

## Organic Gardening Fundamentals

### Growing in popularity

A 2004 survey by the National Gardening Association found that 5% of America's 90 million households garden only with organic management techniques and an additional 31% use both synthetic and all-natural fertilizers and pest controls. This baseline data is complemented by forward-looking questions, which predict that the number of strictly organic gardeners will nearly double in coming years (National Gardening Association, 2005). This trend is particularly evident in urban areas.

### What does "organic" mean?

As defined by US Department of Agriculture (USDA) National Organic Program (NOP):

- Mostly do not use synthesized chemical fertilizer or pesticides
  - Derived from plant, animal, mineral sources
- Prohibit the use of
  - Genetically modified organisms
  - Ionizing radiation, and
  - Sewage sludge-based fertilizers
- Labeling standards for foods
  - "100 percent organic" contain only organic ingredients (and usually a single ingredient such as a fruit, vegetable, eggs, etc.)
  - "Organic" must contain at least 95% organically produced ingredients.
  - Only products meeting the above standards may display the official "USDA Organic" seal
  - Processed products that contain at least 70% organic ingredients can use the phrase "made with organic ingredients"
  - Animals raised in an organic operation must be fed organic feed and be given access to the outdoors. Antibiotics and growth hormones are prohibited.



### Specifics for organic gardeners

- Build healthy soil by adding composted organic matter
  - Helps create favorable soil structure by feeding soil organisms, which create a glue that holds soil together. Soil life helps to make nutrients from mineral soil and organic matter available to plants, particularly when soil temperatures are warm.
  - Creates pore space for air and water.
  - Increases drainage in clay and water holding capacity in sandy soils.
  - Provides some nutrients, depending on source of compost, but unpredictable.
- It's hard to make good compost at home from garden wastes; it's easier to make good compost from food scraps through worm composting.
- Create a balanced ecosystem by providing habitats for birds, snakes, frogs, and beneficial insects
  - Provide diversity of plants (flower type, color, architecture, annuals, and perennials) to attract insects.
  - Provide insectary plants with small flowers.
  - Provide adequate water.

- Plant alyssum, marigold, sunflower, phacelia, buckwheat, etc. to attract bees.
- Let crops such as cilantro and lettuce flower.
- Use of organic fertilizers
  - Get a soil test with interpreted results
  - Many different materials to choose from; do your homework!
  - Organic fertilizers – Nitrogen: fish emulsion (3-5%), composted chicken manure (3%), blood meal (12-15%); Phosphorus: bone meal (12-24%); Potassium: kelp meal (2-5%)
  - Granular organic fertilizers are slow-release and the nutrients are generally not immediately available to plants and most will not burn
    - Incorporate organic fertilizers several months in advance
    - Use a water soluble organic fertilizer to get plants off to a good start
  - Steve Solomon's recipe:
    - 4 parts fish meal: 1 part dolomite lime: 1 part soft rock phosphate (or 1.2 part bone meal) : 1 part kelp meal
    - Apply 4 # / 100 square ft / crop
- Organic products to control insects and diseases
  - Derived from plants: Neem, pyrethrins, capsaicin, rotenone
  - Derived from microbes: *Beauveria*, beneficial nematodes, spinosad, Bt
  - Derived from mineral sources: oils, soaps, kaolin clay, iron phosphate, sulfur, lime-sulfur, copper-based sprays.
  - Just because a product is labeled as *organic* does not mean that it is completely safe
  - **Read and follow direction on label! The label is the law.**
- Weed control in organic gardens
  - Diligence!- Don't let weeds go to seed
  - Hand pulling and a sharp hoe
  - Sheet mulching (wet soil, layer of overlapping cardboard, mulch on top) can smother annual weeds but does not work for perennial weeds like quack grass and field bindweed
  - Organic herbicides made from vinegar (acetic acid), clove oil, citrus oil, soaps, etc. will burn foliage and can work on annual weeds, especially when young
- With all products, consult with Organic Materials Review Institute (OMRI) and National Organic Program guidelines to determine if it is officially considered organic.

### Further Study

- Maritime Northwest Garden Guide- Seattle Tilth
- Growing Vegetables West of the Cascades- Steve Solomon
- How to Grow More Vegetables- John Jeavons
- Designing and Maintaining Your Edible Landscape Naturally- Robert Kourik
- The New Organic Grower- Eliot Coleman

### For Master Gardener™ advice

- Call Home Horticulture Helpline: 503-655-8631 (Clackamas Co), 503-725-2300 (Washington Co), 503-445-4608 (Multnomah County)
- Visit Clackamas Chapter Master Gardeners website [www.clackamascountymastergardeners.org](http://www.clackamascountymastergardeners.org) for 10-Minute University™ handouts and schedule