University of California
Agriculture and Natural Resources | UCCE Master Gardener Program

Ten Tips for Nurturing Your Soil

Evaluate your soil

1. Perform a soil test
   - Determine soil type
   - Determine nutrients, pH, salinity
2. Use a soil probe routinely
   - Evaluate soil moisture, texture
   - Evaluate degree of soil compaction
   - Determine root health
   - Evaluate irrigation depth

Protect your soil

3. Avoid soil compaction
   - Do not walk on or work in wet soil
4. Prevent soil erosion
   - Adjust irrigation to complement soil type
   - Use living ground covers and mulch
   - Create cover to hold soil in place
   - Improve water penetration to slow runoff
   - Terrace hillsides to retain soil
   - Use porous hardscape to allow water penetration and retention
   - Use berms to control erosion
     - Direct water to areas less susceptible to runoff
   - Use infiltration basins to retain water and reduce runoff to ocean

Improve your soil

5. Aerate the soil
   - Use pitchfork or machine
   - Encourages root growth
6. Use raised planter beds
   - Where soil is hardpan or heavy clay
7. Improve soil drainage
   - Amend soil to improve soil structure
   - Plant on berms to take advantage of improved drainage

Nurture your soil

8. Add compost
   - Mix compost into soil
   - Adds nutrients
   - Improves soil structure
   - Improves air and water movement through soil
   - Adds and sustains microbial life in soil
   - Improves air and water movement through soil
   - Adds and sustains microbial life in soil
   - Improves soil health
9. Use mulch
   - Use yard waste as mulch or compost
   - Lay mulch on top of soil 2-3 inches deep, but away from base of plants
   - Can use organic or inorganic materials
   - Preserves topsoil
   - Retains soil moisture
   - Suppresses weeds
   - Decreases erosion
10. Fertilize the soil
    - Adds nutrients, especially nitrogen, phosphorous, potassium
    - Also adds micronutrients
    - Organic fertilizers
      - release nutrients more slowly
      - last longer
      - benefit soil
      - decrease potential for groundwater pollution
    - Synthetic fertilizers
      - fast-acting, short-lived effects
    - Slow-release fertilizers
      - work better in warm, moist soil

UCCE Orange County Master Gardeners

http://mgorange.ucanr.edu http://mgorange.ucanr.edu/Gardening_Hotline/

How to Test Soil

A soil test will assist the homeowner in determining nutrient content, composition, and other characteristics such as the acidity or pH level. This information can be used to optimize plant growth or help solve soil-related problems. Three methods for testing soil are available in Orange County.

Purchase a soil test kit at a retail garden center and conduct the test.

Soil test kits range in cost from $10 to $50 for multiple tests. A Technology & Product Report from the American Society of Horticultural Science assessed the accuracy of commercially available soil test kits, as compared to test results from an analytical laboratory, with the following results:

- La Motte Soil Test Kit (La Motte Co., Chesteron, MD) 94%
- Rapidtest® (Luster Leaf Products, Woodstock, IL) 92%
- Quick Soiltest (Hanna, Woonsocket, RI) 64%

Additional information on soil test kits can be found at http://horttech.ashspublications.org/cgi/content/abstract/17/3/358.

Send a soil sample to a testing laboratory.

Testing laboratories charge for soil analysis. We suggest that you call the selected laboratory prior to submitting samples. Quite often samples must be taken, packaged, and sent in a particular manner in order to obtain the best possible diagnosis. Soil testing laboratories in Southern California are:

- Associated Labs, Orange (714-771-6900, www.associatedlabs.com);
- Waypoint Analytical (formerly Soil and Plant Laboratory, Inc., Orange (714-282-8777, www.waypointanalytical.com.)
- Wallace Laboratories, El Segundo (800-473-3699, www.bettersoils.com).
- The PACE Turfgrass Research facility in Oceanside (760-272-9897) maintains a list of soil analytical laboratories at http://www.paceturf.org/index.php/public/free_stuff/,
- Drop off a soil sample at Orange County Farm Supply in Orange. Call first to find out how to take a sample. (714) 978-6500.

Interactive Soil Maps

The University of California, in collaboration with the USDA Natural Resources Conservation Service, has developed SoilWeb, a web-based interactive soil mapping application. It combines soils data with Google maps, to provide a tool to easily navigate and view detailed sols information. The app runs in your web browser and is compatible with desktop computers, tablets, and smartphones. http://casoilresource.lawr.ucdavis.edu/gmap/

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