

Compost and Soil Humus

Resource List

Compiled by Luke Freeman, Kerr Center for Sustainable Agriculture

Books

- Appelhof, Mary. *Worms Eat My Garbage*. Kalamazoo, MI: Flower Press, 1997.
- Brinton, William F. *Earth Plant and Compost*. San Francisco: Biodynamic Farming and Gardening Association, 2002.
- Campbell, Stu. *Let it Rot!* Pownal, VT: Garden Way Publishing, 1975.
- Ecology Action Staff. *Grow Biointensive Composting and Growing Compost Materials*. Willits, CA: Ecology Action of the Midpeninsula, 2004.
- Gershuny, Grace. *Compost, Vermicompost and Compost Tea: Feeding the Soil on the Organic Farm*. Athol, MA: Highland Press, 2004.
- Gershuny, Grace and Joseph Smillie. *The Soul of the Soil: A Guide to Ecological Soil Management*. 3rd ed. Davis, CA: agAccess, 1995.
- Howard, Sir Albert. *An Agricultural Testament*. New York: Oxford University Press, 1943.
- Howard, Sir Albert. *The Soil and Health: A Study of Organic Agriculture*. New York: Schocken Books, 1975.
- Lowenfels, Jeff and Wayne Lewis. *Teaming with Microbes: A Gardener's Guide to the Soil Food Web*. Portland, OR: Timber Press, 2006.
- Martin, Deborah L., and Grace Gershuny, editors. *The Rodale Book of Composting*. Emmaus, PA: Rodale Press, Inc., 1992.
- Rynk, Robert, ed. *On-Farm Composting Handbook*. NRAES-54. Ithaca, NY: Natural Resource, Agriculture, and Engineering Service, 1992.
- Storl, Wolf D. *Culture and Horticulture: A Philosophy of Gardening*. San Francisco: Biodynamic Farming and Gardening Association, 2000.
- Tate, Robert L. III. *Soil Organic Matter: Biological and Ecological Effects*. New York: John Wiley & Sons, 1987.

Electronic Resources

- ATTRA. <https://attra.ncat.org/soils.html>
- Cornell Composting. <http://compost.css.cornell.edu/index.html>
- EPA Composting. <http://www.epa.gov/epawaste/conserve/rrr/composting/index.htm>
- US Composting Council. <http://compostingcouncil.org/>

Publications

- BioCycle*, Magazine
- Compost Science and Utilization*, Peer-Reviewed Journal

Farm-Scale Composting Presentation Notes

Composting: The Basics

By Luke Freeman

From ODAFF Plasticulture Workshop
Presentation, 2012

- I. What is Compost?
 - A. Decomposed organic matter
 - B. Managed to grow beneficial microbes, concentrate nutrients, and build humus
- II. Benefits of Compost
 - A. Better soil structure
 - B. Increased water holding capacity
 - C. Improved soil aeration
 - D. Nutrients when plants need them
 - E. Plant growth stimulant
 - F. Beneficial microbes
 - G. Other uses
 1. Compost tea
 2. Potting mix ingredient
- III. How to Compost
 - A. Correct C:N, 25:1-35:1
 - B. Adequate moisture: 50-60%
 - C. Adequate aeration
 - D. Small particle size
 - E. Time: 3-12 months
 - F. Compost Stages
 1. Mesophilic, 50-113°F
 2. Thermophilic, 113-158°F
 3. Curing, below 113°F
- IV. Structures
 - A. Free-standing windrow
 - B. Enclosed bin
- V. Organic Regulation
 - A. Records
 - B. Initial C:N, 25:1-40:1
 - C. Temperature of 131-170°F
 1. 3 days in aerated static pile
 2. 15 days in windrow turned 5x
 - D. Plant-based compost is exempt

COMPOST FEEDSTOCKS	
Material	C/N
Crop Residues, Fruit/Vegetable Waste	
Coffee grounds	20
Corn cobs	98
Corn stalks	60-73
Cull potatoes	18
Fruit wastes	20-49
Potato tops	25
Rice hulls	113-1120
Soybean meal	4-6
Tomato processing waste	11
Vegetable wastes	11-13
Straw, Hay, Silage	
Corn silage	38-43
Hay, legume	15-19
Hay, non-legume	32
Straw, oat	48-98
Straw, wheat	100-150
Manures	
Broiler litter	12-15
Cattle	11-30
Dairy	13-18
Horse	22-50
Laying hens	3-10
Sheep	13-20
Swine	9-19
Turkey litter	16
Yard and Municipal Waste	
Bark, hardwoods	116-436
Bark, softwoods	131-1285
Cardboard, corrugated	563
Grass clippings	9-25
Leaves	40-80
Newsprint	398-852
Sawdust	200-750
Woodchips, hardwood	451-819
Woodchips, softwood	212-1313