Organic Gardening-Basics

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What is Organic?

- Organic agriculture is defined as "an ecological production management system that promotes and enhances biodiversity, biological cycles, and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain, or enhance ecological harmony."

- The term "organic" is defined by law as opposed to the labels "natural" and "eco-friendly," which may imply that some organic methods were used in the production of the foodstuff, but this label does not guarantee complete adherence to organic practices.
Goals of Growing Organic

- The primary goal of organic agriculture is to optimize the health and productivity of interdependent communities of soil life, plants, animals and people.
Reasons to Garden Organically

- Imitates nature’s own process
- Organic gardening harmonizes with nature.
- Replenishes nutrients & organic matter
- Optimum soil & plant health
- Maximum garden productivity
- Efficient use of space & recycling of waste
Healthy Soils

- Balance of Nutrients
- Community of Healthy Bacteria
- Animal & Plant Organisms
- Good Structure & Texture
History of the Organic Movement

- Started with British Agronomist Sir Albert Howard in India. (circa 1926)
- Sent there to apply modern chemical methods on model farm
- Found-traditional natural fertilizers produced better and healthier crops.
- Used scientific techniques & natural material to make humuslike soil enrichments thru composting.
Organic methods are gaining ground
Public concerns about food supply/safety
USDA recognized that organic farming is economically competitive in agricultural system.
Food can be grown organically in large farms, homestead plots, suburban backyards, urban community gardens & rooftop or windowsill containers.
What Is Soil?

- Soil Structure- ability to hold air and water for plant roots.
- Important to keep soil - porous, crumbly, and fertile
- 3 substances determine texture
  - Sand
  - Silt
  - Clay
Sand

- Test-Shovel or spade goes in easily
- Feels gritty between your fingers
- Has a coarse texture
- Loose, light, water drains quickly thru large particles
- Drains too quickly
Silt

- Feels Powdery
- Smaller than sand particles
Clay

- Hard when dry
- Slippery when wet
- Particles are microscopic
- Tightly packed together
- Hold onto nutrients
- Doesn’t like to share nutrients w/ plants
- Dense & hard to work
- Puddle when wet, cake & crust over when dry.
- Difficult for roots to penetrate.
Discover Your Soil Type

- **Need:**
  - Quart jar w/ lid
  - Handful of dirt
  - 2/3 of a quart sterile water
  - 1 tsp dish soap
  - Put everything in the jar
  - Shake up
  - Let it settle overnight

- Heavy sand will drift to the bottom
- Medium grade silt in the middle
- Clay on top
- You should see a clear line between layers
Perfect Soil

- 40% Sand
- 40% Silt
- 20% Clay

No matter what your soil type is the addition of organic matter (OM) such as: compost, manure, & other natural materials will improve structure & texture & add nutrients.
Organic Matter (OM)

- AKA Humus - when it is fully decomposed
- Spongy & absorbent
- Holds water & nutrients
- Added to sandy soils increases substance & supports plants.
- Added to clay soils lightens and aerates - allows plant roots, water, air & nutrients to pass.
Earthworms

- Biggest asset to your soil
- Mix soil ingredients
- Improve soil structure by churning air & nutrients
- Provide channels for air & moisture
- Increase nutrient quality
Microorganisms

- Take up soil chemicals, then slowly release them as they change or die.
- The control harmful pathogens.
Building Better Soil

- Making & using compost
- Composting- imitates the natural process of biological reduction of waste to humus.
- Microorganisms help break down plant & animal tissue.
- Green Manure crops- turned under to increase organic matter.
How Organic Matter Helps the Soil

- Feeds microorganisms
- Provides nutrients
- Breaks down plant nutrients
- Improves soil structure
- Better soil aeration
- Crumbly texture that retains moisture.
- Breaks up clay & holds sand together
- Helps soil resist compaction
- Darker color allows soil to warm up quicker
Safe Organic Insecticides

- BT or bacillus thuringiensis
- Insecticidal soap
- Diatomaceous earth
- Rotenone
- Sabadilla dust
- Horticultural oils
Beneficial Insects

- Honeybees
- Lady bugs
- Lacewings larvae
- Dragonflies
- Ground beetles
- Parasitic wasps
- Praying mantis
Weeds indicate pH

- **Acidic soils**
  - Dandelion
  - Dock
  - Horsetail
  - Sorrel

- **Alkaline soils**
  - Ironweed
  - Pennycress
  - Peppergrass
  - Woody aster
Helpful Organic Hints

• Lime & manure are a bad combination. Don’t add them @ the same time.

• Don’t use the leaves of black walnut, eucalyptus, or laurel trees to mulch your garden. They have a compound that stops new growth around them.

• Lightning storms are good for your garden. All electrical activity releases N into the soil.
More Helpful Hints

• Leaving black plastic down for more than a few months deprives the soil of air & water.
• Visit your barber to intimidate deer.
• Grow wildflower garden in your yard & you may get a colorful bonus-- butterflies
References

• The Basic Book of Organic Gardening
• http://www.arhomeandgarden.org/landscaping/SpecGardening/organicgardening.htm
• Make sure that any reference you choose provides research based information.
QUESTIONS??