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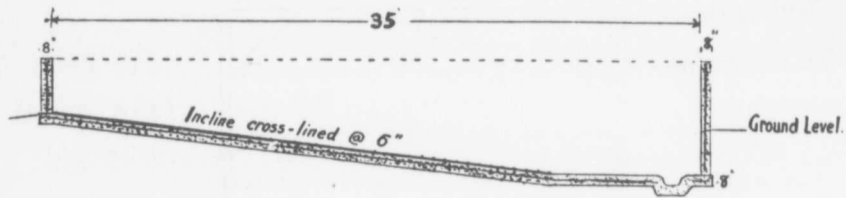


# THE STOCKMAN'S DUTY TO CONSERVE MANURES

BY

E. S. ARCHIBALD.

It is a recognized, proven fact that, ultimately, the only agriculturally successful communities and countries are those where mixed farming is commonly practised. Without the use of barnyard manure, however, the following of such a system of farming is impracticable. Live stock husbandry, then, is the backbone of permanent agricultural prosperity. There are numerous reasons for this, but one of the most outstanding is the maintenance of farm fertility. If, then, the by-products of animal husbandry, namely, manures, are of such intrinsic value, why do over 95 per cent of Canadian stock farmers take no special care to prevent waste? In all other great industries the conservation of the by-products is given special care and such are made to largely meet a large share of operating expenses and to counterbalance overhead charges. Why not in agriculture? Manure is one of the raw materials in field hus-



bandry. In all other industries, raw materials are carefully preserved and it is the duty of every Canadian farmer to adopt similar sound business practices.

This very important question might be briefly summarized for all Canadian live stock men as follows:—

1. The value of manure as voided depends on the age, condition, and health of the animals and the quality of the feed. Young growing animals and heavy-producing milch cows extract from 25 to 50 per cent of the fertilizing value from the food consumed, while unthrifty and fat animals extract only from 8 to 20 per cent, the balance being voided in the manure. The fertilizing elements in the manure, however, are in direct proportion to the same elements contained in the foodstuffs. For example, for milk production cottonseed meal and linseed oilmeal are worth about the same pound for pound, yet high grade cottonseed meal contains from 10 to 20 per cent more of the fertilizing ingredients than does the linseed meal; hence the manure from the former would be more valuable.

## DOMINION EXPERIMENTAL FARMS.

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Based on the lowest values of the fertilizing elements sold in commercial fertilizers, the chemical value of good barnyard manure alone, *as voided*, is approximately \$2.25 per ton.

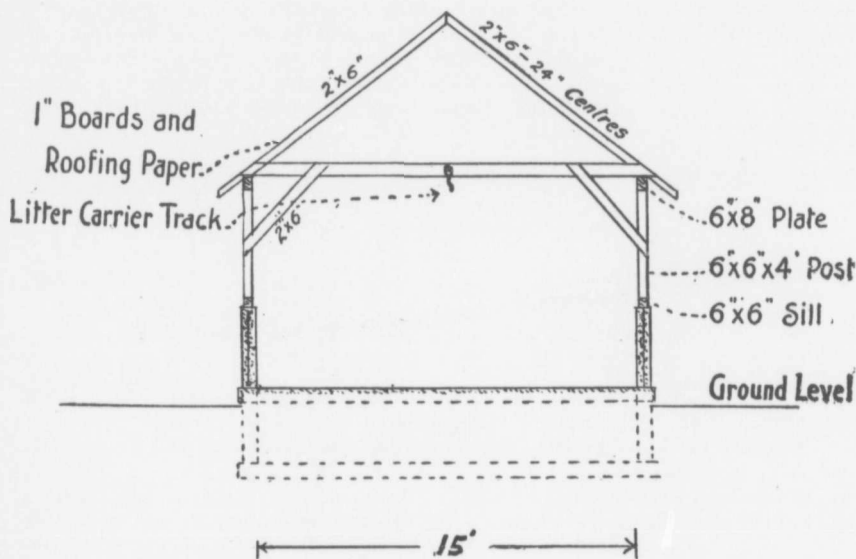
2. Although incapable of exact valuation, authorities emphatically state that the humus value of manure is fully equal to the chemical value.

3. The liquid manure is not only richer than the solid manure, but is more readily available for the plants. Particular attention is herewith drawn to circular No. 8 of the Experimental Farms, namely, "Manures and Fertilizers," by Dr. Frank T. Shutt, Dominion Chemist.

4. The losses of solid manure result from heating, bleaching, leaching, washing, and denitrification.

The losses of liquid manure result from natural drainage, washing from rain, etc. The losses of humus in manures result from rotting, heating, and washing.

To prevent all these losses before the manure is worked into the soil, should be the careful study of every farmer.



5. Manure can be best handled as follows:—

- (1) Absorb and hold all liquids.
- (2) Haul manure from the barns as made.
- (3) Spread and work into the soil as soon as possible.

There are certain months in the year when the above practice is impossible. If it is necessary to stack manure, select a site for stack with slightly concave bottom, preferably on a clay spot in the field. Make the stacks with the sides square and the top slightly concave and thoroughly tramped.

There are districts in Canada where it is advisable to make an artificial pit for protecting both the liquid and solid manures against heavy rains. A sketch of an approved pit is herewith given.

6. It is very conservatively estimated that the chemical losses of manures on the average farm in Canada are 33 per cent of the solid manure, 66 per cent of the liquid manure, and at least 20 per cent of the humus manure.

7. The following table gives briefly the number of live stock in Canada for the year 1914 and the average per farm:—

	In Canada.	Per Farm.
Cattle.....	6,036,817	7.9
Horses.....	3,000,000	3.9
Swine.....	3,434,261	4.1
Sheep.....	2,058,045	2.7

8. The amount of manure voided per year is approximately as follows:—

	Per Animal.	Per Farm.
	ton.	ton.
Cattle.....	17.3	136.6
Horses.....	9.1	35.5
Swine.....	1.3	5.3
Sheep.....	1.0	2.7
Total.....		180.1

9. The value of the 180 tons of fresh manure per farm would thus be \$804.44, considering both the chemical and humus value.

10. The loss in manure per farm would thus be approximately \$281.55.

This is a loss for Canada amounting to at least \$213,978,000 per annum.

This is more than the taxes on Canadian farm lands; nearly 10 per cent more than the value of Canada's 1914 wheat crop; over 25 per cent more than her 1914 oat crop; and is sufficient to counterbalance Canada's adverse trade balance per annum.

**What does it mean to you personally as a farmer?**