THE UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE AND LIFE SCIENCES
COOPERATIVE EXTENSION
Yavapai County

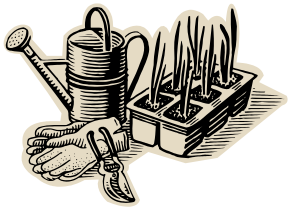
Bulletin #20

Organic Vegetable Gardening

Organic gardening essentially uses methods and materials that are free of synthetic fertilizers and chemical pesticides. It relies on natural processes to maintain healthy soil and plants.

Gardening organically:

- Reduces risks of contaminating the soil and ground water with pesticides and fertilizers
- Relies on a healthy environment for the growth of microorganisms that mineralize organic matter in the soil



Starting an Organic Garden

1. Choose the Location (at least 6 hours of sun a day)
   - Shaded areas will allow cool season crops to grow later in the season.
   - Strive for a site with little or no wind.
   - Level the ground for even water distribution.
   - Locate near water source.
   - Fence to protect crops from damaging wildlife.

2. Prepare the Soil
   - Test the soil for pH levels (Yavapai County Cooperative Extension performs free pH soil tests). Most vegetable plants will thrive at a pH of 6.5, the level that most nutrients are available to the plants. Most local soils will naturally be at a pH of around 7.5 - 8.5. The soil pH can be temporarily lowered by adding organic matter and soil sulfur.
   - Remove all unwanted plants ,gravel, and rocks from the planting area.
   - Amend the soil with organic amendments and/ or plant a cover crop. Following is a list of some of the organic amendments that can be added to the soil to maximize your vegetable production.
     - Alfalfa meal (nitrogen)
     - Blood meal (nitrogen)
     - Bone meal (phosphorus)
     - Compost (organic matter, trace amounts of nitrogen and minerals)
     - Cottonseed meal (nitrogen)
     - Cover Crop (planted to fix nitrogen and add organic matter when tilled into the soil)
     - Feather meal (nitrogen)
     - Greensand (trace minerals)
     - Leaf mold (organic matter, trace nitrogen)
     - Manures: poultry, sheep, goat, cow, rabbit (nitrogen). Some people avoid horse manure because of beetle grubs and weed seeds and steer manure because of the salt content from urine.
     - Rock phosphate (phosphorus)
     - Soil sulfur (lowers pH)
     - Vermiculite (increases nutrient holding capacity)

   The availability of these amendments will vary by year and inventory of retailers.

3. Plan the Watering System
   - Unless you never go out of town or are sure you have reliable help to water your garden when you're away, an automatic watering system will maximize the success of your garden.
   - In our hot, arid climate, watering in the evening will allow the water to percolate into the soil where it can be taken up by plant roots.
   - Apply water directly to the ground, ideally with drip, soaker hose, or drip tape. Watering with sprinklers or hoses that spray water on the leaves is more subject to evaporation.
   - Water the length of time that soaks the soil to a depth of 12 inches. The time will vary, depending on the soil. Sandier soils percolate very quickly. Clay soils percolate more slowly.
   - Watering deeply, less frequently, is better than watering shallowly and more frequently. Watch for signs that your plants are getting too much water (yellow or droopy leaves) or not enough water (droopy plants).

4. Plan the Planting
   - Planting intensely (close together) will shade out weeds and reduce water needs. Crop rotation is important for some vegetable varieties because of soil born diseases that affect specific plant families. Keep a record of what you planted and the location, so you don't plant disease vulnerable plants in the same location the following season. More about crop rotation can be found in gardening books and online. Remember that squash, cucumbers, and melons are all in the cucurbit family and peppers, tomatoes, potatoes, and eggplant are in the nightshade family.

5. Maintain the Garden
   - If soil is well amended, fertilize during the growing season with compost and organic fertilizers only when needed. Some plants such as corn will need added nitrogen during the growing season. At the first sign of corn leaves yellowing, apply a readily available source of organic nitrogen such as diluted fish emulsion.
   - Manage vertebrate pests and insects. Use row covers or netting, hand pick (wear gloves), vacuum with shop vacuum, catch with butterfly net, or use organic controls such as Nosema Locustae or kaolin clay to control grasshoppers or non-toxic soaps for aphids. Follow the manufacturer directions for applying organic controls. Become educated and observe beneficial insects to better understand natural processes in your garden.

6. Harvest
   - Rotting fruit and vegetables that have not been harvested should be composted or fed to poultry.
   - Harvest regularly to increase yield and promote plant health.
   - Over-ripe produce can become tough and/or bitter. Gardening isn't free, so harvest every day to maximize your investment.

7. Weeding and Cleanup
   - Keep the garden weed free and tidy to minimize hiding places for pests and to maximize water availability for your crop plants.

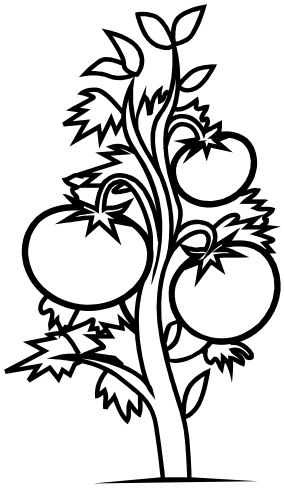
Additional Resources

http://extension.arizona.edu/yavapai/home-horticulture/
- Bulletin #7 Backyard Cane Fruit Production at Elevations 4000 to 6000 Feet
- Bulletin #17 Edible Flowers
- Bulletin #50 Biological Control Resources
- Bulletin #51 Yavapai County Vegetable Planting Dates
- Bulletin #54 Growing Herbs
- Bulletin #75 Yavapai County Hardiness, Heat, and Climate Zones
- Bulletin #76 Fruit Calendar for Yavapai County
- Harvest Clues for Garden Vegetables
- Flower and Fruit Drop

http://extension.arizona.edu/
- AZ1002 Frost Protection
- Q337 Vegetable Varieties for Arizona
- AZ1392 Drip Irrigation - The Basics

http://www.azdeq.gov/environ/water/permits/download/graywater.pdf
- Using Gray Water at Home

Composting Made Simple (available in Extension Office)



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