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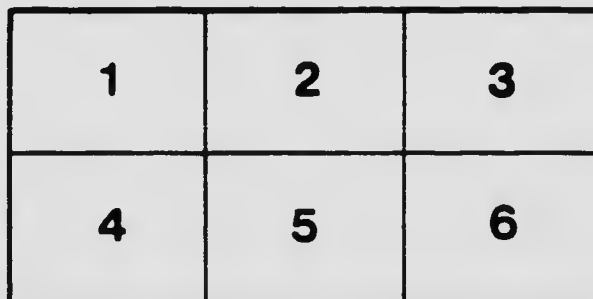
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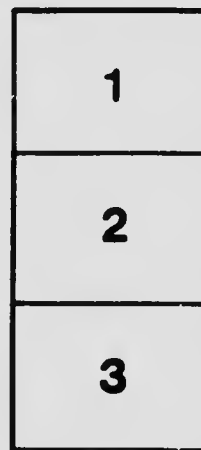
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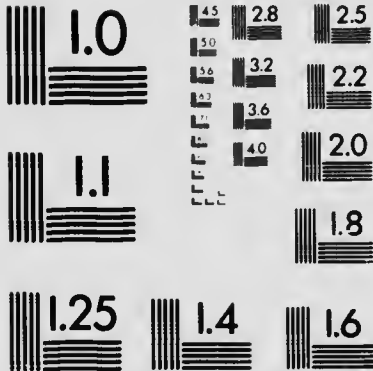
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THE FARMERS' HAND-BOOK

==== PUBLISHED BY ====

The Victoria Chemical
Company, Limited



Outer Wharf,
Victoria, - British Columbia.

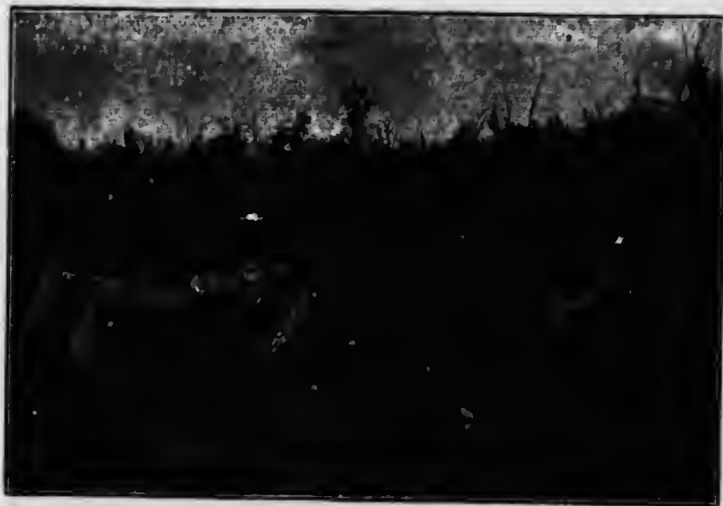


1905.

VICTORIA PTG. & PUB. CO.,
VICTORIA, B. C.



Irish Potatoes, Very Poor Land Unfertilized, Yield
 $7\frac{1}{2}$ Bushels Per Acre.



Irish Potatoes, Very Poor Land as Above, Complete Fertilizer
Used, Yield $97\frac{1}{2}$ Bushels Per Acre.

Introduction.



We take pleasure in again presenting to the public our brands of **High-grade Fertilizers**, and thanking our many friends for their orders of the past season. It is with a feeling of confidence that we approach them for their orders this year, because, although our business showed a vast increase, we gave our customers faithful service, both in quality of goods and promptness of shipment.

During the past we have given each year a quantity of fertilizers free for experimental purposes, and this has had a great effect in convincing farmers in districts new to the trade of the merit of our brands. This policy we intend to continue for the future.

Our works are situated at the **Outer Wharf, Victoria**, we cordially extend to you an invitation to visit us at any time you are in the city.

Awaiting your valued orders, which will receive our prompt and careful attention, whether large or small, and wishing you an abundant harvest and success for the coming season,

We remain, faithfully yours,

Victoria Chemical Co., Ltd.



Chemical Fertilizers.

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While the sale of the Plant Foods in 1898, when we introduced them here, was very small and their use unfamiliar, the steady and rapidly increasing growth of our business justifies us in the belief that their employment in the near future will be looked upon as essential to successful farming.

The chief value of barnyard manure consists of its contents of NITROGEN, POTASH and PHOSPHORIC ACID, the decaying vegetable matter humus binds together loose sandy soils, on the other hand lightens and mellows heavy clays, but on soils that are naturally cold and wet, humus does positive injury. Its value is chiefly due to the fact that it contains the stored-up nitrogen of successive generations of decaying animal and vegetable matter, which, by slow decomposition, is made available for the use of growing crops.

Humus is conserved and increased by the judicious use of chemical fertilizers.

One ton of Nitrate of Soda contains as much Nitrogen as 30 to 35 tons manure.

One ton of Muriate of Potash contains as much Potash as 110 to 120 tons manure.

One ton of Superphosphate contains as much Phosphoric Acid as 70 to 80 tons manure.

One ton of good average barnyard manure contains about 10 lbs. of Nitrogen, 8 of Potash and 5 of Phosphoric Acid; in barnyard manure these proportions of plant food are practically constant, and are seldom those best suited to the requirements of crops. Chemical Fertilizers have the great advantage of being able to offer the plant the food it wants in the exact proportions needed, and in a much more readily available form.

Properties and Uses of the Different Plant Foods.

NITROGEN.—The properties of Nitrogen are to form the growth of leaf and stalk; a deficiency of Nitrogen is shown by pale-green foliage, or small growth of leaf or stalk; an excess of Nitrogen is shown by a rank growth of leaf and stalk, but with imperfect flower. In many cases indications of excessive Nitrogen simply means that the Potash and Phosphoric Acid are deficient.

POTASH.—Is necessary for the development of flowers and fruit buds—that is, it is especially prominent in promoting an abundant yield of fruit and grain. It has much to do with filling out the pulpy matter of fruits, and the plumpness of grain. The rich coloring of fruits, as well as distinctive flavor, is largely subject to the influence of Potash as a fertilizer.

PHOSPHORIC ACID.—Enables the plant to make full use of Nitrogen and Potash. It has an important bearing on the development of seeds, especially seeds that are to be used for planting. It influences and hastens the maturity of

plants. It helps to form the albumen, and indirectly starch, sugar and fat. Without Phosphoric Acid plants will die before reaching maturity.

The fertility of soil is not measured by its most abundant fertilizing element, but by the one that is most lacking. Only when necessary ingredients are in proper proportions can maximum results be obtained.

There is a point about this that deserves careful attention. A shortage of Nitrogen may be corrected by an application of Nitrate of Soda in time to save the crop; a deficiency of Potash or Phosphoric Acid is shown too late to apply a remedy, and the season is lost, as the labor and expense of a large crop per acre is but little more than a small one.

We cannot too strongly advise the use of Complete Fertilizers containing the three necessary plant foods, unless it is absolutely known that the soil has a sufficiency of any particular ingredient. And while we are perfectly willing to supply the separate ingredients, we are satisfied that the advantage we possess in the use of machinery, enables us to prepare mixed fertilizers of more uniform quality and cheaper than can be done with shovel and sieve on a barn floor.

In every case we wish our friends to understand, that we will give their inquiries our most careful consideration, and, if it appears advisable, will make special mixtures for any peculiar conditions. As we well know, the farmer must make money by the use of our fertilizers, before we can make a good business of their manufacture.

After the most careful consideration we have decided upon the following very high-grade mixtures, the analysis of which is strictly guaranteed.

FERTILIZER—"A"

Nitrogen..... 4% equal to 500 lbs. Nitrate of Soda, per ton.
 Potash..... 7% equal to 280 lbs. Muriate of Potash, per ton.
 Phosphoric Acid available 10% equal to 1220 lbs. Superphosphate of
 Lime, per ton.

Particularly adapted to Grain, Truck or General Farming, or wherever the need of Phosphoric Acid is chiefly indicated.

FERTILIZER—"B"

Nitrogen..... 3½% equal to 440 lbs. Nitrate of Soda, per ton.
 Potash..... 11 % equal to 440 lbs. Muriate of Potash, per ton.
 Phosphoric Acid available, 9% equal to 1120 lbs., Superphosphate of
 Lime, per ton.

Particularly adapted for Potatoes, Root Crops, Fruits, Berries and Hops; or where Potash is chiefly needed.

FERTILIZER—"C"

Potash..... 11% equal to 440 lbs., Muriate of Potash, per ton.
 Phosphoric Acid available, 12½% equal to 1560 lbs.; Superphosphate
 of Lime, per ton.

Particularly adapted for Clover, Pease, Beans and other legumes; also for crops where Nitrogen is known to be in plentiful supply.

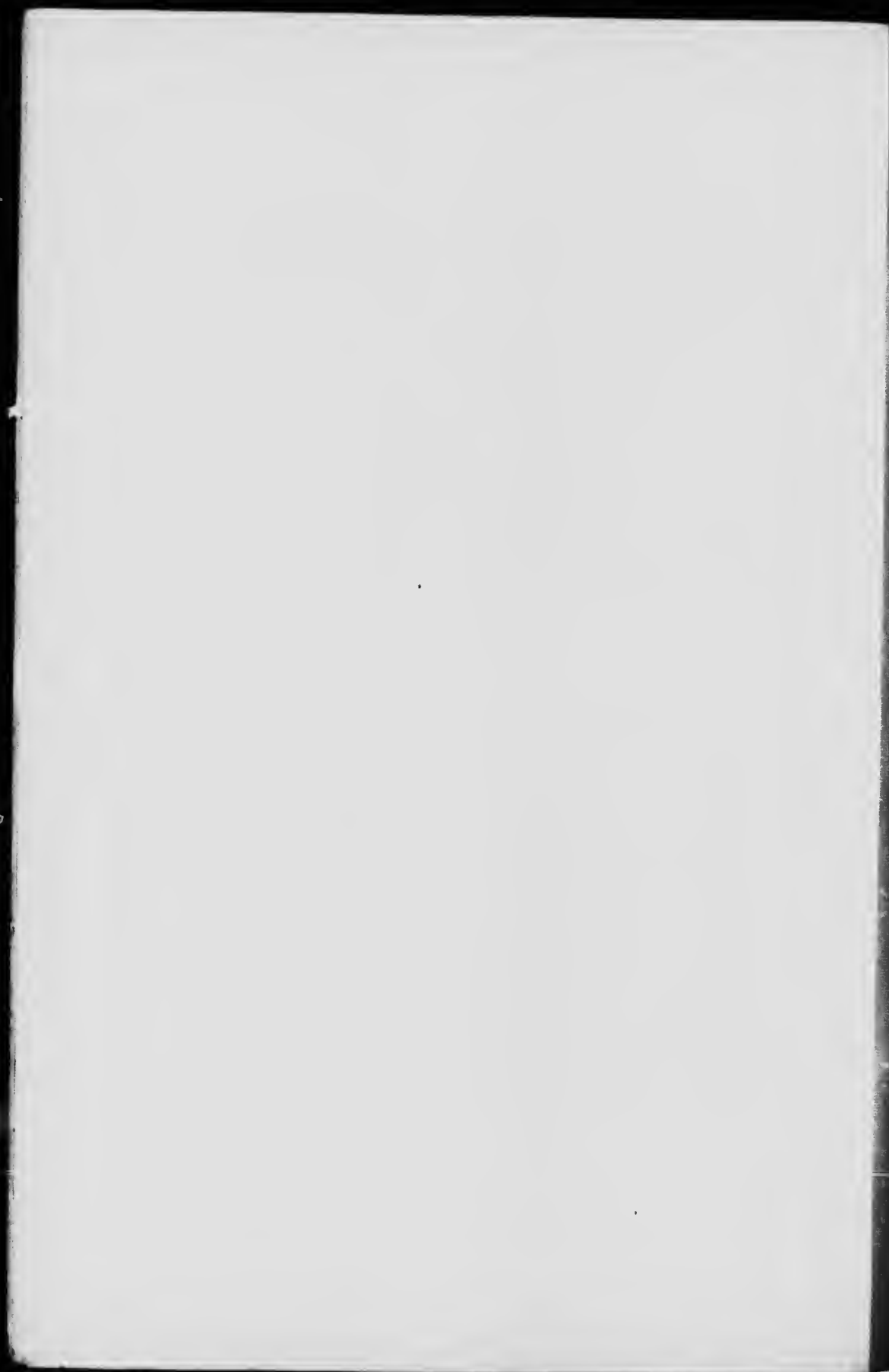
Where Sulphate of Potash is required instead of Muriate, as in Potato Culture, order "A," "B" or "C" SPECIAL.



Oats Unfertilized.



**Oats From Plot of Same Size, With Complete Fertilizer, Potash,
Phosphoric Acid and Nitrogen.**



The Government Analysis of our Mixed Fertilizers has invariably shown them to be stronger than our guarantee.

No make weight or filler is used in the manufacture of our mixed brands.

Amounts to Use.

For Grain or Hay per acre use from 300 to 500 lbs. of our "A" brand; broadcast and harrow in with seed. Truck farming, use from 500 to 900 lbs. General purpose, 400 to 800 pounds per acre.

For Potatoes or Turnips, use per acre from 400 to 800 lbs. of our "B" brand.

For Beets or Hops, use 500 to 1,000 lbs. For Fruits and Berries, use from 400 to 700 lbs. per acre.

For Clovers and other legumes, use from 350 to 700 lbs. per acre of our "C" brand. On soils DEFICIENT IN NITROGEN use our "B" brand.

Methods and Time of Application of Fertilizer.

Nitrate of Soda as a top dressing should be applied carefully in the Spring by hand, taking care not to allow it to fall on the leaves or stems; use if possible before a shower of rain.

Even distribution of Chemical Fertilizers is of great importance, as they are manures in a highly concentrated form, being many times as strong as stable manure.

Superphosphate and the Potash Fertilizers do not perceptibly leach out of the ground, so that in cases where these have to be used, the earlier they are on the land the better; many prefer to use them in the very early Spring.

By putting it on late, especially if not followed by rain, you will probably only get a very partial result for that year and may lose the Nitrate of Soda altogether through the rain in the following winter, most of the Potash and Superphosphate will be retained by the soil.

General Notes—Fruit Trees.

If there is a vigorous growth of leaf and wood, but a poor yield of Fruit, the ground is over rich in Nitrogen, and short in Potash and Phosphoric Acid.

Very satisfactory results are obtained by fertilizing Fruit Trees (which do not bear well) with a few pounds of our Fertilizer "B" or "C."

Incomplete Fertilizers.

The enormous growth of fir with the absence of hard wood in the forests of British Columbia is a sufficient indication of the lack of Potash in our soil, and it should be borne in mind that if one element of plant food is lacking, it is the lack of that one and not the abundance of the others which will determine the crop. It is for this reason that fish, whether in the form of so-called fish guano, or otherwise, nearly always fails to give satisfactory results. Fish guano contains Nitrogen, and Phosphoric Acid slowly available, *but no Potash*, and in nearly every case where it has been tried in British Columbia it has failed to give paying results excepting only in those very exceptional cases where there is sufficient Potash in the soil, and even there it will fail as soon as the Potash supply

becomes exhausted, which will be in the course of a few seasons at most. In some cases it makes a decided difference in foliage growth with no corresponding improvement in the yield of fruit, grain, root, or tuber.

We would much prefer that farmers refrain from using our fertilizers with fish guano, as such a course is likely to lead to an exaggerated idea of the value of fish guano to the detriment of our fertilizers. Anyone wishing, however, to try an experiment might take two plots side by side, using on one the fish and on the other our fertilizer, and in every case the result will be vastly in favor of our product.

Hay and Pasture Land.

Some farmers are of opinion that the application of chemical fertilizers on hay lands is not profitable, that is, they think the increase will not be sufficient to cover the additional expenditure. No greater mistake could be made. Many instances can be given where the yield has been increased from one ton per acre to four tons per acre, and one man in the Chilliwack district assures us that \$30.00 worth of fertilizer made \$250.00 difference in his crop. If you have any doubt as to whether it will pay, ask any farmer who has tried it. We will furnish a number of references and testimonials upon application.

Generally speaking, 300 lbs. of our "A" fertilizer per acre will meet all requirements. Broadcast in the early spring. If the land has been under hay for a number of years, harrowing will be beneficial.

On pasture lands which are not all they should be, an application of our "A" brand will pay well.

In many places where it was formerly almost impossible to secure a "catch" of clover, splendid crops have been harvested as a result of the application of our fertilizers.

Cultivated Land.

Land which has been farmed for some years responds well to our Mixed Fertilizers. Long cultivation without the addition of Chemical Fertilizers may be expected to have exhausted most of the available elements of fertility. If the land has had large quantities of barnyard manure, it may contain sufficient Nitrogen, but will most probably be deficient in Potash and Phosphoric Acid.

Clayey Soils.

In several cases which have come to our knowledge, clay soils have contained sufficient Potash, and therefore would not respond to an addition of this Fertilizer. Superphosphate and Nitrate of Soda have given good results. Sooner or later this class of land will require the addition of Potash. In this connection we quote Mr. E. B. Voorhees, A. M., Director of the New Jersey Agricultural Experimental Station, who states: "Where experiments have not been carried out and the specific needs determined, it becomes necessary to presume that all the constituents are required, and to apply the amounts and proportions of those which the general considerations of the soil, season, climate and crop would seem to demand."

Swamp and Peaty Soils.

These contain much decayed vegetable matter, have an abundance of Nitrogen, and are almost invariably deficient in Potash and frequently in Phosphoric Acid. The addition of barnyard manure to such land is seldom profitable, as manure is over rich in Nitrogen compared with its content of Potash and Phosphoric Acid.

The Fertilizer for such land is obviously Potash in one form or other and Superphosphates. We recommend for Grain Crops on this class of soil 300 to 400 lbs. of our "C" Fertilizer.

The great benefit derived from our Fertilizers on lands of this class in the Grantham, Duncans, Sooke and Chilliwack districts furnish the best testimony as to the great profits which may be had from judicious fertilizing.

In cases of Peat Lands which do not yield good root crops we recommend 500 to 800 lbs. of our "C" Fertilizer.

Sandy Soils.

Sandy loam is generally short of all the elements of available fertility, and must not be expected to give good results by the addition of any one or even of two of the three essentials of plant food; the only thing is a Complete Fertilizer. We recommend from 350 to 800 lbs. per acre of our Mixed Fertilizers according to crop grown.

Black Loam.

Black loam differs from Sandy loam in containing more Nitrogen; therefore this class of soil requires Potash and Phosphoric Acid, and unless it has been very liberally supplied with Barnyard Manure in the past, it is seldom that black loam contains so much Nitrogen as not to pay well for the addition of Nitrate of Soda.

It is of no use expecting to obtain good crops from exhausted land without the addition of a Complete Fertilizer.

The pure undiluted Fertilizers must not be allowed to come in contact with roots or seeds, as it may kill them.

For purposes of calculation, it is worthy of note that the following amount of fertilizer put on an acre which is 43,560 sq. ft. would furnish one sq. foot with amount as shown by the following table:

Per sq. ft.	1 oz.	$\frac{3}{4}$ oz.	$\frac{1}{2}$ oz.	$\frac{1}{4}$ oz.	$\frac{1}{8}$ oz.
Per acre	2722 lbs.	2042 lbs.	1361 lbs.	680 lbs.	340 lbs.

It is preferable to always use Chemical Fertilizers in place of Barnyard Manure for potatoes.

Generally speaking, Potash and Superphosphate assists the formation and yield of Grain and Root Crops, Nitrate of Soda the leaf and stalk and invigorates the plant, and enables crops to derive the fullest benefit from the Potash and Phosphoric supplied.

It pays well to give all land occasionally a dressing of Lime, for the purpose of correcting acidity in the soil if present, and to make otherwise unusable compounds available.

Fertilizers Are Not Stimulants.

The invigorating properties of Nitrate of Soda as a Plant Food has led some farmers to the conclusion that Nitrate of Soda impoverishes the land. A greater mistake could not exist. It is well known that each particular crop removes so much Potash and Phosphoric Acid, etc., from the ground per ton in weight. Thus a ton of Oats removes 16 lbs. of Phosphoric Acid (equivalent to 100 lbs. of Superphosphate) and 12 lbs. of Potash (equivalent to 100 lbs. of Kainite). Suppose you are cropping Oats regularly from a plot of land and that you decide to use Nitrate of Soda, and that on doing so you obtain double the crop. Is it not clear that you have taken up from the ground a very large amount of the Potash and Phosphoric Acid that in the ordinary case would have been taken up by the succeeding crops? Nitrate of Soda does not impoverish the land except by making the plants more vigorous. It gets as much crop out of the land in one year as would often take two years, so that if you do not put back the Potash and Phosphoric Acid that the extra crop has taken out, what can you expect but sooner or later to get a poor yield? By using Potash and Superphosphate along with Nitrate of Soda there is absolutely no risk of impoverishing the soil.

Putting Fertilizers on land is just the same as running an engine at full speed, and no mill man would expect to make money by running all the time at half speed. Then why should farmers expect to make money when they do not work their land to full speed and get all the possible crops from it each and every year?

The soil may have three wants, requiring Nitrogen, Potash and Phosphoric Acid to satisfy them. Unless you know which particular want your farm has, you had better use all three.

Some imagine that by the use of Chemical Measures good results are only temporary. This is entirely an erroneous idea. Where a Complete Fertilizer is being used a marked yearly improvement will be noted, as fully borne out by fifty years' experiments at Rothamstead Station. Only where incomplete Fertilizers are being used is there any danger of soil impoverishment.

Faulty Condition of Soils.

In sour soils, or where there is lack of moisture, poor drainage, etc., Fertilizers cannot be expected to give best returns.

Does the use of Fertilizers pay? There need be no more doubt about this than there is about any simple problem in arithmetic. If your land is giving very good crops it may not pay, but you must be sure that your crops are as heavy as possible before you decide that they cannot be increased. Roughly speaking, by the proper addition of Fertilizers one piece of land can be made as fertile as any other, so that if some one else is getting a greater crop than you, it is not the fault of your land, but yours for not treating it properly. To take an example, some of our customers are getting from 12 to 15 tons of saleable potatoes per acre. If your land is not producing this amount it is your own fault, and if you put \$10 worth of Fertilizer on the land per acre, one ton of extra yield will more than pay for it, and every ton over the first will be straight gain.



Wheat on Poor Soil Unfertilized, Yield $8\frac{1}{2}$ Bushels Per Acre.



Wheat on Poor Soil with Complete Fertilizer, Potash, Phosphoric Acid and Nitrogen, Yield 20 Bushels Per Acre.



Figure for yourself what you ought to make, and what you are making per acre. Take oats as an example. Many of our customers have cropped 70 to 90, and in one instance as much as 114 bushels per acre. If you are not getting this amount, figure for yourself how many bushels over what you are getting you would have to obtain to pay for, say \$5 or \$10 worth of Fertilizer per acre.

Two dollars and fifty cents' worth of our Fertilizers, at the Dominion Experimental Farm, on Potatoes gave a net return of \$26.00 over the unfertilized plot. On Oats \$5.00 worth gave a net increase of 53 bushels.

We have a great many testimonials from farmers in every part of the province, and these will be shown upon application at the office.

Price List of Chemical Fertilizers

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	Prices up to 2,000 lbs.	2,000 lbs. and over.
Mixed Fertilizer—Brand "A"	\$2.20 per 100 lbs.	\$38.00 per ton.
Mixed Fertilizer—Brand "B"	2.25 " "	40.00 "
Mixed Fertilizer—Brand "C"	1.95 " "	33.50 "
Sulphate of Potash (90 per cent. basis).....	3.15 " "	57.50 "
Muriate of Potash (80 per cent. basis).....	3.00 " "	55.00 "
Kainite	1.50 " "	25.00 "
Superphosphate of Lime	1.50 " "	25.00 "
Thomas' Phosphate Powder	1.65 " "	27.50 "
Nitrate of Soda	3.00 " "	55.00 "
Sulphur—Prices on application.		

TERMS NET CASH. Orders delivered F. O. B. or F. O. R. Victoria.

The following is a partial list of dealers from whom our Fertilizer may be procured:—

M. J. HENRY, Florist.....	3009 New Westminster Road,	Vancouver, B. C.
BROWN BROS., Florists	115 Hastings Street,	Vancouver, B. C.
L. C. YORK.....	Whonnock,	B. C.
A. E. WATERHOUSE.....	Alberni,	B. C.
C. BAZETT.....	Duncans,	B. C.
J. CHURCHLAND.....	Surrey Centre,	B. C.
THE CHAS. H. LILLY CO.....	Seattle,	Wash.
BRACKMAN-KER MILLING CO., LTD,	Vancouver, B. C.....	Nelson, B. C.

The Application of Chemical Fertilizers.



General Principles.

Roots and their rootlets reach out in all directions in search of food, and the fertilizers should be placed where the greatest number of rootlets can easily reach them. If the fertilizers are properly distributed, water and nature's forces will do the rest.

Potatoes.

Use our B SPECIAL at the rate of 300 to 600 pounds per acre; apply in the drill, scattering the fertilizer in a broad stream, extending it up on each side of the furrow; then drop the potatoes and cover in.

Root Crops.

When soil is prepared for sowing, mark out the ground and scatter about 300 to 600 lbs. of our "B" Fertilizer per acre along the rows in a stream about 8 to 14 inches wide, then drill in the seed. The use of a good seed drill such as the Planet, Jr., with fertilizer attachment, will save much time in application.

Grain.

Use about 250 to 500 lbs. of our "A" brand; harrow in before or with seed.

Grass Lands.

PASTURES AND MEADOWS—Use our "A" or "B" Fertilizer at the rate of 250 to 500 lbs. per acre. Broadcast in early Spring, before or at time grasses begin to start. In many instances it will pay well to follow the application by a thorough harrowing.

Hops.

Broadcast as early as possible and thoroughly cultivate or lightly plow in. Many successful growers, however, prefer to apply the fertilizers in trenches around the crowns, using from 400 to 600 lbs. of our "B" brand per acre. If there is excessive growth of leaf and vine, and the hops are not setting in proportion, Nitrogen should be reduced, or omitted from the fertilizer entirely; in such cases we recommend "C" fertilizer, or a mixture of equal parts of "B" and "C." In cases where growth of leaf and vine is not vigorous enough, apply in addition to the regular fertilizing about 100 lbs. of Nitrate of Soda per acre. On soils containing alkali, our Superphosphate of Lime will be found valuable as a neutralizing agent.

Strawberries.

Scatter alongside or around plants, not on the plants, about 400 to 700 pounds of our "B" brand per acre. Apply as early as possible in Spring and thoroughly cultivate in. Strawberries are not heavy feeders, yet owing to the early maturity of the crop, it is most important that they should be liberally provided with readily available food.

Other Berries and Bush Fruits.

Use about the same amounts as for Strawberries; the same general principles of application will apply. In old plantations, or where planted close together, broadcast the fertilizer and cultivate in.

Orcherds.

Very early applications are strongly recommended, many of the most successful fruit growers preferring to use it in the Fall. Use per acre about 400 to 800 lbs. of our "B" Fertilizer. If desired, one-half this amount may be applied in the Fall, the remainder in the early Spring. Thoroughly cultivate or lightly plow in. If used on hill sides, where there is danger of the soil washing, apply in Spring when danger of washing rain is over and plow in. Broadcast around the trees, beginning about one foot from base of tree and extend to middle of the rows.

In planting young trees, mix one-half to one pound of "A" or "B" mixture with from four to six times its weight of soil and place in hole, not against roots, but where the young roots will soon reach it. After tree is planted, scatter one pound around it, beginning at about one foot from the base and extend to four or five feet away.

If trees are growing in sod use liberally in order to supply the sod as well as the trees; the trees can only get what the sod allows to pass, and in any case, under such conditions, the trees are getting the worst of it.

Greenhouses.

Our "B" Special is particularly adapted to this work. For bench work use two to three ounces per sq. yard (9 sq. ft.); scatter over the surface of the soil, as may be required. On such plants as tomatoes, carnations, roses, etc., it will pay well to make an application when fruit begins to ripen or flowers begin to bloom; this is in order that the most perfect development may be obtained. For potted plants use according to the size of the pot about one-fourth to one level teaspoonful, work into the surface of the soil and water, or apply with water using about one tablespoonful to one gallon of water; keep well stirred. In no case allow the pure fertilizer to lie in contact with roots, leaf or stem.

Late Planting.

If putting in a late crop after rains are over, in many instances it is advisable to apply the fertilizers from two to six weeks in advance, in order that they may become thoroughly incorporated with the soil.

Make Your Plants Comfortable.

thoroughly work in and water; applications can be made every two to four weeks in order that the best results may be obtained. Plowing, harrowing, cultivating and draining must also be the reliance of the farmer. Fertilizers supply the raw materials from which are built up the structures of plants, but judicious cultivation of the soil is the foundation of success. Manures or fertilizers are but one detail of successful farming; they cannot be expected to give the best results unless the farmer does his duty in every respect.

A Simple Fire Protection.

The Scientific American recently published simple directions where nothing else has been done, and which may prove of value. Take twenty pounds of common salt and ten pounds of sal ammoniac (nitrate of ammonia, to be had at any druggist's), and dissolve in seven gallons of water. Procure quart bottles of thin glass such as are ordinarily used by druggists, and fill with this, corking tightly and sealing, to prevent evaporation. In case of fire throw so as to break in or near the flame. If the fire is in such a place as to prevent the bottle from breaking, as in wool or cotton, knock off the neck and scatter the contents. The breaking of the bottles liberates a certain amount of gas, and the heat of the fire generates more, thus working its own destruction.

What to do in case of Accidents.

Burns and Scalds.—1. Cover with cooking soda and lay wet cloths over it. 2. White of eggs with olive oil. 3. Olive oil or linseed oil, plain or mixed with chalk or whiting. 4. Sweet, or olive oil and limewater.

Lightning.—Dash cold water over the person struck.

Sunstroke.—Loosen clothing. Get patient into shade and apply ice-water to head. Keep head in elevated position.

Stings of Venomous Insects.—Apply weak ammonia, oil, salt water or iodine.

Fainting.—Place flat on back; allow fresh air, and sprinkle with water. Place head lower than rest of body.

Test of Death.—Hold mirror to mouth. If living, moisture will gather. Place fingers in front of a strong light. If alive, they will appear red; if dead, black or dark.

Fire in One's Clothing.—Don't run, especially not downstairs or out-of-doors. Roll on carpet, or wrap in woollen rug or blanket. Keep the head down so as not to inhale the flame.

Fire in a Building.—Crawl on the floor. The clearest air is the lowest in the room. Cover head with woollen wrap, wet if possible, cut holes for the eyes. Don't get excited.

Fire From Kerosene.—Don't use water, it will spread the flames. Dirt, sand or flour is the best extinguisher, or smother with woollen rug, table cloth or carpet.

To Drive Fleas and Other Insects from Domestic Animals.

Mix 10 parts of benzine, 5 parts common soap and 85 parts of water. Generally one or two applications will be enough.



Plums Unfertilized.



**Plums with Complete Fertilizer. Potash, Phosphoric Acid
and Nitrogen.**

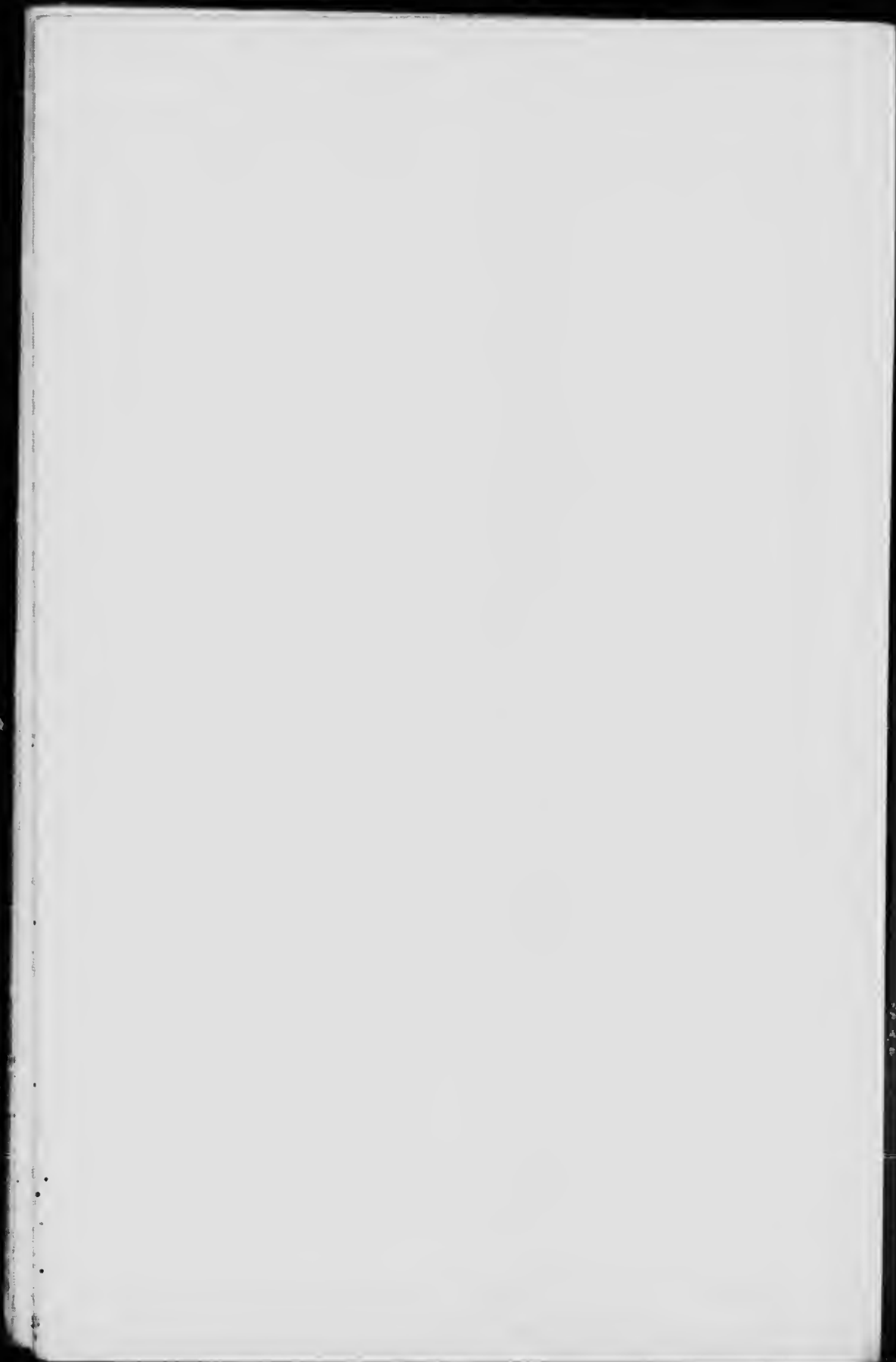


Table showing the number of Rails and Posts required for each Ten Rods of Post and Rail Fence.

Length of Rail Feet	Length of Panel Feet	Number of Panels	Number of Posts	Number of Rails for Each 10 Rods.			
				5 Rails High	6 Rails High	7 Rails High	8 Rails High
10	8	20 $\frac{3}{4}$	21	103	123	144	165
12	10	16 $\frac{1}{2}$	17	83	99	116	133
14	12	13 $\frac{3}{4}$	14	69	84	95	109
16 $\frac{1}{2}$	14	11 $\frac{1}{2}$	12	57	69	81	93

Colic in Horses.

The symptoms in all cases of colic are as follows: Stamping, looking at the flanks, and rolling, with intervals of rest. The animal will strike his belly and appear in great misery.

Administer the following:

Laudanum	2 oz.
Sweet Spirits Nitre	2 oz.
Capsicum	2 drachms.
Carbonate of Soda	3 ozs.

Mix well and give at one dose.

To Drive Flies from Stable.

Scatter Chloride of Lime on a board in the stable, to remove all kinds of flies, but, more especially, biting flies.

Sprinkling beds of vegetables with even a weak solution effectually preserves them from caterpillars, slugs, etc. A paste made of 1 part powdered Chloride of Lime and $\frac{1}{2}$ part of some fatty matter placed in a narrow band around the trunk of a tree prevents insects from creeping up it. Even rats, mice, cockroaches and crickets flee from it.

How to Measure Hay in a Mow, or Potatoes, Apples, &c. In a Bin.

To find the amount of hay in a mow, allow 512 cubic feet for a ton, and it will come out very nearly correct.

To find the number of bushels of apples, potatoes, etc., in a bin, multiply the length, breadth and height together, and this product by eight, and divide the result by ten.

To Destroy Insects in Gardens.

In some seasons the vegetables in our gardens are almost annihilated by worms of several species. Fall plowing or spading the ground just before frost sets in, and strewing the ground with fine salt in the Spring some time before the seeds are sown is said to be a sovereign remedy.

Set an onion in the centre of a hill of cucumbers, squashes, melons, etc., and it will effectually banish the bugs.

If a tree or plant is affected with insects dust it with flowers of sulphur.

Waterproof Composition for Boots.

Dissolve by heat, one ounce of pure bottle India rubber shavings in one quart of Neat's-foot oil and add two ounces of tallow.

This makes a fine waterproof composition for boots, and is recommended to sportsmen.

Useful Household Recipes.

To remove grease from papered walls, dip a piece of flannel in spirits of wine, and rub gently the greasy spot once or twice, and it will disappear.

To remove glass stoppers apply a hot cloth to the neck of the bottle. This will cause the glass to expand, and stopper can easily be removed.

To stiffen collars, a little gum arabic and common soda added to the starch gives extreme stiffness and gloss to shirts and collars.

To remove candle spots, place common brown paper over the spot and pass a warm iron over the paper.

Cream of tartar rubbed upon soiled white kid gloves will clean them.

How to Preserve Eggs.

To each pailful of water, add two pints of fresh slacked lime and one pint of common salt; mix well. Fill your barrel half full with this fluid, put your eggs down in it any time after June, and they will keep two years if desired.

How Farmers Can Make Money.

1. By not attempting to cultivate too much land.
2. By the use of the best machinery, and the thorough cultivation of all crops planted.
3. By keeping a systematic record of all receipts and expenditures.
4. By keeping posted on progressive agriculture and implements.
5. By careful attention to the business of farming, and refraining from outside ventures and speculations.
6. By using the well-known and thoroughly reliable fertilizers supplied by the Victoria Chemical Co., Ltd.

Of the science of farming it is especially true that what is worth doing is worth doing well.

Estimates of Materials.

3½ barrels of lime will do 100 sq. yds. of plastering, two coats.

2 barrels of lime will do 100 sq. yds of plastering, one coat.

1½ bushels of hair will do 100 sq. yds. of plastering.

1¼ yards of good sand will do 100 sq. yds. of plastering.

1 barrel of good lime will lay 1000 brick.

To every barrel of lime estimate about ⅝yds. of good sand for plastering and brick work.

Amount of Paint Required for a Given Surface.

It is impossible to give a rule that will apply in all cases, as the amount varies with the kind and thickness of the paint, the kind of wood or other material to which it is applied, the age of the surface etc.

The following is an approximate rule:—

Divide the number of square feet of surface by 200. The result will be the number of gallons of liquid paint required to give two coats; or divide by 18 and the result will be the number of pounds of pure ground white lead required to give three coats.

Quantity of Bricks Required to Construct a Building.

Superficial feet of Wall.	Number of Bricks to Thickness of			
	8 in.	12 in.	16 in.	20 in.
1	15	22	29	37
2	30	45	60	75
3	45	68	90	113
5	75	113	150	188
7	105	158	210	263
10	150	225	300	375
100	1500	2250	3000	3750

Stable Manure.

Barnyard or stable manure is often regarded by farmers as being a "complete fertilizer," and the only fertilizer needed on any soil. This is correct only in so far as such manure contains all three of the fertilizing elements, but they are rarely found in the proportions needed by different crops. There is usually an excess of nitrogen and not enough phosphoric acid and potash. When stable manure is allowed to decompose by exposure to the weather, a large part of the nitrogen, its most valuable element of plant food, is lost in the form of ammonia. This loss, however, can be largely prevented by scattering Kainite over the surface of the manure as it accumulates, using about one pound per day for each cow or horse, or for each eight head of sheep. The Kainite will save more than its cost in the value of the nitrogen it prevents from escaping in the form of ammonia gas, and will still possess all its original value as a plant food. When stable manure is treated in this way, the addition of phosphoric acid will make it a complete fertilizer of high quality. In all cases the manure heap should have a roof over it.

Analysis of Farm Manures.

(From Bulletin 56, Cornell Experimental Station.

Kind of Manure.	Nitrogen per cent.	Phosphoric Acid per cent.	Potash per cent.
Sheep .....	.767	.391	.591
Calves .....	.496	.172	.532
Pigs .....	.84	.39	.32
Cows .....	.426	.29	.44
Horses .....	.49	.26	.48

Distances for Planting Trees.

(In planting trees the greater distance should be given on the richer soil.)

Apples	20 to 30 feet each way
Pears	20 to 25 feet each way
Peaches	18 to 24 feet each way
Plums	15 to 20 feet each way
Cherries	15 to 20 feet each way

As we are asked so often what is contained in the different fertilizers besides the guaranteed plant foods, it may be of interest to know the average composition of the different chemicals used as fertilizers:

Name of Salt. In 100 parts are contained	Sulphate of Potash	Muriate of Potash	Sulphate of Magnesia	Chloroid of Magnesia	Chloroid Sodium of	Sulphate of Lime	Substances insoluble in Water	Water	Calculated to Pure Potash	
	Kr So ₄	Kcl.	Kr So ₄	Mg Cl	Na Cl	Ca So ₄			Aver- age	Guar- antee
Kainite	21.3	2.0	14.5	12.4	34.6	1.7	0.8	12.7	12.8	12.4
Sul. of Potash 90 p. c. basis..	90.6	1.6	2.7	1.0	1.2	0.4	0.3	2.2	49.9	48.6
Mur. of Potash, 80-85% basis .	—	83.5	0.4	0.3	14.5	—	0.2	1.1	52.7	50.5

THOMAS PHOSPHATE POWDER.

Lime	Magnesia	Alumina	Iron Oxide	Manganese Oxide	Silica	Phosphoric Acid
Ca O	Mg O	Al ₂ O ₃	Fe ₂ O ₃	Mn O	Si ₂ O ₂	P ₂ O ₅
50%	4%	2%	14%	5%	8%	17%

SUPERPHOSPHATE OF LIME.

Soluble Calcium Phosphate	Organic Matter	Silicious Matter	Calcium Sulphate	Iron Oxide	Magnesia	Moisture
Ca H ₄ (PO ₄) ₂			Ca SO ₄	Fe ₂ O ₃	Mg O	
26.5%	4%	6.6%	47.6%	.2	.8	14.3

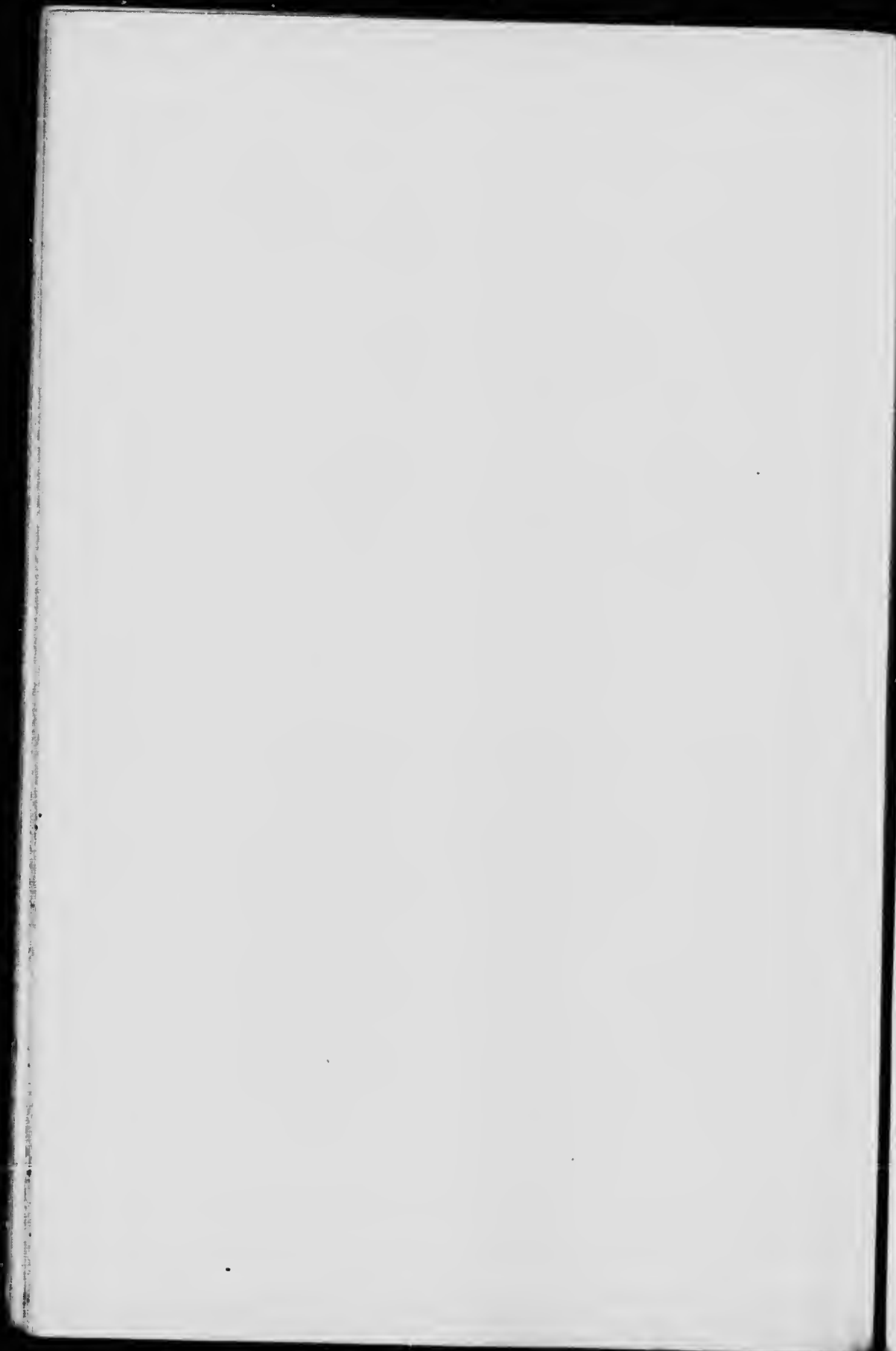
The Calcium Phosphate equals 16 % Phosphoric Acid (B 205), which is the basis upon which we sell it.



Apples Unfertilized.



Apples with Complete Fertilizer, Potash, Phosphoric Acid and Nitrogen.



NITRATE OF SODA.

Sodium Nitrate Na NO ₃	Sodium Chloride Na Cl	Insoluble Matter	Moisture
98.44%	.14%	.04%	1.38%

The Nitrogen contained in Nitrate of Soda is from 15 to 16½ per cent.

Veterinary Recipes.**A**

(1) Healing Lotion.—Carbolic acid, ½ oz.; spirit of turpentine, ½ oz.; water, 1½ pints.

(2) Carbolic Liniment.—Carbolic acid, 1 oz.; sweet oil, 1 pint.

B**Colic Drinks.**

(1) Spirits of turpentine, 2 oz.; linseed oil, 1 pint.

(2) Cholodyne, 1 oz.; warm water, 1 pint.

(3) Gin or any spirit, 6 oz.; ginger, 2 drams; black pepper, ½ oz.; warm water, 1 pint.

Cough Drink.

Camphor, 1 dram; nitre, 2 drams; powdered opium, 1 dram; water, 1 pint.

Cough Powders.

(1) Powdered nitre, 1 dram; tartar emetic, ½ dram. Grind fine and mix up in a mash.

(2.) Powdered nitre, 4 drams; grind fine and mix up in a mash.

Turpentine Liniment.

Spirits of turpentine, 1 oz.; liquid ammonia, 1 oz.; linseed or olive oil, 4 oz.; mix well and rub on with friction.

Medical Notes.

Rheumatism.—Equal quantities of ammonia, or spirits of turpentine, and sweet oil well rubbed on with the hand is found to give relief. Mix in equal quantities (say ½ ounce of each), sulphur, nitre, flour of mustard, turkey rhubarb and gum guaiacum; take a teaspoonful in a wineglassful of water every alternate night,

Fits.

(1) Fainting Fits.—The symptoms are falling down insensible without convulsions, face and lips pale, surface of body cold and covered with clammy perspiration.

Treatment.—Lay patient on the back with head low, loosen clothes about neck and chest. Sprinkle cold water on face and neck. If handy apply smelling salts or burnt feathers to nose.

(2) Epileptic Fits.—These are due to constitutional causes.

Symptoms.—Patient falls down, is insensible and convulsed, throws arms and legs about, foams at mouth, often biting tongue, making it bleed.

Treatment.—Place patient on back. Place a piece of soft wood between teeth to prevent biting the tongue. Restrain movements so as to prevent injury. Apply smelling salts, and, when foaming at the mouth, after fit is over give some very weak spirits and water. Put patient to bed and try to induce sleep.

(3) Apoplectic Fits.—These occur with thick-necked stout persons.

Symptoms.—Sudden insensibility, face red, and breathing very noisy.

Treatment.—Raise head and chest, loosen clothes about neck, apply cold water or ice to head. Stimulants are very harmful.

A Safe Emetic.

Two tablespoonfuls of mustard in $\frac{1}{2}$ pint of warm water, followed by a large drink of warm water.

Burns and Scalds.

The burn or scald should be at once covered with absorbent cotton or lint to keep air from it, oil being first freely applied to the injured part. Lime water and oil in equal parts is also recommended. If oil is not to hand flour or scraped potatoes may be used.

To Fumigate a House.

Burn sulphur in a metal vessel placed on live coals, 3 lbs. per 1000 cubic feet of space, previously closing all windows and doors. After at least three hours open all doors and windows.

Disinfectants.

Chloride of lime is a powerful disinfectant and may be used on a small or large scale. Carbolic acid powder is also good. Quicklime may be used on a large scale for cesspools, etc.

Potato scab can be prevented by soaking the seed, either whole or cut, for two hours, in a solution of corrosive sublimate (2 oz. to 18 gallons of water), or in a solution of formalin, 1 part to 250. Potato rot and blight can usually be prevented by spraying with the Bordeaux Mixture.

Bordeaux Mixture.—Dissolve 6 lbs. of copper sulphate in a wooden or earthen vessel. In another tub or vessel slake 4 lbs of fresh lime; add enough water to reduce it to the consistency of a thick whitewash. Pour this slowly into the vessel containing the copper sulphate solution, using a coarse gunnysack stretched across the top of the vessel for a strainer. Dilute to 45 gallons before applying to plants of any kind.

The following formula, which is a modification of that of the Bordeaux Mixture will be found very useful as a spray for trees:

Copper Sulphate or Bluestone	4 lbs.
Fresh Lime	4 lbs.
Water	40 gals.
Paris Green	4 to 6 oz.

The bluestone is dissolved in 15 to 20 gals. of water in a barrel, and in another barrel the lime is slaked carefully and 15 to 20 gals. of water are added to make a milk of lime. Then the contents of the two barrels are poured into the spray barrel through a strainer. Finally the Paris Green is made into a paste with water and put into the barrel with the Bordeaux. It is very necessary that the agitator should work while the pumping is going on so as to keep the Paris Green well distributed throughout the mixture. Use a good spray pump and spray carefully.

Losses in the Manure Heap.

(From the American Fertilizer.)

In order to determine the value of fresh and fermented manure, the Central Experimental Farm at Ottawa made experiments extending over seven years, using both fresh and rotted manure, to various grain crops. On March 7th, 1904, about 8,000 lbs. of horse and cattle manure was placed in a shed, on a tight barn floor. It was turned and weighed twice a month, and the pile carefully watched in order to preserve the proper conditions of moisture. In one month the weight was reduced to 5530 lbs., in two months to 4278 lbs., and in four months to 3480 lbs. At this time the manure was in what may be termed first class condition, having that pasty character which would admit of its being cut with a spade and mixed readily with the soil. The turning and weighing was continued until December 7th, when the former 8000 lbs. of fresh manure had lost two-thirds of its original weight, as it then weighed only 2600 lbs. From this lesson, together with the knowledge that for seven years fresh manure gave larger returns, pound for pound, than rotted manure, the unduly expensive method of killing weeds by allowing the manure to heat in a pile becomes apparent. As to germination of seeds of weeds, it would seem a much better policy to combat weeds by rotation of crops, together with the thorough cultivation so necessary to success.

If the fresh manure gave larger returns, pound for pound, and 6000 pounds of fresh manure was reduced to 2600 pounds, as recorded in the experiments, it is very evident that the farmer will save two loads in three by applying his manure

to the fields in a fresh condition, and if it can be done daily, so much the better. In comparison with fertilizers, which remain unchanged, manures are not stable in value, and should always be fortified with complete fertilizers.

"That man is a benefactor to his race who makes two blades of grass grow where one grew before."

Shingles Required in Roof.

When laid 4 inches to the weather, 9 shingles are required to the square foot, when $4\frac{1}{2}$ inches to the weather 8 are required.

Example: Find the number of shingles required to cover a roof 38 feet long, the rafters on each side being 14 feet. Shingles exposed $4\frac{1}{2}$ inches.

$38 \times 14 \times 2 = 1064$ (sq. ft.) $\times 8 = 8512$ shingles.

Whitewash that will not rub off.

Mix half a pail of lime and water ready to put on the walls. Take $\frac{1}{4}$ pint of flour, mix it up with water; then pour boiling water upon it in sufficient quantity to thicken it, and pour it while hot into the whitewash. Stir well together and it is ready for use.

Domestic Weights and Measures.

Apothecary's Weight.

20 grains.....	1 scruple
3 scruples.....	1 dram
8 drams.....	1 ounce
12 ounces.....	1 pound

Troy Weight.

24 grains.....	1 pennyweight
20 pennyweight.....	1 ounce
12 ounces.....	1 pound

Avoirdupois Weight.

16 drams.....	1 ounce
16 ounces.....	1 pound
25 pounds.....	1 quarter
4 quarters.....	1 cwt.
20 cwt.....	1 ton

Cubic Measure.

1728 cubic inches.....	1 cubic foot
27 cubic feet.....	1 cubic yard

Dry Measure.

2 pints.....	1 quart
8 quarts.....	1 peck
4 pecks.....	1 bushel

Liquid Measure.

4 gills.....	1 pint
2 pints.....	1 quart
4 quarts.....	1 gallon
31½ gallons.....	1 barrel
2 barrels.....	1 hogshead

Long Measure.

12 inches.....	1 foot
3 feet.....	1 yard
5½ yards.....	1 rod or perch
40 rods or perches.....	1 furlong
8 furlongs.....	1 mile
3 miles.....	1 league

Square Measure.

144 square inches.....	1 square foot
9 square feet.....	1 square yard
30¼ square yards.....	1 square rod
40 square rods.....	1 rood
4 roods.....	1 acre
640 acres.....	1 square mile

Notes of Interest to Farmers.

Stick to the Farm. "It is true that it is difficult to save very much money on a farm, especially on a rented farm. But this is true of many other occupations besides farming. Even if a man receives good wages in the city it is not possible to save very much out of his salary, after the expenses of maintaining a family come out of it. The things that grow in the country with a little encouragement cost money in the town. The wife can help make the living on the farm, but in the city she has little opportunity. Try the farm another year."

Lime.—Lime is not a fertilizer in itself, but in many soils it liberates plant food and thus produces the effects of a manure. Some soils do not need lime and will not respond to its application.

It is our desire to make this book as valuable as possible. We shall appreciate, therefore, any valuable information pertaining to the farm that our friends can give us from time to time, so as to enable us to place same in our next issue.

We shall in return be glad at any time to look up and give you any information upon any subject you might ask, as at the same time such questions may also be useful to us in gathering valuable information for our next book.

Memorandum of Important Events.

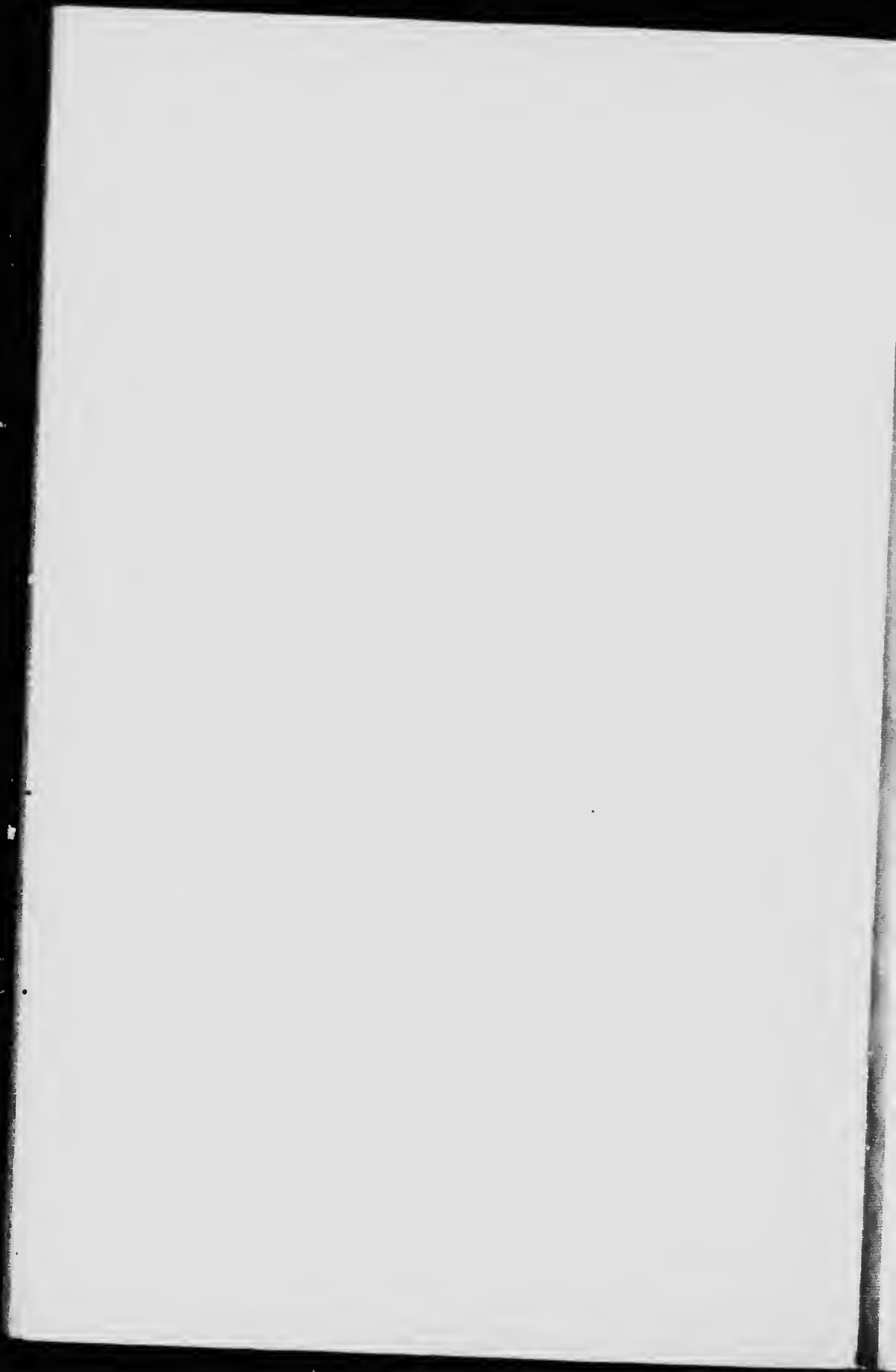
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Hay From Unfertilized Plot.



Hay From Plot with Complete Fertilizer.



Memorandum of Important Events.

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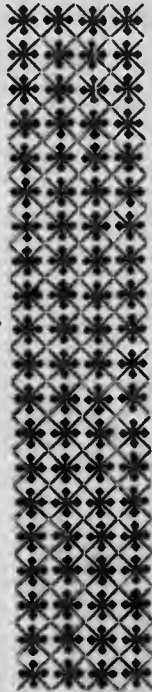
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—A Talk On—

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