

IMPROVING HEAVY SOILS IN LAWNS AND GARDENS

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More and more home vegetable gardens and lawns are being planted every summer. Many areas of our county, however, have soils that are mostly composed of clay or adobe. This hard, usually dark soil can prevent water and root penetration if not modified somewhat before planting. Tilling or cultivating the soil without adding anything will not improve it since it will usually return to the original condition after a few irrigations or rains.

Adding organic matter will help improve the structure of clay or adobe soils. Several materials decay slowly and will, therefore, maintain a looser soil for a longer period of time. These include peat moss, sawdust, rice hulls, shredded bark, and straw. The amount added will depend on the amount of clay in your soil. However, you will usually need to add a volume of organic matter equal to that of the total soil volume for heavy adobes. This is, for a 6-inch deep section of soil, add 6 inches of organic amendment. These materials are low in nitrogen, so about 5 pounds of ammonium sulfate, or equivalent, for each 100 pounds of slow-decaying organic matter used should be added. Normal fertilizing practices should then be followed.

Other amendments not only help loosen the soil but also add fertilizer nutrients. These include manures and properly composted organic matter. The amount of these two materials to add to your soil depends on their source. Dry dairy or horse manure should be added at a rate of about 600 pounds per 1,000 square feet of area to provide enough fertilizer for the plants. An area 50 feet by 50 feet would need about 1,500 pounds to help loosen the soil and provide proper nutrients for the year. Four hundred fifty pounds of steer manure should be added per 1,000 square feet, or about 125 pounds of dry chicken manure, to provide enough fertilizer for a garden crop. No additional ammonium sulfate is needed with these faster-acting materials.

Although the benefits are obvious, there are several disadvantages to the use of organic amendments. If sufficient extra nitrogen is not added to the slow-decaying materials, the plants will develop a nitrogen deficiency affecting their growth and production. Problems can also develop with the use of manures. These often have a high salt content which is damaging to plants, as well as having many weed seeds. Heat-treated steer manure should be relatively weed free. Using manure that is not properly rotted can result in an accumulation of ammonia.

The benefits of adding organic matter, however, to a heavy clay soil usually outweigh the disadvantages.

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