

**CIHM  
Microfiche  
Series  
(Monographs)**

**ICMH  
Collection de  
microfiches  
(monographies)**



**Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques**

**© 1997**

## Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming are checked below.

- Coloured covers / Couverture de couleur
- Covers damaged / Couverture endommagée
- Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- Cover title missing / Le titre de couverture manque
- Coloured maps / Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- Bound with other material / Relié avec d'autres documents
- Only edition available / Seule édition disponible
- Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.
- Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from filming / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.
- Additional comments / Commentaires supplémentaires:

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed / Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies / Qualité inégale de l'impression
- Includes supplementary material / Comprend du matériel supplémentaire
- Pages wholly or partially obscured by errata slips, tissues, etc., have been refilmed to ensure the best possible image / Les pages totalement ou partiellement obscurcies par un feuillet d'errata, une pelure, etc., ont été filmées à nouveau de façon à obtenir la meilleure image possible.
- Opposing pages with varying colouration or discolorations are filmed twice to ensure the best possible image / Les pages s'opposant ayant des colorations variables ou des décolorations sont filmées deux fois afin d'obtenir la meilleure image possible.

This item is filmed at the reduction ratio checked below /  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10x		14x		18x		22x		26x		30x	
								✓			
	12x		16x		20x		24x		28x		32x

The copy filmed here has been reproduced thanks to the generosity of:

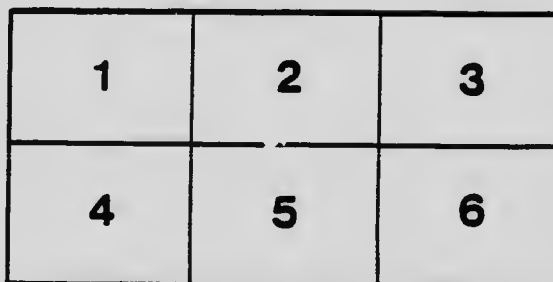
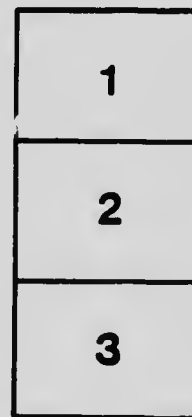
Library  
Agriculture Canada

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shell contain the symbol  $\rightarrow$  (meaning "CONTINUED"), or the symbol  $\nabla$  (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Bibliothèque  
Agriculture Canada

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole  $\rightarrow$  signifie "A SUIVRE", le symbole  $\nabla$  signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



4.5

2.8

2.5

3.0

3.2

2.2

3.6

3.6

4.0

4.0

2.0

4.5

5.0

5.6

6.3

7.1

8.0

9.0

10.0



1.8



**APPLIED IMAGE Inc**

1653 East Main Street  
Rochester, New York 14609 USA  
(716) 482 - 0300 - Phone  
(716) 288 - 5989 - Fax

PROVINCE OF BRITISH COLUMBIA.

---

DEPARTMENT OF AGRICULTURE (HORTICULTURAL BRANCH).

---

COMMERCIAL POTATO-CULTURE.

---

BY P. E. FRENCH, B.S.A., ASSISTANT HORTICULTURIST.

THE potato-crop as a commercial asset is steadily increasing in value in British Columbia. Up to a few years ago the production did not equal the home demand, imports coming from Ontario and the United States. The general quality and character of our product have long been recognized, and the recent victory which the British Columbia car-load attained in the New York National Irrigation Exposition over sixty-six other competitors from all parts of the United States and Canada has furnished striking confirmation of its superiority.

The Delta and bottom lands of the Lower Mainland produce very large yields of main-crop potatoes, which are consumed principally in the local Coast markets. The Ashcroft potato has long been justly famed for its high quality, and other Thompson River Valley points, with Ashcroft, are steadily increasing their output. Around Armstrong the production of early potatoes on the uplands has been made an especial study, while the river lands produce very large late crops. The early varieties produce 2 to 6 tons per acre, marketed at from \$25 to \$40 per ton; late ones running 8 to 11 tons per acre, at \$12 to \$22 per ton. Around Vernon, and especially in the Coldstream Valley, the potato-crop will average about 8 tons under irrigation, of high quality. In the Kelowna District both early and late potatoes are grown, the latter producing about 8 tons at selling prices quoted above. In the Grand Forks District a large car-load business is also developing, potatoes yielding 7 to 9 tons under irrigation, and 4 to 6 under dry-farming methods.

The potato market is one subject to peculiar and unforeseen fluctuations. Predictions as to crops and prices are more difficult to make in potatoes than with any other of the main or staple food crops. Generally speaking, the price received per acre leaves a good margin over the cost of production, but this is true more as an average of years than as a certainty every year.

Certain factors are peculiarly essential to success with potatoes as a main crop. The grower must stay with the game, year in and year out, so as to make good on the average. It is essential to secure varieties suitable to the district and to the market, and to have a good strain of seed of that variety. The grower must keep down the cost of production by the use of machinery and by intelligent management. The district must get into the car-load-shipment class, and be a factor in the market every year.

As a side-issue, the potato is one of the most profitable intercrops in the orchard, and for production in small areas by men engaged in fruit-

growing, poultry-raising, and in general farming. Under these conditions, financial success is dependent on well-selected seed of the most desirable variety, combined with careful and thorough preparation of the soil.

### SOIL.

Potatoes can be grown in a great variety of soils if given proper treatment, but good drainage is essential to a good crop. The ideal soil for potatoes appears to be a rich, deep, friable, warm sandy loam, well supplied with decayed or decaying vegetable matter. The kind of soil to some extent affects the quality of the tubers. Those grown on sandy soil are generally of better table quality than those grown on clay soils. New soil is most desirable, and in it the tubers are generally healthy. Potatoes require a large amount of moisture; thus a soil which has the power of holding a large amount of moisture will give the best results. Such a soil usually contains plenty of humus. For early potatoes a light, rich, sandy loam with a south or south-east slope will give the best results. A warm soil is essential for early production.

### SEED.

For the production of early potatoes, it is a common practice to plant tubers of early varieties which have been grown for several seasons farther north. This northern-grown seed seems to give better results for early potatoes. It is a good plan to select your seed-potatoes from plants with good tubers and a large quantity of them. Medium-sized whole potatoes often give best results for early production. For general planting, the most economical sets are those cut from medium-sized potatoes, and each set should have a large amount of flesh and two or three eyes. The sets should not be cut long before planting, and it is generally advisable to have a change of seed every three or four years. To obtain the best returns, it is very important to select good seed and to know where that seed has been raised.

For extra-early production, sprouting potatoes is sometimes practised. For this purpose medium-sized potatoes are taken, greened, and placed in flats in a cellar with temperature of 40° to 45° Fahr. Tubers not quite matured are best. In the spring set the potatoes, eye end up, in flats. Place them in a light, warm place, and allow only one sprout to form on each tuber. This can be allowed to grow as long as 2 inches. Cut off the lower end of the potato when planting, and be careful not to break the sprout.

### PREPARATION OF THE SOIL.

Fall ploughing is advisable for early potatoes, because you can get on the ground earlier in the spring. For main-crop potatoes, spring ploughing is probably just as good as fall ploughing, except in case of heavy soils. Potato-ground should be well prepared before planting. The ploughing-under of barnyard manure or clover will loosen the soil, furnish plant-food, and increase the water-holding capacity of the soil. If manure is put on in the spring, it should be well rotted and thoroughly mixed with the soil. Manure should not be put in the drills with the sets, because manure in contact with the tubers induces scab. The soil should be ploughed deep and thoroughly harrowed until well pulverized and loosened. Unlike some crops which succeed best when the soil is moderately firm when ready for seeding, the potato succeeds best in soil which is loose.

### PLANTING.

The time of planting, of course, varies with different districts. For very early production the potatoes should be planted as soon as the ground can be thoroughly worked in the spring. If there is danger of frost when the sprouts are just above the ground, they can be protected by ploughing a little earth on top of them.

Main-crop potatoes are usually planted during the month of May.

In ordinary practice, it is customary to plant potatoes so as to admit of cultivation in one direction only, the rows being spaced from 30 to 35 inches. The sets are dropped about 12 inches apart in the rows. Ordinarily, potatoes are planted practically on the level, without throwing up ridges. For early production, the sets should be planted about 2 inches deep, and for the main crop about 3 or 4 inches deep. If early potatoes are planted deep, many of them will not sprout, because the ground is cold. Planting potatoes by hand on the large scale is rather expensive, and it will pay the large potato-grower to buy a potato-planter.

### FERTILIZERS.

Baryard manure and clover are the cheapest fertilizers for potatoes. It is not advisable to manure heavily the year the potatoes are grown, but rather to put a heavy dressing on the year before. Potatoes take from the soil about twice as much potash as wheat, but a light dressing of manure will supply this. The cheapest way to supply the nitrogen is to grow clover and plough it under. If baryard manure is not available, commercial fertilizers are often used. If potash is required, it should be put on in the form of the sulphate of potash. The muriate of potash tends to form a waxy potato.

If nitrate of soda is used, it should be put on in small dressings throughout the growing season. Commercial fertilizers, if applied, should be distributed along the row and mixed with the soil. It should not be placed in contact with the tubers.

### VARIETY TO GROW.

The market requires a smooth, shallow-eyed potato of fair size. For the main crop, a white potato usually sells better than a red. Before choosing a variety to grow, go around and visit your neighbours, and find out which variety is doing the best in your particular locality. Very few growers in British Columbia have gone in for extra-early production, and in the interior of the Province no good test has been made with early or late varieties to determine which are doing the best. Thus it is impossible for us to recommend varieties for different districts.

Some of the principal varieties grown at present are:—

In the Interior—Vick's Extra Early, Early Fortune, Early Rose, Early Ohio, Gold Coin, Money Maker, Mortgage Lifter, Million Dollar, Burbank, Empire State, Carmen No. 1, White Wonder, White Peerless, Netted Gem.

On the Coast—Sutton's Reliance, Empire State, American Wonder, Scottish Champion, Burbank, Carmen No. 2, for main crop. Burbank and Carmen No. 2 are probably the best. Extra Early Moonlight, Early Puritan, Early King, for early.

On Vancouver Island Beauty of Hebron and Raleigh are principally grown.

### IRRIGATION.

Where irrigation is practised, the water should only be applied when the condition of the plants indicates that they are in need of water, as by the darkening of the foliage. Care should be taken not to wait until the ground is too dry, because one can seldom cover the whole field in one day. A check in the growth of the potatoes should not be allowed, as it tends to produce ill-shaped tubers.

Potatoes planted the 1st of May seldom need water supplied before the end of June or the beginning of July. Do not water after the middle of August, so as to give plenty of time for ripening in dry earth. Cultivate as soon as possible after each irrigation. Great care in supplying irrigation-water be necessary for best results both for market potatoes and for seed stock.

### CULTIVATION AND WEEDING.

The success of the potato-crop depends largely upon the kind of cultivation given. No matter how well the land has been prepared and how carefully the sets have been planted, the crop will be much reduced if the soil is allowed to become hard, the weeds to grow, and the moisture lost which could be saved. Cultivation should begin soon after planting. The common drag-harrow, or a weeder, can be run over the ground three or four times, or until the potato-plants are 3 or 4 inches high. From then on, most of the cultivation is done with the single-horse cultivator. The first time the cultivator is used the ground should be cultivated fairly deep and as near the plants as possible without injuring them, to loosen the soil for the tubers. Later cultivations should be shallow to prevent injury to the roots and tubers. The soil should be cultivated every week or ten days, depending on the weather. If the soil becomes baked, evaporation takes place rapidly. It should be stirred after each rain. If the land is weedy, the more frequent the cultivation the less work with the hoe to keep the area clean. From five to six cultivations, or even more, are none too many, and it is usually found that the crop increases in proportion to the number of cultivations. The last two or three cultivations the earth should be thrown towards the plants if the potatoes are near the surface. The weeds that are not killed by the horse-cultivator should be hoed out or pulled by hand. Hilling potatoes in dry sections is a mistake of much too common occurrence.

### HARVESTING.

Potatoes may be dug with the four-tined potato-fork, ploughed out, or dug with the potato-digger. The former method is used when the area is small or the ground stony, and also in case of digging potatoes early, when care should be taken in handling, not to bruise the tubers more than necessary. Where there are large areas to be dug, the potato-digger is essential, as digging with the fork is too expensive, now that good men are difficult to get and wages are high. There are a number of good potato-diggers now on the market.

Potatoes, more or less affected with late blight or rot, are ready to dig as soon as the tops have died, if the weather is favourable. They should be dug in dry weather if possible, so that when taken to the cellar or store-room they will be perfectly dry. If the potatoes are affected with late blight, it is advisable to leave them in the ground as long as possible, because the



diseased tubers will usually show signs of rot before they have to be taken up on account of frost. Potatoes in wet land should be dug before those in dry or well-drained soil, because there is a greater tendency to rot.

### MARKETING.

Potatoes which have been dug in an immature state should be marketed immediately and placed upon the market in such quantities only as will admit of immediate consumption. The mature potatoes may be shipped in the fall or held over until spring. Growers should be very particular about grading their potatoes before marketing them. All the small potatoes should be picked out and fed to the stock.

### STORING.

Potatoes are best stored in a cool, well-ventilated cellar or root-house which is perfectly dark. Too much stress can be put on good ventilation. If there is not a good system of ventilation in the cellar, slats can be nailed a little apart about 5 or 6 inches from the wall. A temporary floor with cracks between the boards can be put about 6 inches above the permanent floor. This allows the air to circulate around and through the pile. If the pile is very large, slatted ventilators can be placed here and there from top to bottom.

Potatoes should be kept at as low a temperature as possible without freezing, and at the same time keep the surrounding air dry as possible. They should be mature when harvested, as skin-slip potatoes do not keep well.

In some sections of British Columbia potatoes are often pitted. This is more often done in the drier parts of the Province. The pit should be made from 6 to 8 feet wide, about 8 inches deep, and as long as needed. The potatoes are then placed in the pit about 4 feet deep and covered with enough straw to keep the earth from coming through, and then about 1 foot of earth is placed on top of this. Do not cover the top immediately. Leave a strip along the top for a week or two for ventilation. If there is danger of rain, this can be covered with sacking. When this strip is covered with earth, leave a small hole for ventilation every 8 or 10 feet. In the winter-time, if there is danger of very cold weather, the pit can be covered with some straw manure and the ventilation-holes filled in.

The value of potatoes for seed or for eating is greatly lessened if they are allowed to sprout.

### DISEASES.

The principal diseases of the potato in British Columbia are the early blight, late blight or rot, and the potato-scab.

The early blight (*Alternaria solani*) is a blight of the foliage, beginning as an even circular spot marked with concentric rings. The disease generally comes early in the season and does not attack the tubers.

The late blight or potato rot (*Phytophthora infestans*) affects both the foliage and tubers. Irregular brown spots cover the leaf. These spots frequently begin at the edge of the leaf and spread until the whole leaf may be involved. The disease winters in the tubers and develops a dry rot.

Both the early and late blight can be controlled successfully by spraying with Bordeaux mixture, 5-5-50; the best spraying when the plants are about 6 inches high, and then at intervals of ten days to two weeks. Generally

three sprayings are sufficient. In wet seasons more may be necessary. Secure seed from a field in which no late blight has occurred. These two diseases do very little damage in the Dry Belt.

Potato-scab (*Colletotrichum scabiei*) gives the potato-tuber a scabby and pitted roughness. Lime, ashes, or manure added to the soil increases the amount of scab by favouring the growth of the fungus. Plant clean seed. If it is necessary to use scabby seed, the spores of the disease on the potato may be destroyed before planting, by soaking the tubers in: Formalin, 1 lb. in 30 gallons water; or in corrosive sublimate, 1 oz. in 7 gallons water, for two hours.

Victoria, B.C., December, 1912.

---

VICTORIA, B.C.:

Printed by WILLIAM H. CULLIN, Printer to the King's Most Excellent Majesty.  
1912.

