

Amending the Planting Site For Landscape Plants

The soil around your home is the result of millions of years of weathering (biological, chemical, and physical), bedrock erosion, and human activities. Continually forming, soil varies from place to place based on the proportions (percentages) of sand, silt, or clay it contains. Various combinations of sand, silt, and clay result in different soil textures.

Soil Textures

A soil's texture reflects the fineness or coarseness of its soil particles. Sand particles are relatively large, making the soil more coarse; clay particles are considered fine-textured.

Soil texture affects a soil's ability to provide good air and water circulation. Desirable soil has the ability to hold water while allowing for adequate drainage. It also provides adequate oxygen for root development.

The amount of pore space between soil particles regulates the amount of air and water that is available to the plant. Large gaps between soil particles are normally filled with air. Small gaps between soil particles are normally filled with water.

Careful Planning

Before you ever begin to plant on your landscape site, assess your soil type and its water drainage pattern. Then you can plan how to improve the soil's texture and how to correct any drainage problems you may have. By adding amendments and improving the soil, you will have a better chance of success with your landscape planting.

Assessing Soil Drainage

Two methods make it easy to determine how well water drains from the soil. In the first method, use a large (46-oz size) coffee can or other container. Remove the top and the bottom of the can. Dig a hole 4 inches deep, and set the can on the floor of the hole. Firm the soil around the can so that water can't slip under the bottom edge. Fill the can with water to the top. Wait 1 hour then measure the water level. If the water level has dropped at least 2 inches in 1 hour, the drainage is normal. If the level drops more than 5 inches in 1 hour, the drainage is excessive. If the water doesn't seem to drain at all, poor drainage is a problem. Using the second method, dig a hole 1 foot deep and 1 foot wide and fill it with water. If all the water has not drained within 6 hours, the soil has poor subsurface drainage.

Planting in Poorly Drained Soils

Clay soils usually result in poorly drained planting sites unless steps are taken to correct the situation. If the planting site does not allow for surface drainage to remove excess water, some alternatives exist for altering the site: installing a French drain or making a raised bed or a berm.

A French drain is installed to remove the water through a network of drains. There must be a point lower than the landscape site for the water to drain to. A French drain involves digging a trench, filling it partially with gravel, and laying pipes to carry away the water.

Another alternative is to plant in a raised bed. The raised bed should at least



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12 inches high. The raised bed can either be enclosed using treated lumber or it can be a mound of soil called a berm. A large berm can be prepared ranging from one to several feet tall. Such structures are large and should complement the landscape. See the illustration of a berm.

If planting directly on heavy clay soil, incorporate a 3-inch layer of new soil to form a transition layer. A sudden change in soil texture will disrupt the flow of water through the soil, possibly causing a stagnant area beneath the new soil.

Adding amendments to the soil may help correct your subsurface drainage problems.

Soil Amendments

If you want to improve your soil by modifying it, choose the amendment materials carefully. Remember, the young plant eventually will send out its roots

beyond the planting hole. You want to create a balanced medium in the planting hole, allowing for good water drainage and air circulation. When the plant grows an extensive root system, you want the plant's roots to be able to penetrate easily beyond the growing medium into the surrounding soil.

When improving the soil, you can add peat moss or other soil structure improvers to the growing medium. Ideal soil consists of 15 percent air, 50 percent solids, and 35 percent water.

The addition of organic matter such as pine bark (less than one-half of an inch in diameter), or sharp sand is recommended for clay soils. Amend clay soil with 2 to 3 inches of pine bark per 6-inch depth. Add sharp sand at the rate of 3 to 4 inches per 6-inch layer of clay soil.

Amend sandy soil to a 6-inch depth with 1 to 2 inches of peat moss or compost.

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