

Going Organic in Vegetable Gardening

What is “Organic Gardening”?

Adopting “Organic Gardening” methods means to stop using synthetic products. Instead, only naturally-occurring products that enrich the soil and control and treat diseases, pests, and weeds are used. Everything else stays the same; you plant, tend, water, and harvest just as you did before. You can switch to organic methods completely or use a combination of methods. For instance, you may choose to eliminate synthetic pesticides and herbicides but continue to use some synthetic fertilizers.

Compost Builds Healthy Soil

Good soil is key to successful gardening, and adding composted organic matter improves soil. Begin a new garden by adding 2 to 4 inches of compost each year. Use more for heavy clay or very sandy soil. About half of the organic matter in compost breaks down each year. Therefore, organic matter builds up in your soil over time. If you want quicker results, make a raised bed of native soil, compost, sand, and manure. Adding compost to soil improves its structure and long-term health. However, it is not a reliable source of fertilizer. Where robust growth is crucial, as for a vegetable garden, add additional fertilizers.

Organic Fertilizers Add Fertility

- Soil loses fertility over time: plants use nutrients as they grow, and winter rain washes away soluble nutrients. As a result, we need to add fertilizers each year.
- Plants can only use nutrients that are soluble; many organic fertilizers contain insoluble nutrients which must be broken down by soil organisms before becoming usable by plants.
- A pre-mixed, balanced organic fertilizer containing nitrogen (N), phosphorus (P), and potassium (K) is an easier way to begin.
- If you choose to make your own mix, combine fast- and slow-acting fertilizers to feed your plants during the entire growing season. Common fast-acting organic fertilizers (with their N-P-K assay) include fish emulsion (5-1-1); blood meal (15-1-1); fish meal (10-4-0); and bat guano (10-3-1). Slow-acting fertilizers include cottonseed meal (7-2-1); alfalfa (2-1-2); bone meal (2-15-0); soft rock phosphate (0-3-0); kelp meal (0-0-10); and greensand (0-0-5). Work slow-acting fertilizers into your soil several months before planting. Soil organisms are active in warmer temperatures.
- High soil fertility is critical for seedling and transplants to thrive. Thriving seedlings are more able to resist pests and diseases and to compete with weeds. A soluble fertilizer like liquid fish emulsion helps small plants get well-established quickly. Once the soil warms up, nutrients from slow-acting fertilizers will become available to plants to carry them through ‘til harvest.
- Over wintering cover crops can minimize soil erosion and compression. As they grow, these plants trap soil nutrients in them so less is washed away by rain. In the spring, cut down the stems and leaves of cover crops before they bloom and add them to the compost pile. Turn the soil to kill roots.

Organic Techniques for Pest Control

- Be observant. The first step in pest control is to identify the pest causing the damage. Using slug bait or pesticides designed for insect control will be of no help if birds are the source of the damage. You can get help from Master Gardeners online at www.metromastergardeners.org or call the phone numbers listed below.

- Healthy plants are less likely to attract pests and more capable of outgrowing damage.
- Be especially vigilant of pest and disease control when your vegetables are seedlings. Small, tender plants can be quickly ravaged; once large enough, plants can sustain some damage without loss of yield.
- Isolating seedlings and transplants from pests is one of the most effective organic pest control methods. Floating row covers will exclude flying insects and birds. They can be laid directly on top of plants and held down along the sides with rocks or boards. As plants grow, they will push the row cover upward. At that point, the plants are large enough to be unattractive to many pests. These covers also warm the soil to encourage faster growth of seedlings.
- In Western Oregon, slugs are the No. 1 garden pest. The key is controlling them prior to planting seeds or transplants. Baits become far less effective when slugs have tender seedlings to feed on; they can mow down an entire row of tiny plants in a single night of feeding. Hand picking at night or in hiding spots during the day, beer traps, or organic slug bait containing iron phosphate can all be effective.
- Beneficial insects are insects that prey on garden pests and help reduce the pest population in your garden. The nectar and pollen of small-flowered plants attract adult beneficial insects to your garden. A perennial herb garden of mint, oregano, marjoram, and thyme blooms at various times during the summer; these blooms attract adult beneficial insects to feed in your garden. If they visit, some will lay eggs that hatch into larvae which prey on insect pests.
- If all else fails, organic pesticides can be used to eliminate damaging pests. Identify the pest before choosing a pesticide that is specific to the pest you are trying to control. An example is using *Bacillus thuringiensis* to control cabbage butterfly larvae on plants of the cabbage family. Broad-spectrum pesticides kill indiscriminately, hurting bees, beneficial insects and soil organisms. Rotenone, Neem, and Pyrethrins are examples of broad-spectrum organic pesticides.

Organic Weed Control Methods

- Annual weeds—ones that sprout from seeds each year—are best controlled by preventing them from going to seed and by hoeing and hand pulling the seedlings. Attacking them when they are small and easily pulled is the best method. Mulching with an organic material, like compost or straw, can smother weed seeds. You should do this in the summer after the soil has warmed up. When planting, using transplants rather than seeds gives transplants a 3- to 4-week jump on competing weeds; tightly-spaced transplants can shade out small weed-seedlings. Again, this method works best with healthy, rapidly growing plants that can outgrow the weeds.
- Perennial weeds—ones that come back in the same spot in your garden year after year—can be difficult to control. These weeds need to be removed before you plant vegetables. Sheet mulch is an alternative to weeding: smother the weeds with thick layers of newspaper or cardboard. The layers can be laid down and soil hauled in to build beds on top of the sheet mulch. Over time, the sheet mulch breaks down and can be incorporated into the soil.

OSU Extension Service Resources

Visit your OSU Extension Service office at 200 Warner-Milne Road, Oregon City, for these publications, or get them online at <http://extension.oregonstate.edu/catalog/html/ec>

Gardening with Composts, Mulches and Row Covers, EC 1247

For Master Gardener™ Advice

- Call Home Horticulture Helpline: 503-655-8631 (Clackamas County); 503-725-2300 (Washington County); 503-445-4608 (Multnomah County). Or submit a question at www.metromastergardeners.org
- Visit the Clackamas Chapter Master Gardeners' website www.cmastergardeners.org for 10-Minute University™ handouts and schedule of free classes.