

## FARM MANAGEMENT

### Pointers on Plowing

J. D. Wallace, Peterboro Co., Ont.

Shall we plow deep or shallow? A general rule we may say, if plowing in the spring, plow shallow, though there are exceptions to this condition.

Deep plowing in the fall has the advantage of opening up the soil to a greater extent and so exposing it to the action of the frost. This has the effect of breaking down the large soil particles into smaller particles and thereby making the soil more mellow for the reception of the next crop. It also aerates the soil, which is a fundamental necessity for the best growth of plants.

We should not forget that the deeper we plow and the more we break down the large particles, the more retentive will the soil be of moisture capacity.

In some soils it may be desirable to plow shallow in the spring as well as deep in the fall. This is the case with heavy clay soils when the winter rains have the effect of pulling the surface and thereby making it too compact. Another reason why we should plow shallow in the spring is that it has the effect of making a greater surface exposure to the heat rays of the sun. This warms the surface soil, which is very important, particularly where we are sowing corn. The shallow plowing is frequently done on soils whose lower layers remain wet late into the spring.

The nature of a soil will also to a large measure decide what treatment we shall give it. A hard pan sub-soil generally requires deep plowing, as it affords a more efficient drainage. The plowing of the surface soil should that surface soil happen to be deep, is very important in the case of deep-rooted crops, such as potatoes, since it permits of a greater extent of root growth of the crop.

All poor soils should be plowed deep, but a soil whose upper layers are rich and whose lower layers are poor should receive a shallower plowing. Particularly should we follow this practice in a case where we are going to plant a shallow rooted crop.

While the deep plowing of clay soils, allows a deeper percolation of the water, it is not wise in the case of sand where the drainage is generally too free. That is why in the case of loose soils we recommend a shallow plowing and also an annual plowing at the same depth, encouraging a firmer subsoil whereby the water will better supply the plant.

### Fall Application of Phosphates

By W. H. Frazier.

Only slowly available commercial fertilizers should be applied in the fall for a following spring crop. Prominent among these is raw rock phosphate applied because it supplies the element phosphorus. It is applied in a very fine powder, containing about 12 per cent. phosphorus or the equivalent of from 25 to 30 per cent. phosphoric acid. An idea of its extreme fineness may be gained from the fact that about 90 per cent. of it will pass through a 100 mesh sieve, which has 10,000 openings per inch.

Raw phosphate is made by treating the rock form with sulphuric acid, but this makes the phosphorus cost about four times as much in this more available form. For fall application, however, the ground rock phosphate is better because of its cheapness, because of the fact that it will hold its

strength longer, and will benefit the following crops. In fact, it is two or three years before much of its phosphorus is regarded as available for the soil, but this depends on the soil.

### APPLY WITH MANURE.

When much humus or decaying vegetable matter is present, acids are formed which act on the rock phosphate and set the phosphorus free for the use of the plant. This is the reason for the application of barn phosphate mixed with the raw rock phosphate at the rate of from 150 to 200 pounds of phosphate per load of manure. This mixture should be applied at the rate of about 1,000 pounds of phosphate an acre.

Lack of phosphorus in the soil is often shown by poorly filled heads of grain, but this may result from other causes.

Phosphorus aids in the development of the seed, and where it is deficient the seed, and where it is too light, even though the straw appears heavy enough for large yields, undecomposed grain growing has undiminished the available phosphorus of our soils, especially when no barnyard manure or crop residue is returned. Another reason for plowing under barnyard manure or green crops with rock phosphate or green crops with rock phosphate is that the increased bacterial action which tends to break them available for the growing crops.

### Rural Depopulation Creates a Crisis in Ontario

(Continued from page 4)

But the abandoned dwelling is a lesser evil than the weakened household. In Grenville, for instance, the average number of persons per family fell from 4.42 in 1901 to 4.07 in 1911 persons to life that averages only four persons to the household through a community of over 17,000 persons, can suffer little further diminution and continue."

A third line of social strain is seen in the relative numbers of the sexes in rural Canada. The general rule of population the world over is that females outnumber males. This is true in all of our urban population. In only 45 out of 350 cities, towns and villages of older Ontario do males exceed females. "But in our rural population this universal rule of human life is reversed and the reversal is so general as to be astounding. In only 40 of the 920 townships and other rural divisions do females outnumber males." In East Middlesex, for instance, the predominance of males is 518, and in the west riding 469. In only one county in Ontario, Grenville, do females exceed males in the rural population. And in all of Ontario the excess of males over females in the rural population is 85,940, while in the cities the excess of females is 10,865. This anomaly holds true not of Ontario only but of all rural Canada.

The influence of such a situation on the well-being of the country church, of rural education and above all, of rural social life, is only too apparent. Dairy next week we will review the economic causes that he gives for depopulation, the economic solution to the proposals and his views on the social causes of unrest. Likewise we may give a few of our own.—F.E.E.

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