

SOIL: HOME TO ALL PLANT ROOTS!

Matching the plant to the soil and creating a hospitable home is the first essential step in successful urban agriculture!

SOIL COMPONENTS

Success Tip: Compost enhances each of the soil components, making for a living, hospitable environment for urban agriculture crops!

Organic Matter

- Comprised of decayed plants and animals
- Living area with millions of microscopic critters keeping the soil alive and vital
- Texas heat burns up organic matter in our soils

Water and Air

- Carbon dioxide in the soil combines with water to form a food solution used by plants
- Air provides space for water and root movement

Plant Nutrients (food)

- Proper balance of 20 elements needed for growth
- Soil fertility is the ability of soil to hold and release nutrients in adequate amounts and suitable proportions
- Proper quantities of water and air are needed

Factors Affecting the Amount of Organic Matter in Soil

- Long term management
- Type of plants previously grown in area
- Temperature
- Drainage

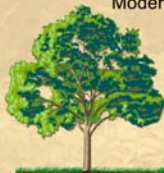
SOIL DEPTH

Success Tip: The deeper the original matter layer, the less water required for successful landscaping

Effective Soil Depth

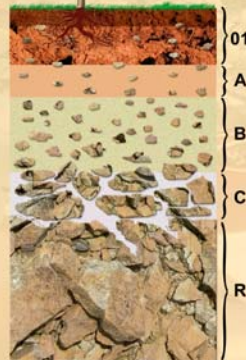
- Depth to which a plant's root can grow before hitting something that stops them
- Plants have different depth needs depending on type and size
- Deeper topsoil holds more water requiring less frequent irrigation

Very shallow: 10" or less Deep: 36"–60"
Shallow: 10"–20" Very Deep: 60" plus
Moderately deep: 20"–36"



Soil Horizons

- Soil not only changes across the surface, it changes below the surface as well.
- What we call topsoil is only the beginning



O1 Organic matter (topsoil, full of living organisms making soil fertile)

A Mineral surface soil that has accumulated decomposed organic matter. Usually darker in color than lower layers; does not support plant life well

B Mineral subsoil collecting clay and organic matter from above; fine texture

C Mineral horizon of weathered parent material; older

R Underlying consolidated bedrock—very deep

SOIL TESTING

Success Tip: Match the plant to the soil or amend the soil to match the plant

How often?

- Test soil every 3 – 4 years or when establishing a new landscape

How do you test soil?

- Obtain a soil testing kit from your local nursery or Texas Cooperative Extension office
- Use clean equipment, do not use brass, bronze or galvanized tools

Where do you obtain soil samples?

- Each sample should represent only one soil type or area for example: a lawn, vegetable garden or perennial landscaped area
- Take at least 6–8 sub samples and combine to make one sample
- If one area of the yard seems healthy and another has bare or yellow areas, sample these areas separately

How deep do you sample?

- Lawns: 4" excluding any turf thatch
- Vegetable and flower gardens: 4"–6"
- Shrubbery: 4"–6" at base of plant