

An application of ten tons per acre will, therefore, enrich the soil, approximately by the following amounts:—

Nitrogen	100 lbs. per acre.
Phosphoric acid	50 "
Potash	90 "

The chemical investigations made in connection with these experiments have shown that a vigorous crop of clover will contain, at a moderate estimate, in its foliage and roots—

Nitrogen	from 100 to 150 lbs. per acre.
Phosphoric acid	" 30 " 45 "
Potash	" 85 " 115 "

Respecting nitrogen, it is evident that by the use of clover we can with a single crop furnish the soil with as large a quantity as would be supplied by a dressing of 10 tons of manure per acre. The greater part of the nitrogen is gathered by the clover from the air, a source not otherwise available, and is therefore a distinct addition to the soil. The amounts of phosphoric acid, potash and lime in the clover have, it is true, been obtained from the soil, but have been largely drawn from depths beyond the reach of the roots of ordinary crops. The decay of the clover, moreover, liberates these important fertilizing elements in soluble and available forms, so that they can be readily utilized by the crops which follow.

FERTILIZERS FOR CLOVER.

Clover requires, for strong and healthy growth, considerable quantities of phosphoric acid, potash and lime. If the soil is well supplied with these, the clover plant, once established, can obtain with the aid of the germs in the nodules on its roots all the nitrogen needed for strong growth. Where the soil is poor in these mineral constituents, they may be supplied by using a dressing of wood ashes and superphosphate of lime. The unleached ashes of hard woods are a most valuable fertilizer. They contain on an average 5 to 6 per cent of potash, 2 to 3 per cent of phosphoric acid, and about 30 per cent of lime. A dressing of 50 to 100 bushels per acre would be sufficient. Where wood ashes cannot be had, one of the German potash salts now found in the fertilizer market may be used in its place. One of these, muriate of potash, contains about 50 per cent of actual potash and may be used in the proportion of 100 pounds per acre. Kainite, which is one of the lower grades of these salts and contains about 12 per cent of potash, should be applied to the extent of about 400 pounds per acre.

Superphosphate of lime will be found a convenient form in which to apply phosphoric acid and lime. Good brands will usually contain about 15 per cent of phosphoric acid in an immediately available form. From 250 to 300 pounds per acre would be a suitable dressing. Thomas' phosphate is also a useful source of phosphoric acid, especially for sour soils and such as are deficient in lime. It contains from 12½ to 17 per cent of phosphoric acid present in a form which, though not immediately soluble, gradually becomes available for plant use.

On peaty or mucky soils, lime is often the only addition needed to secure good crops of clover. From 20 to 40 bushels per acre will usually be sufficient. Marl may be used as a source for lime where it is cheaply obtainable, but should be applied in somewhat larger quantities.

Where a soil is particularly poor in quality, a dressing of barn-yard manure will be found of great advantage in starting the clover. This will not

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