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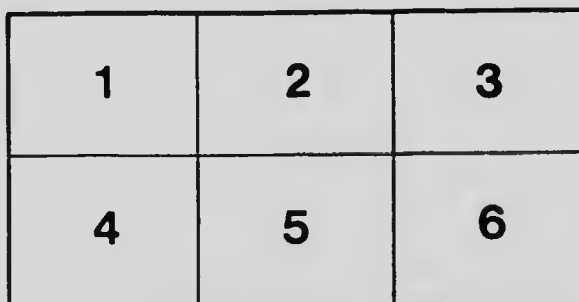
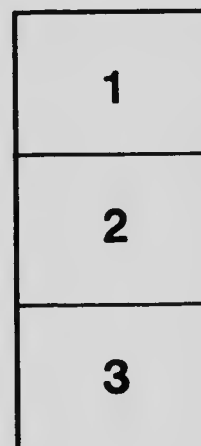
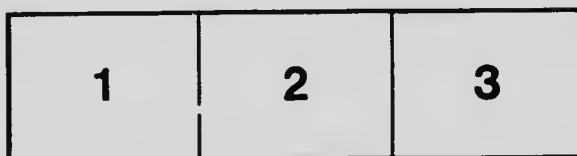
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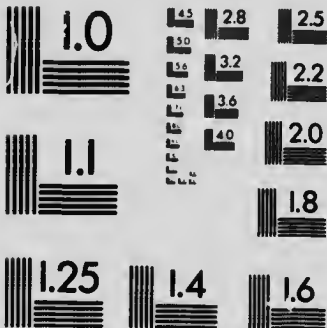
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DOMINION OF CANADA  
DEPARTMENT OF AGRICULTURE  
SEED BRANCH  
GEO. H. CLARK, Seed Commissioner

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THE SEED SUPPLY, 1912

IN

MANITOEIA, SASKATCHEWAN AND ALBERTA

SPECIAL BULLETIN

COMPILED BY

E. D. EDDY, B. S. A.

*From Reports of Seed Inspectors.*

Printed by direction of Honourable MARTIN BURRELL, Minister of Agriculture  
OTTAWA, JANUARY, 1912

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DOMINION OF CANADA

DEPARTMENT OF AGRICULTURE

## SEED BRANCH

OTTAWA, CANADA

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GEO. H. CLARK - - - - Seed Commissioner and Official Seed Analyst.  
E.D. EDDY, B.S.A. - - - Chief Clerk and Seed Inspector, Ottawa.  
GEO. MICHAUD - - - Assistant Seed Analyst, Ottawa.  
ALFRED EASTHAM, B.S.A. Assistant Seed Analyst, Calgary.  
Dr. M. O. MALTE. - - - Fodder Plant Specialist.

### DISTRICT OFFICERS AND SEED INSPECTORS

F. H. REED, B.S.A. - - Regina, for Alberta, Saskatchewan and Manitoba  
Manitoba.  
T. G. RAYNOR, B.S.A. - Ottawa, for Ontario.  
J. C. COTE - - - - Ottawa, for Quebec.  
S. J. MOORE - - - - Truro, for Maritime Provinces.

OTTAWA, January 29, 1912.

To the Honourable MARTIN BURRELL,  
Minister of Agriculture.

SIR:—In accordance with your instructions, an investigation into the condition of seed supply for the cereal crop of 1912 within the Prairie Provinces was commenced during the month of October.

Mr. F. H. Reed, chief inspector of seeds, Regina, Sask., was given direct charge of the investigation. Associated with him in the province of Alberta were Messrs. Alfred Eastham, B.S.A., of the Seed Branch staff at Calgary, and J. G. Clark, Irma, Alta.; in Saskatchewan, A. E. Wilson, Indian Head, Sask., and A. P. Crisp, Moosomin, Sask.; and in Manitoba F. W. Robinson, Winnipeg, Man..

Our experience has been that in a year following severe autumn frosts in localities widely distributed throughout the Prairie Provinces, considerable areas of the cereal crop are apt to be unsatisfactory or almost a failure, because of the unwitting use among farmers (especially among the more recent settlers) of seed oats, barley and even wheat the vitality of which has been seriously injured or destroyed.

The main purpose of the investigation then was educational. The seed inspectors were instructed to visit all districts in which the crop had been damaged by frost. They visited numerous farmers and obtained samples of the best, average and damaged grain and flax, and an estimate of the seed supply within the district that each sample might reasonably be taken to represent. When expedient, a meeting of the farmers and business men of the district was called and the observations of the inspector pertaining to the seed supply within the district were presented. They were warned of the danger to the new settlers and to the community from sowing frosted grain, and advised how best, by organized as well as individual effort, to avert crop failure.

Reports and observations made by the inspectors were received at this office from week to week together with samples for germination test. They contain much valuable information, not only about the seed supply but as to practices and methods of cropping that have contributed toward making the condition worse on some farms than might reasonably have been expected. The reports have been carefully summarized by my assistant, Mr. E. D. Eddy, B.S.A. The information contained therein is important to the farmers in the provinces of Manitoba, Saskatchewan and Alberta. I recommend that it be printed for general distribution.

Obediently yours,

GEO. H. CLARK,  
Seed Commissioner.

# THE SEED SUPPLY, 1912

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## MANITOBA, SASKATCHEWAN AND ALBERTA

When the damaging frosts occurred in the Prairie Provinces last autumn investigation was started to ascertain the extent to which the crop had been injured for seed purposes and to discover which districts, if any, would require seed from outside points and where good seed could be obtained. Inspectors were employed to cover the country as thoroughly as possible and get first hand information on the condition of the crop, and over a thousand samples from widely scattered districts were collected direct from farmers and by the inspectors and have been tested for germination at the Ottawa and Calgary seed laboratories.

The general conclusion from the inspectors' reports and the germination tests is that while the damage through rust, frost or both has been almost universal through the Prairie Provinces, there are very few old settled districts where sufficient seed for local requirements is not available. The most serious situation is in the new sections where the settlers have had complete crop failure and are without seed or the means of obtaining it. In many cases the settlers continued breaking so long that their crop was very late in being seeded, with the result that it was completely ruined by frost. Assistance will have to be given in great many of the new districts or the land will remain idle next year. The demand for seed is made more urgent in the new localities as large areas were broken and prepared for crop last season by settlers who will require to buy all their seed. Late seeding contributed to crop failure in many of the older districts. In the flax producing area good yields of fairly good quality were obtained from early sown crops but the late seeded flax was largely a failure. The same applies in the oat growing districts of Saskatchewan. In almost all districts crops of fair quality seem to have been obtained where the crop was seeded in good condition and early.

Results of the inspectors' investigations and the germination tests are given in the following reports on the provinces and federal electoral districts.

### MANITOBA

Manitoba is the oldest settled of the Prairie Provinces and has suffered least injury from frost. There are many individuals who will require seed, but even in the newest districts there is sufficient good wheat to meet local requirements, and, with few exceptions, the supply of seed oats and barley within the locality will be ample. The amount of good seed available in Manitoba for outside districts is greatly reduced by the fact that most of the high class grain has already been marketed. A large proportion of that which remains is too badly contaminated with noxious weed seeds to be fit for seed.



In the southern and central part of the province, including Provencher, Lisgar, Souris, Brandon, Portage la Prairie and the southern parts of Macdonald and Marquette constituencies, there will be plenty of fairly good seed wheat, oats and barley, although the yield and grade of wheat has been considerably lowered by rust injury. Some frost damage is also reported at a few local points, and in the southern part of the province the oat crop especially was badly injured by dry weather early in the season and some seed may be required. In the northern part of the Macdonald district, as represented by Oak Point, there is a small proportion of the land broken and very little grain has been grown for the market. What grain was produced last year is of good quality and there will probably be plenty of good seed wheat. The production of coarse grains is not sufficient to meet local demands for feed as mixed farming is largely followed. Seed oats will be required and probably a little seed barley. In the northern part of Marquette, represented by Roblin and district, a large proportion of the crop was badly frosted, but there will probably be sufficient seed of all kinds as the grain grown on the higher land escaped serious injury and some seed has been carried over from last year. Several samples of both oats and wheat from different parts of the province, representing a large proportion of the crop, have given satisfactory germination tests.

### Selkirk Electoral District

In Selkirk district there has been no injury from frost sufficient to damage the grain for seed, but considerable seed oats and barley will be required. North of Winnipeg, through Stonewall and Balmoral districts, mixed farming prevails largely and considerable stock is kept. The crops were put in early and have been harvested without serious injury. The wheat grades mostly No. 2 and No. 3 Northern and there will be plenty for seed. The oats and barley will all be required for local use and more will need to be brought in, both for feed and seed. It is estimated that the Balmoral district alone will require about 10,000 bushels of seed oats. At Taron there will be sufficient seed of all kinds. North of that point the homesteaders are practically all Galicians and very little grain is grown. A small amount of seed may be required.

### Dauphin Electoral District

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and above.	No. Samples germinating 50% and below.
Oats.	3	87	98	71	3	0
Wheat	16	96.7	100	93	16	0
Barley	1	77	77		1	0
Flax	3	83	95	76	3	0

Dauphin is the most seriously affected district in Manitoba and some localities will require seed from outside points. In the southern part of the constituency, represented by Pharms, there will be sufficient good seed for local require-

ments unless a larger area is seeded to barley, in which case seed barley will be required. At McCreary, thirty miles north of Plumas, the wheat is sufficient. Barley and oats are a small crop and seed will likely be required. Flax covered a small area but was well saved. At Dauphin only about ten per cent of the cutting was done when the heavy frost came on August 25th. The wheat marketed up to the middle of December graded about 25% No. 2, 35% No. 3, and the balance No. 4 or lower. There will be no scarcity of seed wheat. The oats are practically all frozen and seed will be required. Of the barley marketed, about ten per cent grades No. 3 and the rest No. 4, Feed and Rejected. Seed will be required. The area under flax is small and that which was late sown is badly frosted and some of it was never cut. The early sown gave a good yield and was harvested without serious injury. The acreage next year may be increased in which case seed will be required. In the Swan River District the season was very late and wet. Considerable grain was uncut because the ground was too wet to carry a binder. About 60% of the wheat was uncut when the bad frosts came but enough was saved on the higher land to provide plenty of seed. Oats and barley were badly frozen and seed will be required. In the Bozeman district, eleven miles north of Swan River, the land is lighter and higher and a good crop of oats was harvested. This district will probably be able to supply Swan River. In the section tributary to the railroad, southwest of Swan River, about 90% of the total crop was badly frosted and on the low lands the ground was too wet to carry the binder, but on the lighter land, especially around Thunder Hill, some cutting was done before the middle of August and a good sample of grain was cut. At Durban the wheat grades mostly No. 5 and No. 6. The oats and barley were badly frosted but considerable quantities of oats have been carried over from 1910 which will perhaps meet seed requirements. Some seed barley will be required. In the northeastern part of the district, east of Lake Manitoba, the land is very newly settled and a small proportion is under cultivation. There has been comparatively little damage from frost and in most localities sufficient wheat has been produced for seed requirements. Mixed farming and dairying are followed largely and most of the coarse grain produced is fed, some of it unthreshed. Both oats and barley will be required for seed.

## SASKATCHEWAN

There has been serious injury to the grain throughout the province of Saskatchewan from frost and rust and in some localities from hail, but in practically all of the older settled districts there will be sufficient good seed available for local requirements. In the newer districts of the western part of the province especially, many of the settlers have had two unfavorable seasons in succession and are now without seed or money with which to buy it. Unless assistance is given many settlers will be without seed next spring and large areas of land will remain idle. In the southeast corner of the province as much damage to the wheat crop was done by rust as by frost and the grading is very low. Through the flax producing area, along the Soo and Arcola lines especially, about one-half the crop is completely ruined and not worth the cutting or threshing and a very large proportion of the flax that has been threshed grades only Rejected or Condemned. Much of the crop is still under snow and its value for seed is very questionable. In the new districts north and south from the C.P.R. main line, west from Moose Jaw, new settlers continued breaking until late, with the result that their crop was seeded very late and is almost useless for seed. The same applies to the large district tributary to the C.P.R. Wetaskiwin line and Grand Trunk Pacific from the western borders of the province to within 40 or 50 miles of Saskatoon. The damage along the C.N.R. from Battleford west has also been

very severe, and seed will be required at some points. In the older settled districts further east, the seed supply will be sufficient and large quantities of good seed oats are available in the large oat-growing sections around Saltcoats and Yorkton.

### Assinibola Electoral District

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Aver. % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% or more.	No. Samples germinating 50% and less.
Oat	31	86.4	100	41	31	1
Wheat	71	93.5	100	56	72	1
Barley	6	94.5	100	88	6	0
Flax	16	85.3	96	65	16	0

In the territory tributary to the C.P.R. line from Weyburn to Estevan and from Estevan east to Gainsboro there will be sufficient seed wheat and oats at nearly all points but some flax may be required. Around Estevan about 15% of the wheat grades No.3 or better, but about 80% of the oats grade 1 seed. The district should have sufficient seed of fair quality for local use but none for outside points. In the Frobisher district, about 30 miles east, in addition to the frost injury a considerable area was hailed. There will be sufficient seed wheat but some oats may be required. By the middle of December only about ten per cent of the flax was threshed and it was estimated that about 80% of the crop would not be worth threshing. Around Oxbow the wheat is of higher grade than at any other point between Estevan and the eastern provincial boundary and there will be plenty of good seed. The oats suffered through early drought and are of very poor quality. Seed will probably be required. A large proportion of the flax is not worth threshing and the bulk of that which is threshed grades Rejected. In the Carnduff district there will be sufficient seed wheat and also plenty of good seed oats and some to spare. There is very little flax grown. At Carievale east of Carnduff conditions are not quite so good, but at Gainsboro, near the boundary line, the situation is much the same as at Carnduff. From Estevan to Weyburn, along the Soo line, there will be plenty of seed wheat and oats but flax will probably be needed as the crop is probably ruined over large areas. Land which was seeded to flax early in May gave a good yield of high quality seed but the bulk of the crop was put in in June and was seriously damaged or completely ruined. At Macoun the elevators expected to ship at least 70 cars of flax but up to the middle of December they had handled only one. At Halbrite nearly all the flax grades Rejected with some Condemned. In the Weyburn district from one-quarter to one-third of the land under cultivation was seeded to flax and about 50% of this will not pay for threshing. It is estimated that about five per cent of that which is threshed will grade No.1 Manitoba, 45% Rejected and 40% Condemned. Along the Arcola line, from Fillmore to the Manitoba and boundary, more damage was done to the wheat by rust than frost. In the district of Golden West, about 15 miles north of Stoughton, there is a section where the wheat was not worth cutting on account of rust injury. The flax along this line which was seeded after June 1st is badly frozen and in some cases will not pay

expenses of threshing. Through the Fillmore and Stoughton districts there will be sufficient wheat and oats for seed requirements. At Arcola conditions are better in regard to wheat but the oats are not so good although there will probably be sufficient for seed. Nearly all the flax in this district is not worth threshing. At Carlyle there is a small area under oats as the land is largely seeded to flax and most of the crop is ruined. From Manor east to the Manitoba boundary conditions are about similar. In the northeastern corner of the constituency served by the Reston-Wolsely and the C.N.R. lines there will be sufficient good seed for local requirements, although the injury is severe.

### Regina Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	12	93.4	98	12	12	0
Wheat.....	38	95.1	100	83	38	0
Flax.....	15	92	99	70	15	0

In the southern part of the Regina district, through the flax producing area, there has been widespread and serious damage. As in the flax-producing part of Assiniboia, a large part of the crop was not seeded until June, with the result that it is largely a failure. Thousands of acres have never been cut. About 50% of the crop is not worth threshing and a very large proportion of that which has been or will be threshed will not grade higher than *Condemned* or *Rejected*. A large proportion of the flax was not threshed when the snow, which was followed by a thaw, came, and its germination qualities are therefore uncertain and very questionable. In this section the injury to the wheat and oats has not been sufficiently severe to cause a serious scarcity of seed unless it is in the very new districts where the area under crop is small. Along the Forward branch running west from Weyburn 50 miles, the injury is not so severe to the flax crop as along the Soo line, as a larger proportion of it was put in earlier. Not much oats are grown on this branch, hardly sufficient to supply the local demand. The district is very new and as a large area is prepared for crop next year seed from outside points will probably be required. At Ogema, the end of the operated part of the line, about 50% of the crop was threshed by the end of December. Quite a large proportion of the flax graded *Manitoba* and a little *Northwestern*, the balance *Rejected* and *Condemned*. At Yellowgrass, northwest of Weyburn on the Soo line, about 55% of the flax was either not cut or will not pay expenses of threshing. The yield of that which will be threshed is about eight bushels per acre; 75% will grade *Rejected* or *Condemned*. In the Lang and Milestone districts about 60% of the flax is not worth threshing and thousands of acres have never been cut. Flax occupies about one-third the acreage in these districts. In the Wileox district about 80% of the land cropped was seeded to flax last year and 50% of this is not cut or will not be threshed and a large percentage of that which was threshed barely pays expenses. Further north in the Drinkwater district, conditions are better; probably not more than 40% of the flax will not be threshed and perhaps 40% of that which will be threshed will grade *Manitoba*.

or Northwestern. Along the C.P.R. main line and in the northern part of the constituency served by the Regina-Prince Albert line there has been considerable frost damage but there are no districts where there will not be sufficient seed available locally.

### Moose Jaw Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	5	80	99	53	5	0
Wheat.....	17	96.5	100	84	17	0
Barley.....	1	49	49	.....	.....	1
Flax.....	9	91.1	98	77	9	0

In the Moose Jaw district, the older settled country along the C.P.R. main line, conditions are very good for the season. The land is higher and earlier than in most parts of the province and almost all the farmers have sufficient seed of good quality. In the newly settled districts, north and south of the main line, conditions are very serious and demand relief or the country will suffer next season through large areas not being seeded. Last spring new settlers were anxious to get in as much crop as possible and kept at the breaking until seeding was very late. Flax promised to be a good price and many seeded that crop only and seeded it very late. The result is that there are thousands of acres through the new districts where there is no crop worth cutting. Many of these men have spent their last dollar and must be supplied with seed or let their land remain idle. South from Moose Jaw city conditions are very similar. Hundreds of farmers went in these new districts from Moose Jaw last spring and many of them have not a bushel of seed or a dollar with which to buy it. North of the city, along the Outlook branch, is one of the most favored districts in the province this season and there is an abundance of good clean seed available in the district. In the extreme northern part of the constituency served by the C.N.R. Saskatoon-Calgary line, there has been serious injury and some assistance may be required. In the Netherhill and Broek district, 75% of the wheat shipped has graded Feed with very little better than No. 6. In the northern part of the district practically all grades Feed. About 60% of the total crop grown was flax, and while there is some very good flax being held for seed the bulk of it is badly damaged. Large areas sown on late spring breaking were never cut. A considerable proportion of the oats were cut early and will make fair seed. This is a very new district and some of the settlers have no seed nor the means of getting it. Further west, at Kindersley, conditions are more favorable. The wheat grades higher and the flax is also considerably better; that which was sown in good time gave a good yield and is suitable for seed. A considerable proportion of the oats were cut before frost and are fair quality. Some of the new settlers will need assistance in procuring seed although there is probably sufficient available within the district.

## Qu'Appelle Electoral District.

## SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	39	88.5	99	34	37	1
Wheat.....	68	90.2	100	59	67	0
Barley.....	8	76.2	98	46	6	2
Flax.....	6	86	96	70	7	0

In the Qu'Appelle district more damage has been done to the wheat by rust than by frost and in some parts it is so serious that the farmers will have to sow Feed wheat or buy seed from outside points. Along the C.P.R. main line there has been considerable injury by both rust and frost but there will be sufficient good grain for seed within easy reach of all points, and in some districts there is enough good seed to supply other districts. At Indian Head and Sintaluta there was more damage by rust than by frost. About ten per cent of the wheat grades No. 4, 30% No. 5 and the balance No. 6 and Feed. Oats yielded well. These districts have sufficient seed of fairly good quality for local purposes. Further east, at Wolsley and Summerberry, conditions are much better. A considerable proportion of the wheat grades No. 3 and higher and about one-half of the oats grade No. 2 or No. 3 white. There will be plenty of good seed of all kinds for local needs and some for other districts. In the Grenfell district about ten percent of the wheat grades No. 3 or higher and about 75% of the oats grade No. 1 Feed. Some of the oats germinate better than might be expected and there should be sufficient oats as well as wheat for seed. Further east, at Whitewood, wheat grades practically the same as at Grenfell but the oats are of poor quality and show considerable damage from frost although some germinated fairly well. Along the Reston-Wolsley branch there has been very severe injury at some points and seed will be required. At Kennedy most of the flax was under snow in December and a large proportion of it will not pay for threshing. There will probably be sufficient wheat and oats for seed. At Windthorst, further north, conditions are worse. The best flax yields about six bushels per acre and grades Rejected. A large proportion of the wheat grades No. 6 and Feed and much of this will have to be used for seed unless some assistance is given. Further north, at Kaiser, the land is higher and the quality of the grain is better, but beyond this point, in the Baring district, conditions are much worse and assistance will be required. Through rust and frost damage 90% of the wheat grades Feed. Oats are a fair crop and about 50% grade Extra Feed with the balance Feed. This most seriously affected district extends to the southern boundary of the constituency and westward to a little beyond where the Arcola line crosses the boundary between Qu'Appelle and Assiniboia districts. The area is about 40 miles wide by 30 miles deep, the southern part of it extending into Assiniboia including the Golden West district. In the southwest corner of Qu'Appelle there is sufficient seed grain of fair quality but the flax crop is badly injured. In the Francis district some of the flax seeded early is threshed and will make good seed but in December 80% or 90% of the crop was under snow.

## Saltcoats Electoral District.

## SUMMARY RESULTS OF GERMINATION TESTS

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	8	88.5	94	69	8	0
Wheat.....	11	93.1	100	86	11	0
Barley.....	1	13	13	.....	.....	1
Flax.....	1	86	86	.....	1	.....

Crops in most parts of the Saltcoats district have been severely damaged by frosts and at some points seed may be required, but it is available within easy reach and as the farmers are mostly old settlers they are in a position financially to meet the situation. In some sections there is an abundant supply of good seed for outside as well as local requirements. Around Melville from 70% to 80% of the wheat grades Feed and over 50% of the oats No. 1 Feed. A sample of wheat said to represent 80% of the crop in the Melville district germinates 88%; and two samples of oats, said to represent the average of the crop, germinate over 80%, although the growth is slow and weak. In the north-eastern part of the district, around Churehbridge and Saltcoats, oats are very largely grown, and although there has been considerable injury to the crop there will be plenty of seed and to spare. Samples from these districts, representing a large proportion of the oat crop, have germinated over 80%. Some large farmers in this section make oat growing their main business and put the crop in early, with the result that good seed has been obtained. At Saltcoats about 70% of the acreage under crop is devoted to oats and the balance to wheat and barley. The wheat grade 10% No. 3 Northern or higher, 50% No. 4, 10% No. 5 and the balance No. 6 and Feed. There is plenty of fairly good seed. Oats yielded about 50 bushels per acre and grade 25% No. 2 white, 50% Extra Feed and the balance Feed. A considerable proportion of the oat crop was cut or ripe before the first frost and there is a large quantity of good seed available for outside requirements. Many farmers have several thousand bushels for sale mostly of the standard varieties and very free from noxious impurities. Along the C. P. R. line running through the southern part of the constituency there has also been severe damage but there will probably be sufficient seed at most points. Oats from Abernethy, representing a fair proportion of the crop of the district, germinate over 80% and wheat from the district germinates over 90%.

## Mackenzie Electoral District.

## SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	9	75	92	46	7	2
Wheat.....	1	99	99	.....	1	.....
Barley.....	4	90	96	84	4	0

A large part of the Mackenzie district is devoted principally to oat growing and, while the crop has suffered severely from frost and a large percentage of the grain will grade Feed, there will be sufficient seed in most localities. In the southern part of the constituency, around Yorkton, there are many large farmers who make a specialty of growing oats who put at least part of their crop in early last spring and now have large quantities of seed oats for sale. Fortunately these districts are comparatively free from noxious weeds and they will be able to supply reasonably clean seed oats. In the Theodore district, 25 miles northwest of Yorkton on the C. P. R. line, about 70% of the acreage under cultivation is devoted to oats, 20% to wheat and the balance to barley and flax. The wheat grades about 20% No. 4 with none higher. The oats yielded well and grade 5% No. 2 white, 15% Extra Feed and 80% Feed. A large proportion of the oats were badly frosted when in the green stage and are useless for seed but there will probably be enough good grain from the early-seeded crops for seed requirements within the district. Along the C. N. R. main line the damage has been severe. At Togo about 90% of the crop was frosted. The country is rolling and some of the high land was seeded early to oats and barley, previous to April 15th, and was cut before frost. There will be plenty of seed for the district. Further west, at Kamsack, the settlers are practically all Galicians and Doukhobors. At least 90% of the crop was frosted; 60% uncut and 30% in the stooks, wet and swollen. There are a number of farmers in the district who had only a small crop which was seeded early and harvested before frost so that there should be sufficient seed for local needs. In the Canora district about 80% of the land under cultivation is devoted to oats and a very small proportion of the crop was cut before frost. The oats marketed up to the middle of December have mostly graded No. 1 Feed. There is very little wheat grown here but it is thought to be sufficient for seed purposes. A short distance west from Canora the land is lighter and the oats were not so severely injured. In the northeastern part of the constituency, around Pelly, the oat production is large and at least 75% of the crop is badly frosted, as is also the barley. On some of the lighter land both oats and barley have been produced which will be good for seed. The situation in this section is relieved by the fact that considerable quantities of good seed have been carried over from 1910 which, with the good grain produced last year, will be sufficient for seed requirements.



## Humboldt Electoral District.

## SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	8	79	98	46	7	1
Wheat.....	20	97.2	100	92	20	0
Barley.....	1	55	55			
Flax.....	1	57	57			

The northern part of Humboldt district, served by the C. N. R. main line, is largely an oat-growing country. A large proportion of the crop was not cut until after severe frost and is of low quality and damaged for seed purposes. At nearly all points, however, there are a number of farmers who make a specialty of growing oats for seed. These men made a special effort to get at least part of their crop in early and have a fair sample of seed for this year. In the Quill Lake district about 70% of the land under crop is devoted to oats. Some large farmers here have several thousand bushels of seed for sale. Considerable of the wheat is a fair sample and it is not anticipated that there will be any shortage of seed wheat. In the Lanigan district on the C. P. R. line, 75 miles east of Saskatoon, the wheat grades 25% No. 3 Northern, 10% No. 4, 40% No. 5 and the balance No. 6 and Feed. The oats were not a heavy crop and grade about 80% Extra Feed with the balance Feed. About 70% of the acreage is under wheat, the balance oats and flax. The flax grades about 70% Manitoba with the balance Rejected. The district has sufficient seed of all kinds for local use. Further east, at Foam Lake, the acreage is about 25% wheat, 65% oats and 10% flax. The wheat grades about 3% No. 2 Northern, 10% No. 3, 15% No. 4, 20% No. 5 and the balance No. 6 and Feed. The oats grade about 5% No. 2 white, 50% Extra Feed and the balance Feed. About 80% of the flax crop was not worth cutting and 10% of that cut grades Manitoba and the balance Rejected and Condemned. Conditions are very similar for 30 miles east of this point and a considerable distance west. There will be sufficient seed of fair quality for local purposes. Oats giving satisfactory germination test have been received from Raymore, Elfros, Colonsay, Horse Lake, Kelliher and Beckenham.

## Saskatoon Electoral District.

## SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	12	62.4	99	8	9	3
Wheat.....	25	93.5	100	58	25	0
Barley.....	1	68	68		1	
Flax.....	2	87	89	85	2	0

Although there has been considerable injury to the crop in Saskatoon district, there will be plenty of good seed and some for outside districts, and there are few if any points where the local supply will not be sufficient. Along the Canadian Northern Railway Regina-Prince Albert line there will be sufficient seed of all kinds. Oats, representing a large proportion of the crop, have been tested from Rosthern, Bladworth, Saskatoon and other points, giving satisfactory germination. Around Saskatoon the land is comparatively light and threshing was nearly finished by the end of December. There will be abundance of good seed in the district. From Saskatoon west to Asquith, conditions are somewhat similar to Saskatoon but with a larger percentage of damaged grain around the latter point. A large proportion of the good wheat has been shipped out. East of Saskatoon, along the Canadian Pacific Railway line, there will probably be sufficient seed for local requirements but none for outside points. Along the Canadian Northern Railway main line conditions are much better in the western part of the Saskatoon district than further west along the line. At Radisson about 40% of the wheat grades No. 3 or higher with only about 20% grading Feed. There will be considerable good seed wheat available here. Oats are not likely to be as satisfactory for seed as wheat as a large proportion of the crop was not cut until after the frost although there will be sufficient free from serious injury for seed purposes. Further east at Warman there has been more damage; 65% to 75% of the wheat will grade Feed and very little better than No. 4. Oats are not grown extensively here. Samples of oats giving satisfactory germination tests and said to represent a fairly large proportion of the crop of the district have been received from Elbow and Allan.

### Battleford Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	20	74.5	97	21	17	2
Wheat.....	34	83.7	100	41	21	2
Barley.....	2	55	88	22	1	1

In the Battleford district there are large sections of the country where the injury has been so severe that the crop is practically ruined for seed purposes and seed will have to be brought in or a large proportion of the land will remain idle next season. In many cases the worst injury is in the districts occupied by new settlers who have neither seed nor the means of procuring it. In the south-eastern corner of the district represented by Zealandia, conditions are much better than further west and there will be plenty of fairly good seed of all kinds. Along the Grand Trunk Pacific and the Canadian Pacific Railway Wetaskiwin line there is very severe injury, the badly frozen district starting at Perdue and extending to the Alberta boundary. At Biggar, conditions are serious. A little ridge of country just south of the town had some fair wheat which has been mostly shipped out. South of this the crop suffered more seriously. Further to the north, in the Lizard Lake district, hundreds of acres were never cut. At Scott about 90% of the wheat will grade Feed. There is none better than No. 6. The bulk of the oats were

not cut until after the frost and are badly injured. Considerable of the flax was uncut and that which was is badly frozen. The bulk of the seed wheat, oats and flax will have to be brought in from outside points. At Wilkie conditions are fully as bad as at Scott or worse. It is estimated that 75% of the farmers will require seed grain of different kinds. The Adanac district has suffered severely from hail, rust and frost. The northern part was completely hailed out and there is very little grain which is at all fit for seed. Many of the farmers are intending to sow this badly damaged grain as they can not secure anything better without outside assistance. Further west, at Unity, conditions are much the same with perhaps a small increase in the percentage of higher grade grain. There was a limited quantity of fair grain produced here but the bulk of it has already been sold and shipped. At Macklin, near the Alberta boundary line, conditions are very similar with perhaps a slight improvement. Some estimates indicate that there would be sufficient seed in the district if it could be retained, but those who have fair grain are being forced to sell it to meet payments. On the Kerrobert branch from Macklin to Luseland is one of the most seriously affected districts in the province and there is urgent necessity for seed grain. The district has suffered severely from rust, frost and hail. In the Luseland district the grain has been so injured by rust, hail and frost that 60% of the land sown was not threshed. Ninety-five percent of the wheat will grade Feed and none of the balance better than No. 6. The flax is almost a total failure as a very small percentage was cut. There is said to be a little oats fit for seed. Around Kerrobert 75% of the grain grown is wheat, about ten per cent flax and the balance oats. About 80% of the wheat grades Feed and No. 6. The flax is badly frozen and all that has been shipped grades Rejected or Condemned. Large areas have never been cut. South of Kerrobert, about 20 miles, there is a whole township where no threshing had been done up to the first week in January. It will be absolutely necessary for a large number of farmers in this district to have assistance in procuring seed if they are to have a crop this year. In the Salvador district the crop is almost a total failure. Up to the middle of January only two ears of grain had been shipped from this point and these were wheat and graded Feed. About 70% of the crop sown was wheat, 25% flax and the balance oats. A large quantity of seed will be required here as there is practically none in the district. In the northern part of the constituency, along the Canadian Northern main line, there has been severe injury at some points. East of Battleford a considerable proportion of the land is fairly light and there will probably be sufficient seed for local requirements. Around North Battleford there will be sufficient seed near the river, where the land is lighter, but further north, in the Neeting Lake district, where the land is heavy, the grain is badly damaged and none of it grades better than Feed. The settlers are in poor position financially to provide seed for themselves. Across the river there also is some good grain, but a distance south from Battleford, on the heavy land, there is nothing but Feed with much the same conditions as prevail further south at Wilkie on the Canadian Pacific Railway line. From Battleford west there is very severe injury through to the Alberta boundary and several of the districts will require seed from outside points and many of the farmers are not in a position to procure it without assistance.

### Prince Albert Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	7	46	95	16	2	4
Wheat.....	22	95.8	100	86	22	0
Barley.....	3	92	96	88	3	0

In the Prince Albert district there is a comparatively small area under crop and there will probably be sufficient seed, although the grain has been seriously injured in many sections. Through the Carrot River Valley, east of Prince Albert, there will be enough fairly good seed for local purposes. Around Tisdale, which is almost at the eastern end of the wheat growing part of the district, about 80% of the crop was threshed by the middle of January. About ten per cent of the wheat grades No. 3 Northern, 20% No. 4, 20% No. 5 and the balance No. 6 and Feed. The oats average about 50 bushels per acre and grade 75% Extra Feed and the balance Feed. The barley grades 80% No. 3 and the balance Feed. Some oats from Valparaiso grade No. 2 and will make good seed. Further west, at Melfort, about 20% of the wheat grades No. 3. Oats are a fair crop and will grade perhaps 20% No. 2. Conditions at Beatty and Kinistino, further west, are somewhat similar to Melfort. Around Prince Albert about 40% of the crop was unthreshed by the middle of January but it is anticipated that there will be sufficient seed of all kinds for local requirements. South and west from Prince Albert, along the Shell Brook branch, conditions vary somewhat, but, taking the district as a whole, there will be a sufficient supply of seed. Around Shell Brook about ten per cent of the wheat grades No. 3 Northern or higher and 20% No. 4. The oats were a fair crop and grade about 30% Extra Feed with most of the balance Feed. Conditions are somewhat better at Kilwinning, about 16 miles further west, as the land is lighter and the crops mature earlier, giving a larger percentage of both wheat and oats in the higher grades. At Leask and Blaine Lake, which is the end of the steel on this branch line, conditions are similar to Shell Brook. The land is heavier and lower than at Kilwinning, which made the crop later.

#### ALBERTA.

In the province of Alberta there has been widespread and serious injury from frost, but, with few exceptions, there will be sufficient seed in the different districts to meet local requirements. The most serious phase of the situation is that the most serious damage has been done in the newly settled districts and the settlers are not prepared financially to meet the situation. In southern Alberta last season's frost followed a year in which the crops were very poor on account of extreme dry weather and a large number of settlers, especially from Lethbridge east toward Medicine Hat, are without seed or the means of procuring it. Similar conditions prevail north of the C.P.R. main line, around and east of Castor and Coronation through to the Saskatchewan boundary. Along the Calgary-Edmonton line the injury has been especially severe from Lacombe south; probably not more than 25% of the oats will germinate 60% or over.

Seed will be required at some points. Along the Wetaskiwin branch of the C.P.R. and the Grand Trunk Pacific conditions are some better, and, with perhaps a few exceptions, there will be sufficient seed to meet requirements in all districts. Perhaps the most seriously affected section in the province is along the Canadian Northern line from Lloydminster west to Islay. Here there is very little seed available locally and the settlers are not in a position to procure it. Unless assistance is rendered a considerable portion of the land will have to go unseeded next year. Further west along the line the outlook is more optimistic and at some points the situation is relieved by the fact that oats from 1910 have been carried over.

### Medicine Hat Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated	Maximum % germinated	Minimum % germinated	No. Samples germinating 69% and more	No. Samples germinating 50% and less
Oats.....	11	80.5	98	22	9	2
Wheat.....	11	87.7	100	36	13	1

From Lethbridge to Sterling was hit by hail and frost, consequently there is little good grain. Through Raymond, Magrath, Spring Coulee and Cardston, there were heavy yields of wheat, usually, however, of low grade. This is an old district and most of the farmers are prosperous and should be able to meet the situation. Along the C.P.R. from Lethbridge to Medicine Hat are a considerable number of men who will need help. There are many homesteaders through this country whose crops were a complete failure in 1910 and consequently their financial position is poor. This is particularly true of the country south of Taber and north of Bow Island. According to the bank managers of these towns some 10% of the homesteaders will need help. South of Medicine Hat some seed will be needed. Northwest of Medicine Hat towards Bowell is in better shape. From that point west there is not very much land in crop until Carlstadt is reached. Around this town there is some good seed perhaps enough for the district if it could be retained but some of the settlers will require assistance as they have not the money to buy with and those who have grain are forced to sell for cash to meet payments. Several thousand acres of flax were ruined by frost in this locality. Some fairly good samples have been received from around Tilley. In the vicinity of Bassano there is not a great deal of land in crop and most of the grain was of poor quality. Northeast about 75 miles, in the Stoppington country, there is some good seed but it is difficult of access as the district is not served by a railroad. North and northwest from Bassano, across the Red Deer in the Hand Hill country, there is some good seed. The Carbon district was struck by hail but sufficient good seed is available. Gleichen was badly frosted; the worst sufferers were men occupying C.P.R. land.

## Macleod Electoral District.

## SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	26	64.7	98	8	16	10
Wheat.....	12	85.5	100	46	11	1
Barley.....	2	77.5	87	68	2	0

From DeWinton through Okotoks, High River, Nanton and south to Stavely the main crop is oats—possibly 25% good for seed. Around Cayley, however, there is a smaller proportion. Much of the crop between Nanton and DeWinton was standing when the first snow storm came and suffered severely. Many of the men throughout these localities are ranchers and are in a good position to use their grain for feed and are in good standing financially. Out from Stavely there may be a few who will need assistance. From Stavely south, wheat is the staple crop. In the Claresholm district 30% would grade No. 3 or higher. South of Claresholm through Woodhouse and Granum, west to the foothills, east to Monarch and Noble and on to Lethbridge was haled and frozen. Very little seed will be available around these points, particularly around Monarch. In many cases farmers were compelled to sell any good seed they had in order to meet payments. Around Carmangay there is some pretty good seed; probably enough to supply the district. Bowville, northeast from Carmangay, a district about 12 miles square was badly frosted. Champion district also suffered severely, as did also the country northwest from Brant. In the Thigh Hill country, which is east from Kirkaldy, there is some very good seed. From Macleod west to the foothills suffered considerable from frost, but there should be enough seed for the district.

## Calgary Electoral District.

## SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	53	69.5	99	10	37	13
Wheat.....	10	86.7	100	55	9	0
Barley.....	24	77.3	100	47	22	1
Flax.....	5	71.8	77	66	5	0

The Calgary district has suffered severely from frost. Most of the oat crop around Calgary city is unfit for seed. East, around Shepard and Langdon, there is much frosted grain but there is also considerable fit for seed. The Strath-

more district suffered severely, the settlers most seriously affected being the C. P.R. colonists. South from Calgary, around Midnapore, the crops were badly frosted. West from Calgary is more of a ranching country and there is not a great deal of grain grown but most of last year's crop is of very poor quality. North from Calgary, along the Calgary-Edmonton railroad line, there was severe damage; probably not more than 25% of the oats will germinate more than 60% in this district. Crossfield, Airdrie and Carstairs district suffered severely from frost and Airdrie at least will require seed. It is estimated that there is not more than 50% of the amount required in the vicinity. Around Acme and Sterlingville and east from Beiseker there is some good seed although there has been some damage by hail. East of Carstairs at Seibertville and south there will probably be sufficient seed for local needs.

### Red Deer Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated	Maximum % germinated.	Minimum % germinated	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	80	56.1	100	0	34	40
Wheat.....	21	80.7	100	24	21	1
Barley.....	17	70	98	20	12	4
Flax.....	4	74.7	84	66	4	0

The country tributary to the Calgary-Edmonton line through the Red Deer district was seriously affected by frost and probably less than 25% of the grain will germinate above 60%. Didsbury, Olds, Bowden, Innisfail, Red Deer and Lacombe suffered severely, Didsbury particularly so as hail also did considerable damage north and east from the town. West from Didsbury and Olds there are a good many homesteaders who will be in a position financially to buy seed when necessary. Southeast of Red Deer in the Willowdale and Horn Hill districts there will probably be plenty of seed for local requirements. Further south, around Three Hills, Rawdonville and Ghost Pine conditions vary greatly but there is probably sufficient seed in the district. Along the Lacombe branch of the C.P.R. there is considerable injury but most localities have sufficient seed for their requirements. Around Alix and Stettler some of the grain is useless for seed but there is probably sufficient produced on the high land to meet local needs. South of Castor is a district where there is very little good seed. At Coronation it was at first thought that there would be only about ten per cent of the seed that would be required, but tests of oats from the district justify a more optimistic view, and according to latest estimates there will be sufficient seed grain available in the vicinity of Castor, Coronation and Consort for distribution to homesteaders provided that arrangements can be made with the parties who have it for sale regarding payment, that will be workable for large or small quantities. From Coronation east to the provincial boundary there is a large area in which the crop of the settlers failed in 1910, owing to dry weather, and in 1911, in addition to frost injury, many were hauled out. Financial assistance as well as seed is required. Some-

what similar conditions prevail in that part of the district served by the C.P.R. Wetaskiwin branch but the situation is not so serious as some of the older settlers have a fair supply of seed. In addition to the frost injury, a large area from Huyter and Provost northwest was hailed.

### Strathcona Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats	60	69.5	97	28	45	11
Wheat	35	61.1	100	57	34	0
Barley	3	88.7	99	77	3	0
Flax	2	69	85	51	1	0

In that part of Strathcona served by the Calgary-Edmonton railway there has been less serious damage than further south on this line. Germination tests vary widely on grain throughout the constituency, but the indications are that few if any localities have not sufficient seed for their requirements within a short distance. At Wetaskiwin the outlook is quite optimistic and from this point north there is enough seed for local use. East of Wetaskiwin there is a tract which is expected to have considerable good seed for outside points. In the eastern part of the district served by the C.P.R. conditions are not so favourable. A large section, extending from south of Strome southeast beyond the boundary of the constituency was badly hailed in addition to the frost injury. Along the Grand Trunk Pacific line east of Edmonton threshing has been very backward and a large proportion of the crop still remains unthreshed. In the immediate vicinity of Wamwright there is very little good seed but in the district north of the town both seed wheat and oats are available. At Irma there is plenty of good seed and some to spare. The district between the Grand Trunk Pacific and the Canadian Northern railroads is reported to have considerable uninjured grain good for seed but threshing is very backward and definite information is not available.

### Edmonton Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated.	Maximum % germinated.	Minimum % germinated.	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats	26	57	99	9	14	11
Barley	6	68	100	29	3	2



In the Edmonton district a small proportion of the land is under cultivation and conditions vary greatly but there will probably be sufficient seed within comparatively easy reach of all points. A sample of oats from Clover Bar, east of Edmonton, said to represent 20% of the crop of the district, was cut before frost and germinates 91%. Another sample, cut after the frost and said to represent 40% of the crop, germinates only 30%. Other samples from this district give satisfactory tests. West of Edmonton on the Grand Trunk Pacific line there has been severe injury at some points. Reports from Stony Plain are favourable. One sample of oats from Onoway, representing a large proportion of the crop, germinates only 37%. Another sample germinates 99%. Two samples from Wabanum, said to represent about 25% of the crop were absolutely killed. In Lac Ste.-Anne district there is very little farming, done but the crop is reported as good and fit for seed.

### Victoria Electoral District.

#### SUMMARY RESULTS OF GERMINATION TESTS.

Kind of Grain.	Number of Samples tested.	Average % germinated	Maximum % germinated	Minimum % germinated	No. Samples germinating 60% and more.	No. Samples germinating 50% and less.
Oats.....	38	71.4	99	14	28	8
Wheat.....	5	89.4	99	61	5	0
Barley.....	2	88.5	89	88	2	0

One of the most seriously frosted sections in Alberta is in Victoria district along the Canadian Northern Railway, from Lloydminster west to Islay. Around Lloydminster a number of farmers have wheat that grades No. 3 but there is practically no seed oats from the 1911 crop available. It is estimated that it will require about 10,000 bushels of oats more than can be procured in the district tributary to Lloydminster to meet seed requirements. The most serious phase of the situation as viewed by the people in this district is the lack of money to buy seed, even in cases where it is available in the district. Those who are fortunate enough to have seed grain for sale in many cases consider it necessary to sell at market prices rather than hold for seed, the reason being that there is little prospect of being able to get cash payment from their neighbors who need seed. It is almost certain that unless some measure of assistance is given a large percentage of the land in this district will have to go unseeded next spring. It is estimated that not more than ten percent of the farmers have seed grain. At Vermilion conditions are somewhat better although there is a large percentage of frosted grain. There will probably be sufficient seed procurable in the immediate district although some assistance may be required in financing the situation. In the vicinity of Vegreville the 1911 crop is badly frosted but the situation is somewhat relieved by the fact that considerable oats have been carried over from 1910 and will be available for seed. North of the town, in the Hairy Hill and Whitford districts, the crop is reported to have escaped serious injury. A sample of oats from Ross Creek further west germinates 81% and a considerable number of samples from various parts of the constituency also give satisfactory tests.

## GENERAL OBSERVATIONS AND CONCLUSIONS.

The climatic conditions prevailing throughout the Prairie Provinces of Canada were very abnormal during the season of 1911. Seeding was largely done about the usual time, from the middle of April to the middle of May, and under favourable conditions. During the latter part of May and June the conditions were favourable, with sufficient rain in most parts and reasonably warm weather. July was cloudy, showery and cool, growth being rapid and almost rank, but toward the end of the month rust appeared in some parts and there was little sign of ripening. During August unseasonably cold weather prevailed, preventing ripening, rust became prevalent in some districts, and frost occurred from August 22 to August 28, doing great damage. During September the weather was generally cold and wet with heavy damage resulting to the crops from frost and rust. Damaging frosts occurred in many districts on September 6, 8, 21 and 25. During the first part of October the weather was moderately dry and warm, but owing to rust and the abundant supply of moisture, crops refused to ripen. The freeze-up came on October 25, or three weeks earlier than usual. Much cutting still remained to be done and as the stooks were wet from recent rains considerable injury resulted to even fairly well matured grain which was in stook. The latter part of October was cold and on November 1st the temperature dropped to six below zero. On November 4th something very unusual in Saskatchewan and Manitoba, after the freeze-up, happened; the weather suddenly turned warm and rain fell all day. This was followed on November 8th with from three to five inches of snow and on November 10th 20 below zero was registered. The snow and extreme cold in November came when a large proportion of the threshing remained to be done. December was remarkably fair and mild and the threshing was continued, but the grain that was in stook is very tough and a large proportion of it unmarketable.

### Value of an Early-sown seed crop.

Although the season of 1911 was very abnormal, the reports clearly indicate that in nearly all districts seed of good quality was produced when seeding was done early and on well prepared land. Most of the new settlers who are now without seed made the mistake of continuing breaking too long and thereby delaying seeding until the crop had little chance of ripening. In the older districts also a large proportion of the frosted crop was sown late. The experience of the year strongly emphasizes the importance of every farmer seeding at least a portion of his crop, enough for seed requirements, as early as possible, even though the general seeding may be a little delayed. This is a good practice to follow in any year as it is one of the best means of insuring against a shortage of grain suitable for seed. If a settler has no breaking done the previous fall, it would be well to stop breaking in the spring long enough to seed a small area before breaking and putting in the main crop.

### Carrying seed over.

Another precaution against scarcity of good seed that might well be followed more extensively is carrying over grain from season to season. Some of the most seriously affected districts this year are in a much better condition for seed than they otherwise would be through the fact that some of the farmers have carried over a considerable supply of good seed from 1910.

### The use of Early Varieties.

The season also emphasizes the importance of using as early varieties as can be secured consistent with good quality and high yields. One of the most promising varieties of early wheats is Marquis. The quality of this wheat is considered to be fully as high as that of Red Fife and in many districts it has ripened from a week to two weeks earlier. Marquis wheat is the product of a cross between Red Fife and Hard Red Calcutta, an early wheat from India. A single plant from this crossing was isolated by Dr. C. E. Saunders, Dominion cerealist, in 1903, and has since been grown and selected under his direction.

### Stacking Grain.

The unusual weather conditions during the late fall have strongly emphasized the importance of stacking grain instead of leaving it in the stook when a threshing outfit is not readily available. A large proportion of the grain and flax has been much more seriously injured than it otherwise would have been because it was left in the stook instead of being stacked. It is so tough and in such poor condition that it can not be handled by the elevators on account of the danger of heating and there will be difficulty in saving much of it.

### Advantages of Mixed Farming.

The advantage of mixed farming over exclusive grain growing have been clearly brought out. In the districts where mixed farming is followed, the crop was mostly put in early and good seed has been produced in nearly all cases. Where the grain has been injured for market good use can be made of it by feeding to stock, so that the loss is not nearly as heavy as where it has to be sold on the market. In the mixed farming districts also there is not the same difficulty in keeping weeds in check. Many early settlers make a very serious mistake in adopting an exclusive grain growing system and starting this by seeding their virgin soil with flax, which is very often badly contaminated with noxious weed seeds.

### Testing Seed for Germination.

The extent of the injury to grain for seed purposes can be fairly accurately determined from general appearances with wheat, but with oats, barley and flax it is more difficult. Often a sample of oats will be heavy in weight and present a good appearance when the vitality is seriously impaired or entirely destroyed. The same applies to barley and flax to a less extent. This makes it essential that samples be tested for germination before using the crop for seed, if there is any possibility of the vitality having been injured. Tests are made free of charge at the seed laboratories in Ottawa and Calgary, but farmers are recommended to make tests themselves through using boxes of soil kept at a living room temperature. A definite number of seeds should be planted and the percentage germination will indicate whether the grain is fit for seed and the rate at which it will need to be sown if the germination is below normal. Wheat that is shrunken should be heavily screened before seeding so as to remove as much as possible of the small injured kernels which are likely to produce plants of weak vitality.

### Damage from Smut decreasing.

Reports from some of the newer districts this year clearly indicate that the damage from smut is on the decrease, through more attention being given to treating the seed for its prevention. A few years ago the loss through this

disease was very heavy, particularly at some points along the C.N.R. main line in Saskatchewan; but through the influence of seed fairs, field crop competitions and other educational work, this has been largely eliminated. Formalin is becoming more generally used for treating both oats and wheat. It has been found more satisfactory than bluestone for oats and at least equally so for wheat. If the grain is immersed from ten to 20 minutes, one pound of formalin to 40 gallons of water will make a strong enough solution. If the grain is sprinkled only or dampened with a pickling machine, one pound to 35 gallons of water may be used. Either system will give good results, but if the sprinkling method is followed the grain should be allowed to remain in a pile for an hour or two with a blanket over it in order to retain the fumes of the gas long enough to destroy the smut spores. In any case the grain should be dried and sowed as soon as practicable after treatment so that the danger of injury to the vitality may be reduced to a minimum.

#### **Sources of Good Seed Supply.**

During this work of investigating the crop conditions the inspectors collected as much information as possible regarding the sources of supply of good seed. This information has been compiled and is available through Mr. F. H. Reed, Seed Branch, Regina, Sask.

