

Several factors need to be carefully considered when you're developing landscape beds for ornamental plants. Proper soil pH and internal drainage are very important. This can be accomplished by amending some of our existing soils, but more intensive work may be needed in our more poorly drained soil types.

## Soil Texture

Soil texture refers to the size of individual particles. Sand particles are the largest; this makes the soil coarser. Clay particles are the smallest; this makes the soil finer. It's essential to know the soil texture before planting ornamentals.

There are 12 soil texture classes. These are sand, loamy sand, sandy loam, silt, silt loam, loam, sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay and clay. Ideally, a desirable soil has a representative amount of sand, silt and clay. A good soil texture for landscape beds and home gardens is a silt loam.

Soil texture affects a soil's ability to provide good air and water exchange. Water should be held in the soil, but at the same time adequate drainage should occur. Pore space in soil also provides for oxygen to be supplied to the root system of plants.

## Poorly Drained Soil? What to Do

Clay soils drain poorly unless something has been done to modify the situation. If the planting site does not allow for adequate surface drainage to remove excess water, several avenues can be pursued. These include installing a French drain, planting on a "pitcher's mound" or making a raised bed.

French drains remove water by providing subsurface drainage. Select a point lower than the landscape site for the water to drain toward. Dig a trench, fill it partially with gravel and lay pipes to carry water away from the planting site.

Raised beds are almost essential for successful landscape plant establishment and resulting growth (if French drains or "pitcher's mounds" are not used). Make a raised bed at least 12 inches deep. A raised bed can be enclosed with decorative bricks, concrete edging, landscape timbers, railroad ties or 4 feet by 4 feet wood. Chemically treated wood is safe for use around ornamental plants.

A "pitcher's mound" or berm is recommended when planting an individual tree or shrub. This accomplishes the same thing as a raised bed, but it's done on an individual basis. The berm should be 1 foot tall and needs to come out from the center gradually and slope down to the surrounding soil level.

When planting directly in a heavy clay soil, incorporate a 3-inch layer of new soil to form a transition layer between the existing soil and any soil that is added. A sudden change in soil texture disrupts the flow of water through the soil. This causes a stagnant area beneath the new soil. It is highly likely that roots of a newly planted tree or shrub will not move out of the planting hole if you don't follow proper planting procedures.

## Soil Amendments

Any amendments to add to an existing soil need to be chosen carefully. Create a balanced medium in the planting hole, provide good water drainage and use an amendment that will allow for air space. Ideal soil consists of 25% air, 50% solid matter and 25% water.

The addition of sharp sand and some form of organic matter is recommended when amending clay soils. If amending a sand or loamy soil, add organic matter only. Every 6 inches of clay soil need 3 to 4 inches of organic matter. Every 6 inches of sandy or loamy soil need 1 to 2 inches of organic matter. Adding gypsum (calcium sulfate) at the rate of 50-100 lbs/1000 ft<sup>2</sup> may also improve internal drainage of clay-based soils.

## Plan First

Before you even start to plant, conduct a site analysis of the landscape area. Have a soil test conducted. This will indicate pH, soil texture class, amount of organic matter and the amount of essential nutrients already present. These first steps will help to correct soil drainage and soil pH and to improve soil texture. This will lead to success with your ornamental plants.

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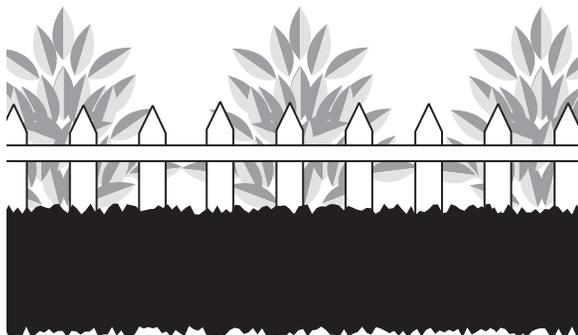
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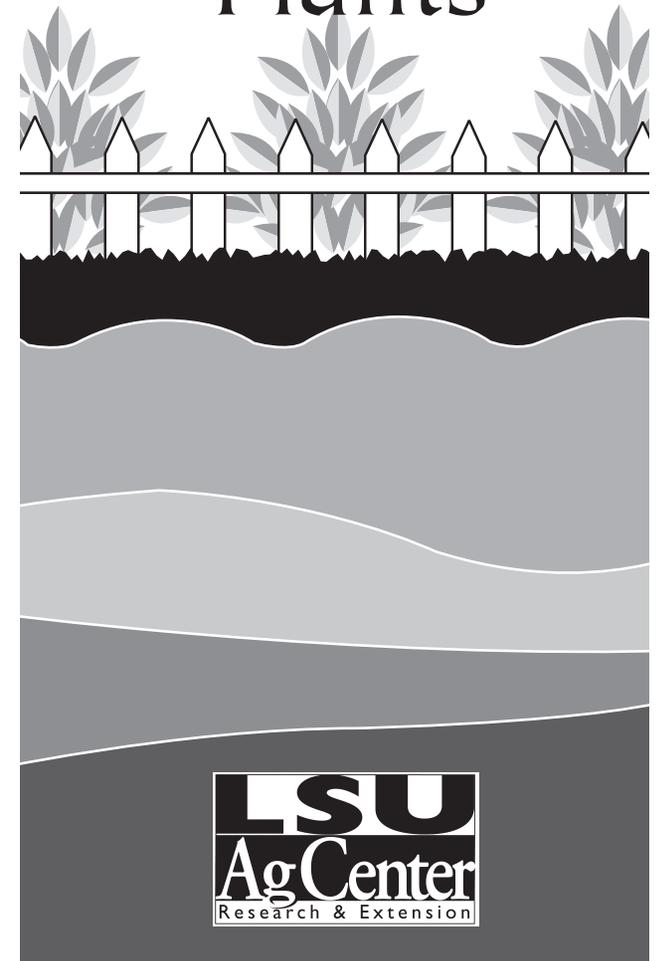
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# Landscape Bed Preparation For Ornamental Plants



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