for floricultural work. A very large number of common annual flowers were grown from seedlings grown in the hot-beds as well as from sowing in the open.

The more tender varieties were sown in the hot-beds on April 24, and the transplanting of these varieties to the open garden was commenced on June 3 and extended until June 9.

The hardier varieties were sown direct to the open ground commencing May 19 and continued at intervals until completed on the 24th, while some of the self-seeding varieties that started to grow in early May in the garden were taken up and arranged in beds, and many of these came into bloom during the latter part of May. This season with its frost-free spring and the frequent showers of rain during June, the display of annual flowers taken collectively was exceptionally good, and a good continuation of blooms was maintained from late May until mid-September.

The following were the varieties sown in the hot-beds, and dates of coming into bloom:—

ANNUAL FLOWERS SOWN IN THE HOT-BEDS

Variety	Date in bloom	Remarks
A Collection of McDonald's Asters, Giant Comet:—		
Azure Blue	Aug. 5	Very good
Crimson	" 5	Fine large blooms
Mauve	" 6	A very fine showing
Dark blue	" 4	A fine display
Rose	" 5	Very large plants, fine blooms
Light yellow	" 7	Good and many blooms
White	" 4	Very pretty

While the dates given for the asters in bloom would appear late, they were very fine large plants, and at this date each plant was quite branching and covered with many fine blooms.

ANNUAL FLOWERS SOWN IN THE HOT-BEDS—*Concluded*

Variety	Date in bloom	Remarks
A Collection of McDonald's Antirrhinum:—		
Apple Blossom	July 21	A fine showing
Nelrose	" 21	Many fine blooms
Flame	" 23	Very fine
Queen	" 21	A very fine showing
Scarlet King	" 24	An excellent showing
Golden Queen	" 24	A fine showing of blooms

The Antirrhinums were transplanted into individual beds and with their many colours made a very fine display.

Anagallis Blue	July 26	Very pretty edging plant
Amarthus—Large plants	" 6	Very fine foliage
Alyssum	June 20	Quite good, much bloom
Balsam	July 22	A very fine showing of blooms
Celosia—These became very fine large plants, much fine foliage.		
Cineraria	July 28	Very good
A Collection of McDonald's Cosmos:—		
Early pink	June 24	Many fine blooms
White	" 24	Very good
Crimson	" 24	Extra good
Cacalia	July 12	Fine
Datura—These grew to a large size	Aug. 21	Many fine large excellent blooms.
Dahlia Double	" 24	These made a fine showing
Dahlia Coltness Hybrids	" 25	Many fine single blooms
Helichrysum	" 19	A good showing
Lobelia	" 19	Very good, was used as edging
Lavatera	" 24	A very fine display
Malope	" 20	Fine large plants, many blooms
Nicotiana	" 23	Plants very large, many blooms
Nigella	" 22	Very nice showing
Petunia Balcony Blue	" 26	An excellent display
Petunia Balcony White	" 26	Very good, fine large blooms
A Collection of McDonald's Phlox:—		
Apricot	July 23	These five different colours made an excellent display
White	" 23	
Dark Blue	" 24	
Fireball	" 24	
Isabella	" 23	
A Collection of McDonald's Stocks:—		
Peach Blossom	July 12	These eight different colours intermingled with other colours made a wonderful display
Beauty of Nice	" 12	
Yellow of Nice	" 15	
Crimson King	" 18	
Queen Alexandra	" 14	
White of Nice	" 15	
Rose of Nice	" 15	
Princess Alice White	" 15	
Scabiosa	" 30	A very fine showing
Salpiglossis	" 14	An excellent showing
Schizanthus Butterfly Flower	" 22	Very fine for bouquets
A Collection of McDonald's Verbena:—		
Mammoth White	July 29	These with the contrasting colours made a very fine display
Mammoth Striped	Aug. 1	
Zinnias	July 24	A very excellent showing

ANNUAL FLOWERS SOWN DIRECT TO THE OPEN GROUND

This collection was made up principally of McDonald's Seed with a few varieties from Dobbie's, Crosland Bros. and Steele Briggs

Variety	Date in bloom	Remarks
Acroclinium	July 20	Many shades of colour, quite good
Ammobium	" 22	Very fine for winter decorations
Mixed Everlasting Flowers	" 25	A fine combination of colours
Abronia Umbellata	Aug. 2	Very pretty, quite suitable for rockeries
Alyssum Little Gem	July 10	A continuous bloom, very fine for edging
Adonis Autumnalis	Aug. 15	Very hardy, blooms red
Arctotis	July 26	Very free flowering
Artemisia Summer Fir	" 20	Very fine foliage
Bartonia	" 3	This made a gorgeous display
Brachycome	" 20	A continuous array of bloom
Candytuft Dark Crimson	June 25	A long duration of bloom
Candytuft Giant White Empress	" 25	The both colours made a fine display
Clarkia Ruby King	July 23	A profuse bloomer
Calliopsis Dark Red	Aug. 1	Bloomed very freely
Calendula Orange King Improved	July 24	Many fine blooms
Centaurea Blue	" 22	Bloomed most profusely
Canary Bird Vine	Aug. 4	Very fine foliage, many blooms
Dimorphotheca	" 6	Very good, almost the last to bloom in the autumn
Eschscholtzia	July 12	Very good
Godetia Lady Satin Rose	" 26	A beautiful combination of blooms
Kochia		These became fine large plants, fine foliage
Jacobaea	July 28	Very fine
Lupinus	" 3	Many blooms quite good
Linum Perenne Blue	June 20	A very free bloomer
Linaria	" 25	Blooms of many delicate shades
Lavatera	July 26	Very fine lily-like blossoms
Malope	" 20	A very good display of blooms
Matthiola Night Scented Stock	" 18	A miniature stock, very sweet scented
Marigold Dwarf French	" 20	The blossoms of many shades
Mesembryanthemum	June 24	Very ornamental
Mignonette	" 22	A long duration of bloom.
Nigella Miss Jekyll	" 22	Quite hardy, many fine blooms
Nasturtiums Dwarf	July 29	Many fine blooms
Nasturtiums Tall	" 29	Very free bloomer, many different colours
Portulaca	Aug. 5	Very pretty, an abundance of many coloured blooms
Poppies, Superb Shirley	July 28	A fine display, double and single blooms
Wild Flowers	June 29	A great diversity of blooms and colours

SWEET PEAS

A collection of twelve (McDonald's seed).

These were sown in the open ground on May 19. The germination was strong and quite timely. The vines made very vigorous growth, and bloomed most profusely throughout the season, commencing from July 27.

These pure strains along with the two McDonald and Steele Briggs mixtures with their many colours made a gorgeous display.

Names	Date in bloom
Mrs. Tom Jones	July 28
Hercules	" 29
Purple	" 31
Royal Scott	" 31
Constance Hinton	" 28
Ravenscourt	" 30
Apple Blossom	" 30
Daffodil	" 27
Vermilion Brilliant	" 28
The President Harding	" 28
Charity	" 29
Tangerine Improved	" 31

McDonald Spencer Mixed—
These came into bloom on July 28, and made a wonderful showing of fine blossoms.

Steele Briggs Spencers—
These came into bloom on July 29, with a beautiful combination of colours and continued to bloom until cut down by the September frost.

Steele Briggs Cupid Sweet Peas—
As these are of a very dwarf habit, they are used as edging around beds of taller plants with wonderful effect, with a continuous bloom from July 18 until the late autumn.

PERENNIAL FLOWERS

The following is a list of perennial flowers that have proved to be hardy, and have withstood our northern winters. This collection provided a continuous bloom from early in the spring until late in the autumn.

HARDY PERENNIAL FLOWERS

Variety	Date in bloom
Adlumia, Mountain Fringe	Many plants of this climber were planted around the different arbours or rustic work in the fall of 1929. These made most remarkable growth, and by midsummer had completely covered them with its beautiful foliage covered with a multitude of most delicate flesh coloured flowers.
Achillea, The Pearl	June 12
Aquilegia in variety, Columbine	" 20
Delphinium in variety, Larkspur	" 21
Dianthus, a number of varieties	" 21
Dicentra spectabilis, Bleeding Heart	July 2
Dictamnus Fraxinella, Gas Plant	June 24
Gaillardia, Blanket Flower	July 3
Gypsophila paniculata, Baby's Breath	" 15
Gladiolus, many strains	Aug. 20
Helenium Hoopesi, Sunflowers	July 20
Iris in variety, Flag	June 20
Lilium tigrinum, Tiger Lily	July 12
Lychnis Chalcedonica, Jerusalem Cross	June 25
Montbretias	July 2
Oxalis	" 4
Peonies, a number of different colours	" 9
Papaver Orientale, Oriental Poppy	May 19
Papaver nudicaule, Iceland Poppy	" 15
Pansies, many strains and colours	" 18
Rudbeckia, Golden Glow	June 27
Summer Hyacinths	Aug. 22

ROSES

The collection of Rosa rugosa roses that were moved in the season of 1928 from the old plantation to a new location, have made wonderful growth, and this season they made a splendid showing, coming into bloom on June 25, and gave a continuation of bloom until the very late fall.

These blossoms of Rosa rugosa were a semi-double crimson, and were very much admired.

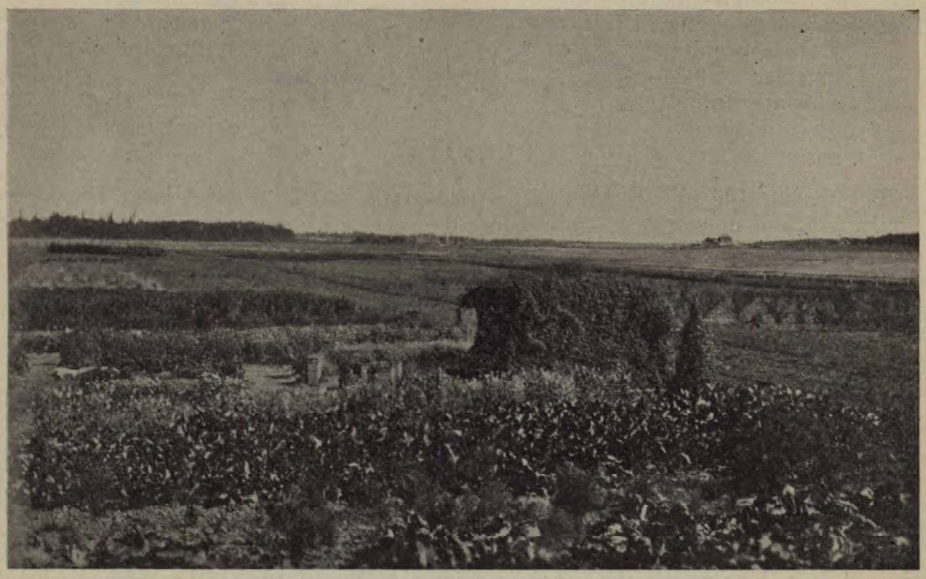
The single bush of Harison Yellow rose has developed into a fine large bush, and commenced blooming on June 28 and bloomed very freely throughout the season with small blossoms of semi-double Light Clear Golden Yellow.

ORNAMENTAL SHRUBS AND FRUIT BUSHES

As the remodelling and removing of the ornamental shrubs and fruit bushes was done in part in the spring of 1930, at the time when such shrubs and plants were making preparation for blooming, with this removing and replanting, very few of the shrubs bloomed this season. The breaking up and replanting of the few remaining fruit bushes prevented any fruit from setting also.

In the setting out of the new plantation of ornamental shrubs, fruit bushes and a few varieties of native shrubs, a few new varieties of shrubs received from the Morden Experimental Station were also planted. The different varieties were planted more in a hedge formation, as near as possible, each

variety being in a row forty-six feet long, each row flanked by a native spruce, the rows being fifteen feet apart. This method will allow access between the rows with a horse-drawn cultivator to keep down weed growth, until such times as the shrubs become well established and the land between the rows can be seeded down to some variety of lawn grass.



Part of the flower garden in the foreground, the new shrubbery to the right, sunflowers and hemp in the distance, and a wheat field in the far right.

The flanking of the rows with the native spruce was more of a protection for the other varieties when turning with a harrow or cultivator. This work of removing the balance of the shrubs will be completed in the spring of 1931.

During the season a great many small seedlings were taken up from among the old shrubbery and planted in nursery rows, and will be moved later into the new plantation.

All the old dead shrubs and other plants were removed from the old plantation, the spruce trees nicely trimmed, and this land will be ploughed up in the spring, and put in readiness for other crops.

The following is a list of shrubs received from the Morden Experimental Station, but a large number of these did not grow:—

Buffalo berry
Sea buckthorn
Acer spicatum
Cornus alba sibirica
Acer tartarica
Caragana pygmaea
Siberian almond
Ribes diacantha
Willows, Golden
Red
Laurel
Britzensis
Sandcherry
Native grape

The following varieties of seeds were also received from the Morden Experimental Station, in the late spring of 1929.

These were only planted during the late autumn. Each variety was planted in a seed bed 12 x 4 feet, the sides and ends framed by lumber 8 inches wide.

The larger seeds were covered to a depth of three inches, and the smaller seeds to a depth of one inch, and we trust that from this collection of seeds that some strong, sturdy seedlings will be obtained.

Prunus nana
Prunus armeniaca
Shepherdia argentea
Hippophae rhamnoides
Elaeagnus angustifolia
Betula pumila
Syringa villosa
Cornus stolonifera
Rosa Rugosa
Rosa altaica
Viburnum americanum
Prunus virginiana
Mountain ash, native
Cotoneaster acutifolia
Cotoneaster integerrimia
Ribes aureum
Acer ginnale
Caragana arborescens

CEREALS

The favourable results obtained with cereals in this district have been very encouraging and more time is now being devoted to this work.

The notes with respect to soil, temperature and precipitation will be found elsewhere in this report, and will not be referred to here aside from such conditions as affect some crop in particular.

VARIETY TEST OF SPRING WHEAT

Eleven varieties or strains of spring wheat were tested on one-sixtieth acre plots. These plots were sown at the rate of two bushels per acre, on May 2 and 5, snow causing the interruption in seeding operations. Favourable weather conditions prevailed throughout the balance of the month and with ample moisture in the soil and timely showers in the month of June, the growth of all cereals was very rapid.

The land used this season for cereal test plots was that on which a crop of corn and roots was grown the previous year. A liberal application of well rotted barnyard manure at the rate of twenty wagon loads per acre, had been applied the previous year on the roots and corn, so that the land had ample fertility for the cereals grown. This fertility, enhanced by splendid tilth and uniformity of the soil made the test plot area ideal for cereals.

The results obtained from the large test plots will be found in the following table:—

WHEAT—RESULTS OF TEST OF VARIETIES

Name of variety	Average length of straw including head	Strength of straw on scale of 10 points	Yield of grain per acre	Weight per measured bushel after cleaning
	in.		lb.	lb.
Huron, Ottawa 3	48	7	2,940	60·0
Bishop, Ottawa 8	52	5	3,060	58·0
Ruby, Ottawa 63	45	8	2,520	62·0
Garnet, Ottawa 650	42	10	2,640	61·0
Reward, Ottawa 928	42	10	2,700	62·5
Marquis, Ottawa 15	41	10	2,820	61·0
Kubanka, Ottawa 37	54	8	2,580	62·0
Kota	45	10	2,760	62·0
Prelude, Ottawa 135	47	10	2,280	63·0
928 QQ2	38	10	2,340	59·5
Renfrew	45	10	3,120	58·5
Marquis (chemist)	42	10	2,460	61·0

It will be interesting to note that at the time of writing there is in this district, slightly over 45,000 bushels of wheat stored in the farmers granaries, which is made up of the following varieties:—

	per cent
Ruby	55
Garnet	15
Reward	5
Red Bobs	15
Preston	10

The importance of early maturing varieties for the north land is evident from these figures, as it will be noted that 75 per cent of the wheat is composed of varieties which ripen earlier than Marquis wheat. The varieties Red Bobs and Preston will be discarded and replaced by the Reward variety in this district by next season, as many of the farmers are obtaining samples of Reward from this Station and building up sufficient seed for a larger acreage.

A general view taken at the beginning of the cereal harvest.

OATS—TEST OF VARIETIES

Eight varieties of oats were tested in single one-sixtieth acre plots. These were sown on May 2 at the rate of 2¼ bushels for small varieties and 2½ for large varieties.

The data obtained will be found in the table which follows:—

OATS—RESULTS OF TEST OF VARIETIES

Variety	Average length of straw including head	Strength of straw on scale of 10 points	Yield per acre	Weight per measured bushel after cleaning
	in.		lb.	lb.
Gopher	46	8	2,880	35·0
Star	43	10	2,820	30·0
Liberty, Ottawa 480	43	10	2,400	47·0
Laurel, Ottawa 477	46	8	2,580	46·5
Victory	40	10	2,940	39·0
Banner, Ottawa 49	47	10	3,060	35·0
Eighty Day, Ottawa 24	42	10	2,280	33·5
Daubeney, Ottawa 47	40	10	2,340	33·0

BARLEY—TEST OF VARIETIES

Thirteen varieties of barley were under test in single one-sixtieth acre plots this past season. These plots were sown on land similar to that used for the wheat plots. The plots were sown on May 2 and 5 at the rate of 2½ bushels per acre.

The data obtained from these tests will be found in the following table:—

BARLEY—RESULTS OF TEST OF VARIETIES

Variety	Average length of straw including head	Strength of straw on scale of 10 points	Yield per acre	Weight per measured bushel after cleaning
	in.		lb.	lb.
Hulless White	29	7	2,820	59·0
Eureka	40	5	2,940	61·5
Albert, Ottawa 54	48	5	2,520	46·5
Success	43	5	2,640	40·0
Manchurian, Ottawa 50	48	10	3,120	42·5
Gold Sweden	39	7	3,240	51·0
Bark	40	10	2,760	45·5
Charlottetown, Ottawa 80	40	10	3,180	50·0
Plumage Archer	42	3	3,360	49·0
O.A.C. No. 21, C.D. 991	47	10	3,000	44·0
Star	35	10	2,400	44·5
Hannchen	42	7	3,420	51·5
Canadian Thorpe	43	3	3,540	48·0

FIELD PEAS—TEST OF VARIETIES

Nine varieties of field peas were tested in duplicate plots of one-sixtieth acre on land similar to that on which the other cereals were tested.

With the exception of Lemaire R. 76-26 which was seeded on May 5, the varieties were sown on May 1. The seed was sown at different rates according to its size ranging from 1¾ to 2½ bushels per acre.

The germination of the seed was somewhat retarded by the coolness of the soil at the time of seeding, fully fifteen days between date of seeding and date of emergence May 16, but from the emergence date the growth was fairly rapid, and excellent growth was maintained throughout the growing season.

While the vines reached a good length, ranging from fifteen inches for the Lemaire R. 76-26 to seventy-five inches for Alberly Blue, and while the sample of threshed grain from all varieties was of an excellent quality, the yields were slightly below a three year average.

In the following tables are given the data and yields obtained, along with a three year average:—

PEAS—RESULTS OF TEST OF VARIETIES

Variety	Number of days maturing	Average length of vine	Average length of pod	Yield per acre	Weight per measured bushel after cleaning
		in.	in.	lb.	lb.
Lemaire, R 76-26	85	22	2	2,940	64·0
Arthur, Ottawa 18	98	56	2	2,400	62·0
White Albertan	96	52	2	3,060	63·0
Dashaway, Sask	96	57	1½	2,820	62·0
Chancellor, Ottawa 26	88	53	1¾	2,520	63·0
Prussian Blue	100	60	2	2,580	62·0
Mackay, Ottawa 25	106	63	2¼	3,180	62·0
Alberly Blue	101	60	2½	3,120	61·0
Empire Blue	94	58	2	2,700	62·5

FIELD PEAS—A THREE-YEAR AVERAGE

Variety	Average number of days to mature	Average yield per acre
		bush.
Arthur, Ottawa 18	101	36·0
White Albertan	100	42·3
Dashaway, Sask	99	43·0
Chancellor, Ottawa 26	91	36·7
Mackay, Ottawa 25	104	47·0
Prussian Blue	102	34·0
Empire Blue	97	41·5
Alberly Blue	101	39·0
Two-year average—		
Lemaire R. 76–26	87	50·5

The variety Lemaire R. 76-26 has only been under test for two years, and while it is of a dwarf habit, it is very early and a heavy yielder. The peas are of a fine appearance, and are an excellent cooking pea, whether served in soup or in any other form.

SPRING RYE—TEST OF VARIETIES

Two varieties of spring rye were tested this season; the seed was sown on May 5 in duplicate plots of one-sixtieth acre each. To prevent cross pollination of the varieties they were sown in different locations within the cereal areas.

With the very favourable season, excellent growth was made, and the yields obtained this season were quite up to the average, with the samples of threshed grain of a very high quality.

In the following table the yields obtained from one plot of each variety are given, along with a three year average:—

SPRING RYE—RESULTS OF TEST OF VARIETIES

Variety	Number of days maturing	Average length of straw, including head	Strength of straw on scale of 10 points	Yield per acre	Weight per measured bushel after cleaning	Average number of days to mature	Average yield per acre
		in.		lb.	lb.		bush. lb.
Common	105	56	10	2,882	54·4	108	45 21
Select, Ottawa 12	105	52	10	2,700	54·0	105	43 52

SPELTZ—TEST OF VARIETY

One variety of speltz was sown on May 5 in duplicate test plots of one-sixtieth acre each. The germination of the seed was quite timely, and the growth made throughout the season was very strong.

BUCKWHEAT—TEST OF VARIETIES

Two varieties of buckwheat were tested again this season; the seed was sown on May 12, in duplicate plots of one-sixtieth acre each.

The germination of the seed was fully 100 per cent and quite timely, May 20, but on the following day a light frost did some very slight damage to the emerging plants. No damage however was noticed on any other form of vegetation. From the above date, the plants made excellent growth throughout the balance of the season, and were still in bloom when cut on August 25.

In the following table the yields obtained are given, along with other data in connection with the buckwheat crop:—

BUCKWHEAT—RESULTS OF TEST OF VARIETIES

Variety	Number of days maturing	Average length of straw, including head	Strength of straw, on scale of 10 points	Yield per acre	Weight per measured bushel after cleaning
		in.		lb.	lb.
Silverhull	105	45	10	1,080	49·0
Japanese	105	43	10	1,200	42·0

FIELD BEANS—TEST OF VARIETIES

Three varieties were under test this season.

The seed was planted on May 12 in duplicate test plots of 1/120 acre each, in hills 24 inches apart each way, with five seeds to each hill, and also in drills which were twenty-four inches apart, with the seed planted two inches apart in the drills.

Sufficient cultivation was given the plots during the early season to promote good growth, so with the very favourable growing season, and the freedom from early autumn frosts, the yields and quality were much above the average.

It will be noted that much higher yields, were obtained from the plots planted in drills. The percentage of loss given in the table of yields, was caused by the large percentage of immature seeds at the time of harvesting, and these were lost in the fanning operations.

For the first time since beans, either field or garden varieties, have been under test at this Station, anthracnose was noticeable. This condition was caused no doubt by some particular climatic condition.

Of the three varieties under test this season, and for the past four seasons, the variety Norwegian Ottawa 710 would seem the hardiest and most suitable variety for this northern district.

In the following table the results obtained are given:—

FIELD BEANS—RESULTS OF TEST OF VARIETIES

Variety	Average length of		Yield per acre	Per cent of immature seed	Weight per measured bushel
	Plant	Pod			
	in.	in.	lb.	%	lb.
Norwegian, Ottawa 710	21	6	1,920	5	56·0
Norwegian, Ottawa 710	20	6	2,280	10	56·0
Beauty, Ottawa 712	19	5	1,320	20	57·0
Beauty, Ottawa 712	19	5	1,800	20	57·0
White Pea	20	4½	1,200	20	56·5
White Pea	20	4½	1,920	15	56·5

FLAX—TEST OF VARIETIES

Three varieties of flax were tested again this season for the Cereal Division for grain production. With the very favourable weather conditions prevailing the growth of straw was slightly heavier than usual, and the yields of grain about up to the average. The quality of the grain was of a high standard, there being no frost injury, as in previous seasons, and no flax wilt was observed.

The seed was sown on May 6, in one-sixtieth-acre plots, the different varieties being ripe and pulled by August 18.

The yields and other data are given in the following table:—

FLAX—RESULTS OF TEST OF VARIETIES

Variety	Number of days maturing	Average length of plant	Yield of grain per acre	Weight per measured bushel	Yield of straw per acre
		in.	lb.	lb.	lb.
Premost, No. 25	105	37	1,080	55·0	5,400
North Dakota, No. 52	105	35	1,020	55·0	5,280
Fibre	105	37	1,140	55·0	5,520

FALL RYE—TEST OF VARIETIES

Five varieties or strains of fall rye were tested during the season of 1929-30. The seed was sown at the rate of one and a half bushels per acre, on August 28, 1929, in one-sixtieth-acre plots, on land that had been summer-fallowed the previous year.

The germination of the seed of all varieties was good (fully 100 per cent). The autumn growth was quite strong and the plot wintered quite satisfactorily with comparatively no winter-killing, so that with the very favourable weather conditions prevailing during the past season, very good yields of excellent quality grain were obtained with very heavy yields of straw.

The very favourable results obtained with fall rye over a number of years proves it to be a sure crop for this northern district, with its many different classes of soil. Results are given in the following table:—

FALL RYE—RESULTS OF TEST OF VARIETIES

Variety	Date of ripening	Average length of straw including head	Strength of straw on scale of 10 points	Yield per acre	Weight per measured bushel after cleaning
		in.		lb.	lb.
Saskatoon	Aug. 12	46	10	2,640	55·0
Mammoth White	" 12	56	10	2,880	55·0
Rosen	" 12	52	10	2,520	52·5
North Dakota 959	" 12	51	10	2,760	54·5
Common	" 12	52	10	2,820	55·0

WINTER WHEAT—TEST OF VARIETIES

A one-sixtieth- acre plot of O.A.C. No. 104, winter wheat was sown on August 28 on the same site as the fall rye, under the same conditions, and although fair growth was made during the late autumn, it did not seem sufficiently hardy to withstand our severe winter conditions, therefore it proved a failure, as it has for a number of past seasons.

FORAGE CROPS

VARIETY TESTS OF FIELD ROOTS

The land used this season for the growing of field roots was in summer-fallow in 1929 following potatoes grown on the land in 1928. Manure at the rate of twenty wagon loads to the acre was applied previous to the potato crop.

MANGELS

Ten varieties of mangels were tested in 1930. Seeding was done in duplicate one-sixtieth-acre plots on May 12, but due to poor germination and injury by cutworms, reseeding was necessary. This was done on May 29 and a fair stand was secured. The drills were placed twenty-four inches apart and on June 18, the plants were thinned to twelve inches apart in the rows. Mangels were harvested on September 23, giving yields as shown on the table following.

MANGELS—TEST OF VARIETIES

Variety and source of seed		Rate of yield per acre, green weight		Per cent stand when harvested
		ton	lb.	
Giant Yellow Oval	Steele Briggs	23	1,400	100
Eclipse	A. E. McKenzie	23	400	100
Golden Fleshed Tankard	Steele Briggs	22	280	95
Long Red Mammoth	Graham Bros.	20	1,580	85
Giant Rose	A. E. McKenzie	18	1,320	90
Red Tankard	Graham Bros.	18	1,200	85
Danish Sludstrup	Graham Bros.	17	1,400	80
Leviathan	Wm. Rennie	16	1,600	80
Yellow Intermediate	C. E. F.	16	1,600	80
Giant Yellow Globe	Steele Briggs	16	400	80

SWEDE TURNIPS

Nine varieties of swede turnips were tested in 1930 in plots of one-sixtieth of an acre. The seed was sown May 12 in drills twenty-four inches apart and the percentage germination was high. On June 24 the plants were thinned to ten inches apart in the row.

The data obtained are presented in the following table:—

SWEDE TURNIPS—TEST OF VARIETIES

Variety and source of seed	Rate of yield per acre, green weight		Per cent stand when harvested	Date harvested
	ton	lb.		
Jumbo, Steele Briggs	25	520	100	Sept. 17
Good Luck, Steele Briggs	24	1,200	100	" 26
Purple Top, C.E.F.	23	1,040	100	" 26
Select Westbury, Steele Briggs	22	1,000	100	" 26
Hartley's Bronze Top, Wm. Rennie	22	880	100	" 26
Canadian Gem, Steele Briggs	22	520	100	" 17
Skirving's Imp. Purple Top, K. McDonald & Sons	20	800	95	" 17
Bangholm, Exp. Farm, Nappan	19	640	90	" 17
Magnum Bonum, K. McDonald & Sons	18	1,560	80	" 26

FALL TURNIPS

Seven varieties of fall turnips were tested in 1930, in duplicate plots of one-sixtieth-acre each.

The seed was sown on May 12, in drills twenty-four inches apart. The percentage germination was high. On June 20 the plants were thinned to twelve inches apart in the row. The plots were harvested on August 20 with results as shown in the following table.

FALL TURNIPS—TEST OF VARIETIES

Variety and source of seed	Rate of yield per acre, green weight		Per cent stand when harvested
	ton	lb.	
Green Top Yellow Aberdeen, Wm. Ewing	22	640	100
Purple Top Mammoth, Steele Briggs	22	580	100
Pomeranian White Globe, Steele Briggs	22	400	100
Red Paragon, Sutton & Sons	22	340	100
White Globe, Wm. Ewing	21	1,860	100
Devonshire Greystone, Steele Briggs	21	1,680	100
Aberdeen Purple Top, Steele Briggs	21	1,100	100

FIELD CARROTS

Seven varieties of field carrots were tested in 1930. The plots were one-sixtieth of an acre in size with the drills twenty-four inches apart. The seed was sown on May 13 and germination was good. On June 26, the plants were thinned to four inches apart. The harvesting was done on September 26.

In the following table are given the yields obtained:—

FIELD CARROTS—TEST OF VARIETIES

Variety and source of seed	Rate of yield per acre, green weight		Per cent stand when harvested
	ton	lb.	
Mammoth Short White, Wm. Rennie	17	1,040	100
White Belgian, Wm. Ewing	17	320	100
Danish Champion, C.E.F.	16	1,000	100
Improved Intermediate White, Wm. Ewing	16	840	100
White Belgian, Dupuy & Ferguson	16	760	100
Improved Intermediate White, Dupuy & Ferguson	15	960	100
Mammoth Intermediate White, John A. Bruce	15	240	100

SUGAR BEETS

Three varieties of sugar beets were grown at this station in 1930.

Seeding was done on May 12 in one-sixtieth-acre plots with drills twenty-four inches apart. Due to poor germination and injury from cut worms and other insects reseeding was necessary and this was done on May 25. The germination of this seeding was fair. On June 23 the plants were thined to ten inches in the row. The roots were harvested on September 23 and a sample of each variety of roots sent to the Dominion Chemist for analysis.

SUGAR BEETS—TEST OF VARIETIES

Variety	Rate of yield per acre, green weight		Per cent stand, when harvested
	ton	lb.	
Rabbethge & Giesecke	13	1,480	85
Fredericksen	14	1,040	90
Lippe	12	120	80

The following table gives the results of the analysis of the sugar beets of the 1929 crop. The analysis was performed by the Dominion Chemist:—

RESULTS OF ANALYSES OF SUGAR BEETS

Variety	Sugar in juice	Coefficient of purity	Average weight of one root	
	%	%	lb.	oz.
Schreiber & Sons	20·04	86·40	1	3
Fredericksen	19·17	82·99	1	1
Horning	18·80	84·31	1	4
Rabbethge & Giesecke	18·99	84·37	1	3
Vilmorin's Improved	17·71	83·16	1	2
Dippe	18·64	82·83	1	0

FIELD CORN

Thirteen varieties of field corn were grown in 1930 in duplicate test plots. One plot of each variety was sown in hills thirty-six inches apart each way, while another was sown in drills thirty-six inches apart.

The land was uniform and had been in cereal crops the year previous. Following the harvesting of the cereals, barnyard manure at the rate of twenty large wagon loads per acre was applied and the land ploughed to a depth of five inches. A spring tooth harrow was then put over the ground. This left the ground in a suitable condition for the winter. In the spring, previous to seeding, the land was again thoroughly cultivated and made ready for seeding on May 10.

Thorough cultivation was practised throughout the season and this together with a good growing season permitted the corn to reach greater maturity than is common in the Fort Vermilion district.

The Brandon selection of Northwestern Dent appears to be most suitable for this district, as it produces a good tonnage of fodder and in most seasons reaches a fair stage of maturity.

The following are the data obtained from the tests:—

Variety and source of seed	Method of planting	Date in tassel	Date in silk	Average height of plant	Yield of cobs from plot	Stage of maturity	Rate of yield of fodder per acre
				in.	lb.		tons lb.
N.W. Red Dent, Brandon 1929	Hills	July 24	Aug. 8	58	110	20 per cent fully matured	10 1,900
N.W. Red Dent, Brandon	Drills	July 24	Aug. 8	62	105	20 per cent fully matured	11 500
Longfellow, Duke	Hills	None	None	56	.....	No cobs, the fodder green	12 300
Longfellow, Duke	Drills	None	None	58	.....	Good yield of fine green fodder	17 500
Wisconsin No. 7, Duke	Hills	Aug. 11	Just appearing	70	.....	Ears just forming	14 200
Wisconsin No. 7, Duke	Drills	Aug. 11	Just appearing	68	.....	A good yield of fodder	17 500
Minnesota No. 13, McKenzie	Hills	Aug. 29	Just appearing	64	.....	The ears just forming	14 300
Minnesota No. 13, McKenzie	Drills	Aug. 29	Just appearing	66	.....	Good yield of fine fodder	18 800
Gehu N. Dak. grown, McKenzie	Hills	July 21	Aug. 11	52	53	Good usable cobs, early	9 600
Gehu N. Dak. grown, McKenzie	Drills	July 21	Aug. 11	59	58	Dough, fair fodder	8 500
N.W. Dent, Macdonald Coll	Hills	July 29	Aug. 11	68	.....	Cobs well formed, early milk	16 1,000
N.W. Dent, Macdonald Coll	Drills	July 29	Aug. 11	64	.....	Excellent fodder	15 600
Bailey, Duke	Hills	Aug. 6	Just appearing	76	.....	Ears just appearing	14 500
Bailey, Duke	Drills	Aug. 6	Just appearing	72	.....	Very good quality fodder	20 50
Golden Glow, Duke	Hills	Aug. 4	Just appearing	76	.....	The ears just forming	12 1,500
Golden Glow, Duke	Drills	Aug. 4	Just appearing	78	.....	Very heavy yield of fodder	26 1,100
Quebec No. 28, Macdonald Coll	Hills	July 26	Aug. 7	67	100	Ears in early dough	7 1,400
Quebec No. 28, Macdonald Coll	Drills	July 26	Aug. 7	64	70	Fodder quite good	12 600
Twitchell's Pride, C.E.F	Hills	July 23	Aug. 9	60	20	Ears in early milk	7 1,500
Twitchell's Pride, C.E.F	Drills	July 23	Aug. 9	62	62	Good yield in fine fodder	12 1,500
Mandon Zunie, Will	Hills	July 22	Aug. 9	54	28	Ears in early dough	9 600
Mandon Zunie, Will	Drills	July 22	Aug. 9	52	40	Fodder quite good	12 1,200
Stowell's Evergreen, C.E.F	Drills only	July 24	Just appearing	40	.....	Ears just forming	10 100
N.W. Red Dent, Brandon 1928	Hills	July 25	Aug. 9	62	65	20 per cent fully matured	23 500
N.W. Dent, Brandon	Drills	July 25	Aug. 9	62	39	Late dough, good fodder	25 1,600
Mixed varieties	Drills only	July 23	Aug. 9	56	.....	The ears well formed	20 800

SUNFLOWERS

Six varieties of sunflowers were tested in triplicate plots of one-sixtieth acre each.

The land was in summer-fallow the previous season. No manure or fertilizer was added to the soil.

The plots were sown on May 17. Growth was retarded throughout the season by the lack of moisture. The harvesting was done on September 29. Previous to this severe frosts were experienced with the result that the plants were comparatively dry when harvested.

The varieties Mammoth Russian and Giant Russian again demonstrated their ability to give the highest yields of ensilage for this district.

The yields and other data are given in the following tables:—

SUNFLOWERS—TEST OF VARIETIES

Variety and source of seed	Distance of drills apart	Rate of yield of fodder per acre	Stage of maturity when harvested
	in.	tons lb.	
Mennonite, Rosthern	20	6 1,500	Firm dough.
Mennonite, Rosthern	24	9 –	Firm dough.
Mennonite, Rosthern	28	10 1,300	Firm dough.
Manchurian, McKenzie	20	22 1,360	20 per cent of the seed ripe.
Manchurian, McKenzie	24	19 880	20 per cent of the seed ripe.
Manchurian, McKenzie	28	18 600	20 per cent of the seed ripe.
Mammoth Russian, McDonald	20	21 –	10 per cent of the seed fully matured.
Mammoth Russian, McDonald	24	19 1,000	10 per cent of the seed fully matured.
Mammoth Russian, McDonald	28	21 1,200	10 per cent of the seed fully matured.
Giant Russian, D.I.S. Co	20	17 20	25 per cent of the seed fully matured.
Giant Russian, D.I.S. Co	24	19 1,600	25 per cent of the seed fully matured.
Giant Russian, D.I.S. Co	28	20 500	25 per cent of the seed fully matured.
Ottawa 76, C.E.F	16	16 640	The seed just in soft dough.
Ottawa 76, C.E.F	20	16 400	The seed just in soft dough.

ANNUAL HAY CROPS

Several varieties of oats, barley, field peas and millets together with one variety of canary grass and one of Sudan grass were grown in tests to determine their relative value for annual hay crops.

The plots used were one-sixtieth of an acre each. The land was summer fallowed the previous season. Just previous to ploughing in 1929 a liberal application of barnyard manure was added. Thorough cultivation was practised throughout the season of 1929. In the spring of 1930 the land was put in fine tilth, previous to seeding, by the use of the spring-tooth and smoothing harrow. It was then rolled.

The land contained a fair amount of moisture, resulting in good germination and vigorous growth throughout the season.

The following tables contain the data obtained from the tests:—

ANNUAL HAYS

Variety	Yield per acre green	Stage of maturity
	tons lb.	
Hog Millet	7 430	Just headed out.
Siberian Millet	6 1,800	Just a few seed heads.
Japanese Millet	6 –	No seed heads.
Golden Millet	6 750	Heads just appearing.
Hungarian Millet	5 800	Some seed heads.
Common Millet	5 1,700	Some seed heads.
Sudan Grass	5 680	Just heading out.
Canary Grass—Fort Vermilion.*		

*This variety was allowed to mature for a future seed supply with the following results. Two tons 200 pounds dry fodder and 26 bushels and 44 pounds of fully matured seed per acre.

ANNUAL HAY CROPS—MIXTURES

Mixtures	Date sown	Date cut	Yield of cured fodder per acre		Stage of maturity
			tons	lb.	
Banner oats and Arthur field peas	May 1	July 29	4	1,600	Firm dough. Well formed.
Banner oats and White Albertan field peas	" 1	" 29	4	1,780	Firm dough. Well formed.
Banner oats and Dashaway field peas	" 1	" 29	4	480	Firm dough. Well formed.
Victory oats and Empire Blue field peas	" 19	Aug. 19	4	1,780	Well advanced. Well advanced.
Success barley and Prussian Blue field peas	" 14	July 30	4	1,180	Firm dough. Well advanced.
Eureka barley and Mackay field peas	" 3	" 30	5	140	Firm dough. Well formed.
Hulless White barley and White Albertan field peas.	" 13	" 31	4	1,660	Firm dough. Well advanced.
Select O-12 spring rye and Chancellor field peas	" 13	" 30	4	1,580	Soft dough. Firm dough.

ANNUAL HAY CROPS—STRAIGHT GRAINS

Variety	Date sown	Date cut	Yield of cured fodder per acre		Stage of maturity
			tons	lb.	
Dashaway field peas	May 13	July 29	5	80	Well formed.
Mackay field peas	" 13	" 31	5	320	Firm dough.
White Albertan field peas	" 13	" 30	4	1,720	Firm dough.
Arthur field peas	" 13	Aug. 2	5	200	Firm dough.
Banner oats	" 17	" 2	3	1,200	Firm dough.
Leader oats	" 17	" 2	3	1,520	Well advanced.

RAPE AND KALE

Nine varieties of rape and kale were sown in one-sixtieth acre plots similar to those on which the other annual fodder crops were grown. The plots were seeded on May 17. The seed germinated 100 per cent and with frequent rains during June the crop grew vigorously throughout the season.

A portion of each plot was cut at intervals beginning July 28 to August 23 until half of each plot had been cut and fed out to both young cattle and swine. The balance of the plots were harvested on August 25 and consumed quite readily by all classes of stock.

In the late autumn a second clipping was obtained from the earlier cut over portions.

RAPE AND KALE VARIETY TESTS

Variety and source of seed	Rate of total yield per acre	
	tons	lb.
Marrow Stem, Suttons	25	400
Green Stemmed Marrow, Suttons	24	360
Purple Marrow Stem, Suttons	22	1,600
Green Marrow Stem, Webb	22	700
1000 Headed, Suttons	21	1,800
Improved 1000 Headed, Suttons	21	1,500
Giant Drumhead Cabbage kale, Suttons	22	880

GRASSES, CLOVERS AND ALFALFA, 1927 SEEDING

Experiments conducted with grasses, clovers and alfalfa have met with uncertain success at Fort Vermilion. Lack of moisture and severe winter conditions are the major factors contributing to these unsatisfactory results.

Several varieties of grasses, clovers and alfalfa were sown in 1927 without a nurse crop on land that had been summer-fallowed the previous season.

The alfalfa was still fairly productive at the end of the third cropping year, while some of the grasses were not fit to cut in 1930. Others gave a very small yield, while the many varieties and strains of White Dutch, Alsike and Red Clover killed out entirely.

The following data are presented from these tests:—

YIELD OF CURED HAY FROM THE 1927 SEEDING OF GRASSES AND CLOVERS

Variety	Yield per acre		Comment
Clovers and Mixtures—Project Ag. 258	tons	lb.	
Sweet Clover Yellow Blossom	1	460	Slightly mixed with other grasses.
Sweet Clover White Blossom	1	100	Slightly mixed with other grasses.
Brome Grass and Western rye grass	1	1,600	This plot was originally sweet clover—white blossom sown broadcast.
Timothy and Meadow fescue	2	1,400	This plot was originally sown to alsike clover.
Kentucky blue grass and timothy	2	1,700	This plot was originally sown to White Dutch clover—Ladino.
Brome grass and Western rye grass	3	–	This plot was originally sown to Alsike clover, broadcast.
Timothy—Boon	2	1,600	A good strong growth of pure timothy.
Western rye grass	3	180	No winter killing, a rank growth.
Kentueky blue grass	2	1,100	A good yield.
Canada blue grass	2	1,400	A most vigorous growth.
Red top	1	800	A fair stand for this variety.
Meadow fescue	–	1,800	A percentage of winter killing.
Brome grass	3	420	A variety that thrives under all conditions.

NOTE.—Date of cutting July 10, 1930. Sown without nurse crops.

GRASSES, CLOVERS AND ALFALFA, 1928 SEEDING

The different varieties were sown on June 25, 1928, without a nurse crop on land that had been summer-fallowed the previous season and was in a high state of fertility at the time of seeding.

The favourable weather conditions that prevailed during the months of May and June 1930, enabled the grasses to make good growth, resulting in excellent yields.

The following tables furnish the data obtained from these tests:—

YIELDS OF CURED HAY FROM THE 1928 SEEDING OF ALFALFA—PROJECT AG. 129

Variety	Distance apart of drills	Rate of yield per acre				Total yield per acre	
		First cutting		Second cutting			
	in.	tons	lb.	tons	lb.	tons	lb.
Grimm	8	2	200	0	1,860	3	60
Grimm	10	1	1,600	0	1,680	2	1,280
Grimm	12	1	1,300	0	1,560	2	860
Grimm	14	1	1,420	0	1,620	2	1,040
Medicago falcata	8	2	1,880	0	1,800	3	1,680
Medicago falcata	10	3	180	0	1,980	4	160
Medicago falcata	12	3	600	1	40	4	640

NOTE.—First cutting July 10, second cutting August 29, 1930. No nurse crop.

With the very frequent showers of rain during June these crops made good growth, and the fodder from both cuttings was of excellent quality.

YIELDS OF CURED HAY FROM THE 1928 SEEDING OF GRASSES AND CLOVERS

Variety	Yield per acre		Sown without nurse crop. Comment
Clovers and Mixtures—Project Ag. 258	tons	lb.	
Red clover, Kenora, and Meadow fescue	2	800	Just a few plants of red clover. A good quality hay.
Red clover, Kenora, and Red top	3	600	The red clover added to the yield. Very strong growth of red top.
Red clover, early Sweden, and Canada blue grass.	1	1,780	The red clover out. Only a medium stand.
Red clover, St. Clet, and Brome grass	3	840	The red clover out. A very heavy yield, the hay good.
Red clover, St. Clet, and Western rye grass	3	180	The red clover out. An excellent yield of good quality hay.
Red clover, St. Clet, and timothy—Regal	3	960	The clover out. An excellent yield of good quality hay.
Red clover, early Sweden, and Kentucky blue grass.	2	1,400	The clover out. A good yield of good quality hay.
Sweet clover—Zouave	1	1,000	Very thin on the plot, fodder fairly good.
Sweet clover—Yellow Blossom	1	1,480	Rather thin, fodder of a fair quality.

NOTE.—Date of cutting July 10, 1930.

YIELDS OF CURED HAY FROM THE 1928 SEEDING OF GRASSES ALONE

Variety	Yield per acre		Comment
	tons	lb.	
Timothy	3	600	The very finest quality of hay.
Brome grass	3	1,200	A very heavy stand.
Western rye grass	3	720	A very heavy yield of excellent quality hay.
Canada blue grass	3	1,530	This plot was very heavy, lodged.
Meadow fescue	2	1,100	A very good yield of fine hay.
Kentucky blue grass	3	900	A very heavy yield of good quality hay.
Red top	2	1,240	Good yield, very fine quality hay.

NOTE.—Date of cutting July 10, 1930. No nurse crop.

GRASSES, CLOVERS, AND ALFALFA SOWN 1929

These varieties were seeded on land that had been summer-fallowed the previous season. A nurse crop was used.

With the exception of red, white Dutch and alsike clover, the varieties sown made strong growth particularly during the latter part of 1929 season after the nurse crop had been harvested.

The grasses came through the winter with very little winter killing while the red, alsike and white Dutch clover killed out entirely.

Five strains of Turkestan alfalfa survived the winter of 1929-30 without any winter-killing, and made remarkable growth this season. These five strains were left to mature for seed production and the results obtained were very satisfactory.

The data obtained are presented in the following table:—

YIELDS OF CURED HAY FROM THE 1929 SEEDING OF ALFALFA. PROJECT AG. 129

Variety	Distance apart of drills	Rate of yield per acre		Total yield per acre
		1st cutting	2nd cutting	
	in.	tons lb.	tons lb.	tons lb.
Grimm, Brooks	Broadcast	2 1,100	— 1,980	3 1,080
Grimm, Brooks	8	2 320	— 1,860	3 180
Grimm, Brooks	10	2 80	— 1,920	3 —
Grimm, Brooks	12	2 200	— 1,890	3 90
Grimm, Brooks	14	2 800	— 100	3 900
Grimm, Brooks	16	2 20	— 1,800	2 1,820
Grimm, Brooks	18	2 140	— 1,890	3 30
Grimm, Brooks	20	2 500	— 1,740	3 240
Grimm, Steele Briggs	Broadcast	2 1,280	— 1,680	3 960
Grimm, Steele Briggs	8	2 1,400	— 1,740	3 1,140
Grimm, Steele Briggs	10	2 800	— 1,680	3 480
Grimm, Steele Briggs	12	2 740	— 1,800	3 540
Grimm, Steele Briggs	14	2 500	— 1,740	3 240
Grimm, Steele Briggs	16	2 380	— 1,620	3 —
Grimm, Steele Briggs	18	2 620	— 1,800	3 420
Grimm, Steele Briggs	20	2 680	— 1,740	3 420
Medicago falcata—Paramount	8	1 1,000	— 1,260	2 260
Medicago falcata—Paramount	10	1 1,180	— 1,290	2 470
Medicago falcata, Paramount	12	1 820	— 1,230	2 50
Medicago falcata, Paramount	14	1 940	— 1,350	2 290
Medicago falcata, Paramount	16	1 700	— 1,170	1 1,930
Medicago falcata, Paramount	18	1 820	— 1,140	1 1,960
Medicago falcata, Paramount	20	1 640	— 1,200	1 1,840

NOTE.—Date of first cutting July 10, second cutting August 29, 1930. With a nurse crop.

TURKESTAN ALFALFA SOWN 1929, WITHOUT A NURSE CROP

Strain	Average length of plant	Yield of dry fodder per acre	Yield of seed per acre
	in.	tons lb.	lb.
J. Tashkent	34	2 800	240
Khiva	32	2 200	210
134 F. Alma Seven River Region	36	2 1,680	240
778 Dscharkent, northern strain	37	2 680	255
Kuplastovca, near Alma	36	2 440	210
Mixed varieties	37	2 960	270

NOTE.—Date cut September 30, 1930.

YIELDS OF CURED HAY FROM THE 1929 SEEDING OF GRASSES AND CLOVERS

Variety	Yield per acre	Comment
	tons lb.	
Brome grass	3 120	A very heavy yield.
Timothy	3 300	A good yield of excellent quality hay.
Red Top	— 1,380	Only a medium yield.
Western rye	3 180	A good quality of hay.
Kentucky blue grass	— 1,080	A very poor stand.
Meadow fescue	2 1,760	A good yield of fine quality hay.
Orchard grass	— 840	A rather poor and thin stand.
Sweet clover, yellow	2 1,380	A very heavy yield, good quality.
Sweet clover, white	2 880	A fair yield, good quality.
Sweet clover, Arctic	1 820	A medium yield, of fair quality.

NOTE.—Date of cutting July 10, 1930. Sown with nurse crop.

FIBRE CROPS

FLAX.—One variety, J. W. S. Flax, was tested this season in triplicate plots of one-sixtieth acre each, at different rates of seeding. The total yields from these plots were shipped unthreshed, to the Fibre Division, Ottawa, during the autumn.

The seed was sown on May 19, and the plots were harvested on August 19. The yields of dry matter per acre, from the different rates of seeding, were as follows:—

RESULTS WITH J. W. S. FLAX

Rate of seeding per acre	Distance of drills apart	Average length of plant	Weight from plot	Yield of dry matter	
lb.	in.	in.	lb.	tons	lb.
112	6	29	80	2	800
98	7	33	96	2	1,760
84	8	35	90	2	1,400

HEMP.—One variety of hemp was tested in triplicate plots of one-sixtieth acre each, and sown in drills at different rates of seeding. The seed was sown on May 18, and the plots were cut on August 27.

The land used for these experiments had been summer-fallowed the previous season. Fifteen wagon loads of well rotted barnyard manure per acre had been applied during the autumn of 1928, after that season's cereal crop had been removed.

The yields of dry matter per acre, from the different rates of seeding are as follows:—

RESULTS WITH HEMP

Rate of seeding per acre	Distance of drills apart	Average length of plant	Weight from plot	Yield of dry matter	
lb.	in.	in.	lb.	tons	lb.
70	10	75	160	4	1,600
60	12	82	145	4	700
50	14	84	145	4	700

The crop from these three plots of hemp were also forwarded to the Fibre Division during the autumn.

FORT GOOD HOPE, N.W.T.

The weather, during the growing season of 1930, was very favourable to the crops. Frequent rains occurred at regular intervals from seed time to harvest.

Wheat, oats and barley ripened within 80 days. Garnet, Prelude and Reward wheat, Legacy and Alaska oats, and Trebi, Albert and O.A.C. 21 barley were successfully grown.

Forage crops gave generally good results, except Canada blue grass and Kentucky blue grass which failed to germinate. This also happened to Banting corn.

Thirty bushels of potatoes were planted and yielded 235 bushels. Fourteen bushels of carrots were harvested. Cabbage grew well, some of the heads weighing as much as 12 pounds. Turnips, radish, lettuce and small peas were produced in sufficient quantities for station use. Potato onions, planted on July 9, were gathered on September 16, and gave a good yield.

Beans and sunflowers were frozen during the night of August 16.

Generally, results in 1930 were very encouraging, and it is intended to increase the area of land under cultivation.

FORT RESOLUTION, N.W.T.

THE SEASON

The year 1930 may be classed among the best we have had in this district. After a mild winter, the thaw began about the end of April and continued until the snow was gone, early in May. Most of the seeding was completed by May 22. There were heavy rains in June and July with intervals of great heat. In August, usually a season of frosts, there was no cold until the end of the month, and the gardens were not affected. Harvesting was carried out without loss in September.

HORTICULTURE

The following table shows the results obtained with vegetables:—

Kind of variety	Date sown	Date of germination	Ready for use	Remarks
Cabbage—				
Copenhagen Market	April 15 (inside)	April 22	Aug. 15	Nice heads, 10 to 15 pounds.
Lettuce—				
Big Boston	May 15	May 22	.....	Used all summer.
Radish—				
Scarlet Globe	May 17	May 28	.....	Used all summer.
Carrot—				
Chantenay	May 16	June 5	July	Excellent results, 60 bags on a small area.
Guerande	May 16	June 5	.....	
Long Orange	May 19	June 9	.....	Poor results.
White Belgian	May 19	June 9	.....	
Beet—				
Detroit Dark Red	May 16	June 5	July	Excellent results.
Half Long	May 16	June 5	.....	Poor results.
Mammoth Long Red	May 19	June 6	.....	Mediocre.
Sugar Royal Giant	May 19	June 6	.....	Mediocre.
Half Sugar Rose	May 22	June 6	.....	Mediocre.
Turnip—				
Jumbo	May 16	June 2	.....	Excellent results, rather too crowded but a few weighed from 10 to 15 pounds.
Perfection	May 16	June 2	.....	
Good Luck	May 22	June 5	.....	
Canadian Gem	May 22	June 5	.....	
Aberdeen Purple Top	May 22	June 5	.....	

CEREALS

On May 28, the following varieties of cereals were sown:—

Oats: Legacy, Alaska; Liberty.
Wheat: Garnet; Prelude; Reward.
Barley: Albert, Ottawa; Chinese; Himalayan.
None of these varieties, which were sown on newly ploughed land, did well.

FLOWERS

The ornamental garden, which is protected from the north winds, did very well. Stocks of different hues, snapdragons, chrysanthemums, asters and zinnias produced strong plants and good bloom.

MINK FARM

A mink farm was started on this substation during the summer.

FORT SMITH, N.W.T.

THE SEASON

The winter of 1929-30 was a very stormy one, with a heavy snowfall. Although the snow was long in melting it was possible to start seeding on May 7.

HORTICULTURE

Considerable success was had with onion sets which sprouted well and came on steadily in spite of the cold nights.

Wakefield and Copenhagen Market cabbage were doing nicely until, about the middle of June, they were destroyed by worms.

Two acres of potatoes were planted on May 26. They grew very well and yielded 292 bags of quite good quality.

Extra Early Egyptian, Crosby Egyptian and Detroit Dark Red Turnip beets were sown on the middle of May and yielded 203 bags when harvested on October 1.

An abundant yield of rhubarb was obtained. The sandy soil of Fort Smith seems to be exceptionally favourable to the growth of this vegetable.

CEREALS

Marquis wheat was sown on May 13 on manured land, and matured fairly well. Twenty-five bushels of Banner oats were sown on land manured the previous autumn. Two hundred bags of fairly good grain were obtained.

ORNAMENTAL GARDENING

Some of the annuals were started in hot-beds in April. They were transplanted in the second week of June and made a fine showing. Among the shrubs which are very successful here are lilacs which bloom about the first of July. Caraganas also grow very well and are in their full bloom on the last days of June.

FORT PROVIDENCE, N.W.T.

About five acres of potatoes were planted this year. In July and August there were frequent rains, and the plants appeared strong, promising a large crop. When the potatoes were dug, about September 15, there was a disappointing yield, the 98 bags planted producing only 425 bags. The quality, however, was excellent.

RESULTS FROM DIFFERENT KINDS AND VARIETIES OF VEGETABLES

Kind and variety	Date of sowing	Date above ground
Oxheart carrots	May 14	May 30
Globe onions	" 15	" 31
Beauty beans	" 15	June 4
Flat Wetherfield red onions	" 15	" 2
Beets	" 15	May 30
Turnips	" 15	June 5
Norwegian beans	" 15	" 4
Stringless Green Pod (001072) beans	" 15	" 1
Masterpiece (001405) beans	" 16	May 31
Princess Artois (09388) beans	" 15	June 1
Best of Swede turnips	" 15	May 25
English Wonder (08622) peas	" 21	June 3
Round Pod Kidney (06954) beans	" 15	May 31
Banting corn (1926)	" 16	June 3
Pickaninny corn (1926)	" 16	" 8

BETSIAMITES, P.Q.

The spring and summer of 1930 were very unfavourable to crop growth in this district. Spring was fairly late and seeding was done on June 12. The plants were above ground by the 20th. At first the crops looked promising but steady rain in July practically ruined all the plots. Potatoes rotted in the ground.

On April 28, several varieties of cabbage were sown in hotbeds. After transplanting these were completely destroyed by worms.

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