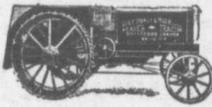


The Right Engine ---

That is what 10,000 farmers over Canada are proving to themselves when they persistently use the Brantford Engines. We do not assemble Brantford Engines. We build them right here in our big, up-to-date, factory. The making of every part is supervised and tested as if the engine were for our own use. This is why the "Ideal" is giving honest service in many cases running as high as 20 years. Our new "Ideals" are built to handle a wide range of fuel—gasoline, naphtha, or coal oil—running just as smoothly on the latter, and giving maximum power at only half the cost. We unqualifiedly guarantee every Brantford Engine that leaves our factory. They are made for shafts, or mounted—from 1 1/2 to 65 h.p. Our catalogue gives full details.

Driving the Right Equipment



Brantford tractors are far beyond the experimental stage of the many makes that now flood the market. They have been tested out for ten years under the severest and most varied of practical farm conditions. They have made good. The prospective buyer of a tractor should bear this in mind—that any machine of which so many uses are made, such as plowing,

disking, etc., hauling to market, or heavy belt work, must be so constructed and of such quality materials that it will stand up season after season and give first-class service. We stand behind our tractors with the guarantee that they will give this service.

THE ENGINE. In the "Ideal" and "Ideal Junior" each engine has two opposed cylinders placed horizontally; pistons are operated by a two-throw crank-shaft, in heavy bronze bearings half way between cylinders; this insures perfect balance and greatest power. Separate carburetors for both fuel and water on each cylinder, but one throttle governor regulates full supply for both. The carburetors are of oil-spore special make to insure complete use of all kerosene fuel.

Oiling.—Fitted for engine and compression grease cups for bearings.

Ignition.—Governed by throttle system and the best high tension trip magnet, no batteries of any kind being required.

Cooling.—Hopper-cooled—thus with no trouble from leaky radiators, fans, and frozen pipes, runs half day without replenishing.

Power.—The "Ideal" (20-15) has plenty of power to pull 5 plows or drive a 28-inch thresh with all attachments. The "Ideal Junior" (24-12) will pull 3 plows or drive a 24-inch mill. Power 2 1/2 miles.

The "Beaver" is our latest 4-cylinder light tractor, developing 12 h.p. on the bar and 24 h.p. on the belt. Get full information from us before purchasing.

Our Other Lines

Galvanized Steel Pumping Windmills, Steel Flag Staffs, Galvanized "New Ideal" Power Windmills, Power Spraying Outfits, Batch Concrete Mixers, Galvanized Steel Wood and Pole Saws, Iron Pumps, Wood Tanks, Water Boxes, Brass Cylinders, etc.



Goold, Shapley & Muir Ltd. Brantford, Ont.

Branches at Portage la Prairie, Regina, Calgary, Saskatoon. Catalogues covering any class can be secured by writing us.

The Manurial Value of Clover

Even at Present Seed Prices It is a Cheap Fertilizer

THE amount of semi-decomposed vegetable matter of humus present in our cultivated soils—sandy and clay loams—bears an intimate relation to their productive capacity. Humus not only fulfils the mechanical function of rendering soils porous and more retentive of moisture, but furnishes also the essential medium for the activities of the bacteria which liberate plant food in the soil. Furthermore, humus constitutes the chief natural source of the soil's nitrogen supply.

Applications of barnyard manure may be considered the chief means employed in the maintenance of humus in the soil. Supplementary means are the growing and plowing in of a green cover-crop such as rye, buck-wheat, rape, vetches or clover. Of these, clover—where conditions are conducive to its satisfactory growth—is to be generally preferred. By means of its deep ramifying roots clover disintegrates and aerates the lower soil layers and brings up therefrom plant food supplies unattainable by other more shallow rooted crops.

An additional advantage which clover, in common with all members of the legume family, possesses is that of its ability to assimilate the free nitrogen of the soil atmosphere by means of minute bacterial organisms living and operating in small nodules on its roots. Thus clover gathers the greater part of its nitrogen from the air, and its phosphoric acid, potash and lime largely from soil depths beyond the reach of the roots of ordinary crops, consequently enriching the surface soil with these constituents for the benefit of succeeding crops.

Clover Compared With Manure.

How does clover compare with manure as a fertilizer? Barnyard manure of good average quality contains approximately 16 pounds nitrogen, 5 pounds phosphoric acid, and 10 pounds potash per ton. Therefore, 10 tons of barnyard manure would furnish about 160 pounds nitrogen, 50 pounds phosphoric acid, and 100 pounds potash.

Experiments conducted at the Central Experimental Farm, Ottawa, have shown that a vigorous crop of clover will contain, at its maximum estimate, in its foliage and roots, from 100 to 150 pounds nitrogen, 30 to 45 pounds phosphoric acid, and 85 to 115 pounds potash per acre.

A good crop of clover from one acre, if it were turned under may, therefore, be deemed equal, in fertilizing value, to an application of ten tons of barnyard manure.

In the experiments referred to, 10 pounds per acre of common red clover was seeded down with various grain crops, while other plots were seeded with grain alone. In no instance did the growth of clover depress the yield of grain with which it was seeded.

In the following year, fodder corn (Leaming), produced 8 tons, 480 pounds more after wheat than clover, after barley and oats, increases were, respectively, 43 bushels, 20 pounds; 29 bushels, 40 pounds, and 24 bushels of potatoes, per acre, as compared with the yields from adjoining plots without clover.

Potatoes After Clover.

With potatoes the results were equally striking. After wheat, barley and oats with clover, the increases were, respectively, 43 bushels, 20 pounds; 29 bushels, 40 pounds, and 24 bushels of potatoes, per acre, as compared with the yields from adjoining plots without clover.

The full benefits from clover will, as a rule, be noticeably persistent for several years.

On soils which are deficient in lime, a satisfactory growth of clover will be encouraged by an application of, say, two tons of ground limestone per acre. As a phosphatic fertilizer, designed to benefit both the grain and the clover, 300 pounds of superphosphate or 500

pounds of basic slag, per acre, may be recommended.

Unleached wood ashes contain, on an average, from 10 to 20 per cent of potash, about 10 per cent of phosphoric acid and from 20 to 30 per cent of lime. They are, as mentioned, suitable as a fertilizer for clover, and, when procurable at a reasonable price, may be applied at the rate of from 25 to 40 bushels (1,000 to 1,600 pounds) per acre.

Supplementing Barnyard Manure

BARNYARD manure is not a well balanced fertilizer for application to ordinary farms, crops, states Prof. H. G. Bell. As a supplement to barnyard manure, Prof. Bell advocates that 40 to 50 lbs. of acid phosphate be added to each ton of manure. Experiments have demonstrated, he said, that the yield of corn per acre will be increased by 11 bushels where the acid phosphate is used. The most convenient method of applying the acid phosphate is to fill the manure spreader and then spread 40 to 50 lbs. of the phosphate, depending upon the capacity of the spreader, on top of the manure. It will then be spread evenly over the field.

Sweet Clover and Blot

ONE advantage of sweet clover for pasture is that cattle and sheep are not as liable to bloat on it as they are on other clovers and alfalfa. It is practically impossible to pasture cattle on green alfalfa, but on sweet clover they are comparatively safe throughout the season and in all kinds of weather. The few cases of bloat which the section reports reported have been in conditions of protracted wet weather. Some maintain that the freedom from bloat of alfalfa is due to the presence of cumarin in the plant.

The tainting of milk when cows pasture on sweet clover is confined for the most part to early in the spring—Geo. H. Glover.

Hardy Varieties of Alfalfa

WE have decided that Grimm is the best variety of alfalfa for general seeding. We used with this variety only, in large fields." Such is the decision of Mr. E. A. Lods of the Experimental Department at Macdonald College, in summarizing the results of the most extensive variety tests with alfalfa ever conducted in Canada. We then went to inspect the plots, on the performance of which the decision is based. The variety tests are conducted in rows, 100 links long. In these rows there were 77 different varieties of alfalfa planted in duplicate some six years ago. The fourth row in the series was a selection of Grimm alfalfa. After going through six winters, it still showed an almost perfect stand. The next three rows were planted with seed obtained from France and Italy, and in the whole three rows we counted only 10 plants. These varieties were evidently not well suited for Canadian conditions, and it is just possible that seeding with these, or similar tender varieties, explains many a Canadian farmer's failure with the crop. From the 10 plants that did survive, however, seed has been saved and a little later I visited the plots where the second generation of alfalfa plants were being raised. This was being experimented with. These plots had gone through just one winter and apparently had fared as well as the Grimm and looked well. It was not a specially hard winter," explained Mr. L. A. Waltzing, who has charge of the plots. "In a severe winter the killing would have been perhaps 50 per cent, but probably not have been as great as the killing

In the plots of imported seed.

To return to the next three rows all Grimm, but failed from drought was from mesoa, grown 40 years down "How about the seed" I asked.

"Ontario Varieties" favorably with Mr. Waltzing. There are some alfalfa being tested here, which are common.

brought from the South Dakota and other varieties need. It will even if covered. The small difference, however, is the seed. Prof. H. G. Bell advocates that 40 to 50 lbs. of acid phosphate be added to each ton of manure.

This very brilliant mental work which aid College, made the service that can do for agriculture the results of it may usually avoid insulinate to also and he can also that are suitable success is almost at our colleges, to be introduced and once varieties it is a matter of until the seed is merant quantities generally.

Prospects for

T IAT fall will be a failure

favored parties crop, and in many librod is that if This condition for the greater pro-

The reason for the first place to which it had last for season came place to the free which was exper-

few weeks.

It is an old say weather is bad and while we are this having been time for maple sap not been favorable

Pasture

RECENT exper that a good the cheapest for boys, says An Minnesota Experim own and their H feed of clover is best. O good substitute. O seed rape or any other with rape as satisfactory pasture

A mixture of oat bushels, peas one two pounds an acre of pasture that will afford about the first crop of corn in which rape has been sown and that cultivation can't prevent the oat. Such pastures will grain feed and less the production of usive to try to make good alone, as cheap factor in pork produc-