COMPOSTING AND GOOD SOILS: A GARDENER’S BEST TOOLS

THE IMPORTANCE OF BUILDING GOOD SOIL
- Good soils are the basis for healthy plants and promote soil health through development of soil microbial and fungal communities, allowing plants easy access to moisture and nutrients. Healthy soils also have the potential to mitigate climate change.

A BRIEF INTRO TO SOILS
- Factors of Formation: CIORPT (Climate, Organisms, Relief, Parent Material, Topography)
- Soil Textural Components: Sand, Silt, Clay
- The impact of soil physical properties on soil biology and chemistry

SOIL HEALTH BASICS
- It’s elemental: The Periodic Table
- Photosynthesis: “The Basic Process of Life”
- Examples of common plant molecules: lignin, cellulose, carbohydrates
- The Soil Food Web (including mycorrhizal fungi)
- Organic Matter is the basis for soil health.

SUSTAINABLE SOIL HEALTH PRACTICES (Add SOM)
- No Till
- Polycultures
- Crop Rotation
- Cover Cropping/“Continuous Cover”
  - N fixation
  - Mycorrhizal Fungi (“nutrient and moisture superhighway”)
- Add compost and manure

BENEFITS OF BACKYARD COMPOSTING
1. Waste (and methane) reduction: 26% of all waste is organic/vegetative
2. Resource creation (Organic Matter needed for soil health)

HOW TO COMPOST:

BUILDING THE PILE: ESSENTIALS OF COMPOSTING
- C:N ratio: brown-green: 2:1 (or 1:1) by volume
- Moisture: about as damp as a rung out sponge
- Aeration: turning pile accelerates decomposition
- Volume: approximately one cubic yard (3x3x3)
- Surface area: the greater the surface area the faster the decomposition

WHAT CAN YOU COMPOST?
- YES: lots of things! e.g. vegetative kitchen and garden materials, animal manure, coffee grinds, houseplant clippings, hair
- NO: Meats, fats, oils, dairy products, pet waste (from meat-eating pets), contact poisonous plants, disease- or insect-infested plants, aggressive plants, weed seeds, colored paper, charcoal ash
METHOD OPTIONS: HOT PILE (BATCHING) VS. COOL PILE (LAYERING)

SYSTEMS: Keep compostable material organized, more efficient and more aesthetically pleasing
- Single or Multi-Bin Systems
- Homemade or Manufactured

OTHER OPTIONS FOR FOOD SCRAP MANAGEMENT
- Soil Incorporation/Trenching
  - At least 12" from surface
  - Don't plant where you're burying materials
  - 6-8 weeks for decomposition.
- Vermicomposting: RED WIGGLERS (not earthworms)

Finished compost:
- Improves Soil health and texture
- Makes mineral nutrients more readily available to plants, improving growth
- Reduces need for synthetic fertilizers, pesticides (reducing non-point source pollution)
- Increases water-holding capacity of soils: keeping nutrients in solution, and reducing erosion, watering requirements, plant stress
- Moderates soil temperature, reducing plant stress

USING FINISHED COMPOST
- Topdressing (under mulch) (Benefits of mulching: moderate soil temperature, retain moisture, control weeds, protect tree/ shrubs from mower/trimmer Blades) Don't Over mulch.
- Soil Amendment (above ground when planting trees/shrubs)
- Potting/Seed Starting Mix (Be sure to use mature compost)
- Compost Tea: 1:10 parts compost to water, steep
- 1 hour to 7 days (aerate) in covered container

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SOME OF MY FAVORITES:

Books: Composting
- Weedless Gardening by Lee Reich
- The Rodale Book of Composting by Rodale Press
- Worms Eat My Garbage by Mary Apelhof, Flower Press.

Books: Soils
- The Soul of the Soil by Joseph Smillie and Grace Gershuny
- Teaming with Microbes and Teaming with Fungi by Jeff Lowenfells
- Mycorrhizal Plant by Michael Phillips

Books: Soils and Climate Change
- Drawdown by Paul Hawken

Websites: Composting and Soils
- Google “No nonsense composting information”. In general .com or .edu sites are most reliable for strictly informational (i.e. not sales) purposes.
  - www.recycleworks.co.uk/
  - www.leereich.com
  - www.makedirtnotinwaste.org
  - www.compost-bin.org
  - www.emilycompost.com/compost.htm

Compost Bins, Tools and Scrap Buckets
Commercially manufactured bins are available through garden centers, hardware stores, mail order supply companies, and some county or municipal recycling offices. Several sources are listed below.
  - Lee Valley Tools, 1-800-871-8158 or www.leevalley.com
  - Gardener's Supply Co., 800-876-5520 www.gardeners.com
  - Brandbuilders LLC, The Earth Machine (in quantities of 25 or more) 1-800-842-0527

Worms and Worm Bins
Red worms (aka red wigglers, manure worms, or the latin Eisenia fetida) can be used for indoor composting, or added to an outdoor pile or garden.
  - www.compost-bin.org/buy-red-worms

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