ten tons per acre. If neither of these ways of adding nitrogen is convenient, a light dressing of nitrate of soda, say 50 to 100 pounds per acre, just after the plants are up will give them the needed start. Both clover sod and manure are valuable for the humus which they add to the soil, improving its texture and making it more retentive of moisture.

The plant food which needs to be added in largest quantities to most soils is phosphoric acid. It may be applied in the form of acid phosphate, slag or bone meal. Sevey in his book on Bean Culture says: "It seems that phosphoric acid in the form of dissolved South Carolina rock (acid phosphate) is more likely to give profitable results than the application of any other fertilizing material." If beans do not ripen early enough, or if they ripen unevenly, it may be due to a lack of phosphoric acid in the soil.

Potash is a useful fertilizer for beans on most soils but good results can be and are obtained without making special applications of this material to the soil. The usual commercial form of potash not being obtainable now, it would be well to save and apply whatever wood ashes can be got. Unleached wood ashes contain from 5 to 8 per cent of potash. Potash is also contained in well preserved manure. Some authorities claim that it may be set free from the inorganic material of the soil by the application of lime. Since soils differ greatly in fertility no definite recommendation as to the amount of fertilizer to be used per acre on all soils can be given. This would be a matter to be determined by the owner according to the character of the soil as to productiveness. Good bean crops can be grown by the application of a phosphatic fertilizer, such as acid phosphate, slag or bone meal, 400 to 500 pounds per acre and a nitrogenous fertilizer such as nitrate of soda, say 50 to 100 pounds per acre, provided the soil is fairly well supplied with humus.

Except in the case of nitrate of soda, fertilizers for beans should be applied when harrowing at the time of fitting the land for the crop. They should be well mixed with the soil, otherwise they are liable to injure the germinating seed.

## The Soil and Its Preparation.

Beans require a warm, well-drained soil, and one which does not suffer from lack of moisture. The bean crop is particularly sensitive to external conditions and may readily fail with insufficient heat or with too much or too little moisture. Under the conditions of our climate, with its short growing season, the land for beans should not be too heavy or too cold. A light or medium loam with a southern exposure is more likely to give success than a heavy clay