DOMINION OF CANADA
DEPARTMENT OF AGRICULTURE
DOMINION EXPERIMENTAL FARMS

EXPERIMENTAL SUB-STATIONS

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

REPORT OF THE EXPERIMENTALISTS IN CHARGE

For the Year 1924

Printed by authority of the Hon. W. R. Motherwell, Minister of Agriculture, Ottawa, 1926

FOREWORD

The work on the Illustration Stations is certainly significant as to climatic conditions and some crop possibilities in the northern districts. It must be remembered, however, that the results quoted are the results of a crop year when work was carried on under very difficult circumstances, due to lack of adequate technical assistance and bad climatic conditions, rather than the results of any intricate and exhaustive experiments, but there is no doubt that they will stand as a valuable record.

FORT VERMILION, ALBERTA

REPORT OF THE SUPERINTENDENT, ROBERT JONES

THE SEASON

The winter of 1923-24 was a comparatively favourable one for stock as during all the usually bad months we had more than our share of fine days, the snowfall being less than the previous year. Many cattle and horses were still on the range at the end of November.

From December on all classes of stock were given shelter in one form or another; the importance of this is impressed upon settlers, as is also the ease with which stock can be wintered if only proper arrangements are made for food, water and shelter. Cattle turned out in fair condition in the spring rapidly put on weight when the new grass appears but stock coming through the winter thin and in poor condition require all summer to recover, and their growth is stunted.

The trench silo, the first silo ever tried in this part of the province, was opened on December 12, and the ensilage fed to the milking stock at a starting ration of 5 pounds; this was eaten with avidity and on the 19th this ration was increased to 15 pounds and later on to 30 pounds together with other feeds. The cows that this ensilage was being fed to were only strippers, and none of them freshened during the period the ensilage was being fed, viz., December 12 to April 15. The increase in the flow of milk, however, was quite noticeable.

January was not a bad month except around the 16th and 17th when the temperature reached the lowest point recorded for two or three years, viz., 61·5° below zero.

During February we had exceptionally good weather for the time of the year, and during the latter part of the month warm chinook winds reduced the depth of snow considerably.

The weather in March was mild, in fact the past winter was one of the mildest on record.

April opened up cold and blustering but favourable weather with a fairly good amount of sunshine during the latter part of the month further reduced the depth of snow so that by the 30th it was only lying in patches on the fields.

The whole of the growing season of 1924 was quite marked by the limited rainfall throughout this northland. In some parts of the Fort Vermilion district crops were quite light, while in the more fortunate parts of the district a bumper crop was harvested.

Frost on May 18th did considerable damage to many of the crops, particularly winter wheat and rye, resulting in yields which were much below the average.

June opened up with a warm spell, but frosts were experienced on the 8th and 13th, which is later than usual, and damaged tomatoes, beans, and plants in the hot beds.

On June 14 Brome grass and Kentucky blue grass were headed out with lengths of 12 inches and 9 inches respectively.

Wheat headed out by the 28th, this being fifty-two days from the date of seeding, oats on the 28th, and barley on the 29th.

All berries and bush fruits were in bloom during June, the fruit setting well, and all varieties yielded a tremendous crop despite the small rainfall. Early-sown vegetables also became fit for use.

Hay crops, both on the Experimental Area and on the prairie hay lands, suffered most from lack of moisture; the crop was light throughout the district, and many fields of grain were cut as green feed.

Heavy morning dews freshened all vegetables and played a large part in saving the situation.

All the newly seeded 1924 plots of grasses, grain mixtures, and alfalfa, with all varieties of clover had to be discarded. On July 21 they were thoroughly disced as they were covered with Field Pennycress or stink weed; these weeds being so far advanced that it was impossible to clean the plots with hand hoes. The land was reploughed in preparation for reseeding to grasses in the spring of 1925. Further cultivation was given this field previous to the freeze up.

Harvesting of the different varieties of grasses, clovers, and alfalfa was started on July 23 and completed in splendid haying weather.

The earlier planted potatoes, Rochester Rose, were fit for use on July 28, but were only of medium size.

By the 29th some of the earlier varieties of oats and barley were changing colour, and as there had not been any heavy winds nor rain the straw in all cases was an almost perfect stand, and no lodging had taken place.

On July 30 we started picking fruit from the currant bushes, which gave a fine yield.

All garden vegetables were ready for use during July and most of the annual flowers were in bloom. The garden having been placed where it got the full benefit of the long hours of sunshine was a mass of lovely colour, the roses in particular being greatly admired by visitors. The peonies which had been transplanted also came into bloom this month.

Several complete exhibits of grains and grasses were sent to outside points and came in for a great deal of favourable comment.

August was a fine growing month, but the grain crops were too far advanced to derive much benefit from the rain, but all other crops quickly showed a great improvement, especially the roots, sunflowers, and corn, some of which made tremendous growth.

The first grains to reach maturity were the Alaska and Eighty Day oats, which were cut on August 1. The first wheat, Prelude, was cut on the 5th, and the first barley, Albert, on the 6th. From that day on cutting was continuous, and harvesting of the main grain crops in the outside fields was started on the 15th.

A field crop of winter rye, 10¾ acres, was seeded on August 19, and on the 22nd all plots of winter wheats and ryes were sown on the experimental area. These made rapid growth and were a thick stand well above the ground before winter set in.

The alfalfa plots which were cut first on July 18 showed a much thicker and heavier stand by the end of August, and were almost ready for a second cutting, but the rain came too late to influence the growth of the prairie hay crop much, and all farmers in this settlement found it difficult to locate sufficient for their winter requirements. During the month all grass plots on the experimental area were thoroughly disced, and then given a top dressing of well-rotted manure, after which they were given a stroke with the smoothing harrow. In thirty-six years' experience in this northland I have never known the hay ground to be so hard and dry as it was during August. All cereals under test on the experimental area, with the exception of two wheats, and speltz, had been cut, and also field corn and sunflowers. The straw was shorter than last year, and while the yield was on the light side, the quality was quite up to standard.

Fall turnips and field carrots were also harvested during August and used as fodder for the stock, to supplement the failing pastures; these, together with several cuttings from the plot of rape were very acceptable.

On well-prepared land, such as summer-fallow, and new breaking which had been given careful cultivation during the season of 1923, and a good seed bed prepared, the effect of the low precipitation during the growing months was not so noticeable. The yields obtained were much higher than those obtained from fall ploughing, while crops sown on spring ploughing were almost a complete failure this season.

For the first three weeks in September the weather was fine. The last plots of wheat were harvested, and threshing of the large field plots of grain was started on the 5th. All field roots were pulled on the 9th; the sugar beets were in splendid condition and in most cases the yields were heavy.

The trench silo was filled to capacity on September 2nd; a breakdown in the machinery was responsible for the delay. This meant that weights were taken ninety-six hours after cutting, but as light showers of rain fell during this period the crops did not become thoroughly dry, the alfalfa being direct from the mower. The ensilage cutter was driven by a 10 horsepower Fairbanks-Morse gas engine. After 23 tons of green weight corn, sunflowers, and the second cutting of alfalfa had been most carefully tramped, two large wagon loads of last season's straw were put through the cutter on top of the green ensilage, then a covering of uncut straw was placed on top of this, and for a number of days this was thoroughly tramped down.

A heavy snowfall accompanied by strong winds necessitated the suspension of field operations from September 22 to 29. The snow was wet and any stooks standing in the field were saturated. Fortunately, most of the grain plots on the experimental area had been threshed by this date, but many crops in the district which were then in the stook were only ready for threshing in the early part of October and threshing was not completed until well towards the end of the month.

Fine open weather continued throughout October making it possible to finish up all the work of the fall in splendid shape. Ploughing was possible to the end of the month, a longer period than usual. All land in the experimental area was well manured, ploughed, and put in readiness for the spring seeding. Hotbeds were cleaned out, and the remaining grains, and field and garden beans were threshed.

Favourable weather conditions during November permitted of much needed outdoor work being done in readiness for the winter.

No new buildings were erected during the past year, but all necessary repairs were made to buildings, fences and drains.

An excellent flow of good water was struck at a depth of 36 feet in the well that was dug during the past summer.

Some attention has also been given to exhibition work. These exhibits consisted of some of the small fruits, vegetables, grains, grasses, alfalfa, and clovers. Two complete collections were made up, and one was forwarded to the town of Peace River, and the other to the city of Edmonton. Both exhibits attracted much attention.

Through the courtesy of Captain Meyers, a complete exhibit was placed on board the steamer *D. A. Thomas*, plying up and down the river between Vermilion Chutes and Fort Hudson's Hope, a distance of 800 miles. This collection was the centre of attraction for the many homesteaders along the river, as well as the many tourists who visit this district during the summer months.

During the past summer greater interest has been taken in the work of this Station by the farmers in the district, and greater demands were made for information and for personal visits.

TABLE OF METEOROLOGICAL OBSERVATIONS TAKEN AT FORT VERMILION, PEACE RIVER DISTRICT, ALBERTA, APRIL 1, 1924, TO MARCH 31, 1925.

Months	Maximum	Minimum	Range	Mean	Highest	Date	Lowest	Date	Rainfall	Snowfall	Total Precip.	No. of days Precip.	Heaviest in 24 hours	Date
	°	°	°	°	°		°		ins.	ins.	ins.		ins.	
April, 1924	37·8	6·7	31·1	22·2	68·0	30	−17·5	10	.....	9·50	0·95	6	0·45	23
May	62·4	35·4	27·0	48·9	82·0	13	24·0	18	0·88	.....	0·88	5	0·36	10
June	68·2	41·4	26·8	54·8	87·8	29	27·8	13	0·64	.....	0·64	9	0·13	2
July	75·2	48·1	27·1	61·6	86·0	2	37·2	28	0·41	.....	0·41	6	0·16	20
August	67·9	45·2	22·7	56·5	79·8	13	32·0	31	2·27	.....	2·27	11	0·80	16
September	58·2	35·2	23·0	46·7	78·0	13	5·5	26	0·31	9·10	1·22	7	0·49	23
October	46·3	27·1	19·2	36·7	59·8	20	14·0	14	0·14	2·50	0·39	3	0·25	31
November	19·8	5·2	14·6	12·5	46·2	18	−26·0	9	0·04	1·00	0·14	3	0·05	13, 15
December	3·4	−22·0	25·4	−9·3	39·0	9	−50·0	16	.....	3·50	0·35	3	0·20	4
January, 1925	−9·6	−29·3	19·7	−19·4	11·0	9	−65·0	31	.....	17·00	1·70	9	0·40	20
February	0·80	−26·2	27·00	−12·7	20·00	10	−65·8	1	.....	2·50	0·25	2	0·20	3
March	23·1	− 8·9	32·0	7·1	49·5	24	−38·5	13	.....	1·00	0·10	2	0·05	1·24
									4·69	46·10	9·30	66		

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

—	Mean temp.	Highest temp.	Lowest temp.	Total Precipitation	Heaviest in 24 hours	Total hours sunshine	Average sunshine per day
April—							
Ottawa	40·8	74·0	13·0	4·08	0·81	183·7	6·12
Fort Vermilion	22·2	68·0	−17·5	0·95	0·45	216·0	7·20
May—							
Ottawa	49·5	70·0	27·0	3·90	0·91	210·3	6·78
Fort Vermilion	48·9	82·0	24·0	0·88	0·36	299·9	9·67
June—							
Ottawa	63·8	87·0	40·0	2·51	0·59	218·1	7·27
Fort Vermilion	54·8	87·8	27·8	0·64	0·13	253·7	8·45
July—							
Ottawa	65·2	95·0	40·0	3·89	0·61	278·1	8·97
Fort Vermilion	61·6	86·0	37·2	0·41	0·16	288·5	9·31
August—							
Ottawa	64·2	87·0	40·0	3·39	0·75	252·6	8·15
Fort Vermilion	56·5	79·8	32·0	2·27	0·80	244·8	7·89
September—							
Ottawa	56·2	87·0	31·0	4·63	0·75	145·4	4·85
Fort Vermilion	46·7	78·0	5·5	1·22	0·49	178·0	5·93
October—							
Ottawa	47·8	73·0	27·0	0·25	0·12	207·2	6·65
Fort Vermilion	36·7	59·8	14·0	0·39	0·25	113·7	3·67
November—							
Ottawa	35·8	65·0	7·0	1·64	0·64	85·9	2·86
Fort Vermilion	12·5	46·2	−26·0	0·14	0·05	48·5	1·62
December—							
Ottawa	14·9	47·0	−22·0	1·54	0·40	64·6	2·08
Fort Vermilion	− 9·3	39·0	−50·0	0·35	0·20	85·9	2·77
January—							
Ottawa	5·5	37·0	−36·0	2·97	0·60	87·9	2·87
Fort Vermilion	−19·4	11·0	−65·0	1·70	0·40	69·1	2·23
February—							
Ottawa	20·9	43·0	−11·0	3·52	1·04	97·5	3·48
Fort Vermilion	−12·7	20·0	−65·8	0·25	0·20	112·8	4·03
March—							
Ottawa	29·9	58·0	−13·0	3·49	0·70	138·6	4·47
Fort Vermilion	7·1	49·5	−38·5	0·10	0·05	148·3	4·78

RECORD OF SUNSHINE AT FORT VERMILION, PEACE RIVER DISTRICT, ALBERTA, FROM APRIL 1, 1924, TO MARCH 31, 1925

Months	Days with sunshine	Days without sunshine	Total hours sunshine	Average sunshine per day
1924				
April	26	4	216·0	7·20
May	29	2	299·9	9·67
June	29	1	253·7	8·45
July	31	0	288·5	9·31
August	29	2	244·8	7·89
September	28	2	178·0	5·93
October	24	7	113·7	3·67
November	16	14	48·5	1·62
December	23	8	85·9	2·77
1925				
January	18	13	69·1	2·23
February	21	7	112·8	4·03
March	21	10	148·3	4·78

ANIMAL HUSBANDRY

CATTLE

Owing to the presence of tuberculosis in the district, and to the facilities for dissemination due to the intermingling of cattle on free range, this dread disease has unfortunately gained a strong foothold. No knowledge of this condition in the district existed prior to the application of the tuberculin test to the Station herd. In this instance all individuals reacted, and were slaughtered according to regulations. As a result of this test no cattle are kept at the Station at the present time. Heavy losses have also been sustained in the district.

SWINE

Owing to the scarcity of feed it has been necessary to reduce the herd of swine to three head, two sows and the herd boar, Albert Beau, L.E.S. 2,—66842. The latter is a new acquisition from the Lacombe Experimental Station and should greatly improve the class of hogs in the district. The farmers of the surrounding country appear to appreciate what has been done by the Station to improve this class of stock on their farms.

SHEEP

The flock of sheep now comprises twenty-one grade Shropshire ewes and the pure-bred ram, Instone King B. 43, procured from the Lacombe Experimental Station. This ram is a fine individual and great improvement is looked for in the coming lamb crop from the introduction of the new blood.

HORTICULTURE

Owing to a late cold spring the season of 1924 was very unfavourable for successful vegetable culture. Conditions for germination were poor, due to the small amount of precipitation throughout June and the greater part of July. There is no doubt that timely showers during the last week in July and through August helped the situation to a certain extent, but it was too late: the harm had been done and resulted in a stunted growth and a yield of vegetables much below the average in both size and weight.

All vegetable experiments for the season were conducted on land that had grown a crop of cereals, and test plots of potatoes during 1922 and 1923 respectively. After the cereal crop was harvested barnyard manure was applied at the rate of 20 wagon loads per acre for the potato crop; none was added for other vegetables. No summer-fallowed land was available for the vegetables this year.

FALL VS. SPRING SEEDING

The seed of seven different vegetables, namely, beets, carrots, cabbage, onions, lettuce, radish, and turnips, was sown on October 13, 1923; and, as weather conditions thereafter where prohibitive the seed could not have germinated before the spring of 1924. Evidently some of the seed decayed, as it never appeared above the ground; and as for the remainder, it made such a poor showing up to May 24, 1924, that it was ploughed under.

Seasonal conditions here would seem not to be conducive to the sowing of seed in the fall.

ASPARAGUS

Results from this crop were very disappointing as the yield was much below the average, and the tips were very small. This was due no doubt to the unusually dry weather last summer which prevented crowns from forming, and to the fact that the plants had been retrenched during the autumn of 1923.

ARTICHOKES

This crop also was disappointing, although the artichokes were of a good size, and were ready for use on June 8. These plants too were transplanted in the autumn of 1923, and hardly had time to become established.

GARDEN BEANS

Results obtained this, and other years indicate that Improved Golden Wax, Davis White Wax, and Extra Early Red Valentine are the most suitable for this district from the standpoint of both earliness and productivity.

Eight varieties of both Bush and Windsor beans were tested this season with the following results:—

TEST OF VARIETIES—BUSH

Variety	Date sown	Date ready for use	Remarks
Golden Wax (imported seed)	May 22	July 25	Good crop of fine quality.
" (own seed)	" 22	" 29	Fair crop.
Davis White Wax	" 22	" 30	Good crop.
Burpee Stringless	" 22	Sept. 1	Fair crop.
Refugee	" 22	" 2	Fair crop.
Extra Early Red Valentine	" 22	" 4	Good crop of fine quality.
May Queen	" 22	" 5	Fair crop of fine quality.
Pilot	" 22	" 24	Small crop of fine quality.

TEST OF VARIETIES—BROAD OR WINDSOR

Variety	Date sown	Date ready for use
Becks Green Gem	May 12	July 28
Early Mazagan	" 12	" 28
Long Pod Conqueror	" 12	" 28
Green Broad	" 12	" 28
Giant Four Seeded	" 12	" 28
Broad Tailors	" 12	" 28
Common Broad	" 12	" 29
Cluster or Dwarf Fan	" 12	Sept. 1

The spring frosts had only a slight effect on the "Broad" or "Windsor" varieties, and in the autumn they will stand a greater degree of frost without being killed, than the other kinds of garden or field beans. For this reason they are highly recommended for districts that may be subject to late spring or early autumn frosts.

All varieties produced a fair yield of fully matured beans.

GARDEN BEANS—DISTANCE APART IN ROWS

Two varieties were tested and results indicate that in the north, close planting is most advisable, the proximity of the tender plants acting as a preventive against injury from late spring frosts.

Both varieties were planted at the several distances on May 22, and in all cases the germination was good.

No. 1—STRINGLESS GREEN POD (Own seed)

—	Two inches apart	Four inches apart	Six inches apart
Ready for use	July 30	July 29	July 28
Yield from one drill	2¼ lbs.	2¾ lbs.	1¾ lbs.

No. 2—IMPROVED GOLDEN WAX (Own seed)

—	Two inches apart	Four inches apart	Six inches apart
Ready for use	July 28	July 29	July 30
Yield from one drill	1¾ lbs.	1¾ lbs.	1¾ lbs.

BEETS

Six varieties of beets were tested this season but owing to the coolness of the soil at the time of seeding germination was poor, and the growth also was greatly retarded by the dryness of the soil, resulting in greatly reduced yields.

TEST OF VARIETIES—BEETS

Variety	Date sown	Date ready for use	Yield per acre	Remarks
			lbs.	
Crosby Egyptian	May 6	July 21	25,000	Roots small, quality good.
Edmund Turnip	" 8	" 21	24,360	Roots long, quality good.
Black Red Ball	" 7	" 21	18,120	Roots long and prongy, poor quality.
Eclipse	" 9	" 21	16,200	Roots fair size, quality medium.
Early Wonder	" 6	" 21	12,600	
Detroit Dark Red	" 6	" 21	10,800	Good shape but small.

POTATOES

Five varieties of potatoes were tested this year on stubble land. Manure at the rate of 20 wagon loads per acre was applied just previous to the land being ploughed, after the cereal crop had been removed.

Owing to the late cool spring and the extremely dry weather of June and part of July, the potatoe crop throughout the district was greatly below the average. Our potatoes are quite free from scab and no blight was noticed nor have we any Colorado Beetles to contend with.

POTATOES—TEST OF VARIETIES

Variety	Date planted	Ready for use	Size	Yield per acre		Total yield per acre
				Marketable	Unmarketable	
				bush.	bush.	bush.
Irish Cobbler	May 12	Aug. 9	large	296	98	394
Gold Corn	" 9	" 9	"	291	100	391
Carman No. 1	" 13	" 7	"	282	85	367
Rochester Rose	" 9	July 25	medium	261	75	336
King Edward	" 13	Aug. 6	large	204	80	284

COST OF PRODUCTION OF POTATOES

Rent of land, ¼ acre at $15 per acre		$ 3 75
Cost of seed, 3½ bushels at $1		3 50
Manure, hauling and spreading by hand, 5 loads		3 00
Ploughing and keeping the plot of land cultivated the previous season		6 00
Harrowing and opening furrows—2 men and team		2 50
Planting and covering—2 men at $2.50 per day		5 00
Cultivating—1 man and team, 3 times during growing season		3 00
Hilling—2 men with hand hoes, 4 hours, each at 45 cents		3 60
Digging, picking, and storing—		
4 men and 1 team, 1½ days	$11 75	
Horse and machinery	7 50	
		19 25
		$49 60
Total cost per ¼ acre		$49 60
Yield per ¼ acre		115½ bush.
Cost per bushel		0 42
Proceeds per ¼ acre		91 20

TEST OF CABBAGE FOR STORAGE PURPOSES

The object of this experiment was to demonstrate the possibility of growing cabbages from seed sown outside, to such a size that their storage would be profitable commercially. Very unfavourable weather conditions during the spring and early summer rendered the experiment practically useless, and, in

this district, the cultivation of cabbage outdoors from the time it is sown until harvested can hardly be recommended.

The seed of two varieties, Danish Ballhead, and New Flat-Swedish, were sown on May 7, only to be killed by frost on May 19. These two varieties were again sown outside on May 28, but the resultant crop was not encouraging. With Danish Ballhead a few small heads were harvested, while no heads at all were formed by New Flat Swedish.

In order to carry out the storage part of the experiment, two of the transplanted varieties which had done well were chosen, and several cabbages of these varieties (Copenhagen Market, and Extra Amager Danish Ballhead) were stored for the winter. In preparing these cabbages for storage the root though trimmed, was left in place; all large outer leaves were removed; and the cabbages were tied head down, in a fairly cool cellar, in which position they remained in first class condition until spring.

Variety Test of Cabbage

Ten varieties were sown in hotbeds on April 28, slightly later than usual. Germination was quite timely and the plants were a good size when transplanted to open ground between May 28th and 31st. As the result of a setback, due to a severe frost on June 7, the plants were not ready for use until much later than usual, but the good weather in late summer and early autumn produced a fair crop of large solid heads.

Variety	Date ready for use	Average weight per head	Remarks
		lbs.	
Early Paris Market	July 27	15	Many heads burst.
Selected Jersey Wakefield	" 27	12	Many unfit to store.
Copenhagen Market	" 30	13	Fine solid heads of good quality.
Kildonan	Aug. 4	15½	Heads very solid; an excellent keeper.
Fottler Imp. Brunswick	" 5	16	Heads very solid; quality good.
Early Winnigstadt	" 15	13	Heads solid; quality fair.
Ext. Amager Danish Ballhead O. 2013	" 15	19	Solid; quality very good.
Round Red Danish	" 15	12	Heads solid; good keeper.
Marblehead Mammoth	" 16	15	Very leafy heads, not compact.
Danish Roundhead	" 21	14	Heads very solid, quality good, and a very good keeper.

CHINESE CABBAGE

Two varieties, Wong Bok and Pe Tsai, were tested, and they were found to be very rapid growers, indicating the advantage of cultivating such a crop to obtain early greens.

Two 33-foot drills of each variety were sown on May 7, but were killed by frost on May 18 . The same varieties were reseeded on May 28, and Wong Bok was ready for use on June 16, and Pe Tsai on June 20. Any part of the crop not used as greens makes excellent food for stock.

CAULIFLOWER

This was a very poor season for cauliflower and the result was a very low yield, and much below the average in quality. A dry spell made it necessary to pick them as soon as they were ready for use. However, a few that were left untouched produced fine large heads by September.

VARIETY TEST OF CAULIFLOWER (SOWN UNDER GLASS)

Variety	Date sown	Date Trans-planted	Date ready for use
Early Snowball	April 29	May 28	July 14
Extra Early Dwarf Erfurt	April 29	May 27	July 24

NOTE.—Two drills of each of the above varieties set out at a late date produced slightly better results.

BORECOLE, OR KALE

Only one variety was tested. Drought and frost seem to have no effect on this vegetable as it grew well and produced fine, large, strong plants.

BRUSSELS SPROUTS

While plants of this variety made fairly good growth, the results seem to indicate that the season in this northland is too short for the successful culture of Brussels sprouts.

CARROTS

The carrots suffered less than other vegetables from the unfavourable spring weather and the later dryness, so that although they were only of medium size, the roots were of good quality and the yields were very fair.

VARIETY TEST—CARROTS

Variety	Ready for use	Yield per acre		Remarks.
		tons	lbs.	
Chantenay	July 9	12	1,200	Fair size.
Half-Long Scarlet Nantes	" 9	5	80	Quite small; good quality.
Danvers, half-long	" 9	14	200	Medium size, smooth and uniform.
Guerande or Oxheart (McDonald)	" 12	17	300	Very large and rather coarse.
Guerande or Oxheart (Steele)	" 14	18	1,020	Very large and rather coarse.
St. Valery	" 14	13	520	Medium size; good quality.

CELERY

Low yields were obtained because of unfavourable weather conditions.

The seed of all varieties was sown in hotbeds on April 28, and was harvested on September 29, with the exception of Rose Ribbed Paris which was taken up on September 16.

The varieties found most suitable for this district, for home use, are, Golden Self Blanching and French Success; and for storage, Winter Queen and Giant Pascal.

Besides testing these seven varieties for productivity, a blanching experiment was also carried on with them. Three different materials were used, viz. soil, boards, and ready roofing. Results indicate that much better celery is obtained with the use of soil for blanching purposes. The use of ready roofing appears to render the plants susceptible to sunburn, while with boards the plants become spindly and lose flavour and crispness.

VARIETY TEST—CELERY

Variety	Date planted	Weight of 12 plants trimmed	Remarks
		lbs.	
Golden Self-Blanching	May 27	10	Ready for use Aug. 29.
Early Blanching	May 27	10	Stores very well.
Giant Pascal	June 14	10	Ready for use Aug. 28; grown in trench 1 foot deep, which afforded fine protection.
Rose Ribbed Paris	May 29	9	Ready for use Aug. 30; grown in 6-inch trench.
New Emperor	June 14	7	Ready for use Aug 30; grown in 1-foot trench; good.
French Success	May 27	5	Ready for use Aug. 26.
Winter Queen	May 27	4	Ready for use Aug. 27; planted on level, and soil heaped up around plants.

CELERIAC

Celeriac was grown for the first time, and results were very disappointing. There was so little growth that practically no crop was secured.

CUCUMBER

Six varieties were tested; two of which, Boston Pickling and West India Gherkin, did so poorly as to be hardly worth mentioning. A new variety, Prolific, was introduced and, considering the unfavourable weather conditions, made a very fair showing.

Under normal seasonal conditions best results have been obtained from Davis Perfect, Improved Long Green and Early Fortune. As a result of the late spring frosts the yields this year were below the average.

VARIETY TEST OF CUCUMBERS—SOWN UNDER GLASS

Variety	Date sown	Ready for use	Number picked	Total weight	Remarks
				lbs.	
Davis Perfect (Graham)	May 12	Sept. 9	8 fruit	2¼	Very small.
Davis Perfect (selfed No. 3)	May 17	Aug. 31	.....	1¾	Good quality.
Improved Long Green	May 12	Sept. 9	5 "	2¾	Good quality.
Prolific	May 12	Aug. 26	14 "	6¼	Good quality.

GARDEN CORN

Ten varieties of garden corn were tested out this season, but owing to the late spring followed by dry weather, all the varieties tested did not produce mature cobs and failed to reach the average crop production. The excellent weather in late July and during August resulted in an abnormal growth of stalk.

The land used was sown, in 1923, to cereals and grain, for which crops no manure was applied. However, after the crops were harvested manure was applied at the rate of twenty wagon loads per acre.

The seed of all ten varieties was sown on May 16, in hills 2½ by 2½ feet, and the plots were one-sixtieth of an acre.

TEST OF VARIETIES—GARDEN CORN

Variety	Date in Tassel	Date ready for table use	Yield of cobs from plot	Length of stalk
				ins.
Pickaninny	July 14	Aug. 20	107 lbs.	36
Howe Alberta Flint	" 11	Aug. 15	45 lbs.	38
Sweet Squaw	" 21	Did not mature	.....	60
Golden Bantam	" 28	" "	.....	68
Early Malakoff	" 21	" "	.....	62
Golden Justice	" 28	" "	.....	68
Early Malcolm	" 21	Sept. 3	a few cobs..	60
Early White Corn	" 28	Sept. 3	25 lbs.	64
Extra Early Adam	Did not germinate			
Hower Early Flint X Picaninny	Did not germinate			

VARIETY TEST OF KOHL RABI, SOWN MAY 7

Variety	Date ready for use	Yield	Quality
		lbs.	
Early White Vienna	July 24	70	Very good.
Giant Purple Vienna	July 26	89	Good.

VARIETY TEST OF LETTUCE—EARLY SEEDING, SOWN MAY 6

Variety	Date ready for use	Remarks
Hanson	June 11	Large, crisp crinkled leaves, mild, tender, remaining fit for use until Aug. 30.
All Heart	" 11	Fine large heads, fit for use until well on in the autumn.
Grand Rapids	" 11	Fair sized heads surrounded by loose clusters of light green leaves, fit for use until the end of August.

LETTUCE—LATE SEEDING

Two varieties, Iceberg and Hanson, were sown on June 9, and were ready for use on July 9.

Iceberg developed good length and kept in condition until early autumn. Hanson grew into fine large heads which remained good until fall.

GARDEN HERBS

Several varieties of herbs were tested this season, and all did fairly well when compared with other garden crops. Seed was sown outside late in May and all varieties made splendid growth.

VARIETIES TESTED

Borage (*Borago officinalis*), Summer Savory, (*Saturein hortensis*) Balm (*Melissa officinalis*) Horehound, (*Marrubium vulgare*) Marjoram Sweet, (*Origanum Majorana*), Rosemary, (*Rosemarinus officinalis*) Lavender (*Lavendula*) sage, (*Salvia officinalis*) Thyme, (*Thymus vulgaris*). Of these, Borage (*Borago officinalis*) and summer savoury (*Satureia hortensis*) were the only ones to bloom. All were cut and dried for winter use.

PEPPERGRASS AND ENDIVE

A row each of these salad plants were sown on May 7, made rapid growth and became ready for use about June 24.

MELONS

Two varieties, viz., Emerald Gem Muskmelon and Cole Early Water Melon were tested. Two hills of each variety were planted from seed sown under glass on May 17, but the weather was so very unfavourable that results were practically negligible. Emerald Gem produced no crop, while Cole Early yielded a few very small immature fruits.

CITRONS

Two varieties were tested and were productive of rather disappointing results. However, after the severe setbacks received during the early part of the season, they did surprisingly well. Seed of both varieties was sown under glass May 17, and, later, four hills of each variety were planted. Below, in tabulated form, are the results of this test.

CITRON—VARIETY TEST

Variety	Number picked	Total weight	Remarks
	lbs.		
Red Seeds (for preserving)	.....	17½	Immature.
Colorado Green	6	11½	Very immature.

ONIONS

Seven varieties were tested but the results were extremely disappointing as the yields were very low and the bulbs very small. The unfavourable weather, coupled with severe attacks by the onion root maggot and poor germination was responsible for the poor results.

VARIETY TESTS OF ONIONS

Variety	Size of plot	Date sown	Ready for use	Yield from plot	Remarks
				lbs.	
Ailsa Craig	1/60 acre	May 9	July 17	80	Medium size, good quality.
Extra Early Flat Red	1/20 "	" 6	" 13	30	Fair size and quality.
Extra Selected Large	1/60 "	" 7	" 12	34	Very low yield.
Flat Yellow Danvers	1/120 "	" 8	" 14	29	Small, fair quality.
Southport Red Globe	1/60 "	" 8	" 15	62	Good size, fair quality.
Southport White Globe	1/60 "	" 8	" 15	34	Medium size, fair quality.
Yellow Globe Danvers	1/60 "	" 7	" 13	7	Inferior quality.

VARIETY TEST OF ONION SETS

Two varieties, Yellow Globe Danvers and Large Red Wethersfield, were planted on May 13 and harvested on September 9, but here again results were extremely unsatisfactory. The Danvers yielded 38 pounds of medium size from two drills 33 feet long; while the Wethersfield yielded 65 pounds of fairly large, medium quality onions from a similar area.

PEAS

Ten varieties were tested during 1924. All varieties, save one, were sown in three double drills. The one exception was Danby Stratagem, which was sown in seven double drills, equally one sixtieth of an acre.

Due to the dryness of the season the peas were ready much earlier than usual, and the period from this time until they were mature was unusually short. Binder twine proved to be a most satisfactory support.

The following table shows the results of the ten varieties tested.

VARIETY TEST—PEAS

Variety	Ready for use	Date ripe	Yield		Length of vine	Length of pod	Aver. peas in pod	Remarks
			Green	Ripe				
			lbs.	lbs.	inch	inch		
Alaska Earliest of All	July 13	Aug. 14	8	6½	28	2	6	Fine.
Early Morn	" 14	" 15	15	6½	25	3	5	Very Good.
English Wonder X Gregory Surprise	" 15	" 9	4	10½	43	2½	8	Very good.
Eight Weeks	" 17	July 31	10	6¾	18	3	6	Very fine.
American Wonder	" 17	Aug. 24	7	8½	24	2	6	Very good.
Pioneer	" 18	" 13	8	6½	20	3	7	Good.
Laxtonian	" 18	" 14	12	8¾	20	3	7	Very good.
Lincoln	" 18	" 13	5	10	23	3	8	Excellent.
English Wonder X Gradus	" 21	" 13	6	6¾	16	2½	5	Excellent.
Danby Stratagem	" 21	" 15	40	24	22	3½	9	Very fine.

CULTURAL TEST OF PEAS

Three varieties were tested this season. The peas were sown on May 12 in drills one, two, and three inches apart with 30 inches between the rows.

Tests conducted here during the past two years indicate that close planting of peas gives better results, with regard to earliness and productivity, than does distant planting.

Following are the results of this years tests:—

Variety	One inch apart		Two inches apart		Three inches apart	
	Date ready for use	Yield of ripe seed	Date ready for use	Yield of ripe seed	Date ready for use	Yield of ripe seed
		lbs.		lbs.		lbs.
English Wonder	July 15	3¾	July 17	4	July 17	4
Gradus	" 16	3	" 17	3¼	" 17	3½
Imp. Stratagem	" 17	4½	" 15	4	" 17	3¾

PARSLEY

On May 6 two drills of Champion Moss Curled were sown, but the seed did not germinate. Possibly this failure was due to the coolness of the soil at seeding time.

PARSNIPS

Three varieties were tested but owing to a very poor germination (about 45 per cent) the resultant yields were very low, though the seeds that did germinate produced very fine large roots.

VARIETY TEST—PARSNIPS

Variety	Size of plot	Date sown	Ready for use	Yield from plot	Remarks
	sq. ft.			lbs.	
Hollow Crown	165	May 7	Aug. 15	84	Large, smooth and uniform.
Guernsey	165	" 7	" 18	80	Large, smooth and good quality.
XXX Guernsey	110	" 7	" 16	16	Good size and quality.

VARIETY TEST OF PEPPERS

Of the four varieties tested this year only one, viz., Neapolitan, produced any crop. The other three varieties, viz., Small Red Chile, Harris Earliest, and Squash, were just beginning to bloom when killed by frost in the early autumn. This would seem to indicate quite clearly that only the very earliest varieties of peppers can be recommended for this district.

All pepper seed was sown in hot beds on April 29, and, on June 2, one 33-foot row of each variety was planted. The crop secured from the row of Neapolitan was 2½ pounds of medium sized pods.

PUMPKINS

Seed of the three varieties tested was sown under glass on May 17, but were completely killed by frost on June 8, and 13. On June 20, the same three varieties were reseeded, with the following results:

VARIETY TEST OF PUMPKINS

Variety	Number picked	Total weight	Remarks
		lbs.	
Large Connecticut Field	15	66	Some weighed 15 lbs.
Small Sugar	8	21½	Good quality and good keeper.
Small Sugar No. 1 selfed	16	51	Excellent quality.

MARROW AND SQUASH

Both varieties of marrow were sown under glass on May 12, and were later transplanted to four hills, while the squash variety was sown May 17, and transplanted to three hills. The following table shows our results with these three varieties:

VARIETY TEST—MARROW AND SQUASH

Variety	Date ready for use	Total weight	Quality
		lbs.	
Long White Bush Marrow	Aug. 12	40	Fine.
English Vegetable Marrow	" 17	49	Very good.
Golden Hubbard Squash	" 25	15	Excellent.

RADISH

Early Seeding

Four varieties were sown May 6, for early use, but the young plants were killed by the frost on May 19. These same varieties were re-seeded on May 26, with the following results:

Variety Test of Radishes

Variety	Size of plot	Ready for use	Remarks
Icicle	2 drills 33′ x 20″	June 30	Very small, quality inferior.
Sparkler White Tip	1 drill 33′ x 20″	" 20	Medium size, fair quality.
XXX Scarlet Oval	2 drills 33′ x 20″	" 25	Fair quality and size.
Olive Shaped French Breakfast	2 drills 33′ x 20″	" 26	Fair size, quality medium.

Late Seeding

Three varieties were sown later, with much better results than those obtained from the varieties sown earlier. This was due, chiefly, to weather condition. All plots were the same size (110 square feet) and all seed was sown on June 9, and germinated June 25.

Variety	Ready for use	Remarks
Early Scarlet Globe	July 3	Fair size, good quality.
Extra Early Scarlet White Tipped	" 8	Fair size, fine quality.
French Breakfast	" 5	Fair size, very good quality.

Some seed of Earliest Scarlet Turnip Radish was sown under glass April 30. Growth was slow and the crop was not ready for use until May 25. However, the resultant crop was of fine flavour, crisp and tender.

Variety Test of Swiss Chard

Two varieties, White Silver, and Giant Lucullus, were tested this year, and both made good growth.

Both varieties were sown on May 7, in 33-foot drills, 20 inches apart, and both were ready for use on June 22. At this date the White Silver plants were quite large, but the Giant Lucullus were only fair in size.

When harvested on September 18, the average weight of the White Silver plants was 4½ pounds, while Giant Lucullus averaged 4 pounds per plant and was slightly inferior in quality.

TABLE TURNIPS

Four varieties were tested, and although growth was somewhat retarded during the early part of the season, the results, on the whole, were satisfactory.

VARIETY TEST—TABLE TURNIPS

Variety	Date sown	Ready for use	Yield per acre	Remarks
			lbs.	
Early Snowfall	May 7	July 12	7,680	Large roots.
Extra Early Purple Top Milan	" 7	" 10	15,840	Large roots.
Golden Ball	" 7	" 12	11,560	Fair sized roots.
Red Top Strap Leaf	" 9	" 12	30,000	Fair sized roots and a good (85%) stand.

RHUBARB

The varieties tested this season were, Victoria, St. Martin, and a seedling of Ruby; but as they were planted in the fall of 1923 no great results could be expected. The roots were well mulched in the late autumn of 1923, and better results may reasonably be expected in another season, after the plants have become better established.

SALSIFY

Two varities were tested, with better results than with most of the vegetables this season. The seed of both varieties was sown on May 7, in four drills (two drills of each variety) 33 feet in length. The seed germinated well and growth was fair.

VARIETY TEST OF SALSIFY

Variety	Ready for use	Yield	Quality
		lbs.	
Long White French	Aug. 10	55	Fair.
Mammoth Sandwich Island	" 8	40	Very good.

LEEKS

A few roots, of the varieties Broad London and Musselburgh, which had been stored over the winter of 1923-24 were planted May 22, but did very poorly.

We also tested two other varieties viz., Rouen Large and Carentan Monstrous. Two 33-foot drills of each were sown on May 7, and harvested September 17. The Rouen Large yielded 30 pounds of good-sized roots; and the Carentan Monstrous produced 20 pounds of medium sized roots of good quality.

SPINACH

The only variety sown was New Zealand and for some unknown reason, it failed to germinate. This is the second season that this variety has been a failure.

TOMATOES

Ten of the very earliest varieties were tested. Sown in a hot-bed on April 28, and transplanted on June 2, and 3. Severe frosts on June 7, and 12, caused great havoc, with the result that only a few plants of each variety were left. These plants were staked on August 12, and were kept pruned from this time until the end of the month.

Select Earliana, and First of All were the only varieties which produced ripe fruit before the crops were harvested.

VARIETY TEST OF TOMATOES

Variety	Number of plants	Yield	Remarks
		lbs.	
Alacrity (0-3031 C.E.F. seed)	4	10½	Large fine smooth fruit.
Alacrity (0-3033 C.E.F. seed)	2	6	Medium size, smooth, fine fruit.
Avon Early	11	70	Large and good quality, very prolific.
Bonny Best	11	52	Very large, fine quality.
Danish Export	5	18½	Large and uniform.
Early Mascot	6	12	Medium size, smooth, good quality.
Fifty Day	1	11	Heavy yielder, large and smooth, excellent quality.
First of All	12	88	Large fruit.
Pink	8	22	Large smooth fruit, good quality.
Select Earliana	12	68	Very large fruit.

FRUITS

The yield from all varieties of currants was much better than expected, and the growth was splendid. All bushes, with the exception of those planted only last year, were fairly well laden with berries of good size and excellent quality.

A fair yield of fine raspberries was produced as the plantation has fully recovered from the effects of the fire of last season. Twenty-four canes of two new varieties, Cumberland and Golden Queen, were planted on May 17 and produced a few fine berries.

Due to the winter-killing, the gooseberry bushes had to be pruned back severely in the spring. However, a fair growth was made and on August 12 a few ripe berries were picked from the variety Pale Rod.

The Saskatoon Berry (*Alemanchier vulgaris*) bloomed on May 30, and in June produced ripe fruit, which, unfortunately, was eaten by birds.

The young trees made good growth this season.

ORNAMENTAL GARDENING

The annual flowers were grown this year on ground that produced vegetables last year. After these vegetables were harvested the ground was well manured, ploughed, and harrowed. The plants made rapid growth and, with the exception of the zinnias were not affected by the June frosts.

The tender varieties were sown under glass April 28, and transplanted later. Hardier varieties were sown direct to the open borders from May 17 to May 31.

VARIETY TEST—ANNUALS

Variety	Date of bloom	Remarks
Asters—		
King of the Belgians	Aug. 23	Very good display.
Blushing Beauty	" 20	Very fine.
Meteor	" 23	Excellent bloom.
Primrose Queen	" 19	Long period of bloom.
Rochester White	" 12	Magnificent blooms.
Dark Violet	" 23	Lovely colouring.
Antirrhinums—		
Chamois	July 27	Beautiful shade.
Delicate Shades	" 23	Very good.
Giant Scarlet and Gold	" 31	Fine display.
Giant White	" 28	Lovely blooms.

VARIETY TEST—ANNUALS—*Concluded*

Variety	Date of bloom	Remarks
Alonsoa, Warscewiczii compacta	Aug. 15	Small.
Ageratum, Imperial Dwarf Blue	" 10	Very pretty.
Alyssum, Little Dorrit	" 17	Good border plant.
Bartonia, Aurea	" 17	Strong grower, fine decoration.
Canary Bird Vine	" 1	Beautiful yellow flowers.
Cardinal climber	July 26	Many lovely light red blooms.
Calendula, Lemon Queen	" 24	Fine showing.
Calendula, Meteor	" 24	Good.
Calliopsis, tinctoria	Aug. 9	Very pretty.
Candytuft, Dunnetts Crimson	July 15	Very effective border.
Celosia, plumosa	Aug. 12	Good.
Cantaurea, Cyanus Minor Blue	July 19	Fine showing.
Cosmea	" 17	Fine display.
Chrysanthemum, inodorum	" 18	Fine bloom.
Clarkia	" 26	Very good.
Dianthus Heddewigii	" 17	Very fine.
Dianthus Snowdrift	" 28	Good.
Dimorphotheca	" 15	Very good.
Eschscholtzia (California poppy)	" 15	Mass of bloom.
Gaillardia picta Lorenziana	Aug. 11	Very good.
Gypsophila elegans grandiflora	July 8	Fine display.
Godetia	" 28	Good.
Helitrope	.....	Did not bloom.
Kochia (Summer Cypress)	.....	Large beautiful bushes.
Lavatera, Loveliness	July 21	Very strong.
Lavatera, rosea splendens	" 26	Very fine.
Linaria, Excelsior	" 7	Pretty border plant.
Lobelia, compacta, dark blue	" 15	Good.
Lobelia, ramosa White	Aug. 10	Good.
Lobelia, compacta, Bright Blue	" 7	Fair.
Martynia fragrans	July 25	Delicate light mauve.
Marigold, African	Aug. 6	Strong plants.
Marigold, French, single	July 31	Good.
Mesembryanthemum (Dew Plants)	Aug. 14	Very hardy.
Mignonette	July 15	Strong, free flowering.
Morning Glory	Aug. 15	Good.
Moon Flower Vine	.....	Strong growing vine.
Nasturtium, Tall	July 21	
Nasturtium, Dwarf	" 19	Very fine.
Nigella, Miss Jekyll	Aug. 19	Very attractive.
Nemesia, Rose Pink	" 12	Delightful show.
Nemesia, White	" 12	Hardy.
Petunia, Rosy Morn	July 12	Very fine.
Petunia, Giant of California	" 12	Beautifully ruffled blooms.
Phlox, Drummondi, grandiflora	" 17	Made a vivid colour display.
Phlox, Drummondi, Snowball	" 17	Bloomed over a lengthy period.
Pansy, Royal Exhibition Mixture	" 25	Wonderfully large blooms.
Portulaca	Aug. 12	Bloomed profusely.
Poppy, Shirley, Rev. W. Wilks	July 26	Splendid display.
Rudbeckia, Golden Sunset	" 25	Beautiful blooms.
Salpiglossis	" 25	Highly ornamental.
Scabious, Flesh Colour	Aug. 17	Fair.
Scarlet Runner	July 25	Mass of colour.
Schizanthus, Scarlet and Gold	Aug. 12	Very good.
Sunflower, Sulphur Gem	" 12	Strong grower.
Sunflower, Stella	" .1	Miniature, 3' high, good.
Stocks—		
Light Blue	July 8	Very fine.
Carmine	" 25	Beautiful.
Chamois	" 17	Good showing.
Lilac	" 12	Strong grower.
Purple	" 9	Enormous spikes.
Rose	" 12	Very choice.
Scarlet	" 28	Good.
White	" 18	Excellent.
Sweet Sultan, White	Aug. 16	Very good.
Tagetes Signata pumila	July 25	Free bloomer.
Verbena hybrida mammoth	" 22	Profuse blooms.
Viola, Tufted Pansy	" 27	Very good.
Viscaria	" 24	Effective in beds.
Virginian Stock	" 7	Made a good showing.
Wild Cucumber Vine	Aug. 1	Fine for shade.
Zinnia, Curled and Crested	" 9	Only fair, touched by frost.
Zinnia, Giant Dahlia	" 1	Only fair, touched by frost.

EVERLASTING FLOWERS

Everlasting flowers were tested this year for the first time, to obtain flowers for winter decorations. The results proved very satisfactory, with a profusion of fine coloured flowers.

VARIETY TEST—EVERLASTING FLOWERS

Variety	Date of bloom	Remarks
Acroclinim, Single Rose	July 10	Many blooms.
Ammobium White	Aug. 9	Good.
Catananche, Bicolour	.....	Did not bloom.
Helichrysum, Golden Globe	" 11	Abundant bloom.
Honesty, Purple	.....	Made good growth.
Rhodante Rose	July 14	Very pretty.
Rhodante White	" 10	Many blooms.
Statice, Suworowi (Sea Lavender)	" 16	Lovely.
Statice, Silver Cloud	" 30	Very beautiful blooms.
Statice, Yellow	Aug. 20	Many blooms.
Statice, Mauve	" 9	Excellent.
Xeranthemum	" 9	Many fine blooms.

SWEET PEAS

All seed was sown on May 23, outside, and from July 31 to late autumn they provided a perfect blaze of colour. The following list includes all varieties tested.

VARIETY TEST—SWEET PEAS

Variety	Date of bloom	Colour
Alfred Watkins	Aug. 9	Pale lavender.
Annie Ireland	" 18	White and terracotta.
Barbara	" 3	Salmon.
Beryl	" 13	Pink.
Brocade	" 13	Rose and mauve.
Charity	" 11	Crimson.
Daisybud	" 18	Rose pink.
Doris Usher	" 18	Pink and cream.
Edna May, Imp	" 11	White.
Elegance	" 19	Pink.
Elfrida Pearson	" 11	Pink and Salmon.
Elsie Herbert	" 11	White and pink.
Faerie Queen	" 11	Cream and salmon.
Hawlmark	" 9	Salmon and rose pink.
Helen Lewis	" 19	Orange and rose.
Hope	" 5	Rose.
Jack Cornwall, V.C.	July 31	Navy blue.
John Ingman	Aug. 19	Rose red frilled.
King Manoel	" 20	Deep maroon.
King Mauve	" 1	Mauve.
King White	" 1	Pure white.
Lilian	" 20	Pink and buff.
Matchless	" 9	Cream, frilled.
Maud Holmes	" 20	Crimson.
Mrs. A. Hitchcock	" 11	Pink and salmon.
Mrs. Tom Jones	" 5	Delphinium blue.
Picture	" 9	Flesh pink and rose.
Powerscourt	" 9	Lavender.
Princess Mary	" 20	Blue and pink.
Royal Purple	" 1	Purple.
Royal Scot	" 11	Scarlet.
Tangerine, Imp	July 31	Orange.
The President	Aug. 20	Orange Scarlet.
Warrior	" 9	Maroon.
White Spencer	" 11	White.
Wonderful	" 9	Scarlet.

GLADIOLI

Corms of the twelve varieties listed below were set out on May 19, and although slow in starting, they made fair growth and provided a wealth of colour.

VARIETY TEST—GLADIOLI

Variety	Date of bloom	Remarks
America	Sept. 9	Soft lavender pink.
Baron Jos. Hulot	.....	Did not bloom.
Catharina	.....	Did not bloom.
Empress of India	Sept. 8	Velvet maroon.
Flora	.....	Did not bloom.
Liebesfueur	" 9	Fiery scarlet, orange shading, violet markings.
Maiden's Blush (*Primulinus*)	Aug. 18	Light salmon pink, delicate markings.
Mrs Frank Pendleton	" 30	Lovely flushed salmon pink with blotch on throat.
Odin	Aug. 30	Beautiful salmon red, with chestnut red.
Orange Brilliant (Primulinus)	Sept. 8	Light orange, scarlet markings.
Peace	Aug. 30	White and lilac.
Prince of Wales	" 18	Beautiful salmon pink, shaded silvery white.

HERBACEOUS PERENNIALS

The perennial flowers again made a very good showing and received much favourable comment from visitors to the station. The following were the varieties tested, with dates of first bloom.

VARIETY TEST—HERBACEOUS PERENNIALS

Variety	Date of bloom	Remarks
Aquilegia (Columbine)	June 26	Many fine blooms.
Achillea, the Pearl	" 12	Fair display.
Arabis (Rock Cress)	" 28	Very good.
Delphinium (Larkspur)	July 13	Many fine blooms.
Shasta Daisy	" 18	Great display.
Dictamnus fraxinella (Gas Plant)	" 3	Beautiful pink blooms.
Hollyhocks	Aug. 26	Very fine.
Lychnis chalcidonica	July 3	Mass of scarlet blooms.
Phlox	June 26	Very fine.
Paeony, Delicata	July 18	Many blooms.
Poppy, Iceland	May 28	Masses of various colours, fine early display.
Sweet William	July 3	Many colours.

ROSES

The four varieties listed below were the first roses planted at this station. They again produced a mass of bloom and were a lovely sight from July 4th to late summer.

VARIETY TEST—ROSES

Variety	Date of bloom.	Remarks
Delicata, double	July 4	Pink, bloomed profusely.
Rugosa, double	" 6	Dark red, mass of blooms.
Rugosa, single	" 4	Light red, many blooms.
Japanese, single	" 4	Very light red.

The following are newer varieties with us and are not so hardy as the rugosa roses.

Variety	Date of bloom	Remarks
American Pillar (climber)	.....	Did not bloom.
Crimson Rambler "	.....	Did not bloom.
Edith Bellenden	Aug. 16	Good.
Frau Karl Druschki	" 1	Perfect white blooms.
Gold Finch	.....	Did not bloom.
J. B. Clark	" 30	Good.
Jeannie Deans	.....	Did not bloom.
Killarney	" 12	Very fine.
Kaiserin Augusta Victoria	.....	Did not bloom.
Lady Alice Stanley	.....	Did not bloom.

ORNAMENTAL SHRUBBERY

Growth of the different varieties was very satisfactory this season and the flowering shrubs produced a great display of bloom. The following list comprises all varieties tested:—

VARIETY TEST—FLOWERING SHRUBS

Variety	Common Name	Date of bloom
Caragana arborescens	Siberian Pea Tree	June 4
" frutex	Russian pea-shrub	" 4
" grandiflora	Large flower pea-shrub	" 8
" pygmaea	Dwarf pea-shrub	" 8
Cotoneaster tomentosa	.....	" 29
Euonymus linearis	Spindle Tree	July 7
Syringa vulgaris, Chas. Joly	Lilac	June 28
" " Congo	"	" 28
" " Emile Lemoine	"	" 28
Syringa japonica	Japanese lilac	July 9
Syringa vulgaris, Mme Abel Chantenay	Lilac	June 27
" " Michel Buchner	"	" 29
Lonicera alpina	Honeysuckle	" 8
" Mundeniensis	"	" 8
" Sullivantii	"	July 10
" tatarica	"	" 11
Potentilla Friedrichseni	Cinquefoil	" 10
Ligustrum	Polish Privet	
Spiraea arguta	Meadow Sweet	July 8
" Billardii	"	" 11
" media	"	June 3
" oblongifolia	"	" 3
" sorbifolia	"	July 10

CEREALS

The rainfall during the growing season (May-August) was very light, being only 4.2 inches. As a consequence the growth of straw was short and the yield was somewhat below the average, although the quality of the grain was good.

SPRING WHEAT VARIETIES

Eleven varieties of spring wheat were listed in single plots of one-sixtieth of an acre each. The seed was sown at the rate of 2 bushels per acre in all cases. Seeding took place on May 6 except in the case of *Bishop*, which had to be reseeded on May 16.

YIELDS OF SPRING WHEAT

Variety	Average number of days to mature	Length of straw	Strength of straw on scale of 10 points	Yield per acre	Weight per measured bushel after cleaning
		inches		bush. lbs.	lbs.
*Bishop, Ottawa 8	110	39	9	44 0	64·0
†Club	99	33	10	26 0	62·6
†Garnet, Ottawa 652	94	36	10	23 0	64·2
Huron, Ottawa 3	105	38	10	53 0	64·0
Kitchener	111	40	10	49 0	63·5
Marquis, Ottawa 15	102	37	10	33 0	64·0
Prelude, Ottawa 135	91	30	10	21 0	64·6
Reward, Ottawa 928	103	30	10	33 0	64·7
Red Bob	99	36	10	41 0	64·5
Red Fife, Ottawa 17	112	38	10	47 0	64·5
Ruby, Ottawa 623	95	32	10	26 0	64·6

*Reseeded on May 16th. Yield is not comparable with the other.
†These varieties were grown on land which had grown a crop of sunflowers in 1923. Their yields are, therefore, not to be compared with those of the other sorts.

INFLUENCE OF ENVIRONMENT TEST

The following six varieties of spring wheat were included in a special test conducted at the request of the University of Alberta, for the purpose of determining the influence of environment, chiefly upon quality. This test is being conducted at several other points in Western Canada, the grain, when harvested, being forwarded to the university for special study.

RESULTS FROM ENVIRONMENT TEST

Variety	Average number of days to mature	Length of straw	Strength of straw on scale of 10 points	Yield per acre	Weight per measured bushel after cleaning
		inches		bush. lbs.	lbs.
Huron	111	38	10	38 0	64·0
Kubanka	113	40	7	30 0	64·0
Marquis (common)	111	40	8	50 0	64·0
Renfrew	113	40	10	58 0	63·8
Red Fife	109	38	10	50 0	64·5
Ruby	102	39	10	40 0	64·6

WINTER WHEAT

Two varieties of winter wheat, viz., Kharkou and O.A.C. 104, were sown on August 11 and 17, 1923. Germination was strong and autumn growth good. The plots were well covered with snow from November until February, when the Chinook winds removed it, leaving a damaging coat of thin ice. This situation, along with alternate freezing and thawing in the spring, killed both plots completely.

WINTER RYE

The above conditions damaged the winter rye plots seriously but did not kill the plants completely. Five varieties were tested in single plots of one-sixtieth acre each. The results are given in the following table:—

TEST OF VARIETIES—WINTER RYE

Variety	Average height of plant	Strength of straw on scale of 10 points	Yield
	inches		bush. lbs.
Common	56	7	27 48
Mammoth	53	.....	– 3·5
North Dakota No. 950	44	7	33 12
Rosen	53	6	30 –
Saskatoon	54	7	39 36

OATS

Nine varieties of oats were tested in single plots of one-sixtieth acre each. The seed was sown at the rate of three bushels per acre. The late varieties had the advantage this year, owing to the fact that they received the benefit from the late rains.

TEST OF VARIETIES—OATS

Variety	Average number of days to mature	Length of straw	Strength of straw on scale of 10 points	Yield per acre (uncleaned)	Weight per bushel
		inches		bush. lbs.	
Alaska	84	39	10	40 20	35·5
Banner, Ottawa 49	99	45	7	107 22	36·0
Daubeney, Ottawa 47	87	38	10	65 10	32·0
Eighty Day, Ottawa 42	84	38	10	72 12	32·0
Gold Rain	98	46	7	109 14	39·5
*Laurel (Hulless), Ottawa 477	89	31	10	1,080	51·5
*Liberty (Hulless), Ottawa 480	95	41	10	1,500	48·0
Leader	94	40	9	81 0	34·8
Victory	103	43	8	112 12	39·2

*These varieties were grown after sunflowers and also suffered to some extent from blackbirds. Their yields cannot be compared, therefore, with those obtained from the other varieties.

BARLEY

Nine varieties of barley were under test in 1924 in single plots, occupying one-sixtieth of an acre each. The previous crop was sunflowers. Seeding took place on May 17 in the case of all varieties except Charlottetown No. 80, which was sown on May 13, and Alberta Beardless, which was reseeded on May 30. The results obtained are recorded in the following tables:—

TESTS OF VARIETIES—BARLEY

Variety	Average number of days to mature	Length of straw	Strength of straw on scale of 10 points	Yield per acre	Weight per measured bushel after cleaning
		inches		bush. lbs.	lbs.
Albert, Ottawa 54	81	37	10	30 0	.....
*Alberta Beardless	94	39	7	46 32	.....
Barks	91	31	10	44 5	45·5
Chinese, Ottawa 60	88	41	8	38 36	47·8
*Charlottetown 80	98	35	10	35 0	55·0
Duckbill, Ottawa 57	90	38	10	58 36	54·5
Hulless White	88	36	7	48 36	63·8
Manchurian, Ottawa 50	88	39	10	51 12	48·0
O.A.C. 21	80	36	10	45 0	47·0

*The yields obtained from these varieties cannot be compared with those obtained from the other sorts, for the reasons indicated above.

FIELD PEAS

Seven varieties of field peas were tested in single plots of one-sixtieth acre each during the season of 1924. The previous crop was field corn. The seed was sown at the rate of 2 bushels per acre in all cases. Seeding took place on May 7, except in the case of Golden Vine Sask. 625, which was sown on May 17. A severe frost on June 8 retarded the growth to some extent.

TEST OF VARIETIES

Variety	Average number of days to mature	Length of vine	Yield per acre	Weight per measured bushel after cleaning
		inches	bush. lbs.	lbs.
Alberly Blue	99	43	30 0	65·0
Arthur, Ottawa 18	96	42	23 0	65·5
Chancellor, Ottawa 26	96	38	40 0	64·7
Empire	98	40	36 0	65·0
Golden Vine, Sask. 625	96	40	47 0	65·2
Prussian Blue	98	42	26 0	65·0
Golden Vine, Sask. 625	96	42	49 0	65·0

FIELD BEANS

Four varieties of field beans were under test here in 1924. These were sown, after a barley crop, in hills two feet apart each way. The seed was applied at the rate of 60 pounds per acre, on May 22.

The germination was good and the growth strong until the plants were cut back by frost on the night of June 8, and again on the night of June 13. Owing to the very unfavourable autumn, threshing did not take place until October 9.

TEST OF VARIETIES—FIELD BEANS

Variety	Average number of days to mature	Length of straw	Yield per acre	Weight per measured bushel after cleaning
			bush. lbs.	
Beauty, Ottawa 712	107	.....	14 0	65·3
Navy, Ottawa 711	.....	not matured	no seed obtained	
Norwegian, Ottawa 712	107	.....	20 30	63·5
Petite, Ottawa 709	.....	"	no seed obtained	

SPELTZ

One variety of spelt was tested this season on land that had grown a crop of sunflowers the previous season, and fair results were obtained in spite of the fact that the precipitation for the growing period was light. This variety of cereal seems to thrive under drier conditions than many of the other cereals, and with its thick outer cover, it can withstand more degrees of frost in the autumn than can any of the other cereals. It is recommended, therefore, for districts subject to early autumn frosts. The stooling of the plants was fair.

The seed was sown on May 13 and the crop harvested on September 3.

The straw was strong and was 43 inches in length. The total yield per acre was 51 bushels and 24 pounds of grain and 3,720 pounds of straw.

SPRING RYE

Only one variety of spring rye was tested this season. This was sown after a crop of sunflowers. Seeding took place on May 7, and the crop was cut on August 13.

The straw was strong and 48 inches in length. The yield obtained was 26 bushels and 44 pounds of grain and 3,240 pounds of straw.

FLAX

Two varieties of flax were tested in one-sixtieth-acre plots, sown on May 8 after a crop of sunflowers. The seed was sown at the rate of 42 pounds per acre. Eight degrees of frost on May 17 killed fully 10 per cent of the plants, and checked the growth of the surviving plants considerably.

The crop remained in the field throughout the September snow storms and was not threshed until October 10.

TEST OF VARIETIES—FLAX

Variety	Days to mature	Length of straw	Yield	
			Grain	Straw
		inches	bush. lbs.	lbs.
Premost	98	25	22 28	1,560
Wilt Resistant	98	24	21 24	1,440

BUCKWHEAT

Two varieties of buckwheat were sown on May 24, in plots of one-sixtieth of an acre, and on land that grew cabbage and other similar transplanted vegetables the previous season. The germination of the seed was good, 100 per cent.

Good growth was made until the severe frost which occurred on the nights of June 7 and 8, when fully 80 per cent of the plants were killed. The plots were reseeded between the drills, so as not to destroy the few remaining plants. The germination of the seed, from this seeding of June 9, was very slow, as by this date the soil had become quite dry, so that the plants from the second seeding only came into bloom a short period before the first autumn frost. The grain obtained was from the few plants that escaped the last spring frost.

TEST OF VARIETIES—BUCKWHEAT

Variety	Number of days to mature	Strength of straw on scale of 10 points	Yield per acre
			bush. lbs.
Silverhull	137	10	6 24
Japanese	137	10	9 6

FORAGE CROPS

Forage crop work included variety tests of field roots, corn, sunflowers, hay crops, and miscellaneous experiments dealt with in the following report.

FIELD ROOTS

The spring was late and cold and germination in the root crops, particularly field carrots, was weak, necessitating in some cases reseeding, with the result that the crops were slightly below the average. The land used for field root tests was in cereals the previous year with the exception that field carrots followed a crop of potatoes. Twenty loads of manure per acre were applied in the fall of 1923 and ploughed in and the land put in excellent condition for seeding.

FIELD CARROTS

Eight varieties of field carrots were sown May 9 in one-sixtieth-acre plots. With the exception of Chantanay all were reseeded May 27, only comparatively poor stands being obtained, which were thinned, where necessary, to 3 inches between the plants in the row. The following table gives varieties, yield obtained, and dates harvested:—

VARIETY TEST—FIELD CARROTS

Variety	Source	Per cent stand	Date harvested	Yield per acre as harvested	
				tons	lbs.
Chantenay	.....	100	Sept. 12	15	240
Danish Champion	C.E.F.	70	Aug. 27	12	...
Ontario Champion	.....	65	" 29	11	1,220
Yellow Belgian	Ewing	65	" 28	11	860
Long Orange	Bruce	65	" 30	10	1,600
Large White Vosges	Bruce	65	" 23	9	1,680
White Belgian	Ewing	60	" 25	9	960
Improved Short White	.....	.....	.....	Failure	

Yields of eight varieties of Swede turnips tested in one-sixtieth-acre plots, the rows being 20 inches apart with plants 12 inches apart in the row, were obtained as shown in the table following. All varieties were sown May 22.

SWEDE TURNIPS

Variety	Source	Per cent Stand	Date harvested	Yield per acre as harvested	
				tons	lbs.
Canadian Gem	.....	90	Sept. 10	29	1,700
Ditmars	H. H. Monuet	90	Sept. 12	28	1,300
Good Luck	Steele Briggs	75	Aug. 28	28	460
Selected Westbury	Steele Briggs	75	Sept. 12 " 12	21	1,920
Bangholm 7021	.....	75	" 9	21	360
Hartley's Bronze Top	Bruce	75	" 12	19	1,900
Jumbo	Steele Briggs	70	" 9	19	1,180
Monarch	.....	60	" 8	17	1,280

Eight varieties of fall turnips were sown in test plots May 23 and yields obtained as follows:—

FALL TURNIPS

Variety	Source	Per cent Stand	Date harvested	Yield per acre as harvested	
				tons	lb.
Early Sixweeks	Suttons	100	Aug. 29	28	1,300
Red top strap leaf		100	" 22	28	1,300
Red Paragon	Suttons	100	" 30	25	700
Impr. Greystone	Steele Briggs	95	" 27	24	1,440
Purple Top Mammoth	Suttons	90	" 23	21	1,740
Pomeranian White Globe	Steele Briggs	85	" 28	20	1,520
Greystone		80	" 26	19	1,900
Hardy Green round	Suttons	60	Sept. 25	15	720

Fall turnips, not being suitable for long storage, were utilized to advantage as feed immediately after harvest.

Seven varieties of mangels were sown in test plots on May 14. Germination was poor and some reseeding was necessary. When harvested September 9 and 10 the following yields were obtained:—

MANGELS

Variety	Yield per acre as harvested	
	tons	lbs.
Giant White Sugar	26	1,760
Giant Yellow Oval	25	1,600
Giant Yellow Globe	25	1,000
Yellow Globe	21	900
Prize Mammoth Long Red	20	320
Yellow Intermediate	17	1,800
Golden Fleshed Tankard	17	1,640

Sugar beets were sown May 9 and harvested September 9. Yields of the seven lots tested are given in the folowing table:—

SUGAR BEETS

Variety	Yield per acre as harvested	
	tons	lbs.
Klein Wangleben	22	520
Vilmorin's Improved	20	1,040
British Columbia	20	640
Chatham	19	1,240
Kitchener	18	1,920
Sidney, B.C.	18	1,560
Waterloo	17	560

With the exception of the first two varieties tested, the above lots were Canadian-grown seed.

A plot (one-fortieth acre) of Improved Dwarf Essex rape was sown May 9 and although subject to unfavourable soil and weather conditions until the second week in June gave excellent yields of good-quality green feed. Cutting was

started July 25 when the rape had made a growth of 26 inches, and extended at intervals as required until September 17, by which time a growth of 38 inches had been made and a good second growth was appearing on the earlier cut section. In all this plot gave a yield at a rate of 24 tons 1,400 pounds of excellent feed per acre.

ENSILAGE CROPS

CORN FOR ENSILAGE

Corn variety tests were conducted in one-sixtieth-acre plots on land which had been in cereals 1923 following a crop of potatoes. For the potato crop in 1922 the land received twenty loads of manure per acre, and fifteen loads per acre was applied following the cereals. This manure was ploughed in during the fall and the land thoroughly worked with spring tooth and smoothing harrows just previous to corn planting. Seeding was done in hills 3 feet apart each way on May 15 and all lots harvested August 28 and 29 before any serious frost occurred. Germination and growth were slow until favourable weather conditions of July and August, when extraordinary growth was made, and yields are fully up to average.

Of the sixteen lots tested three only reached sufficient maturity to form cob. Quebec 28 and Compton's Early had cobs formed; Twitchell's Pride was well cobbed with some in the milk stage. Weights were taken ninety-six hours after cutting:—

CORN

Variety	Source	Per cent Stand	Height	Yield	
			inches	tons	lbs.
Compton's Early	J. O. Duke	100	80	29	1,280
White C. Y. Dent	Steele Briggs	100	75	25	1,600
Longfellow	Dakota Improved Seed Co.	90	73	21	—
Wisconsin No. 7	John Parks	85	84	20	1,760
Leaming	John Parks	90	60	19	640
Quebec 28	Macdonald College	90	62	18	1,920
90 Day White Dent	Dakota Improved Seed Co.	90	70	18	1,200
Longfellow	J. O. Duke	85	68	18	480
Northwestern Dent	A. E. McKenzie	75	62	18	—
North Dakota	Steele Briggs	85	72	18	—
Northwestern Dent	Dakota Improved Seed Co.	75	70	17	800
Leaming	J. O. Duke	85	.....	16	1,840
Golden Glow	J. O. Duke	85	70	16	1,840
Disco Pride Yellow	Dakota Improved Seed Co.	80	70	15	720
Wisconsin No. 7	J. O. Duke	70	72	15	—
Twitchell's Pride	E. F., Fredericton	70	60	14	80

A number of varieties of ensilage corn were seeded in drills at different distances apart. These were seeded May 16 to May 21 on land which had produced a crop of garden vegetables the previous year, and although the ground was cold at the time of planting, germination was good and a 100 per cent stand was obtained throughout. With favourable weather conditions during late summer and early autumn rapid strong growth was made and yields obtained which are considered excellent for this district.

Data recorded from this experiment is given in the following table. All varieties were cut August 28 and 29:—

INDIAN CORN IN ROWS AT DIFFERENT DISTANCES APART

Variety	Drills	Height	Maturity when cut	Green yield per acre	
		inches		tons	lbs.
Longfellow	22 ins. apart	82	Cob formed	39	1,680
N.W. Dent (E. F., Brandon)	24 " "	73	Well formed	20	1,100
N.W. Dent	26 " "	60	Not tasselled	34	1,750
Yellow Cob Ensilage	30 " "	70	Cobs formed	23	860
Rustler White Dent	34 " "	78	Cobs formed	20	200
Mixed field corn	30 " "	72		17	740
Mixed garden corn	24 " "	50		18	600
Mixed field corn	24 " "	75		26	1,940
Mixed field corn	22 " "	72		21	300

It may appear that the dates of cutting were rather early, but early cutting was made to escape the severe and killing frosts generally experienced here during early September. After our severe frosts no further growth is possible, and leaving the material in the field throughout these frosts greatly lowers its value. After the first week in September, or when frosts arrive, frosty nights may be expected to continue and it is well to get any forage crops still in the fields under cover at once.

SUNFLOWERS

A number of varieties and strains of sunflowers were sown in test plots May 19 and 20 and harvested August 28 and 30. Seeding was done in drills at different distances apart, one set of plots being thinned to 8 inches between plants in the row, a duplicate series were left unthinned. Germination and growth until the end of June was slow, after which time more favourable growing conditions prevailed and remarkable growth was made. The tests were conducted on land part of which had been in garden vegetables and the balance summer-fallowed.

Yields, taken seventy-two hours after cutting, and other data recorded are given in the table following:—

SUNFLOWERS

Variety	Drills	Per cent Stand	Height	Maturity	Yield per acre			
					Plant 8 ins. apart in row		No thinning in row; plants 3 in., 4 in., 7 in. apart	
			inches		tons	lbs.	tons	lbs.
Early Ottawa 76	20 in. apart	90	80	5 p.c. ripe	20	1,688	37	691
Mammoth Russian (Steele Briggs)	22 " "	100	89	No bloom	17	1,490	36	1,515
Mixed Mennonite	24 " "	100	60	25 p.c. ripe	25	100	28	279
Manteca (Rosthern)	26 " "	100	74	Full bloom	29	1,250	39	300
Mixed (C.P.R.)	44 " "	80	82	Full bloom	26	496	26	168
Manteca (C.P.R.)	30 " "	100	86	Starting bloom	31	336	47	720
Early White (Rosthern)	32 " "	90	64	20 p.c. ripe	24	1,368	24	521
Early Black (Rosthern)	34 " "	95	76	25 p.c. ripe	25	660	30	760
Early (Rosthern)	36 " "	95	50	50 p.c. ripe	18	1,950	22	330
Manchurian	38 " "	100	72	5 p.c. ripe	22	—	28	540
Giant Russian (C.P.R.)	40 " "	100	72	25 p.c. ripe	23	1,380	29	813
Mammoth Russian (MacDonald)	42 " "	100	98	Starting bloom	29	394	45	16
Mixed (C.P.R.)	44 " "	80	82	Full bloom	21	1,650	22	190

The fodder was perfectly green when hauled to the silo, and as the weather was cloudy with showers between time of cutting and weighing, the weights were no doubt influenced by additional surface moisture.

Unthinned plots gave in each instance the highest yields, but the quality of forage from thinned plots was much superior.

Frosts which occurred during the early part of June affected corn, but it was noted that they had no apparent checking influence on the growth of the sunflowers. This ability to withstand frost will undoubtedly be of considerable importance in making sunflowers a very important fodder crop to live stock men in the northland.

HAY

Annual hay crops, particularly some varieties of the millets, have a place as a valuable fodder crop in this part of the northland. Great interest was shown by the farmers in this district who visited the station and saw the heavy growth of annual hay crops especially as the hay on the prairies and sloughs was generally very light and in many cases a total failure. Eight seedings, six of them millets were sown in one-sixtieth acre plots May 19 and cut September 1. The first seeding of hog millet did not germinate and was resown June 3. The land had been in sunflowers 1923 with manure applied for that crop, no additional fertilizer was applied for the annual hay plots. In the following table are given the crops sown and data recorded from these tests:—

ANNUAL HAY CROPS

Seeding	Stand	Height when at maturity	Yield per acre taken 24 hrs. after cut	
			tons	lbs.
Japanese millet	100	35 in., past bloom	16	220
Hungarian millet	90	30 " full bloom	12	1,800
Common millet	75	38 " bloom	12	1,560
Siberian millet	85	46 " not headed	12	—
Hog millet	85	44 " bloom	11	1,760
Golden	80	43 " past bloom	9	—
Sudan grass	85	42 " heading	14	500
Canary grass	100	32 " Seed ripe	5	80

Plots of perennial grasses sown for hay in 1923 did not get a favourable start owing to very adverse weather conditions after seeding. One series of plots was sown with, and a duplicate series without, a nurse crop and the stands from the seedings with nurse crop were so poor that these were ploughed in and not weighed for record.

The following table gives hay yields for plots sown 1923 without a nurse crop. Cutting was done July 18.

HAY

Seeding	Hay yield, per acre		Remarks
	tons	lbs.	
Timothy	1	1,240	Excellent hay.
Red top	0	360	Fair hay.
Western rye	1	160	Fair quality.
Meadow fescue	1	40	Very good quality.
Kentucky blue	0	1,680	Fine fodder.
Tall oat	0	720	Inferior feed.
Orchard grass	0	240	Fair quality.
Brome grass	0	480	Fair quality.
Alfalfa (1st cut)	3	300	Excellent quality.
(2nd cut)	5	1,100	Green material, put in silo immediately after cutting.

ALFALFA

In 1923 a number of plots of alfalfa were sown broadcast and in drills at different distances apart. These were seeded without a nurse crop on land which had been manured and summer-fallowed the previous season. Seeding was done May 31, 1923, and the plots were clipped on July 10 and August 28, 1923, to destroy weed growth, the last clipping being left on the plots as a mulch. All plots came through the winter in fair condition, and two cuttings made in 1924, the first on July 18, the second on September 3. Material from the first cutting made excellent quality hay. The material from the second cutting was utilized for ensilage. Data recorded is given in the table following:—

ALFALFA FOR HAY

Method of seeding	Yield *hay* first cut		Yield *green* material second cut	
	tons	lbs.	tons	lbs.
Broadcast (average of four plots)	1	970	2	1,970
In drills 6" apart (average of four plots)	–	1,440	2	305
In drills 24 " apart (average of 2 plots)	1	1,480	4	760
In drills 30" apart (average of 2 plots)	1	10	4	1,540
In drills 36" apart (average of 2 plots)	1	190	3	1,770

HAY AND PASTURE MIXTURES

Hay was cut from a series of greens, clovers, alfalfa and mixtures seeded in 1921 for hay. Naturally, in the case of red clover this has almost entirely disappeared; what has remained up to the last year being due to natural reseeding. Last winter was particularly severe on red clover and at present it does not constitute any of the hay yields obtained this year. No second cutting from any of these plots was made this year, but after the first cutting was taken some plots were disced and top dressed with ten wagon loads of manure per acre to determine the influence of top dressing on old hay stands.

The persistance of the various crops sown has been reached since 1922 and the results obtained are in favour of Timothy and Alfalfa mixtures. The following table gives original seedings, yields 1924, and the grass, clover and alfalfa making up this yield:—

HAY AND PASTURE MIXTURES

Original seeding 1921.	Yield hay per acre 1924		Remarks on 1924 stand
	tons	lbs.	
Grimm alfalfa	1	480	100 p.c. alfalfa.
Alfalfa and timothy	1	..	5 p.c. timothy, 95 p.c. alfalfa.
Alfalfa and Western Rye	1	880	85 p.c. Western Rye, 15 p.c. timothy.
Alfalfa and Meadow Fescue	1	320	15 p.c. Meadow Fescue, 85 p.c. alfalfa.
Alfalfa, timothy, western rye and meadow fescue		830	15 p.c. timothy, 85 p.c. alfalfa.
Alfalfa, timothy and western rye, meadow fescue		1,696	20 p.c. timothy, 80 p.c. alfalfa.
Kentucky blue and red top			
Red clover and timothy		160	100 p.c. timothy, thin stand.
Red clover and western rye		1,760	100 p.c. western rye, thin stand.
Red clover and meadow fescue		480	100 p.c. meadow fescue, thin stand.
Red clover, timothy, western rye, and meadow fescue		320	Poor quality.
Red clover, timothy, western rye, meadow fescue, Kentucky blue and red top		240	No red top or Kentucky blue.
Red clover and alsike		1,890	Volunteer crop.
Red clover, alsike and timothy		800	Timothy, thin stand.
Red clover, alsike and western rye	2	640	Fair stand western rye, balance weak.
Red clover, alsike and meadow fescue		1,440	Some meadow fescue, weedy.
Red clover, alsike, timothy, western rye, and meadow fescue		800	20 p.c. timothy, 25 p.c. western rye, 5 p.c. meadow fescue, thin stand (50 p.c.).
Red clover, alsike, timothy, western rye, meadow fescue, Kentucky blue and red top		240	15 p.c. timothy, 20 p.c. western rye, 5 p.c. meadow fescue (thin stand, 40 p.c.).
Prome grass		1,650	Medium stand.
Western rye		1,350	Medium stand.
Kentucky blue		360	Poor stand.
Meadow fescue		420	Poor stand.
Timothy		1,950	Fair stand.
Red top		1,500	Poor stand.
Alfalfa, alsike, white Dutch clover and timothy	1	1,250	Alfalfa and timothy.
Alfalfa	1	250	100 p.c. alfalfa.

THE BEES

Although the past season was not a very favourable one for the production of much comb honey, what honey was taken from the hives was of a very high quality.

The spring was unusually late and cold, with frequent frosts until well into June, but a fairly generous supply of nectar and pollen was available during the end of June and early July.

Accordingly the colonies built up fairly rapidly and were in fair condition by the latter part of July. No very large honey flow developed during the late season, but the bees made a fair gain over a period of four weeks from July 15 to mid-August.

The autumn blooms were not plentiful, and with the cool weather of late August, and the heavy snowstorm and extremely cold weather of September, practically no late honey was obtained. During the cold period the hives lost weight very rapidly. As a consequence the conditions were very unfavourable for the building up of nucclei, and unusually heavy feeding was necessary to bring the colonies up to a satisfactory weight for the winter.

The two colonies that were wintered in the cellar of one of the bunk houses were removed to the open on April 28. On examination it was found that one had wintered quite well and was in good condition, while the other one was

rather weak and it was not possible to strengthen it with any brood. No surplus stores were made by this weak colony as it did not build up very fast.

Forty pounds of honeycomb were taken from the strong colony, but no increase from either hive was made this season.

Owing to the short seasons in this Northland, the swarms arrive too late to be able to build up and increase in numbers and provide sufficient stores for the winter, as in the past, when they were allowed to swarm the new colonies were found so weak in the autumn that they had to be united.

This season the feeding was begun early in September, and continued until October 13 when having become quite cold, further flight would have been impossible. A syrup composed of two parts sugar and one part of water was fed out of a five-pound jam pail with the top perforated. On October 13 the hives were weighed and placed in the cellar. No. 0.1 hive weighed 71¼ pounds without the cover, while No. 3 B.C. hive, the weak colony from the spring, weighed only 54¾ pounds without cover. After being placed on the stand in the cellar feeding was continued until the weight of this hive amounted to 70 pounds. At the last examination the bees covered eight frames in No. 1 hive, and seven frames in No. 3 B.C. hive.

Bee-keeping in this Northland is as yet very much in the experimental stage, and until such time as a greater acreage of alfalfa and clover is grown in this district bee-keeping will remain more an experiment than a paying proposition. As the bunk house is not occupied this winter only an occasional fire is made, and during one of the very cold spells the temperature fell to 35 degrees below zero. It remains to be seen how this condition will affect the bees.

SALMON ARM, B.C.

REPORT OF THE SUPERINTENDENT, THOS. A. SHARPE

The winter of 1923-24 was rather mild with less than the average fall of snow. Quite early the ground froze to a depth of several inches, and this crust remained all winter. As a result, when the snow melted in the spring it ran off leaving the ground practically as dry as it was in the late fall. The lack of spring rains affected nearly all of the crops, and on the whole the season was an unfavourable one for growth.

Grain, unless sown very early, was quite short and thin, and garden seeds did not germinate until very late, producing a very irregular stand and a poor yield.

Soy beans made a fine growth and fruited freely, and the crop was ripened long before any frost came.

The small fruit crop was light and not so fine in quality as in years of sufficient rainfall.

Tree fruits did not appear to suffer from the drought. The apples were of a good size and free from scab.

Experiments with tree fruits are being carried out with a view of determining which varieties are best suited to this district. Several varieties of pears, viz., Flemish Beauty, Dr. Jules Guyot, and in favoured spots, Bartlett, and Souvenir du Congress, are of sufficient merit to warrant further cultivation.

METEOROLOGICAL DATA

1924—Temperature

Months	Maximum	Date	Minimum	Date	Rain	Snow	Hours Sunshine
April	76	29	25	15-24	0·28	.....	147·24
May	90	13	33	7	0·28	.....	303·0
June	100	30	41	6	0·96	.....	271·42
July	103	2	45	8-22	0·85	.....	299·06
August	91	12-26	40	30	2·14	.....	231·06
September	87	3	36	20	1·63	.....	198·54
October	65	22	29	10	1·16	.....	92·48
November	57	2	9	12	1·06	10½	60·06
December	58	12-14	−15	17	0·44	31½	48·42
1925							
January	49	20	3	15	.....	43¾	40·18
February	52	2-3	14	16	0·59	14¼	55·36
March	54	24-31	21	8	0·36	2½	118·0
Total	.....	.....	.....	.....	9·75	122½	1,866·42

BETSIAMITES

The season of 1924 was very unfavourable to cropping. The ground did not thaw out until the end of May, with the result that seeding was not performed until June. Much rain fell throughout the summer and up to the month of July there were practically no warm days. As a result, most of the seeds either failed to germinate, or died within a few days. This was particularly the case with plants sown at the outset in beds for transplanting. When they were set in the soil the cold killed them. A few patches of oats, rye, and flax succeeded in growing a little, but the remainder, after a slow germination, rotted in the ground. A few warm days at the end of July gave a little more life to the surviving crops, but the grain did not ripen, and vegetables were a complete failure. Early in October heavy frosts destroyed everything that remained. From that date the fall was exceedingly disagreeable and nothing could succeed.

SWEDE CREEK, YUKON TERRITORY

The season of 1924 was not favourable to good growth. The spring was very cold and cloudy, and during the four growing months there were practically 268 hours less bright sunshine than for the same period in 1923. Then during the month of May there were ten nights when the temperature touched freezing point, and on May 13, 5 degrees of frost were registered. Consequently seeding was late and growth was slow, and the 9 degrees of frost registered on August 17 caused everything to be badly frozen.

The improvement of the soil is a difficult question especially when no stock is kept and consequently but little barnyard manure.

As precipitation in this territory generally is quite light it is necessary to have the soil in the best possible condition to hold moisture. The ploughing down of green crops helps in this way, but as it is late in the season when this is done, it also holds the cold most of the next season with the result that fermentation does not take place until the following summer. It is on the manured soil where large yields of grain, hay, roots and vegetables are obtained.

The following meteorological records for 1924 give temperature, precipitation, and sunshine:—

Months	Temperature				Precipitation			Sunshine
	Maximum	Date	Minimum	Date	Rain	Snow	Total	Hours average
January	20	19	−59	25	.....	9½	0·95	5·18
February	39	26	−53	17	.....	6½	0·65	41·54
March	45	8	−26	28	.....	2¾	0·27	151·30
April	64	29	−26	3	0·07	3	0·37	214·6
May	68	30	27	14	1·14	.....	1·14	167·36
June	83	24	30	17	1·04	.....	1·04	263·36
July	79	19	39	24	1·91	.....	1·91	219·30
August	82, 98	10	23	17	1·55	.....	1·55	186·18
September	80	5	12	25	0·76	¼	0·79	91·30
October	50	2	−1	31	0·26	12¾	.....	58·6
November	37	5	−20	11 and 12	.....	9¾	0·98	9·6
December	12	4	−55	14 and 15	.....	5¾	0·57	.....

CEREALS

OATS

Seeding of grain began on May 14. One and three-quarter acres of hillside land were seeded with Victory Oats at the rate of 3 bushels per acre. After the frost of August 17, three-quarters of an acre of this crop was cut for hay, as it was not far enough advanced for grain, and yielded 1½ tons of good quality. The remaining acre ripened and when threshed yielded 32 bushels of good feed oats.

On May 16 one-quarter of an acre of bottom land was seeded with Liberty oats. There was a heavy growth, which, when cut was cured in sheaves and made excellent hay.

WHEAT

The following varieties of wheat were tested this year, Marquis, Red Bobs Supreme, Ruby, and Prelude. Seeding was done May 15 on bottom land.

The growth of Red Bobs Supreme, and Marquis, was good, but Prelude and Ruby were only fair and all were frosted on August 17. Marquis yielded at the rate of 16⅔ bushels per acre, Red Bobs Supreme, 17 bushels per acre, and Prelude 13 bushels to the acre. The Ruby was so badly eaten by rabbits while curing in the stook that it was impossible to get a fair estimate of the yield. The quality of all them was poor, Prelude being the only one suitable for milling, the others being only fit for feed.

BARLEY

On May 16 half an acre each of Himalayan and White Hulless barley was seeded on bench land, but they were so badly eaten by rabbits that they were not threshed. The few small patches remaining were quite well matured.

FORAGE CROPS

The bench land which, in 1922, was sown with a mixture of timothy and alsike, was again seeded with a mixture of timothy and red clover. The timothy having withstood the winter, yielded one ton of excellent hay. An acre of timothy sown on bottom land yielded two tons of good hay.

There is very little danger of timothy sown on bench land being winter-killed so long as it is cut before it gets too ripe.

The following method of working the soil for forage crops, has proved the most advantageous at this Station. After the land has been seeded to grain, sow timothy (6 pounds), and then go over once with the light drag harrow; the following spring seed alsike clover (6 pounds) on the grain stubble, disc over once and then drag crosswise. This method of working the soil helps to warm it and does not damage the timothy plants, and a fair cutting of hay can be obtained the same season. It also cleans off all stubble, and the following year produces a good crop of mixed hay, and the aftermath can be ploughed under.

RED CLOVER

The tests with red clover have shown that in most cases it is winter-killed. The plots that did survive attained a length of 2 feet. Plots of alsike and clover mixed, seeded in the fall of 1923 and which were not expected to germinate until spring, showed up well in the early summer, but later in the season did nothing. An adjoining plot seeded in the spring also failed.

ALFALFA

Growth was slow on the two bench land plots of alfalfa. The older of these two plots has survived 5 years, and the other 3 years.

In 1923 a part of the three-year-old plot was given a load of barnyard manure. The plants grown on this portion attained a height of 40 inches, while plants on the unmanured portion were spindly and stunted.

SUNFLOWERS

The sunflowers, planted in rows 3 feet apart, made a very large growth, some plants being more than 7 feet high. Unfortunately the frost of August 17 ruined them.

ROOT CROPS

TURNIPS

Several varieties of turnips were planted on May 17, namely Ostersunden, Bortfelden, Yellow Land, Aberdeen Yellow Purple Top, Danish Queen, and Monarch. None of these were injured by frost.

The date of seeding was rather late for swede turnips, and while they did not grow large they were of extra fine quality.

While fall turnips did remarkably well, the summer or early varieties were so badly damaged by the attacks of the red bug that they did not do well. It was noticed that the bugs did not bother the late varieties as long as the early kinds lasted, and it was found worth while to plant a few rows of the early varieties, and to spray the crop with hellebore mixed in water.

The following yields were obtained: Ostersunden, 36,440 pounds; Bortfelden, 38,900 pounds; Yellow Lanslard, 29,240 pounds, Aberdeen Yellow Purple, 32,708 pounds; Danish Queen, 16,370 pounds; Monarch, 19,230 pounds.

VEGETABLES

POTATOES

Three varieties of potatoes, Sussex Rose, Early Ohio, and Agassiz Special, were planted on May 16th, but the August frost resulted in a small yield of poor quality.

CABBAGE AND CAULIFLOWER

Cabbage and cauliflower did not give a large yield this season. What heads were produced were quite small, and the late varieties did not head at all.

Of the cabbages, Copenhagen Market did best, and of the cauliflowers Early Snowball gave best results.

Table vegetables were planted on May 15. Of the onions Extra Early Flat Red did best and were ready for use on July 25.

Detroit Dark Red, Crosbys Egyptian, and Detroit turnip beets were all ready for use on July 20.

Two varieties of lettuce, Big Boston, and Crisp as Ice were ready for use on June 15.

Radishes did not do well. They were wormy.

The parsley seed germinated poorly. Only a few plants of Champion Ross Curled grew.

White Silon swiss chard made a big growth.

Table carrots of the following varieties, Guerando or Oxheart and Sel Chantenay were ready for use on July 15 and 20 respectively.

Garden peas of the British Wonder variety were ready for use on August 8. The yield from the Thos. Laxton would have been large but for the frost on August 17.

Three varieties of beans were planted, namely, Masterpiece O—2746, Round Rod K. Wax O—1638, and Stringless Green Pod. There was only one small picking of each of the two first-mentioned varieties.

FORT SMITH, N.W.T.

Results obtained during 1924 were better than those of the year 1923, but failed to come up to expectations owing to the drought which prevailed during June and July. The rainfall favoured seeding in May and helped growth at the outset, enabling a large proportion of the plants to withstand the drought of the following months. There was considerable rain during August and September, with rare intervals of bright weather.

The wheat and oats continued to grow in August, and owing to this late growth, failed to ripen completely; the kernels remained soft and lost much of their size when drying. In spite of these drawbacks the yield may be considered as average for the region; fifteen hundred pounds of Marquis wheat were obtained from one hundred and fifty sown, and sixteen hundred pounds of Banner oats yielded twelve thousand pounds.

Our artificial hay experiments yielded very mediocre results.

The potato crop was even inferior to that of ordinary years, only six bags being obtained from each one planted.

Vegetable crops, however, were more satisfactory, the results being shown in the following table:—

Variety	Sown	Germinated	Result
Carrots, Chantenay	May 10	May 25	Good.
Carrots, Guerande	" 10	" 25	Good.
Beets, Detroit	" 10	" 20	Mediocre.
Rutabagas	" 10	" 20	Mediocre.
Carrots, Short White	" 10	" 25	Excellent.
Peas, Th. Laxton	" 12	" 22	Satisfactory.
Onion, Yellow Globe	" 12	" 25	Good.
Onion, Prizetaker	" 12	" 25	Perfect (Diameter 3").
Lettuce, Big Boston	" 12	" 22	Good.
Cabbage, Copenhagen	June 10 (transplanted)	.....	Good (15 lbs.).

The flower garden having received more care through continuous watering, gave good results. The following varieties of flowers were tested: Corn flower, Lavatera, California Poppy, Carnation, Candytuft, Chrysanthemum, Godetia, Snap dragon, Nasturtium, and Zinnia. All were in bloom during the whole summer and until late in the fall; the earliest were Corn flower, California poppy, and Candytuft.

We obtained five hundred Caragana plants from local seed.

METEOROLOGICAL RECORDS

Month	Maximum	Minimum	Snow	Rain
			inches	
January	13	−55	14	
February	44·5	−45	8	
March	39	−19	6	
April	60	−28		
May	79	17	Snow on the 21st. Cyclone on the 15th.	0·70 frost Hail 2½ circum.
June	87	25	.....	0·81
July	93	31	.....	0·95
August	76	31	.....	1·98
September	75	13	Snow on the 24th. inches snow	1·04
October	63	11	2	
November	39	−36	5	0·04
December	27	−49·7	10	

FORT RESOLUTION, N.W.T.

The winter of 1923-24 was exceptionally beautiful and dry; very few severe snow storms were registered, and outside of a short and continued period of intensely cold weather at the end of January and beginning of February the temperature continued rather mild throughout the winter. March and during the whole of April we experienced frequent chinook winds, which cut down the snow considerably. On April 22 the big thaw set in and by May 1 all snow had disappeared from our own fields.

Ploughing was started on May 6, and on May 8 we risked planting a few bushels of potatoes. A heavy snowstorm with cold northern winds on May 10 caused us for a while to fear that we had planted the potatoes too early, but fortunately they escaped damage. The hay crop, however, which was looking quite promising at this time, was badly bitten by the frost. Except for one day the weather continued cool until May 25, and from then until the end of the month it was warmer. There was a fair precipitation during the month of June, but from the 7th to the 26th we had a period of cold weather with continual winds from the northwest. Our garden seeds, mostly planted by the middle of May, were pricked out between June 1st and 13th, with the exception of onions and beans. Growth, however, was slow on account of the cold.

From the latter part of June until July 6th it was very warm, then we had a timely rainfall followed by another hot spell which lasted until the end of the month. The rainfall on the 6th gave life to our rather poor looking crops; the hay in our meadows picked up again and made rapid growth; the potatoes quickly bloomed, as well as all our varieties of flowers; and all garden crops made rapid progress.

August was a very unfavourable month with north winds lowering the temperature considerably. On the 5th a heavy frost covered the ground, ruin-

ing practically two-thirds of our potato crop. It was noticed that those patches which were exposed to the wind were not so badly affected, in fact some were practically untouched. It was then decided to clear up as soon as possible a ridge of willows along the shore in order to permit the winds to blow freely over the fields.

In September the weather, on the whole, was very bad. With the exception of a few clear, warm days from the 8th to the 15th, it was nearly always cool and stormy. Snow appeared several times between the 20th and 26th but thawed again. No heavy snowfall was experienced until November 4 which marked the beginning of the real winter.

METEOROLOGICAL RECORDS

—	Maximum	Minimum	Rain	Snow	Melted Snow
				inches	
1923					
December	−10·6	−15·1	.....	11·5	
1924					
January	−17·4	−25·6	.....	0	
February	−17·6	−20·5	.....	7	
March	21·1	−10·6	.....	3	
April	25·3	15·4	.....	2	
May	51·1	32·7	0·23	.....	32
June	58·4	39·4	0·92	.....	
July	70·1	52·0	1·66	.....	
August	63·4	48·4	2·73	.....	
September	53·	38·6	2·58	3	
October	41·1	30·6	0·83	.....	

CEREALS AND FORAGE CROPS

Banner oats succeeded fairly well; we get three tons of excellent hay out of them. They would certainly have matured had we not cut them too early in the green state, as feed for our cattle.

Our hay crops, consisting of 15 tons of different varieties, such as Western Rye, Brome grass, Timothy, and Red Top, were harvested during the latter part of August. To supplement this in order to provide sufficient winter rations for our twenty head of cattle, we yearly gather some 50 or 60 tons of good hay, mostly of the Red Top variety, from the natural meadows to be found alongside of Great Slave river, some 60 miles from here.

VEGETABLES

Nearly all our vegetables gave satisfactory results, with the exception of the onions, which failed entirely.

Cauliflower of the Erfurt variety were particularly successful.

Peas and beans also were good, and were ready for use on August 5.

Potatoes were a very poor crop due to the severe frost encountered when in early bloom. Seventy bushels of Early Rose and five or six bushels of other varieties were planted in May and June, but the total yield on October 1 was only 180 bushels. Experiments were conducted in planting at different times and at different depths. It was found that potatoes planted nearer the surface soon proved to be further advanced than those planted deeper in the soil, even though the deeper ones had been planted two weeks earlier; both were equally damaged by the frost of August 5.

All other vegetables were gathered in early in October in view of the fast-approaching winter.

Turnips and beets yielded 80 bushels; carrots, 40 bushels; cabbage, 300 head, some of which weighed from 10 to 12 pounds.

VARIETY TEST—VEGETABLES

Variety	Date of Sowing	Pricked out, Date	Ready for use	Results
Turnip—White Snowfall	May 13	May 28	July 20	Fair.
Turnip—Purple Top Milan	" 13	" 28	" 20	Fair.
Turnip—Good Luck	" 15	" 28	" 25	Good.
Carrot—Chantenay	" 13	June 10	Aug. 1	Very good.
Carrot—Early Horn	" 13	" 10	" 1	Very good.
Beet—Detroit Turnip	" 14	" 13	" 1	Fair.
Beet—Crosby's Egyptian	" 14	" 13	" 1	Good.
Onions—The Queen	" 14	" 20	No	Nothing.
Onions—Denver's Yellow Globe	" 14	" 20	No	Nothing.
Radish	" 13	" 5	June 20	Good.
Lettuce—Improved Hanson	" 15	" 1	" 22	Very good.
Cauliflower—Erfurt	" 15	" 1	Sept.	Very good.
Cauliflower—Early Snowball	" 15	" 1	"	Very good.
Cabbage—Jersey Wakefield	" 15	" 1	"	Good.
Cabbage—Copenhagen Market	" 15	" 1	"	Good.
Cabbage—Jersey Wakefield	" 15	" 1	"	Good.
Cabbage, Copenhagen Market	" 15	" 1	"	Good.
Cabbage—Danish Ballhead	" 15	" 1	"	Good.
Carrot—Oxheart	" 15	" 12	Aug. 1	Fair.
English Wonder peas	" 28	" 10	" 5	Good.
May Queen Peas M	" 28	" 10	" 5	Good.
Beans—Wardwell Kidney Wax	" 28	" 23	" 5	Fair.
Beans—Giant Stringless Green Pod	" 28	" 23	"	Good.

VARIETY TEST—FLOWERS

Variety	Bloomed
Daisy	3rd week in May.
Poppy	2nd week in June.
Mignonette	3rd week in June.
Sweet William	3rd week in June.
Carnations	4th week in June.
Soapwart	1st week in June.
Forget-me-nots	1st week in July.
Phlox	1st week in July.
Stocks	2nd week in July.
Blue Bells	2nd week in July.
Marigolds	3rd week in July.
Butter and eggs	2nd week of July.
Pansy	4th week of July.
Little Doutte	3rd week of July.
Nasturtium	1st week in August.
Balsams	2nd week in July.
Larveter	1st week in July.

FORT PROVIDENCE, N.W.T.

The season of 1924 was too dry for the production of good crops. Seeding was performed at the usual time, namely, late in May, but persistent drought throughout June and half of July injured all our crops to a large extent. Fortunately, about the middle of July there was a rainfall which gave new life to the crops.

POTATOES

Ninety-five bags of Early Rose were planted late in May and yielded 412 bags. Many of these potatoes were large but slightly watery. In ordinary years we are able to dig potatoes for use on August 15, but this year, owing to the drought, we could not harvest them until a month later.

HAY

At the present time we have here twenty-eight head of cattle. In the summer and fall the animals find their pasture around the Mission and in a large field which we have cleared and turned into an artificial meadow.

Owing to the fact that for eight and a half months in the year we have to keep our stock in the stable we are compelled to secure a large quantity of hay from a natural meadow about six miles from here, in the heart of the forest. Sometimes, in the spring, this meadow disappears and forms an immense lake, but generally it is dry by mid-June and the hay grows very fast.

Last summer a mower drawn by oxen, and ten Indians working with scythes, gave us practically all the hay required for the winter.

OATS

We have tried growing oats for the last five years, for use as poultry feed, and to improve the cattle ration. In each of the first three years we harvested fine crops of oats, but in the last two seasons the crop has failed owing to unfavourable weather conditions.

WHEAT AND BARLEY

Wheat ripens sometimes, but always with some difficulty.

Barley ripens every time and, in general, yields a good crop of grain.

POULTRY

In the spring of 1924 we had 150 hens and 6 cocks. Eggs gathered during the year amounted to 1,139 dozen. We killed 251 fowl, which yielded 975 pounds of meat.

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E.B.