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Discussion Topics

• Soil Preparation
• Soil Additives
• Landscape Installation
Landscape Soil Preparation: Getting Off to a Good Start…
What kind of soil do you have?

Sand - Well drained with good aeration (doesn’t hold much water)
Silt – Well drained with adequate aeration
Clay – Poorly drained with limited aeration (holds to much water)
1. Using a post-hole digger or sharp-shooter dig a 8” x 24” hole
2. Fill the hole approximately ½ full with water.
3. Determine how long it takes for the water to drain from the hole
   - < 15 min = Excessive drainage
   - 15 – 30 min = Good drainage
   - > 30 min = Poor drainage
Interpreting the hole test results...

< 15 min = Excessive drainage
Consider adding fine textured organic matter

15 – 30 min = Good drainage
Modifications not required

> 30 min = Poor drainage
Consider raised beds or incorporating coarse textured materials
**Additional thoughts and reminders…**

**Organic Matter:**
Be sure to use organic matter that is THOROUGHLY decomposed. Raw organic matter can cause nitrogen deficiencies.

Select organic matter with a good distribution of particle sizes. The finer the OM the greater the water holding characteristics.

**Raised Bed Construction:**
When constructing a raised bed, DO NOT incorporate the landscape soil (bed mix) in to the native soil. This tends to create a bathtub effect and holds water.

Select a landscape soil (bed mix) with a good distribution of particle sizes.
Soil Additives:

What to Add and How Much...
Gypsum - *Calcium Sulfate*

Used primarily to maintain soil structure.
Prevents soils from dispersing and maintains soil aggregates
Selectively prevents sodium from adsorbing to the soil
Adds calcium
Gypsum - *Calcium Sulfate*

Gypsum is not recommended for use in landscape soils (i.e. > 10% organic matter)

Gypsum is not effective in sandy (well drained) soils.

The effects of gypsum applications are short-lived, usually a matter of 4 – 6 weeks.

The use of gypsum in most landscape situations is not cost effective.
Root Stimulators

Products bearing the name “Root Stimulator” are not subject to regulation by the Texas Department of Agriculture or any regulatory agency.

There is evidence showing that some plant hormones can be used to increase root formation in certain plants. However, it is highly unlikely that a plant will fail to become established in the landscape without the addition of a root stimulator.
Fertilizers

Base fertilizer applications on the results of a soil test. Generally speaking, do not apply more that 1 – 2 lbs. of actual nitrogen (N) per 1000 square feet of area.

Use no/low phosphorous (P) fertilizers.

Apply fertilizers to the target area only and avoid getting fertilizer materials on walks, driveways, streets, storm drains, ponds, creeks, drainage ditches or any area that may potentially contaminate surface and groundwater resources.

Store fertilizer materials safely and in a manner that will prevent potential contamination of surface and groundwater resources.
Fertilizers

Fertilizers are not a “medicine” for sick plants. They are SALTS. The same types of salts that caused most of the plant damage from Hurricane Ike.

Use fertilizers wisely and DO NOT over-apply to the landscape.

The appropriate use of fertilizers in the landscape pose little threat to the environment.

Environmental contamination occurs when fertilizers are mis-applied, mis-handled and/or stored improperly.
Landscape Installation:

Planting Techniques for Trees & Shrubs...
THEN:
Prepare a planting hole twice as large as the diameter of the container/root system of the plant going in to the hole.

NOW:
Prepare a planting hole the same size as the diameter of the container/root system of the plant going in to the hole.
Tree Planting
To ensure healthy trees, start with Right Tree/Right Location.
Once you select a tree suited for your site and its microclimate, be sure to plant the tree correctly!

**THEN:**
Amend the backfill with organic matter.

**NOW:**
Do not amend the backfill.
Tree Planting

To ensure healthy trees, start with Right Tree/Right Location.
Once you select a tree suited for your site and its microclimate, be sure to plant the tree correctly!

**THEN:**
When finished planting, the surface of the container/root system should be at grade level.

**NOW:**
When finished planting, the surface of the container/root system should be 6”- 8” above grade level.
Additional Installation Info…

Do not dig too deeply, disturbing the soil at the bottom of the planting hole. This can result in settling.

DO NOT cut or score the roots of newly planted tress, shrubs or other plant materials!!!

If necessary – un-twine the roots.

Use backfill to construct a water-holding reservoir around the outer circumference of the plants root system.
Watering – Before, During & After

**Before** - Make sure plants/containers are thoroughly watered before beginning the planting process.

**During** - When the containerized root system is placed in to the planting hole, fill the hole approximately \( \frac{1}{2} \) full with water.

**After** - Slowly apply water until the planting reservoir is filled. Wait until the water percolates in to the soil and re-apply water until the reservoir fills again. Repeat this process until water stands in the reservoir.
Additional Watering Info...

Watering/irrigation is the most IMPORTANT practice for establishing newly plant trees and shrubs in the landscape!!!

A turf irrigation system will NOT adequately water/irrigate newly planted trees and shrubs in the landscape!!!

Water must be applied SLOWLY so that the rate of application does not exceed the rate of infiltration/percolation.
Looking for More Info…

Be sure to visit the Texas AgriLife Extension Service, Galveston County Office’s Web Site

http://aggie-horticulture.tamu.edu/galveston

Gulf Coast Gardening

Galveston County Master Gardeners
Earth Kind Plant Selector:
On-line database providing valuable information on plant adaptability.

Heat Tolerance
Drought Tolerance
Pest Tolerance
Soil Requirement
Fertility Requirement

Earth Kind Index = 1-10
10 = Highly Adapted
1 = Not Well Adapted

http://EarthKind.tamu.edu
Galveston County Master Gardener Volunteers Prepare Storm Survivability Ratings
Storm Survivability Ratings

http://EarthKind.tamu.edu