

diseased animals is especially dangerous, although diseased meats are, too, a serious menace.

Of course the financial loss incident upon prohibiting the sale of diseased milk and animals would be considerable. Under present conditions this would undoubtedly fall heaviest on the farmer. But why should the country be forced to maintain extra tuberculosis sanatoria, when preventative methods would be not only more effective but more humane?

#### Municipal Abattoirs Necessary

At the present time all meat sold in Canadian cities and towns, except that slaughtered for export or interprovincial trade, is not subject to inspection at the time of slaughter, and may, therefore, be considered to be slaughtered clandestinely. The proper time to inspect meats is at the time of slaughter when the viscera are *in situ*. Unless the inspection is made then it is likely to be of no avail. When it is known that often the primest animal may be dangerously infected with tuberculosis, the importance of inspection at the time of slaughter is readily seen. It is surely high time that at least the larger centres should insist on the establishment of properly regulated municipal abattoirs. The days of the noisy, reeking, and ill-kept slaughter-house should surely be numbered in every intelligent community.

#### Tuberculous Milk a Menace

Again, the problem of preventing the sale of tuberculous milk is of even greater importance than regulation of the meat industry. The danger from the use of infected milk is considerably greater than in the case of meat.

It is undoubtedly possible by using care in the production, and by careful inspection of the herds to obtain pure, wholesome milk. The trouble has been, and is, to far too great an extent, the fault of the consumer. Certified milk, that is, milk that is as nearly germ free as it is possible to obtain it, is an unknown commodity to most users. Even where the value of cleanliness in the dairy is appreciated by the consumer, it is not uncommon to find a total disregard of the danger of using milk from tuberculous cows.

Earnest efforts are being made to stamp out tuberculosis in man. Would it not be the part of wisdom to remove the cause of a great deal of the trouble by stamping it out in cattle and other animals used to produce human food? Let the consumer steadily demand the certified products, even if the price is higher, and in a short time disease and dirt will be generally banished from our food supplies. The remedy rests with the consumer.

Many a health officer is 100 per cent. efficient and only 15 per cent. effective, because municipal authorities prefer a high death rate to a trifling increase in the tax rate.

## Barnyard Manure

### Its Importance to the Farmer—How to Care For and use Manure

The manure problem is a fundamental problem for farmers of today and to-morrow. One of the most important lessons for them to learn is how to produce good barnyard manure; and then to care for it and use it rationally.

In many parts of Canada the manure is simply thrown away. In other places, notably in the West, it is burned; and in places where the manure has accumulated around the stables, the stables have been moved away, instead of making use of the manure. This means a great annual loss. At the present price of plant food, the amount of manure produced in the United States every year is worth nearly \$2,500,000,000. In 1908, the value of the whole corn crop in the United States was only \$1,601,000,000. These figures show the very great importance of manure production.

#### Value as Fertilizer

Manure is usually valued according to the amount of nitrogen, phosphoric acid and potash it contains. This method does not give any value to the humus which is a very important part of the manure. It holds moisture which aids in bringing the plant food in the soil into soluble condition and makes the soil more friable and easily tilled.

Experiments at Rothamsted, England, during fifty years on land (1) unmanured, (2) manured continually, and (3) manured during the first twenty years only, showed a gradual decrease in the crop on the unmanured soil and a gradual increase from year to year on the manured soil. When the application was stopped there was a gradual decrease, but at the end of thirty years after the last application, the yield was still double that on the unmanured part.

#### Sources of Loss

The greatest sources of loss are from allowing the liquid portion to run away, leaching by rain, and from heating or fermentation.

The liquid is much more valuable in plant food per pound than the solid. In cow manure the total liquid portion is about the same value as the total solid portion. Yet many farmers arrange their stables to drain off the liquid. *Don't do it.* From \$10 to \$15 worth of fertility can be lost annually in this way from each cow kept. Use some kind of absorbing material to prevent loss of liquid.

#### How to Apply Manure

Where possible, the manure should be spread in the field as made. It saves handling twice, and there is a greater tonnage then than at any other time. The effect of green manure will be seen for a longer time than rotted manure on account of the decomposition taking place in the soil. If this cannot be done, by all means have a covered shed where the manure is

put and where it will be packed by stock tramping on it, and where it will be kept moist. If it is kept tramped and moist and if the shed has a cement floor there will be very little loss.

Experiments in the West have shown that a very light application of barnyard manure in the spring after sowing, as a top dressing on soils having a tendency to blow, gives excellent results; not only preventing blowing but giving increased yields from the added plant food.

## COAL BRIQUETTING IN NOVA SCOTIA

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and have been used with considerable success upon the Intercolonial Railway and for domestic purposes.

The Inverness Railway and Coal Company are also installing a briquetting plant at Inverness, C.B., for the purpose of briquetting the slack made during mining operations.

#### Advantages of Briquettes

Briquettes when properly made with a suitable binder possess, the following advantages over raw fuel:

1. The even size of the briquettes permits of a more regular and thorough combustion in the firebox or furnace, as the spaces that exist between adjacent blocks allow of even distribution of air through the fire and the pressure drop through the fire is also less.

2. A good briquette holds its shape in the fire, so that even when coking coals are used they do not coke together sufficiently to cut off the air for combustion and the gases are burned as fast as distilled off.

3. Practically no smoke should be obtained from the combustion of good briquettes.

4. Briquettes generally burn to a fine ash rather than a clinker, as in the briquetting process the mixing and grinding thoroughly distributes the ash material, which in the raw fuel exists in spots and layers and is fused into clinker instead of falling through the grate.

5. The characteristic fineness of the ash from briquettes allows of keeping a better fire with less attention and poking than is possible with raw fuel under the same conditions.

6. The evaporation per pound of fuel is greater for the briquetted than for the same coal in its natural state. This advantage is maintained at all rates of evaporation.

7. The capacity of a boiler is considerably increased by the use of briquetted fuel.

8. The weather-resisting qualities of many coals, and especially lignites, are greatly improved by briquetting.

9. Briquettes apparently give a longer flame than run-of-mine coal. It is much easier to raise and to keep up steam with briquettes than with run-of-mine coal.

11. Higher rates of combustion are possible with briquettes and consequently higher power.

12. When properly made there is less loss from breakage during transportation of briquettes than of run-of-mine coal.

## Experimental Farms and Stations

### Something about the Work of the Dominion Department of Agriculture

At the close of the fiscal year (March 31st, 1912), the system of Dominion Experimental Farms and Stations includes, in addition to the Central Farm at Ottawa, the following branch farms and stations, which are given in geographical order from east to west: Experimental Station, Charlottetown, P. E.I.; Experimental Farm, Nappan, N.S.; Experimental Station, Kentville, N.S.; Experimental Station, Ste. Anne de la Pocatière, Que.; Experimental Station, Cap Rouge, Que.; Experimental Farm, Brandon, Man.; Experimental Farm, Indian Head, Sask.; Experimental Station, Rosthern, Sask.; Experimental Station, Scott, Sask.; Experimental Station, Lethbridge, Alta.; Experimental Station, Lacombe, Alta.; Experimental Farm, Agassiz, B.C.; Experimental Station, Invermore, B.C.; Experimental Station, Sydney, Vancouver Island, B.C.; a total of fourteen farms and stations. In addition, sub-stations are maintained at Kamloops, B.C., and at Fort Vermilion, on the Peace river, Alta. Experimental work has also been carried on during the year, though no land is owned or rented by the Department, at Athabasca Landing and at Forts Smith, Resolution, and Providence, all in northern Alberta.

While much of the work done during the year has been a continuation of the investigations of years past, some of its features have been so elaborated as to be practically new. These are chiefly in connection with the Western Farms and Stations where stronger emphasis is being placed on the necessity of diversified farming. The testing of varieties of cereals, fodder corn, roots, clovers and grasses was again carried on, and the annual distribution of seed for the improvement of crops was made, under some new regulations, calculated to make it of more value to the Canadian farmer.—Report of the Minister of Agriculture, 1912.

## Crop Rotations for Eastern Canada

The following rotations have been under test at the Central Experimental Farm for fourteen years. Under proper management any one of the three will produce good results. Look them over carefully, choose the one most applicable to your conditions and give it a fair trial. It will increase your crop returns, help keep down the weeds and assist in maintaining the fertility of your soil.

#### Rotation No. 1

This is of three years' duration and is well suited for intensive dairy farming where soiling crops are used.

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