

Soil Improvement and Preparation

The soil provides plants with air, water, and nutrients. Garden soils are of three general types.

- *Loam and sandy loam soils* are of medium texture, easy to irrigate, and usually drain well. These soils are easy to work.
- *Clay soil* is fine-textured and usually more fertile and productive than other soils. However, clay soil compacts easily, so it drains slowly. It must not be worked when very wet, and it crusts when dried out. If wet, it takes longer to warm up in the spring.
- *Sandy soil* is coarse-textured and has good drainage, but it retains very little water or nutrients. It is easy to work and irrigate.

Soil in good physical condition (good tilth) can hold and provide adequate quantities of nutrients, water, and air to plant roots. It will also drain well when large quantities of water are applied, and it will be easy to work without becoming sticky when wet and crusted when dry. If your garden soil has poor tilth, it can be improved by adding organic matter, such as compost, manure, sawdust, leaves, lawn clippings, or peat moss. Be careful to avoid excessive amounts of organic matter: for example, large quantities of manure can cause excessive salt buildup. Never use lawn clippings recently treated with pesticides. Additional nitrogen fertilizer may be needed when organic matter is used. Cover crops or green manures, such as rye, oats, wheat, etc., can also improve the condition of soil when they are tilled under in fall or spring. To produce these crop in time for fall or spring tilling, sow seeds in early fall. Additional information on amending garden soil can be found in chapter 3.

The first step in soil preparation is spading, rototilling, or plowing the garden. Do not till the soil if it is too wet, especially if it is clay. In some areas, it is possible to give the garden an early spading before winter rains or frosts occur. If it is not possible to work the soil before winter rains, prepare it as soon as it is dry enough to work easily without resulting in compaction. Work the soil to a depth of at least 6 inches (15 cm). Immediately after spading, break up large clods with a spading fork or rake to ensure that the soil is pulverized into pea-sized granules. Soil can be formed into beds if desired.