

# Amending Desert Garden Soil - Considerations

JJZ

## 1. Become familiar with your soil. Make a plan. Start working with what you have.

- a. Assess texture & structure, color, scent, nutrients, organic matter, drainage, compaction.
- b. Soil texture is somewhat predictive of soil fertility, eg.  $\uparrow$  sand +  $\downarrow$  organic matter =  $\downarrow$  fertility.
- c. Consider soil laboratory testing and jar sedimentation test at home.
- d. Assess what you have, then form a plan for amending. Help available at local Co. Extension.
- e. Adjust for desert climate: winds, UV radiation, low humidity, low rainfall,  $\uparrow$ pH,  $\uparrow$ salts and low soil organic matter  $\rightarrow$  meager soil structure.  $\downarrow$

## 2. Improve soil structure by:

**Formation of soil aggregates - crumb structure  $\rightarrow$  tilth  $\rightarrow$  resilience**

**At the same time - improve nutrient exchange capacity (CEC) =  $\uparrow$  fertility:**

- a. **Amend soil regularly**- spring & fall: eg. compost and /or worm castings, possibly manures.
- b. **Use organic mulches** *year round*, to maintain soil moisture. Mulches then decompose to humus.
- c. Allow *healthy* plant residue (stubble) to decompose in garden soil.
- d. Consider planting a cover /green manure crop. See # 3 b, pg. 2. Consider crop rotation.  
**Keep green plants growing all year long** because the roots feed soil microorganisms.
- e. Consider vegetarian animal manure amendments. Already composted manures are useful.
- f. **Support soil biology** - maintain moisture, avoid unnecessary chemicals, eg. "cides". See 3a, pg.2
- g. **Manage soil more by disturbing it less.** Till lightly, when necessary. Less microbial disturbance.
- h. Raised garden beds help avoid soil compaction and have many other benefits for desert gardens.
- i. **Cover bare soil.** Mulch it. Plant something, then mulch it. See "d" above.
- j. **Shading** soil and plants in the desert decreases sunburn & evaporation from plants and soil.
- k. Actively aerated compost tea (AACT) adds nutrients and beneficial microorganisms to soil.
- l. Consider recycling homestead organics by backyard composting. Visit [www.nmcomposters.org](http://www.nmcomposters.org)

## 3. Contact local county extension service for assistance - Sandoval Co. - 505.358.1943

## 1. Books:

- a. *The Soul of the Soil*, 1999, Smillie & Gershuny
- b. *Teeming with Microbes*, Revised 2010, *Teeming with Fungi*, 2017, *Teeming with Nutrients* - all by J. Lowenfels
- c. *A Soil Owner's Manual*, 2016, Jon Stika

**2. Laboratory Soil Testing:** Colorado State Univ. [www.soiltestlab.colostate.edu](http://www.soiltestlab.colostate.edu)  
Soil test kits available at BernCo. Extension Office, 1510 Menaul Blvd.,NW 505.243.1386  
and Sandoval Co. Extension, Bernalillo,NM, 505.358.1943 Cost - about \$35.00

## 3. World Wide Web:

- a. [nrcs.usda.gov](http://nrcs.usda.gov): *The Soil Biology Primer*, *Unlock Secrets in the Soil*, *Web Soil Survey*
- b. [aces.nmsu.edu/pubs](http://aces.nmsu.edu/pubs) - *Managing Organic Matter in Farm & Garden Soils: Circular 687*  
*Principles of Cover Cropping for Arid & Semi-arid Farming Systems*  
*Nitrogen Fixing Legumes. Guide 129A*
- c. [phc.eu/en/knowledge-information/film-video](http://phc.eu/en/knowledge-information/film-video) : *Soil biology - microorganisms*

**4. Shade Fabric:** [growerssupply.com](http://growerssupply.com), [Lowe.com](http://Lowe.com), [Homedepot.com](http://Homedepot.com)

**5. Grow Box:** [growbox.com](http://growbox.com)

**6. Rain barrels:** [tjerasrainbarrels.com](http://tjerasrainbarrels.com)

**7. Clay Irrigation pots:** 123 Vermont, Abq., 505.266.3590 [growingawarenessurbanfarm.com](http://growingawarenessurbanfarm.com)

**8. Drought tolerant plants:** [highcountrygardens.com](http://highcountrygardens.com), [santaana.org/nursery.htm](http://santaana.org/nursery.htm)

**9. Cover Crop Seeds:** [plantsofthesouthwest.com](http://plantsofthesouthwest.com), [Amazon.com](http://Amazon.com)

**10. Organic Fertilizers:** [espoma.com](http://espoma.com), [neptunesharvest.com](http://neptunesharvest.com), [milorganite.com](http://milorganite.com)

**11. Irrigation methods:** [www.dripworks.com](http://www.dripworks.com), [www.ncat.org](http://www.ncat.org) - NM irrigators pocket guide

**12. Raised beds kits:** [homedepot.com](http://homedepot.com), [lowes.com](http://lowes.com), [amazon.com](http://amazon.com)

**13. Visit: Waterwise Demonstration Garden**, 950 Pinetree Rd.,SE, Rio Rancho

**14. Locally Made Compost:** Sandoval Solid Waste Composting Facility, 505.867.0816

2708 Iris NE, Rio Rancho: Bulk product & wood chip mulch.

ABCWUA Soil Amend. Facility, 505.205.5721, Bulk, [www.abcua.org/content/view/87/75](http://www.abcua.org/content/view/87/75)

Some local nurseries carry bagged NM made compost : LaMontanita Coop, Plants of the Southwest, Santa Ana Garden Center, The Village Mercantile., Corrales

**15. Study home composting:** [nmcomposters.org](http://nmcomposters.org) → Many resources & “Classes for the Public”

