

Planting Container Plants

Working With The Native Soil

First of all let's assume that the plant we are going to install is perfect, otherwise you may have to fix it before it is planted (see Repairing Plants). Let's also assume that your garden's soil is at least decent, not solid rock or solid clay.

You may want to check you soil for drainage before you start.

1. Dig a hole 18" deep and wide.
2. Fill with water.
3. If it drains within 10 minutes the drainage is above average.
4. If it drains within 1 day the drainage is decent.
5. If the hole still has water after several days you should select bog tolerant plants or fix the drainage.

The goal is to keep all the roots alive while they are getting established. **The problem** is that many of the deeper roots that come with the container plant are too deep to breathe in our local soil (especially when you install plants that were grown in containers taller than 8"). This problem is also due to the fact that the drain holes at the bottom of the containers gave the roots an unnaturally deep source of air. The ground has no such air source. We have to provide sufficient airflow to the bottom of the planting hole to keep the deep roots alive.

Small container plants (up to 8" deep) have such shallow root balls that it is not critical to create a breathable zone. They get enough air from the surface passing through their own root ball.

For a larger container plant we recommend:

1. The soil is easier to work with if it is moist but not wet. Thoroughly irrigating the area 2-3 days before is quite beneficial during the dry season.
2. Dig a hole as deep as the root ball is tall. Don't make it deeper. We don't want any chance that the top of the root ball will sink below surface level.
3. Dig the hole wide enough so that there would be a gap of about 4-6" from the edge of the root ball to the edge of the hole.
4. Mix (amend) the soil you dug out of the hole with about 1/3 to 1/2 of either:
 - a. Laguna Hills Nursery Planting mix
 - b. Laguna Hills Nursery Tropical Potting Soil.
 - c. Laguna Hills Nursery Acid Mix
 - d. Pumice

All of our soil mixes contain pumice, the most efficient material at aerating the soil. It is best not to backfill with pure product although it can work. We are creating a *halfway house* and want the roots to enter the native soil fairly quickly. (If your garden soil is sand or decomposed granite **do not** amend it. You don't want to make the soil too aerated.)

5. Place the plant into the hole.
6. Place the amended soil into the hole around the root ball. Firm the soil with your hands to eliminate air pockets. When installing large plants of 15-gallon or larger, it is beneficial to place perforated pipes vertically along side the root ball to provide even easier air passage to the bottom. A section of 3" perforated drain pipe works fine. It can be filled with gravel to stop mosquitoes and capped with a drain grate for safety.
7. Use the remaining loose soil to build a 2-3" high basin around the plant to catch irrigation water. Make certain that native soil does not cover the surface of the plant's root ball. (The relatively high porosity and low permeability of native soil will prevent irrigation water from entering the root ball.)
8. Water thoroughly. Fill the water basin at least 3 times. It takes several inches of moisture to thoroughly moisten dry soil. The soil is adequately moist only during or just following our December-April rainy season.
9. During warm weather (80°F+) the newly installed plant should be watered daily or even several times per day if the weather approaches 100°F. Once the roots have had time to grow into the surrounding soil daily watering is less critical. This may be just a few days for plants smaller than 1-gallon, a few weeks for 1 to 5-gallon sizes, and a month or more for larger specimens. Plants are **established** once they grow a significant amount of root into the surrounding soil.
10. After a few weeks the basin can be smoothed out if the plant is watered with sprinklers or drip. Apply an organic surface mulch to stop weeds, insulate the soil, provide nutrition and conserve water.

Replacing the Native Soil

If you have the bad fortune that the soil in the planting bed is mostly rock or pure clay you will get better results if better soil is brought in. Here are 3 strategies:

1. Add a layer of soil on top of the existing soil. I recommend either *sandy loam* or a mixture of *sandy loam* : *decomposed granite*. The thicker the layer the better, but 6"-8" is enough to give positive results.
2. Build raised planters in strategic locations and fill with the soils listed above.
3. Remove 8" to 2' of native soil and replace with the soils listed above. It's a good idea to install French Drains in the lowest sections to insure that marshes don't develop.

The plants can then be installed using the previous instructions.

Here are a few precautions:

1. If your home is near a slope consult a soil engineer to make certain you won't cause slope failure. If a highly porous soil is substituted, the ground near a slope may absorb too much water and become unstable during unusually rainy winters.
2. If you add soil make certain the yard's surface drainage is not affected. Do not cover any portion of the house's walls.

Amend the Native Soil

If your soil is heavy clay the permeability can be increased if the entire bed is amended. (Amending the soil cannot improve drainage.) Adding *pumice* is the most efficient (adds less volume) and permanent method. Pumice is a natural volcanic rock with air holes blasted through it. To be effective the pumice should be from 10-20% of volume. At 20% of volume there is rock-to-rock contact, that creates permanent airways through the soil, even if it is otherwise clay. This is 1"-2" of pumice mixed in with 9"-8" of soil to create 10" of highly permeable earth. This can be fairly expensive.

Sand can be added to increase permeability, however, depending upon the clay content of the soil, you may have to increase the sand content of the soil anywhere from 10% to nearly 70% to change the soil's character. (The clay content of the soil must drop below 35% to create significant permeability.)