

DEPARTMENT OF THE INTERIOR

BUREAU OF EDUCATION, WASHINGTON

ORGANIC MATTER FOR THE HOME GARDENS.

This pamphlet is intended to help teachers who are conducting home-garden work on methods of providing organic matter for the garden soil. It is hoped that each garden pupil will be encouraged to provide organic matter needed to enrich his garden soil.

SOURCES OF ORGANIC MATTER.

Organic matter can be supplied in three ways—first, by an application of stable manure; second, by growing and turning under green manuring crops, such as clover, rye, rape, and turnips; and, third, by using autumn leaves or other organic matter between the rows of winter vegetables and around the garden fruits, shrubs, and flowers or by making a compost of autumn leaves and garden refuse for later application.

Stable manure is usually considered the best way to increase the supply of organic matter in the soil. When stable manure is not available some other material must be employed. The value of stable manure varies with the amount of straw or other absorbent it contains; with the kind and amount of food fed the animals; with the age and kind of animals; and with the method used in storing manure. The manure of horses, cows, pigs, and sheep has about the same value per ton, so far as organic matter and plant food are concerned. Hen manure is low in organic matter, but very high in plant food. For this reason it should be applied sparingly. Since fresh application of manure and also of lime increase the tendency to scabby potatoes, it is desirable to have this crop follow a green manuring crop.

Crimson clover is an annual legume which grows well during the winter months in the Southern States. It is superior to rye, in that it is able to secure nitrogen from the air in the soil by means of bacteria which live in the nodules in its roots. When a crop of crimson clover is turned under, the soil receives an additional supply of nitrogen, which is the form of plant food necessary to make the vegetables grow rapidly and to develop large and dark green leaves. For the best results, crimson clover or rye should be turned under in early spring while it is green enough to decay rapidly and before it has used the soil moisture needed for the vegetables. If the plow-

ing or spading is followed immediately by deep harrowing or raking, the crop will be mixed thoroughly in the soil and will decay more rapidly. A portion of the crop of rape and turnips can be used as winter vegetables and the remainder turned under in the spring.

A leaf covering will hasten the growth of the winter vegetables by keeping the soil moist and warm and by protecting the vegetables from drying winds. When the soil is broken in the spring, finely ground limestone should be applied at the rate of 1 bushel to 500 square feet of ground. This will neutralize the acid produced by the decay of the leaves.

A compost of leaves should be made in a flat pile 6 by 8 feet and as high as possible. It should be placed in a well-drained section of the gardens. If the compost can be turned over and thoroughly mixed each month the process of decay will be more rapid. A compost made in October should be ready for application in March. The following method for making a compost is suggested:

6 inches of leaves.

$\frac{1}{4}$ inch of finely ground limestone.

6 inches of leaves.

6 inches of stable manure, or as much as may be available.

3 inches of soil (desirable but not necessary).

Repeat.

Cover pile with 6 inches of soil.

Street sweepings from non-oiled streets may be substituted for the stable manure. Any organic refuse may be utilized. Wood ashes may be used in place of lime.

USE OF ORGANIC MATTER.

Organic matter makes a soil mellow, warm, well ventilated, and capable of holding and retaining moisture. It renders the soil plant food available and contributes a supply of nitrogen. Furthermore, it produces a soil more easily cultivated. It encourages a larger root system, resulting in better yields. It makes the soil warmer for winter and early spring vegetables. It also makes a soil more capable of producing a crop during a dry season.

Each garden pupil who makes provision for organic matter in liberal quantities for his garden soil will have a larger crop the following year at a less expenditure of labor.