

# Organic Gardening/Landscaping

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Chapter 13

# Organic Gardening

- food or other agricultural products that have been produced through approved methods that integrate cultural, biological and mechanical practices that foster cycling of resources, promote ecological balance and conserve biological diversity.
- Synthetic fertilizers, sewage sludge, irradiation and genetic engineering are not to be used.

(USDA, National Organic Program)

# Organic Gardening . . .

- an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity.
- based on minimal use of off-farm inputs and on management practices that restore, maintain or enhance ecological harmony.
- has a primary goal of optimizing the health and productivity of interdependent communities of soil life, plants, animals and people.

# Certified Organic

- The National Organic Program (NOP) is the federal regulatory agency.
- Administered by USDA and VDACS
- Congress enacted law in October 2002
- Producer must obtain certification before marketing any product as organic.
- Organic Materials Review Institute (OMRI)

# Elements Examined Under NOP

- soil amendments
- soil management
- plant management
- seed and plant sources
- chemicals (pesticides and fertilizers)

# Elements Examined (cont'd)

- anything else that comes in contact with plants or otherwise influences plant growth
- No synthetic products of any kind were applied to the soil for 3 years prior to any harvests
- To be certified as organic, at least 95% of the inputs and production methods must be organic.

# Elements Examined (cont'd)

- Producers grossing less than \$5,000/yr. are not required to obtain organic certification.
- Product may only be sold as “organic.”
- Must adhere to approved organic agric. prod. methods.
- No synthetic products of any kind were applied to the soil for 3 years prior to any harvests
- To be certified as organic, at least 95% of the inputs and production methods must be organic.

# Certified Organic vs Certified Naturally Grown

## Certified Organic

- Follows strict NOP guidelines
- Certification, w/ paperwork through USDA, NOP, VDACS
- May use some third party inspectors.

## Certified Naturally Grown

- Non-profit organization
- Certification on small scale
- Uses some NOP guidelines
- Growers may follow Certified Naturally Grown (CNG)
- Relies on annual peer inspection
- May market products w/o certification.

# Sustainability Through Biodiversity

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- Soil health
  - Green Manure/Cover Crops
  - Planting design
  - Companion planting
  - Rotation
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# Sustainability Through Biodiversity

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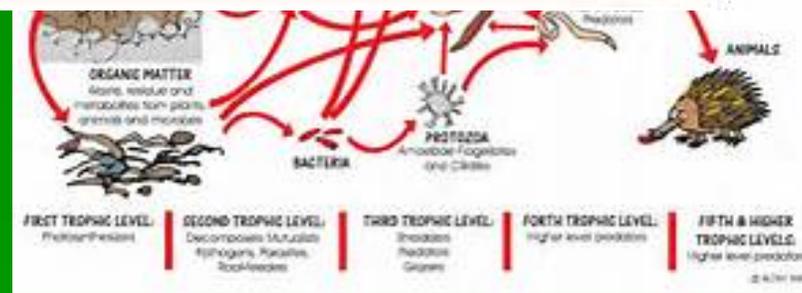
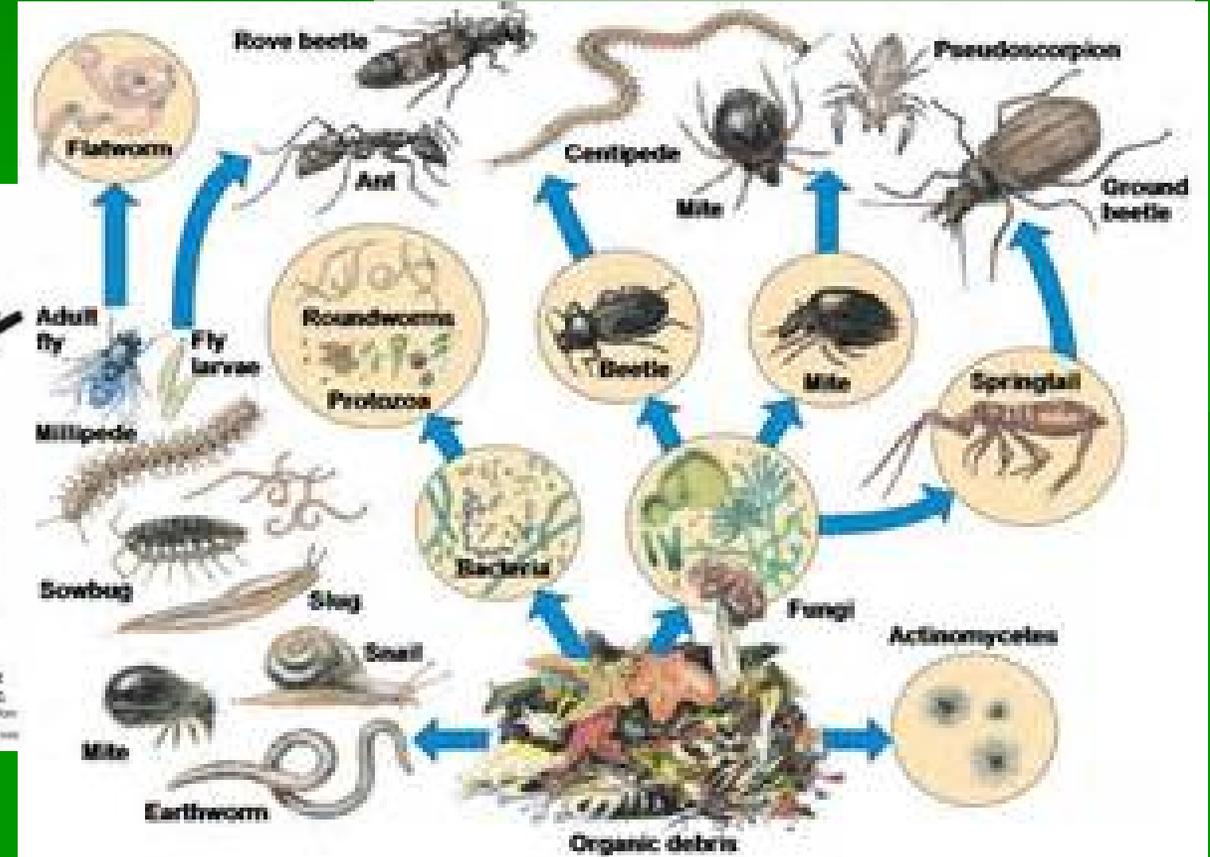
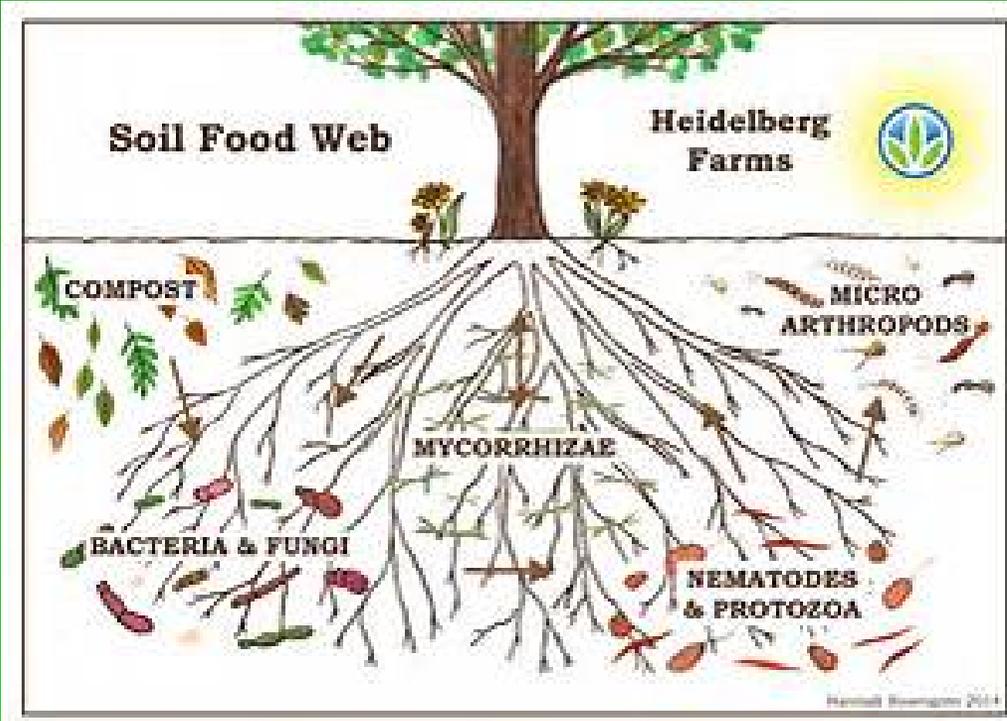
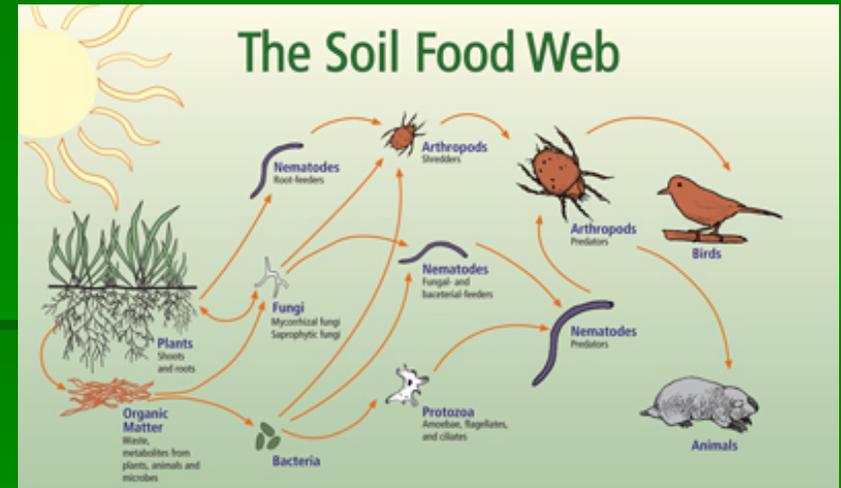
- Compost
- Manures
- Mulch
- Reduced tillage
- Buffers
- Biocontrol
- Wells, ponds and water collection

# Soil Health

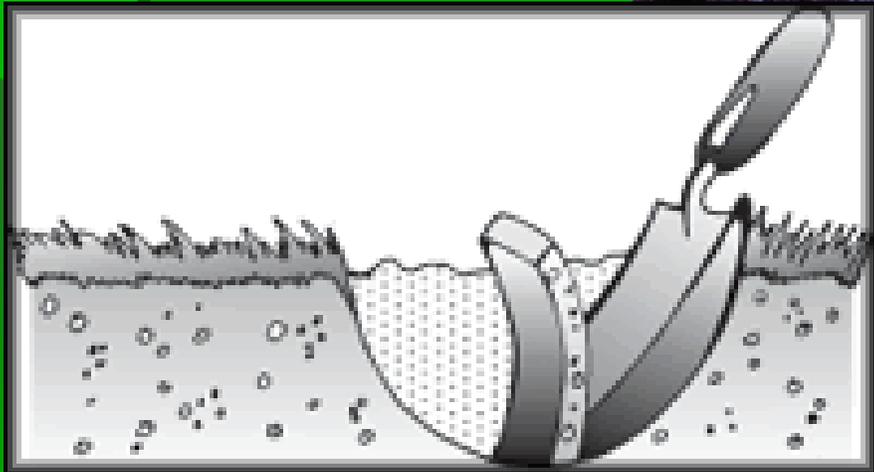
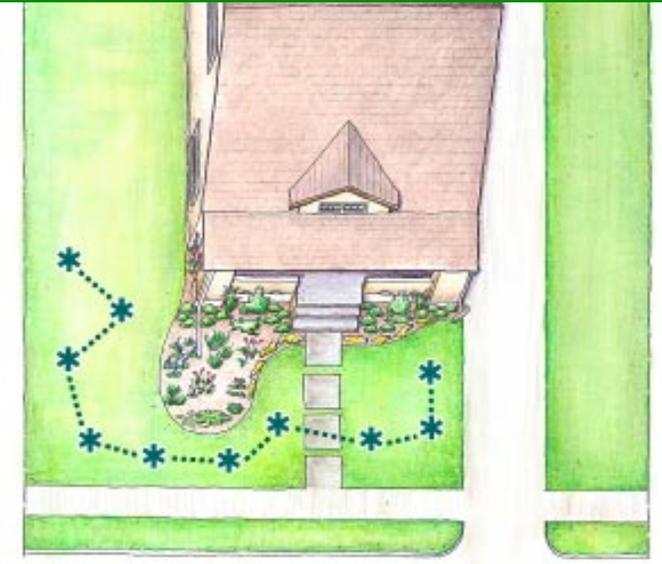
- “The continued capacity of soil to function as a vital living system, within ecosystem and land-use boundaries, to sustain biological productivity, promote the quality of air and water environments, and maintain plant, animal, and human health.”

(Pankhurst et al., 1997)

# The Soil Food Web



# Building Organic Soil -- Don't guess, soil test



# Building Organic Soil – Know What the Plants Need (nutrients, pH, O.M.)



# Building Healthy Organic Soil

- Incorporate green manure/cover crops
  - Alfalfa, clovers, vetch, rye, legumes
- Add compost, manures, amendments, mulches
  - Backyard compost, manures, lime, organic fertilizers
- 2-3 percent O.M. for lawns, 4-6 percent for flowers, gardens and landscapes, > 10 is probably too much
- Incorporate 2" of compost to 6" deep

# Building Organic Soil -- Minimize tilling, when possible





# Plant Health & Nutrition

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- Soil Test
  - Irrigation Method & Time
  - Mulch
  - Intercropping
  - Cover crop
  - Pruning
  - Sanitation
  - Reduced tillage
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# Planting Design

- Companion planting
- Rotation

# Sustainability Green Manure/cover crops



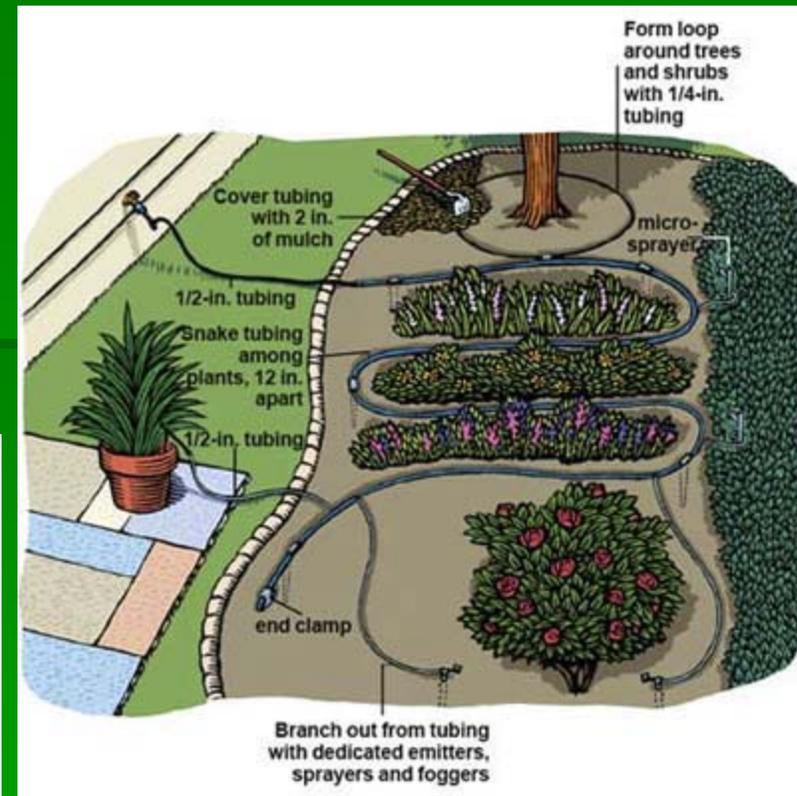
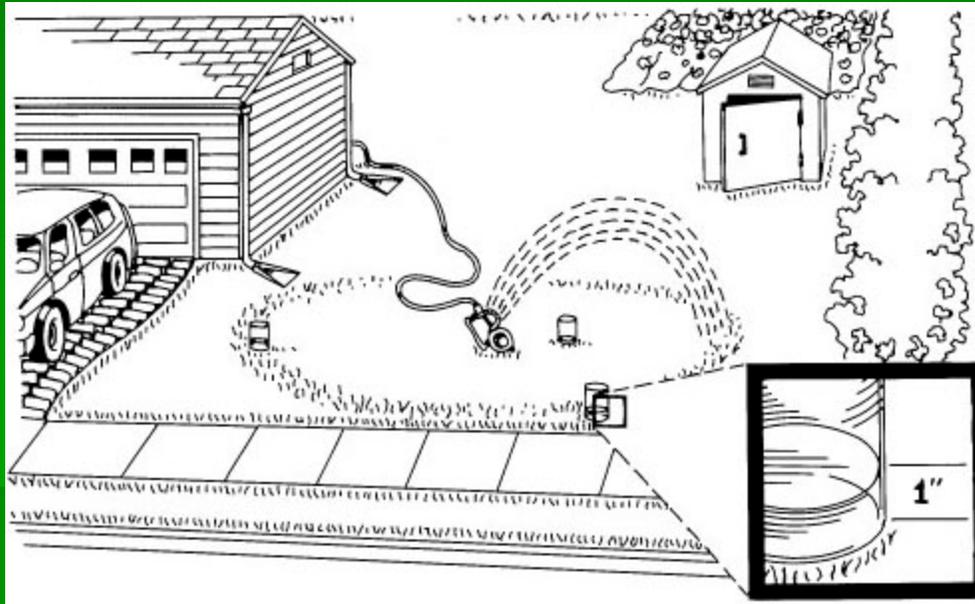
# Sustainability

Well/pond water collection



# Plant Health & Nutrition

Irrigation Method & Time





# Plant Health with Cultural Best Management Practices (BMPs)

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- Plant selection
  - Proper planting methods
  - Pest monitoring
  - Sanitation
  - Control methods when necessary
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# Pest Management

- Resistant Plant Varieties
- Plants that attract Beneficials
- Biocontrol / Disease Organisms
- Sanitation
- Crop Rotation
- Trap Crops
- Intercropping
- Altering planting dates
- Soil health
- Mulch
- Botanical pesticides



# ■ Poaceae

## Pest Management

Plants that attract Beneficials



# Some Controls for Insects and Diseases

- **Bacillus thuringiensis (Bt)**
- **Neem Oil**
- **Diatomaceous Earth**
- **Compost tea**
- **Horticultural Oil**
- **Insecticidal soap**
- **Rotenone**
- **Pyrethrin**
- **Capsaicin**
- **Hot pepper wax**
- **Spinosad**
- **Potassium laurate**
- **M-Pede**
- **Copper**
- **Entomopathogenic nematodes**

# Some Controls for Weeds

- Mulches
- Acetic acid
- Clove oil
- Cinnamon oil
- Rosemary oil
- Thyme oil
- Citric acid
- Ammoniated soap of fatty acid
- Ethanoic acid
- Corn gluten

**Thanks for Your Time.**

