Value and Conservation of Farm Manure

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THERE was more value in the manure produced on Canadian farms in 1913 than in the gold dug from all the mines of our country in the same year. Prof. S. D. Connor of Perdue University estimates that there is more manure wasted in the United States each year than the value of all the gold dug from all the mines in the world in any one year. These are staggering figures, but Prof. Connor has proved his case.

Dairy farmers, as I have found them, are too inclined to regard manure as an unimportant by-product. At the same time our agricultural colleges are telling us that the manurial product of a single well-fed dairy cow in one year is worth at least $20. A cow producing $80 worth of milk, therefore, has a three-figure income when we add the value of the manure. The old estimate that the manure will pay for the labor involved in looking after the dairy herd, is nearer correct than some of us have been inclined to think. That it will if it is well cared for.

Where Dollars Are Lost.

But it isn't. I have seen a year's supply of manure thrown through a hole in the side of the barn and allowed to leech under the eaves and ferment until it was hardly worth carrying out and spreading on the land. In addition, it was rotting the building and adding to the expense for repairs. Other farmers still pile manure carelessly in the barnyard, where it is exposed to the rain, to the sun, and perhaps is right in the way of the water running off the roofs of surrounding buildings. This is almost criminal negligence From a business standpoint it is rank foolishness. Manure is too valuable to be treated in such a way.

The disposal of the summer manure has always been the most difficult point with us. We apply some with the manure spreader to portions of the pasture, but as pasture is limited, and as cows will not feed on the part so manured for some weeks after, we cannot follow this practice extensively. In the fall, however, our manure shed is thoroughly cleaned out and applied as a top dressing to the new seeding. When binding the grain I always watch the seeding carefully, and when I have got over a field I know just where the weakest parts of the seeding are and where the manure is most needed. A light application of not more than three or four loads to the acre, applied with our spreader, will do wonders in reviving a weak catch of either clover or alfalfa.

Throughout the winter the manure is carried to the fields each day and spread as made. In this way loss through leeching and fermentation are both reduced to a minimum. In fact, there is no loss from fermentation. All of our winter manure is applied to the land intended for corn and roots the following season. To indicate just where we have manure, stakes are planted in the snow and moved each day.

Where the Fields are Hillsides

This plan might not be so advisable on steep hillsides. Were my farm not level my plan would be to haul the manure at intervals through the winter and pile it in the fields, so it would be right handy for spreading in the spring. One advantage of this plan would be that the manure spreader could be used in the spring, and I regard manure spread with the spreader as 10 per cent. more efficient in the feeding of the plants than the manure that is thrown out more or less in lumps by hand. In field piles have the sides steep and the manure well tramped down to reduce losses to a minimum.

Here is another point I would emphasize. Perhaps you have not put cement floors in your cow stable because you did not think you could afford them as yet. Experiments conducted at the Ohio Station showed conclusively that the amount of manure lost in one season through not having tight floors was of sufficient value to have paid for cementing. It is only with cement floors and tight gutters that the liquid portion of the manure can be conserved, and the liquid excrement contains two-thirds of the value of the manure.

Why Ventilation is Necessary

APPROXIMATELY one-half of the weight of an animal's body is composed of oxygen. What would seem more natural, therefore, than to conclude that the most important function of ventilation in the cow stable is to supply the cattle with lots of oxygen and remove the carbon dioxide which they cannot use, and which is believed to be decidedly injurious. Dr. Lipp of South Dakota, however, in a recent address, claims that this old reasoning is altogether wrong. His conclusions after much careful investigation extending over a period of years are summed up in the following paragraph.

"That lack of ventilation, instead of being injurious in the usually accepted manner, is harmful for another reason, namely, that excessive stall temperature and humidity interfere with the elimination of heat from the skin, and water from the respiratory organs. . . . All present information leads to the final conclusion that ventilation is but a matter of air movement, for the elimination of body heat and water. Any satisfactory system of ventilation secures these three requisites, namely, air movement, and proper regulation of stable temperature and humidity. These requisites lacking, all the evil effects of poor ventilation or lack of it at once become evident."

Dr Lipp's conclusions do not minimize the importance of ventilation in the least. So long as the results are satisfactory the practical stock man will not worry about the whys and wherefores.

Manure is Here Well Conserved by Drawing Daily to the Fields

Three loads of manure are produced daily on this dairy farm, near Ottawa, Ont. The illustration shows all the manure there was around the buildings when the farm was visited by an editor of Farm and Dairy. Losses through fermentation and leaching are avoided by hauling to the fields and spreading each day through the winter.

Seed Corn for Ensilage Production

IN Ontario alone 400,000 acres of corn are grown annually for ensilage. The amount and quality of this ensilage is largely dependent upon the variety or strain and the fertility of the seed. In most districts in Canada early maturing varieties and strains are required and strong germinating power is essential to a full stand. The unsatisfactory crops produced by many growers throughout the country provide abundant evidence that such seed is not available, or if it is available is not used. In order to procure more definite information in regard to the seed corn being planted, an investigation was conducted in Ontario and Quebec last spring under the direction of E. D. Eddy, B.S.A., Chief Seed Inspector at Ottawa. Over 1,700 samples of seed corn were collected from farmers along with information as to its source, methods of planting, and so forth. The following table summarizes the inspector's reports respecting the origin of seed, how it was shipped and how planted.

Corn Used in Ontario and Quebec

Origin of Seed: From dealers	85	per cent.
From growers	11	per cent.
Home grown	4	per cent.
How shipped: On the ear	22.46	per cent.
Shelled	77.54	per cent.
How planted: in drills	74.29	per cent.
In hills	25.71	per cent.

"It will be noted that a large proportion of the seed is procured through seed dealers," says Mr. Eddy in discussing the results of the investigations. "A little of this is Ontario-grown corn shipped on the ear, but nearly all of it is shelled and a large proportion is imported from the central and western states. Naturally much of this seed is of varieties and strains not suitable to Canadian conditions. During the past few years some of the best ensilage growers have purchased corn of known varieties direct from growers in south-western Ontario. It is usually shipped on the ear and as a rule is much better, both in suitability for local conditions and in germination, than that handled by local dealers.

"Purchasing seed corn on the ear has many advantages, but less than one-quarter of the farmers visited procure it in this way. When on the ear the quality can be much more easily determined. The poor ears can be discarded, the buts and tips removed before shelling, and a much better sample of seed procured. The poor-quality corn sold for seed is nearly always shelled as its inferiority can be less easily detected. The buts and tips, off-type ears and nubbins may be included. Unless the corn has been well dried before shelling it is more liable to heat and lose its vitality than when on the ear. Some first-class seed is sold shelled. It is characterized by large, well-dried, uniform kernels, the result of shelling selected ears that have been properly cured and the buts and tips removed. Corn on the ear costs more on account of the extra work in handling and the transportation charges, but as a rule the increased cost is many times repaid in the larger yield and superior quality of the crop.

Best Growers Plant in Hills

"Many of the best growers plant in hills; they claim that a larger yield of grain in proportion to stalk and leaf is obtained in this way as well as better facilities for cultivation. It will be noted, however, that about three-quarters of the farmers visited follow the drill method."

All the samples selected were submitted to a

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