

Two Things About Using Fertilizers

By Henry G. Bell

How To Raise Dollars—Nature's mysterious cycle is in operation at all times. Plantfood is turned into crops, some to be sold as money makers, others to be fed to livestock, which in turn are sold on foot, or their products—milk, butter, cheese, wool, etc.—are turned into money.

Various operations on soils aid in increasing their productive power. Such operations, for instance, as drainage, good tillage, the upbuilding of humus and such additions as stock manure and fertilizers are reflected in increased and improved crops, which are still further reflected in more and better livestock products. The ultimate expression is found in the farmer's bank account, if his business is managed efficiently.

Leaks occur in the cycle. If they are due to bad soil handling, the cure is obvious. If they are the result of unbalanced plantfood, or lack of plantfood, again the cure is plain. By liberal additions of plantfood in the shape of manure and fertilizers, common farm deficiencies can be overcome and paying returns assured. Various soils and various crops require somewhat different treatments from a plantfood standpoint.

Does It Pay?—Crops can be increased by the liberal use of fertilizers. This fact has been established by Experiment Station tests and innumerable farm experiences. From the great host of both we quote a few authentic and definite results to illustrate the point:

The Dominion Experimental Farms, Ottawa, after a test of fertilizers for several years, quote increases in potato yields of over 100 bushels per acre, directly attributable to the addition of high-grade fertilizers.

In tests carried on in 1920 by the Ontario Agricultural College, corn grown on clay soils showed an increase over check plots varying from 42 to 56 bushels where proper fertilizers were applied. On sandy loam the increase from complete fertilizers was 44 bushels per acre. Sugar beets in a similar test showed an increase of 2.3-10 tons per acre where complete fertilizers were applied.

At Ohio Experiment Station, Worcester, in a twenty-five year experiment where corn, oats, wheat and hay were grown in rotation, there was an average increase from fertilizers of all sorts on corn of 14.9 bushels. On wheat the average increase over no fertilizer was 11.3 bushels. On oats it was 11.8 bushels, and on clover and timothy 1,764 lbs. On these tests fertilizers were applied in the usual farm way in addition to the rotation of crops.

At Indiana Station, where fertilizer was applied in 1920 to corn, an increase of 42 bushels per acre was obtained, while on wheat under similar conditions the increase was 12.9 bushels per acre.

Actual farmers' experiences have paralleled and in many cases exceeded the results obtained at Experiment Stations.

In 1920 Stanley Merrill of Lambeth, Ont., applied high grade fertilizers on a one-fifth acre block of potatoes, obtaining as follows:

No fertilizer 137.5 bus.
500 lbs. per acre 187.5 bus.
750 lbs. per acre 216.6 bus.
1,000 lbs. per acre 300.0 bus.

J. V. Potvin of Carp, Ont., in the same year obtained 210 bushels of potatoes where no fertilizer was applied, against 293 bushels where 500 lbs. of good grade fertilizer was used.

Mr. Fred W. Warnica, Allandale, Ont., fertilized ensilage corn in 1921. Where no fertilizer was applied he got a yield of 5.5 tons per acre; where 500 lbs. was applied his yield was 7.2 tons; where 750 lbs. was applied per acre his yield was 8.6 tons.

Mr. Walter Holmes of Eberts, Ont., gave a fair application of suitable fertilizer to his corn in 1921. He says: "I applied fertilizer (2-12-2) at the rate of 260 lbs. per acre and found the corn matured fully ten days earlier and produced 25 bushels per acre more grain than the unfertilized. The soil was a good clay loam. In 1919 the field grew clover and in 1920 it had a crop of wheat, while this year it grew corn."

Mr. Henry Hartley, Woodstock, added a 4-10 fertilizer to his corn, on part alone and on one piece in addition to manure. The report of this test reads: "The plot manured and fertilized is by all means the best. The corn was tall and nearly all of it ripe. The plot not fertilized shows the tops very uneven in height and small in size. The greatest difference of all between the plots was in the maturity of the corn and the yield of ears. On the unfertilized plots most of the ears were simply nubbins with very little corn on them, but with an occasional ear nearly matured."

Mr. John Schuell, Paquette, Ont., grew sugar beets on a clay loam following corn. He added fertilizer at

the rate of 250 and 500 lbs. per acre, obtaining the following yields:

No fertilizer 27 tons
250 lbs. per acre 29 tons
500 lbs. per acre 31 tons

Mr. C. W. Thompson of Blenheim harvested 16 1/4 tons of beets per acre on the fertilized part of his field against 12 1/2 tons where no fertilizer was applied.

With regard to tomatoes, Messrs. Campbell Bros., Simcoe, Ont., in 1921 grew a crop on sandy loam following soil that was manured in 1919. They applied a 4-8-6 fertilizer at rates of 250 and 500 lbs. per acre, obtaining yields as follows:

No fertilizer 154 bus.
250 lbs. per acre 212 bus.
500 lbs. per acre 248 bus.

The report reads: "I must say that the results in this case are most striking. The plot upon which the fertilizer was applied heaviest is easily 50 per cent. better than where no fertilizer was applied. There is also a gradual falling off in the crop where lower amounts of fertilizer were applied. This was a poor year for tomatoes and the average yield was not much over 50 per cent. The plants were badly blighted with leaf spot. On the plots where the largest amount of fertilizer was applied the plants were healthy, showing little injury from blight, and were almost a perfect stand."

Now such gains pay big. Take, for instance, a gain of 10 bushels per acre in wheat yield as the result of fertilizing. Such a figure is quite reasonable, in fact is low. 10 bushels per acre gain is commonly obtained from applying 200 lbs. per acre of 2-8-2 or 3-8-3. Here is how it figures out:

10 bus. gain in wheat at \$1 per bus. \$10.00
200 lbs. 2-8-2 4.50

Gain from fertilizers per acre \$ 5.50

Of course there is a little more grain to handle, but the increase in straw and improvement in quality of grain will more than counterbalance this. The \$5.50 per acre gain from fertilizing is largely clear gain or velvet.

Take Mr. Schuell's experience on sugar beets. His yields were as follows:

With 500 lbs. 3-8-3...31 tons per acre
Without fertilizer...27 tons per acre

Gain from fertilizer...4 tons per acre

4 tons sugar beets at \$6 per ton, \$24
500 lbs. 3-8-3 12

Gain from fertilizing \$12

When such a percentage can be made on money invested in fertilizer, even under prevailing conditions of low prices for farm products, it is surely good business for Ontario farmers to give immediate attention to this means of increasing their farm returns.

More bushels and tons of produce in 1922 spell more dollars return. This fact is beyond question. During a period of low prices the farmer who gets the biggest yield per acre makes the most total dollars and in the end has the greatest net return. A very striking illustration is provided by the University of Ohio in discussing the relation of crop yield to farm returns, in a pamphlet published in 1920. It reads as follows:

It Pays to Grow Large Crops.

The following table is based upon figures secured from 80 farms in Washington township, Montgomery County, in 1916. The farms were divided into two groups, those farms having yields above the average going into one group, and those with yields below the average in another.

Crop Yields and Labor Income.

Crop	No. of Farms	Crop Acres	Labor Income
Above average	38	63	\$769
Below average	42	66	393

It will be noted that here also, although the size of the farm in the two groups is nearly the same, those having yields above the average returned a labor income or net profit nearly twice as large as those having yields below the average.

In Scioto County last year (1919), 36 farmers raised an average of \$2,855 worth of crops from 65 acres, the most profitable five of these farms averaging \$3,445 worth on 62 acres. The average amount spent for manure and fertilizer was only \$130, while on the most profitable five the average expenditure for manure and fertilizer was \$226. Good crop yields are fundamental in the farming business. Though the farming be strong in all phases except crop yields, the results will be limited.

"No legacy is so rich as honesty." Shakespeare.

So much depends upon the feed and care of the mare, that the owner has himself to thank for success or disappointment with his colts.

Why We Miss Uncle John.

When Uncle John Newing moved out of our neighborhood everybody was sorry. He was a handy man to have around. He could splice a hay rope, or mend anything made of wood or iron, or build a fence out of almost nothing. The neighbors always knew where to go when they needed a job of this kind done.

But the thing folks missed, when the old man went away, was not so much his skill in fixing things up, as it was his right royal way of responding to the calls which came. No matter how busy he was about his own affairs, he never failed to drop what he was doing and go over to see what was wrong at the neighbor's. In short, we missed Uncle John's good heart and thoughtfulness for others.

And do you think anything better can be said of a man than that when he is gone there is a big hole in the life of the neighborhood?

It is great to grow the finest crops of anybody in ten counties; there is something worth while in being rightly called the thriftiest farmer in the neighborhood; but the world can get along with a few bushels less of potatoes, if it has the good heart left.

Some folks move away and nobody cares much, just because these folks never did anything to show they had a heart in them. They could mend ropes and fix fences and all that, but you would rather have an icicle dropped down your back than to have them smile at you.—F. V.

Control of the Corn Borer.

The Entomological Branch of the Dominion Department of Agriculture is appealing to farmers in affected districts for co-operation in the control of the European corn borer. It is only by the co-operation of the farmer and the entomologist that the control of the pest can be brought about. Its investigations the Branch has arrived at a point where it feels justified in making three concrete recommendations to this end. The first is that, in south-western Ontario, all corn be planted as late as is considered safe for the average year. Last year Dent was planted late in May and suffered

greater damage. It is neither Flint nor Dent earlier than May 28. The question is that the corn be planted as possible as soon as it can be planted and the stubble plowed down early in the fall, or by the last of September at the latest. The third recommendation is that all parts of the corn plant have not been used for feeding be destroyed by burning before the 1st of June.—Mr. H. G. Crowfoot, entomologist of the Division of Field Crop and Garden Insects of the Entomological Branch, is carrying out special experiments in control in the region of St. Thomas, Elgin County.

The Dairy

I am becoming more firmly convinced every day that dairymen should grow more grain upon their farms and cut down feed bills. There is little profit in dairying nowadays if all the grain, or even a large portion, has to be purchased. During the pasture month I feed equal parts of ground oats, corn meal, wheat bran, with an allowance of one and a half pounds of condensed meal daily per animal. I do not have any fast and set rule as to amount of grain I feed daily, but I find that under average conditions a pound of grain to three pounds of milk is about right. I do not attempt heavy grain feeding, but maintain my herd under average farm conditions.

Apple Blossoms.

Dainty little blossoms,
With you coloring faint,
Sending forth a fragrance rare,
That no bush can paint;
Springtime fairy children,
Nodding to the breeze,
Are you serious cheer the world?
Tell me, blossoms, please.

In the apple orchard
What a picture sweet,
All the trees in pink and white,
The month of May to greet!
We welcome the O Springtime,
With your bird and leaves,
Sun, and rain, and flowers,
And your blossoming trees.

—M.C.D.

Exit the Thistle.

At last farmers have a very satisfactory recipe for the thistle patch. At least, this is true of those who have soil suited to the production of alfalfa and this crop can be grown upon a wide variety of land. Where one has patches of sties in a field, he can get rid of them by devoting that field to alfalfa for a period of three or more years. If the land is sour it will be necessary to add lime in order to make gain of a good catch of alfalfa. The extensive root system of this plant, either with the frequent cuttings wipe out the thistles in a brief period of time.

For Home and Country

How Brockville Got a Rest Room.

In 1919 the members of Algonquin Institute were discussing the possibility of establishing a Rest Room in Brockville, the centre to which many of them went three times a week, to do their marketing and shopping, for women with children, as many of them were. The hotel war-time prices had become prohibitive, and there was not other place where they could rest, leave parcels, or take children. Therefore, a committee of two was appointed to see about securing accommodation suitable for a public rest room. This was found, but was going to be difficult for a single Institute to finance. Eight other branches were united to meet the original movers in Brockville in May, 1920, and Delta, Mallorytown, South Augusta, Morton and Algonquin responded by sending delegates to both over ways and means. It was decided to ask the town to help, and with the encouragement of the Mayor and a few of the merchants a canvass of the business men was begun. "The Board of Trade helped by giving us three fine rooms with light, heat and water, we to assume the management and provide a Matron," reports the Secretary. "A Committee was formed consisting of a President, Secretary, Treasurer and Directors. 500 yearly membership tickets were sold \$1.00 each and a Matron secured who was very capable, very business like, and in every

way a lady. Our sitting-room is furnished with easy chairs, couch window seat and writing desk, donated chiefly by the merchants. There is a kitchenette, a lavatory with wash-bowls, clean towels, and a mirror. We have everything we need in short, except a phone, which we hope to have very soon. The rooms are kept spotlessly clean and very home-like, and are open from 9 a.m. until 10 p.m. every day except Sundays, and in July and August, Wednesday afternoons. Many tourists passing through make use of our rooms and to those we make a small charge. Our Matron receives \$400 annually, our total expenses for last year being about \$500. We had a good year in every respect and closed with a little balance to our credit in the bank."

What Father Ontario Will Do For the Home-Makers.

COMMUNITY HALLS—A booklet giving full particulars as to the basis upon which Government Grants are given in establishing Community Halls will be furnished upon application. The government is prepared to give a grant on the basis of one quarter of the total outlay, up to \$10,000. Write to the Institutes Branch for a copy of the booklet. A representative of the Department will be sent to advise with representative committees regarding plans for Community Halls.

Poultry

I have been having the long and short worm in my flock of chickens, but seem to have it cured, but the treatment is expensive. I wondered if you could advise something to give that would be a preventative. Is there anything I could give young chicks to prevent the same trouble?—Mrs. J. W.

Worms can be removed from poultry by using tobacco stems at the rate of a pound of finely ground stems to each 100 hens. Steep the stems for a couple of hours after just covering them with water. Add the mixture to about four quarts of mash. Keep the birds hungry during the day and give the dose of tobacco mash about three o'clock in the afternoon. Two hours later give about a pound of epsom salts dissolved in water and mixed with mash. Soon the birds will go to roost and many of the worms will be expelled on the droppings where they can be destroyed rather than spread over the range.

Worms can largely be prevented by keeping the range free from overcrowding and feeding the birds a balanced ration so they will be vigorous and less subject to attacks from parasites. Stagnant ponds on the range seem to increase parasites. A well-drained range disinfected by sunning is a help in preventing worms in poultry.

European Food Situation.

The winter grain crops of Europe, with the exception of Germany and the Netherlands, are reported to have made favorable progress during the month of March. In Germany the ground was exposed to late frost with injury to wheat and rye. It is also reported that a great shortage of farm help may follow the keen demand for factory hands in that country. This may reduce the sugar beet acreage and lessen the ability of Germany to re-enter the sugar export trade on a broad scale this year. The Italian wheat harvest can be no more than a fair crop, while Roumania's acreage is much below that of last year.

An Excellent Whitewash.

Slake one-half bushel fresh lime with boiling water, covering it to keep in the steam. Strain the liquid through a fine sieve and add seven pounds of fine salt, previously dissolved in warm water; three pounds ground rice, boiled to a thin paste and stirred in boiling hot; one-half pound bolted gilder's whitening; one pound white glue, which first soak in cold water until swollen up, then melt over a fire, avoiding burning it. Add five gallons hot water to the mixture, stir well, and let stand a few days covered up. When ready to use the wash, make it boiling hot. A pint of this mixture will cover nearly a square yard.

Register the Calves.

Where one is producing pure-bred cattle, it pays to register the calves as soon after birth as possible. Practically all the dairy breeds make a lower rate for young animals than for older ones. This saving can be made by registering early. Besides, where one looks after this duty before turning the calves to pasture, he avoids the possibility of making an error in identifying the different animals.

Sacrifices to a Fault

We all know the extent to which many mothers sacrifice their own comfort and pleasure in order to give their children advantages. There is nothing more to be admired in the history of the race than the fine type of unselfish devotion which mothers have shown in this respect. The tragic part of it is that too frequently the children are unappreciative of mother's service and even take advantage of her willingness to give up for them.

We often wonder if the purpose for which mothers make these sacrifices is not frequently missed entirely. Instead of allowing children to have all the fun and mother do all the work, would not children be more benefited if mother insisted that they perform their part of the daily tasks about the home? Indeed, experience and observation leads us to believe that the children themselves would gain a larger proportion of pleasure from their play hours after they had rendered the services which it is within their power to give, than where they were free to do as they please. Nothing is finer than to enter a home where every person has been trained to feel a responsibility for certain tasks. Such homes are the very highest contribution which a family can make to our national welfare and they also bring to the parents the greatest possible degree of satisfaction.

A Worth-while Life.

A month ago the writer attended the funeral of his best friend, a farmer boy who grew up with him in the same community and with whom he had been closely associated all his life. As a boy he was industrious and thrifty and earned the money necessary for a start in farming. He married a fitting helpmeet and settled down to the business of his life, first on a rented farm, later on a farm of his own, where his industry and thrift and good management contributed to the earning of a competence, in addition to bringing up a fine family of three children. But the choicest among his achievements was the place he won in the community in which he lived, a place which was attested by the host of friends and acquaintances who attended his funeral when he was stricken down in the prime of his manhood, and the tributes they one and all paid him.

He lived a worth-while life. His greatest success was his wholesome influence on the community in which he lived. His life was worthy of emulation by all of us. It measured up to the critical standard by which all of us must one day be judged. There is no greater reward to a well-spent life than to have all those with whom we come in contact speak well of us.

Skim milk or buttermilk is considered indispensable for chicks during the early development. If the chicks have all the milk they will drink, meat scrap may be eliminated from the mash ration.

British princes and princesses may not marry before the age of twenty-five without the King's consent; if over twenty-five they may marry by giving notice twelve months beforehand to the Privy Council, unless Parliament decides against the proposed match.