

Getting Wood Fuel For Next Winter

Coal Shortage Likely to be More Acute Than This Winter—Municipalities Should Act at Once

The fuel situation in Eastern Canada will be fully as bad if not worse next winter, and it is imperative that steps be taken at once to provide substitutes for coal. With an increasing labour shortage in the United States, increased demands upon the railways, increased requirements for American coal for domestic and export purposes and the placing of Canada on 'war rations' by the United States Fuel Controller, it will be fortunate if Canada secures as large supplies of coal as she has this season.

We must fall back upon our forests. Ontario, Quebec, and New Brunswick contain vast quantities of hardwood which has little present value except for fuel purposes. A cord of seasoned hardwood, such as hard maple, beech or birch, is approximately equal in heating value to a ton of anthracite. Under normal conditions, coal has been cheaper, but, at present prices, the difference in cost is not very great. What is needed now is immediate action on the part of municipal authorities to lay in an emergency stock of wood fuel, both on account of the shortage of labour for cutting and hauling, and the necessity for having the wood cut to dry during the summer. The city of Winnipeg laid in a reserve supply of 14,000 cords of wood this season, and the Mayor reports this was an important factor in averting a fuel crisis. Ottawa also has decided to establish a civic fuel yard.

To supplement the efforts of city and municipal governments, co-operation of the provincial governments is, in many cases, essential. Where timber on Crown lands is sufficiently accessible, a special organization is needed to facilitate the completion of arrangements, including the organization of labour for cutting on a large scale. The Provincial Forester, or some one working under his direction, should take the whole matter up vigorously with the respective city and municipal governments, and assist in determining the needs of the local situation in each case, and how best to meet them. A beginning in this direction has already been made in Quebec, and it is reported that Ontario is offering wood in Algonquin Park free to municipalities and is co-operating with them in organizing production.

Experience has shown it is quite feasible to materially relieve the coal shortage by a more extensive use of wood in the following directions:

1. By farmers and rural communities generally, within easy reach of wood supplies, making as

general use of this fuel as possible, to relieve the demands for coal and freight cars alike.

2. The general substitution of wood for coal in furnaces and stoves during early autumn and late spring, as well as during mild weather in winter.

3. The heating by wood of churches, lodge rooms, halls, etc., where warmth for only a limited period of time may be necessary.

4. The eking out of limited stores of coal by burning wood in the day-time, reserving coal for holding the fire over night.

5. Running furnaces low to keep the house in general only warm enough to prevent water pipes from freezing, and supplementing this by using wood in stoves or grates to keep the living and dining rooms comfortable.

6. Using wood much more generally than at present as a substitute for coal in cooking.

7. By making windows and doors tight and by insulating furnaces, boilers and piping, as suggested by Senator W. C. Edwards, who also advocates that slabs and mill waste, instead of being burned in incinerators, should be reserved for domestic heating.—C.L.

Factors in Production

2. Value of Manure

Careless Handling is Resulting in Serious Losses

The Commission of Conservation has found by actual investigation on 3,000 farms, in Canada, that the majority of farmers exercise no special care to prevent waste of manure. This means that out of the \$200,000,000 worth of manure produced annually in Canada, fertilizing elements to the extent of millions of dollars are being lost every year. While manure is only a by-product on the farm, it is the farmer's greatest asset in the maintenance of soil fertility. On account of it being a by-product, it is not given the care and attention which the so-called principal products receive.

What would we think of a farmer who would wilfully allow some of his live stock to wander away and become lost, or, who would not repair a hole in the granary floor

through which he knew grain was leaking out? In these times of stress and food shortage, the avoidable wasting of anything that will contribute towards increased production is unpatriotic and little less than criminal. Every pound of plant food in the form of manure should be jealously guarded for use on the land. Every avenue of waste and loss should be closed.

Losses occur principally from over-heating, leaching and drainage. To prevent over-heating, which causes a loss of nitrogen by the escape of the ammonia gas formed, the manure should not be piled too deep and should be kept well packed, or put on the land as made. It is also well to mix the cow manure with the horse manure, if the manure is to be piled.

Leaching takes place when the manure pile is placed under the eaves. The water running over and through it washes out the quickly soluble, and hence the most valuable, elements, causing them to be lost. To allow the urine or liquid manure to run away is extremely wasteful, a fact which the accompanying table from Bailey's *Cyclopedia of Agriculture* graphically illustrates. Under average conditions, the weight of urine from farm animals in general exceeds that of the solid dung. This means that, when the liquids are allowed to escape, a portion of the most costly fertilizing elements is lost. Absorbents should be used, or a pit made to hold the liquid. Dry horse manure can be advantageously used in the cow stable to absorb the liquids when there is a shortage of straw.

Since it is almost impossible to secure potash, and, as nitrogen and phosphoric acid are high in price, the wisdom of preventing their loss from the animal manure on the farm cannot be too emphatically urged.—F.C.N.

ESTIMATED VALUE OF MANURE IN CANADA COMPARED WITH THAT OF OTHER NATURAL PRODUCTS. (Estimate based on U.S. Statistics.)



Total Value, 1916

COMPOSITION OF FRESH EXCREMENT, 1,000 POUNDS

| | | Water (Pounds) | Nitrogen (Pounds) | Phosphoric acid (Pounds) | Alkalies (Poun %) |
|-------|--------------------------------|----------------|-------------------|--------------------------|-------------------|
| Horse | 1,000 lbs. solid dung contain. | 700 | 5.0 | 3.5 | 3.0 |
| | 1,000 lbs. urine contain. | 890 | 12.0 | 0.0 | 15.0 |
| Cow | 1,000 lbs. solid dung contain. | 840 | 3.0 | 2.5 | 1.0 |
| | 1,000 lbs. urine contain. | 920 | 8.0 | 0.0 | 14.0 |

3. Variety of Grain Sown

Choosing Tested Varieties Always an Advantage

Agricultural investigations made by the Commission of Conservation in various parts of Canada have repeatedly and abundantly proven that there are too many varieties of the different crops being grown on farms. In Waterloo county, it was discovered that 28 varieties of oats were being grown among a group of 100 farmers, and among 50 farmers in Lanark county 19 varieties were found.

There are some varieties of oats, such as Banner, O.A.C. 72, or Siberian, which have given the best results at the Experimental Farms in Canada, and are much superior in every way to the varieties being grown on many farms, particularly in the older provinces of the Dominion. The 'trying-out' process in connection with varieties of grains is expensive and is being conducted by the Experimental Farms for the express benefit of farmers. In spite of this, many farmers continue to ignore the valuable information which has been obtained for them in this matter, and continue to pay fancy prices for something new which is lauded and praised by those who have it to sell. This is illustrated by the recent statement of an Ontario farmer in Dundas county who said that he had just paid \$2.25 for 32 pounds of a new variety of oats which was said to give a wonderful yield. This man knew nothing about the agent, nor the suitability of the so-called new variety of oats for his farm. It might be weak in the straw, thick hulled, very susceptible to disease and in any or every way undesirable so far as he knew. Why take these chances?

Many farmers do not even know the names, let alone the suitability, of varieties of grain grown on their farms. Know what you are sowing and sow one of the tried and proven varieties. It is one of the easiest, most inexpensive and surest means of increasing production of cereal grains which are so urgently needed at the present time.

—F.C.N.

PROPAGATING MUSSELS FOR MAKING BUTTONS

The United States Bureau of Fisheries has been conducting extensive work on the Mississippi river and its tributaries in the propagation of the pearly mussel, which supports an important button industry. Larval mussels are inoculated on common fishes, which are then liberated in open waters. After a time, the mussels drop off the fishes and begin their independent existence on the bottom. In 1917, upwards of 250,000,000 mussels were inoculated on 110,000 fishes at a cost of less than three cents per thousand mussels produced.