

flower and vegetable shows, parks and gardens. Describe the exhibition of flowers and vegetables you may hold in your own school. Encourage the children to photograph their plots from time to time, and insert these pictures in their journal. The keeping of a journal may possibly prepare a child as readily to be a methodical bookkeeper, journalist or scientist as to be a gardener.

A FEW FACTS ABOUT MANURE

By Frank T. Shutt, D.Sc., Dominion Chemist, in the "Agricultural War Book"

Farm manures constitute one of the most important sources of fertility, and no one who would build up his soil intelligently and economically can ignore the results of investigations which have had for their object the study of their nature and best methods of use. Information regarding manures must always be timely, if only for the reason that on all rationally conducted farms they are produced all the year round. In

the following paragraphs we merely state in very concise form some of the more important facts respecting manures; the thoughtful farmer will work out from them the methods of handling and using manure best suited to his conditions and circumstances.

Speaking broadly, the function of manure in the soil may be said to be twofold, the enrichment of the soil in the essential elements of fertility—nitrogen, phosphoric acid and potash, and the furnishing of humus-forming material for the general improvement of tilth.

The plant food contained in manure is that taken from our fields by the growth of our crops, with probably an additional amount from purchased mill feeds; it stands to reason, since the available plant food in soils is not inexhaustible, that if we are to maintain the soil's productiveness we must carefully save and put back into the soil all the manure produced on the farm. And the more we can produce the better, if we would have increased crop

yields. The farm's store of manure in some cases might with profit be supplemented by the judicious application of commercial fertilizers, which are to be valued simply for their percentages of plant food, but from an economic standpoint as well as from the very nature of these materials, fertilizers can never be used as a substitute for manure.

Humus Very Important

Humus is one of the most important constituents of soils. It mellowes a soil, makes it warmer and more retentive of moisture, and thus renders it a more fitting and comfortable medium for seed germination and root extension; in a word, it puts a soil in good heart. Manure in furnishing humus-forming material—organic matter—supplies what no commercial fertilizer possesses, no matter how rich it may be in plant food. It is humus that gives "life" to the soil, for it is the material upon which the useful micro-organisms feed, organisms that prepare food for farm crops. It is not wise or right, therefore,

to value manure simply and solely from its content of nitrogen, phosphoric acid and potash; it has an additional value for the general improvement of soils that cannot be reduced to dollars and cents—a value unequalled for this purpose by any other material.

Changes which mean decomposition and a certain loss in fertilizing value, begin to take place as soon as manure is voided. It is practically impossible to get manure into the soil, its best storehouse, without some loss; this may be considered inevitable. But there is no necessity for the tremendous losses that undoubtedly occur today on many Canadian farms, losses which at a conservative estimate reduce the value of the manure thirty to fifty per cent. These losses are due to fermentation and leaching, and take place in the barnyard and manure pile. The losses from excessive fermentation are in nitrogen—the most costly of all the elements of plant food—and in organic matter; those from leaching are chiefly in the more soluble nitrogen and potash compounds.

Use Fresh Manure

It is evident, therefore, that the sooner the manure can be got into the soil the better, unless for some special purpose rotted manure is required. Rotting for several months in large heaps results in very large losses, and especially so when the manure is in loose, unprotected piles. If it is impracticable, by reason of the depth of snow, or the condition of the land, to immediately spread the fresh manure, keep the pile compact and moist and do not turn it. These precautions will minimize the losses.

The liquid portion of the manure is by far the more valuable, for it is not only richer in nitrogen and potash than the solid, but these elements are present in a soluble and immediately available condition and can be at once utilized by crops. It is, therefore, the part of wisdom to use sufficient litter in the barns and stables to absorb all the liquid. If the supply of straw is short, sawdust and air-dried peat or muck may be employed as supplemental litter.

The freshest and longest manure should be used on the heavy loams, the oldest on the light and sandy lands. Do not bury the manure too deeply when plowing it under, four or five inches is sufficient. Apply it with a manure spreader if at all possible, for this implement saves labor and in spreading the manure uniformly does most efficient work. Use the manure for the hoed crop of the rotation corn or roots, and a top dressing early in the season on an impoverished meadow will not infrequently be found to give a good return.

Increased Implement Duties

Continued from Page 7

ferred severely during the past two years from loss of their crops thru unfavorable weather, and who certainly are not in a position to bear any additional taxation. It is of no use to talk about the patriotic duty of paying unjust taxes. Canada is sending her finest young men to the front, and there is no need to talk about patriotism. This is a matter of business, and if the government is really anxious to increase production, it should certainly find some other way of raising revenues than by putting taxes upon the implements which the farmers must use in order to produce their crops."

To say that there is no power above the state, and if the state is only strong enough it has the right to anything and everything that will conduce to its own benefit—that is practical atheism.—Sir Oliver Lodge.

Sacrifice is the one pure, sacred and efficacious virtue, the halo that crowns and sanctifies the human soul.—Mazzini.

The next man you pass has probably more burdens to carry than you.—William Purvis.

The most sublime act is to set another before you.—W. Blake.

GOPHERCIDE

(SOLUBLE STRYCHNINE)

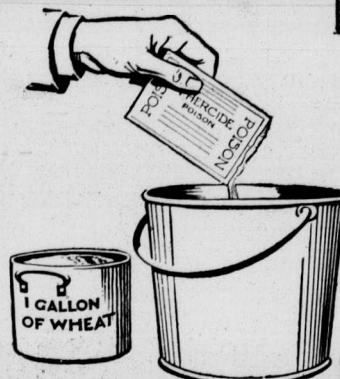
proved to the satisfaction of thousands of farmers last year that it is the most effective Gopher Poison made. It is a preparation of the deadly strychnine, so treated by our chemists that the bitter taste is covered, and it is easily dissolved in warm water, without acids or vinegar.

GOPHERCIDE is Easy to Prepare

In answer to your enquiry re my experience with Gophercide, I might say I find it a good effective remedy for destroying gophers. I ALSO THINK IT IS HANDIER TO USE than the ordinary method of dissolving strychnine in vinegar or acids. The cost is only a small item when you consider the gophers it will destroy.

Yours truly, C. RUSKEN.

To use, simply dissolve a 50c. package of GOPHERCIDE in two quarts of warm water, soak a gallon of wheat in it for a few hours, and sprinkle the wheat around the gopher holes.



GOPHERCIDE is Greedily Eaten



Auburndale, Alta., June 15th, 1914. I purchased a package of Gophercide this spring and used it as directed. I found it to be the best gopher poison I have used (and I have used a good many kinds) as THE GOPHERS TAKE THE POISONED GRAIN VERY READILY and the poison is very effective.

Yours truly, A. H. GREEN.

One of the most important advantages of GOPHERCIDE is that the intensely bitter taste which warns the gophers against strychnine has been entirely overcome.

GOPHERCIDE is Sure to Kill

North End, Sask., May 17th, 1914. In regard to Gophercide will say I HAVE NOT HEARD THE SQUEAK OF A GOPHER ON FIELD SINCE I PUT OUT THE POISON. It is O. K.—far ahead of strychnine, being so easily prepared for the gopher.

Yours truly, DAVID REYNOLDS.

GOPHERCIDE soaks right through the wheat and poisons it thoroughly. Though the gophers do not get it till it has been out for days and exposed to the rain, it will kill them quick and sure.

If your druggist hasn't Gophercide on hand, write for it to our nearest branch, enclosing 50c. for each package required. National Drug and Chemical Company of Canada, Limited, Montreal. Branches at Winnipeg, Regina, Calgary and Edmonton. 13

