# Soils and Crops

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## FERTILIZER MIXTURES FOR POTATOES.

May profitable returns be obtained from the use of commercial fertilizers? What is the best combination for potatoes? What is the most economical quantity to use per acre? These questions are at this season of the year uppermost in the minds of the growers. With the increased demand for potatoes, both for the home and export market, there has come the demand for a supplement to farmyard manure to provide the necessary food elements such as nitrogen, phosphoric acid and potash.

The growers will be reviewing their past year's experience and results from the use of various combinations, and comparing them with those of their neighboring growers, in order to arrive at some decision as to the most economical mixture and quantity to use for 1924. In order to aid them in determining these questions, a series of experiments was started at the Experimental Farm, Nappan, in 1922. While it is realized that no hard and fast rules can be laid down in the use of commercial fertilizers, nor may final deductions be drawn from two years' results, nevertheless, it is felt that these results may help in making a decision.

It may first be noted from this work that commercial fertilizers have a distinct value in potato production. The average yield from all plots receiving an application of fertilizer was 247.6 bushels per acre, while the average from the twelve check plots without fertilizers was 107.5 bushels, thus showing an increased yield of 140.1 bushels per acre, of which one-fifth were graded unmarketable and valued at 20 cents a bushel, while the marketable were valued at 55 cents per bushel. This gave a gross return of $67.20 per acre on the increased yields over check in favor of the fertilized plots. The average cost of fertilizer was $27.27 per acre, leaving an average net profit of $39.93 per acre.

The second point of interest is what mixture gives the best results. By averaging the two years' results the respective standing of the different mixtures tested are as follows, based on the value of the increased yield over the check plots: No. 1, 3-8-6 mixture with a yield of 260.8 bushels per acre gives a profit of $43.50 over cost of fertilizer; No. 2, 4-8-10 yielded 270.6 bushels and $41.42 profit; No. 3, 4-8-8 yielded 267.2 bushels and $41.40 profit; No. 4, 3-6-6 yielded 246.5 bushels and $38.93 profit; No. 5, 4-6-6 yielded 247.1 bushels and $37.20 profit; No. 6, 4-8-6 yielded 249.5 bushels and $34.25 profit; No. 7, 5-8-6 yielded 250.8 bushels and $31.24 profit; No. 8, 5-6-6 yielded 234.1 bushels and $26.93 profit; No. 9, 4-8-4 yielded 233.6 bushels and $26.11 profit; No. 10, 6-6-6 yielded 216.5 bushels and $15.35 profit.

From the preceding figures it will be noted that, in the main, those mixtures reasonably low in nitrogen and high in phosphoric acid and potash gave the highest profits.

The highest two-year average was obtained from the use of a 3-8-6 fertilizer, that is, one containing 3 per cent. nitrogen, 8 per cent. phosphoric acid (citric soluble) and 6 per cent. potash. The 4-8-10, 4-8-8 and 3-6-6 mixtures all gave good profits and from the two-year average, it would appear that any one of these four formulae would give satisfactory returns. Further, the results would indicate that with a reduction in the amount of potash applied there will be a corresponding decline in the profits.

Having shown that commercial fertilizer can be used economically in the growing of potatoes, further that certain combinations give better results than others, the next question is, what is the maximum amount to apply per acre? From a two-year average, the 2,000-pound application yielded 266 bushels per acre or an increase over the average of all checks of 159 bushels, the 1,500-pound application yielded 250.2 bushels, or an increase or 143.2 bushels over all checks, the 1,000-pound application yielded 226.7 bushels per acre or an increase of 119.2 bushels over checks.

At first glance it would appear that the 2,000-pound application would be the more profitable, but when put in terms of dollars and cents the results are different. The market value of the extra 15.8 bushels increase due to the larger application is $7.57 against an extra charge of $9.09 for fertilizer. This shows a reduction in profit of $1.52 per acre from the heavier application. The increased yield of the 1,500 over 1,000-pound application was 24 bushels with a market value of $11.52 against the extra cost of $9.09 for fertilizer. This left a profit of $2.43 per acre over cost of fertilizer in favor of the 1,500 pounds. If interest on investment, freight, truckage and handling charges are taken into consideration, these figures would indicate that of the several applications employed 1,000 pounds per acre is the most economical application and not more than 1,500 pounds can be profitably used on the average soil.

The preceding figures are based on the average of all mixtures sown at the rate of 2,000, 1,500 and 1,000 pounds per acre. All marketable potatoes were valued at 55 cents per bushel and the unmarketable at 20 cents. In summarizing the results, it may be said that, at a reasonable price, a well balanced fertilizer applied at the rate of 1,000 to 1,200 pounds per acre will give profitable returns from the average soil.

## POULTRY.

Since an egg will start to incubate very slowly at a temperature of 68 deg. to 70 deg. F., it is well to put eggs that are to be used for hatching in a place that is below this temperature as soon as possible after they are laid.

Just what is the temperature at which eggs for hatching first begin to show the unfavorable effects of chilling is not so accurately known.

Practical experience seems to indicate that best results will be obtained from eggs held at as uniform a temperature as possible, somewhere between the limits of 55 deg. and 65 deg. F.

The place most likely to furnish favorable holding conditions is a cool, well-ventilated cellar.

Since thermometers will not remain accurate indefinitely it is always a wise precaution to test each one that is to be used in an incubator in order to be sure that it is indicating the correct temperature.

This may be done easily by comparing it with an ordinary clinical thermometer. Immerse the two bulbs in warm water, stir the water well to be sure that it is of uniform temperature throughout and read the two thermometers.

Care should of course be taken to use water that is only lukewarm, so that there will be no danger of breaking the thermometer. Since the important range of the incubator thermometer is from about 99 deg. to 104 deg. F. it is the scale between these limits to which most attention should be given. One need not care if the thermometer is inaccurate above or below this range if it records the temperature correctly at the incubation point.

Occasionally it is necessary to use a centigrade thermometer as the standard of comparison. Since the scale on this thermometer is entirely different from that on the Fahrenheit thermometer used in incubators it is well to remember that 104 deg. F. is equal to 40 deg. C. and that 99.5 deg. F. is the same of 37.5 deg. C. If the thermometer is accurate at these two points it is reasonably certain to be correct at intervening points on the scale.

## Poster Sells His Apples.

What a roadside poster can do has been demonstrated at the Henry Adams fruit farm. The poster is made of heavy cardboard and mounted on a wooden frame 3x5 feet. Here is what the sign says:

SLOW DOWN, FRIENDS!

Just wanted to tell you that there's some mighty fine Baldwin and Red MacIntosh apples for sale on this farm at only $1.50 per bushel. Come in.

During the first two weeks Mr. Adams sold 320 bushels of apples, bringing in a total of $480.


ONTARIO BREED BETTER $ STOCK LIVESTOCK Improvement Committee

**Farmer Proves Value of Pure Bred Bull**

W. G. Potter received $52.25 more for steers sired by a Pure Bred Bull than for steers sired by a Scrub Bull. He shipped five steers from common grade cows of equal merit. The two steers sired by a Scrub Bull brought $95.55 each, while the three steers sired by the Pure Bred Bull brought $147.80 each. The steers received the same care.

Fewer and better cattle are more profitable than a larger number of Scrub animals.

Make your cows work for you rather than you should work for them.

Your 1925 resolution was to get rid of that Scrub Bull—Have you done it?

**BETTER BULLS PAY** 103



# SUN LIFE ASSURANCE COMPANY OF CANADA

HEAD OFFICE - - MONTREAL

*A Statement of Remarkable Progress*

**Extracts from Directors' Report**

Your Directors present their fifty-fourth Annual Report with unusual satisfaction. The rapid expansion of operations, and the steady upbuilding of resources, which have so markedly characterized the Company's transactions in previous years, have continued during the past twelve months, and at a greatly increased rate of progress. . . .

. . . . These figures [herewith quoted] show the growth which has taken place in the volume of the Company's operations, and in its resources. The figures as to profit-earning power and financial strength are even more impressive.

As to profits actually paid, the sum of $6,681,652.49 has been disbursed during the year to policyholders under this heading.

As to provision for the future, the Company's position has been materially strengthened in all directions.

There has been a further upbuilding of the life policy reserves. Heretofore policies issued prior to 1908 have been valued on the basis of assuming three and a half per cent. interest, as the discounting rate for the Company's obligations, but this year the entire life assurance contracts have been valued at three per cent., the extra amount thus set aside being $1,111,032.

There has also been a strengthening of the Annuity Reserves. Recent investigations have shown a progressive increase in the average lifetime of annuitants. A special annuity reserve of $750,000 has this year been set up beyond the amount required by the Government standard.

The Company's Head Office and branch buildings and other real estate, have been written down by $750,000.

The Contingency Reserves have been strengthened by the addition of $4,000,000 taken from the earnings of the year, $3,000,000 of this amount going to the fund to provide for possible fluctuations in the market value of our securities, raising that fund to $5,000,000, and $1,000,000 going to General Contingencies account, raising that to $2,500,000. These contingency accounts thus amount now to $7,500,000.

After making these heavy allocations, the undivided surplus has yet been increased by $4,234,490, bringing it to a total of $22,107,536.

The Company is, of course, in a position to increase its already generous scale of profits to policyholders, and your Directors have pleasure in announcing, for the fifth year in succession, that such an increase will be made.

While many factors have contributed to this remarkable showing, the most noteworthy has been the large earning from investments. As has been mentioned in previous reports, it has for many years been the policy of the Company to invest in long-term bonds and similar choice securities, in order that by this means the high rates of interest then prevailing as a result of the abnormal conditions produced by the war, might be projected into future years. This policy is now bearing fruit. Current rates of interest, though still very satisfactory, are materially lower than those of former years, and as a consequence there has been a marked rise in the quotations for most of the securities owned by the Company. During the past year some of these increased values have been capitalized by sales, and a net profit of $2,891,250.48 has been realized from this source. In addition there has been an increase of $6,831,377.69 in the market value of the securities still held. Although most of this increased value is undoubtedly permanent, and due merely to the readjustment of interest rates to a more normal basis, it will be noted that the Company has carried $4,000,000 of the amount to contingency accounts, as already explained.

The rate of interest earned during the year on the mean invested assets has been 6.38 per cent., exclusive of profits from sales. This is a substantial increase over the rate of the previous year, and has resulted from our having realized on some of our holdings of government and other bonds which had risen to high figures, the proceeds being then reinvested in securities yielding better returns.

**1924**

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| **New Assurances Paid For** Increase . . . . $30,075,000 | **$137,466,000** |
| **Total Income** . . . . . Increase . . . . $15,280,000 | **$62,245,000** |
| **Payments to Policyholders and Beneficiaries** . . . . . (Total paid since organization, $183,798,000) | **$31,881,000** |
| **Assets at December 31st.** . . Increase . . . . $64,873,000 | **$274,130,000** |
| **Reserves for Unforeseen Contingencies** . . . . . | **$7,500,000** |
| **Surplus Over All Liabilities and Contingency Reserves** Increase . . . . $4,234,000 | **$22,107,000** |
| **Assurances in Force** (Net) . . Increase . . . $167,871,000 | **$871,636,000** |

Policies in force (excluding Group Policies) . . . . 384,113

Employees of firms protected by Group Policies . 30,160

***Dividends to policyholders again increased***

## The Sun Life ranks amongst the Foremost Life Assurance Institutions of the World

*Incorporated 1865* *Began business 1871*


# LANDSCAPING THE FARM HOME

## It's Easy to Transform Bleak Surroundings Into a Beauty Spot.

BY FRANK A. WAUGH.

Hundreds of farmhouses are bare and dreary—perched on high, bare foundations, unshaded by trees, with none of the decorative beauty that comes from shrubs, flowers and lawn.

They need not be so. Simple landscaping is easy to do, and the results are astonishing.

First of all comes the necessary clean-up. The home grounds must be cleaned up and kept clean. Good housekeeping is just as important outside the house as inside.

The next step is often to place a satisfactory fence around the immediate home grounds. On most farms the home yard is subject to incursions from livestock, the tractor, the flivver and the binder. These must be kept out of the front yard at all costs.

Of course this fence must be a good one. It should be made of solid posts and boards in some simple, not too ornamental, pattern. It might be painted white, gray or green. A picket fence is very pretty in a village or city, but is hardly appropriate on a farm, and a barbed-wire fence is not sufficiently attractive for the purpose in hand.

Then provide a clean and practical walk from the front door to the front gate, or to the side gate where the automobile stops, or to both. This walk should be as simple as possible.

Next, attention should be given to the lawn, for without a reasonably good lawn no home grounds can be considered satisfactory.

Nearly always it is necessary to regrade the lawn. It should be plowed up and put in thoroughly good condition. At the time of plowing, it is desirable to use a large quantity of fertilizer. Barnyard manure is best, unless it happens to be very full of weed seeds. Good commercial fertilizer may be very useful, especially if it is accompanied by a reasonable proportion of well-rotted barnyard manure. All this plant food should be well worked into the soil before the seed is sown.

Lawn seeding may be done very early in the spring or in early fall. In some localities one season is better, and in some localities another, but early spring planting is usually satisfactory, unless the soil is very dry or unless a serious spring drought ensues.

The kind of grass seed to be used on this lawn is partly a matter of taste, partly a matter of soil conditions and considerably a question of climate. The standard lawn-grass mixtures bought ready-made from the seedsmen are usually satisfactory, especially if the highest-priced mixtures are chosen. Cheap mixtures are to be entirely avoided.

In any case only the best grades of seed should be bought. These should be mixed and sowed broadcast at the rate of 120 to 150 pounds to the acre.

By this time we are ready to plant some trees. The elms, maples and oaks are especially desirable.

EFFECTIVE WINDBREAKS.

A word about windbreaks. Almost every farm home grounds must be protected from wind.

This windbreak, of course, will be located on the windward side of the buildings, usually the north and west. It can best be made up of several rows of several species of trees and shrubs. There should be at least one or two rows of evergreen trees.

Shrubs should not be planted in beds on the lawn nor as single specimens, but mainly in two continuous strips. The first of these should run around the foundation of the house.

The second strip of shrubbery will be placed along the margin of the lot to form a boundary and screen.

Along with the shrubbery about the house, vines may also be planted. These are especially desirable for climbing on verandahs or for shading windows which are too sunny.

TIME-TESTED FAVORITES.

The catalogue of shrubbery available for these plantings is a very long one.

In this list should be mentioned the old-fashioned, beautiful and indispensable lilac, several of the native dogwoods, the forsythias, the deutzias, Japanese quince, the hydrangea, any of the hardy privets, several species of bush honeysuckle, the good old-fashioned mock orange, the flowering almond, dwarf species of sumac, almost any of the hardy roses, the bridal-wreath spiræa and other spiræas and the viburnums.

Vines have been recommended for these same plantings. The species most widely available in this country are the Virginia creeper, the trumpet creeper, the Dutchman's pipe vine, the bittersweet, clematis, climbing honeysuckle, matrimony vine, wistaria and some of the grapes.

In any such planting of the farm home as we are here discussing, the planting of flowers will certainly be desirable.

All the more delicate flowers can be grown to best advantage in a separate flower garden.

In the flower garden one can grow sweet peas, asters and all his other favorites. The list is a long one, but among the hardy perennials—and hardy perennials are especially desirable—may be mentioned the following: Columbine, campanula, hardy chrysanthemum, foxglove, sneezewort, Iceland poppy and Oriental poppy, Sweet William, rudbeckia, larkspur and hollyhock.

## How I Sell My Rye.

There is seldom any demand for rye, and the price paid for same is very low. Last fall I had some winter rye which I was unable to sell for any reasonable price. I could not use it for chickens or stock.

I brought it to the mill and ground it up into fine flour. I bought some white sacks, 50-pound size, and sacked it up neatly. Afterwards these were marked "Rye."

There was no difficulty in selling this flour to retail grocers, or to others who wished rye flour. I received almost twice the amount that the whole grain would have brought. —A. S. H.

A dead ear of corn may mean nine hundred missing stalks.

Fish are scaled and fowls plucked easily and quickly if dipped into boiling water for an instant.

## SHEEP.

Adequate preparation should beforehand be made for handling the early lambs, as they are very sensitive and readily succumb to adverse conditions. Lambs dropped during the severe winter weather are out of season, and to insure success natural conditions must be provided. Early lambs are profitable, but demand attentive care.

The stable should be warm, light and dry. My experience has been that there is nothing quite equal to a basement stable with a wall on the west and north side and having a south exposure. A wall of either stone or concrete completely shuts out the sharp cutting winds from the north and west and aids in keeping the stable at a more uniform temperature. If a wall is not available a double matched siding with an airspace between is second best.

Half the battle of successful management of early lambs depends upon having a place where it is warm and where a uniform temperature can be maintained. The stable should be well ventilated, yet, at the same time, free from drafts and never so cold as to chill the lambs. Water should never freeze in a stable where early lambs are being raised until the lambs are at least six weeks old.

Much of the trouble encountered in handling early lambs may be obviated by giving the ewes extra care so that the lambs will come strong and full of vitality. Weak, puny, early lambs are a discouraging proposition, and especially in cold weather. I have found that by feeding the ewes well they drop healthy, robust lambs, come to their milk readily and cause but little trouble at lambing.

## When Stock is Poisoned.

Quick action is often important when animals are poisoned. Until veterinarian arrives, give copious drenches of new milk or melted lard. Give sheep that have eaten poison weeds ten grains of powdered alum and permanganate of potash in one pint of water, and repeat in twenty minutes. —Dr. A. S. Alexander.

Have faith in co-operation—but remember that faith without work is nothing.—G. M.