

# Organic GARDENING

## Organic Vegetable Gardening



Organic gardening, or ecological gardening, is not new since it has been practiced for many years throughout the world. In fact, centuries before gardeners relied on the relatively recent practices of using synthetic fertilizers and pesticides, organic gardening was the norm. Organic gardening is popular in the United States, and interest is increasing in Louisiana. In organic gardening, particular garden practices are encouraged that utilize natural biological cycles, enhance diversity and are ecologically sound. A major difference between “conventional” and organic gardening is that the latter uses natural materials rather than synthetic pesticides and fertilizers, with a goal to make the garden sustainable.



### Keys to Successful Organic Gardening

- **Building the soil**
- **Using finished compost**
- **Using mulch materials for weed control**
- **Using sound horticulture practices**
- **Biological diversity in the garden**
- **Encouraging beneficial insects**

Organic matter, such as compost, is often used in organic gardening because it is an essential ingredient. Adding organic amendments improves soil tilth making the soil easier to work, enhances the soil microorganisms that are involved in making nutrients more readily available and improves the soil environment for good root growth. Organic matter also supplies some of the nutrient needs of the crop, although the nutrients in most organic matter sources are lower when compared to conventional inorganic fertilizer.

From the plant’s standpoint there is no difference in nutrients supplied from organic or inorganic sources. The difference in organic and inorganic fertilizer forms is primarily in nutrient availability since organic sources are generally more slowly available. It has been common knowledge for many years that decomposing organic matter in soils has beneficial effects as a plant nutrient as well as improving water-holding capacity of sandy soils and increasing and improving the structure of clay soils.

Growing vegetables organically is a long-term process that involves a number of practices carried out over the years instead of a single production practice. The major practice is the improvement and maintenance of soil fertility. Soils and the biological microorganisms in the soil are essential to successful organic gardening. Many organic gardeners consider the living biotic life of the soil to be crucial and practices such as adding organic matter by working-in a green manure or applying compost to soils is essential. Healthy soils are the key for successful organic vegetable production.

A wide variety of animal and plant products are used in organic gardening. Gardeners often use materials that would generally be discarded, thereby reducing environmental waste. It is important for gardeners to know the plant nutrient content and the availability of nutrients in any organic materials that are added to soils. Organic materials might contain nutrients that might not be in sufficient amounts or ratios for the crop. In addition, the

nutrients might be in forms that plants are unable to use and these might be converted to more available forms over time. Gardeners often rely on tables for general information on nutrient content as well as trial-and-error using specific materials in a garden. Gardeners use different organic materials that are readily available or at low cost.

Animal manures are often used in organic gardens. Animal manures, such as cow, horse, rabbit and chicken, are an excellent source of nutrients and organic matter for garden soils. Different manures range in fertilizer value and have been used in the production of vegetables for thousands of years. It is best for the manure to be partially broken down, aged or composted before being applied to soils. In general, it is recommended that manures should be composted to “stabilize” the nitrogen and to decrease the viability of weeds that may be in manure. Fresh manure, or manure teas, should not be applied directly to growing plants and should not be applied within three months of harvesting vegetables.

Compost is often used by organic gardeners because they are acceptable sources of organic matter and nutrients. Compost is easily made by homeowners in their backyards from layering various organic materials such as leaves, grass, kitchen table scraps, etc. in piles along with adding lime, topsoil, manure, organic fertilizer and water. Over time, microorganisms decompose the organic materials along with the assistance of the gardener in turning and making sure that the compost has enough moisture and air, creating a wonderful product that can be used in organic and conventional gardens. The LSU AgCenter Web site has a guide/instructions for making compost as well as plans for constructing different compost piles.

When the compost has been broken down into a homogenous material and no undecomposed materials are visible, it is ready for use. The amount of time to complete the aerobic decomposition for ready-made compost depends on a number of factors including the raw materials used, the season, the temperature reached in the pile and the management of the pile, etc. Every gardener should have a backyard compost pile to generate their own fertilizer and soil amendment!

Mulch is an important component of successful organic gardening. Mulches help control weeds, prevent erosion and soil compaction, conserve soil moisture and prevent crusting. Different mulch materials are used for gardening; the amount used depends on the material used.

Gardeners use plastic mulch, compost, newspaper, leaves, hay, straw and cotton seed hulls as mulch. It is important to realize that when using mulch materials with a high carbon content, such as sawdust, woodchips and bark, their incorporation in the soil can cause problems because the soil microorganisms can out-compete plants for limited soil nitrogen.

Organic gardeners use natural products and follow practices that conventional growers also use, such as using disease-resistant cultivars, crop rotation to other plant families, incorporation of organic matter, proper plant spacing, mulches, planting in the correct season, reducing plant stress, rouging infected plants, organic pesticides, biodiversity, cultivation, use of transplants where possible, habitat for beneficial insects, proper fertilization, sanitation, clean and healthy transplants, intercropping, cover crops, trap crops and environmental modification, such as row covers and high tunnels or primitive greenhouses.

One of the major concerns of gardeners is pest management and the use of chemicals on food. Organic gardeners have a wide array of practices as well as organic pesticides to manage pests. In general, organic gardeners encourage natural predators by creating habitats and allowing the build-up of predator insects that will control pests. They also use biological diversity, planting many different crop species and using companion plantings.

Companion planting relies on the concept that different plants may be beneficial together or deleterious. Specific companion planting combinations are listed in the literature and often these are based on tried-and-true gardening experiences as well as folklore. For example, some garden crops are known to repel insect pests and others to attract beneficial insects. The last resort for organic gardeners is organic pesticides, although organic insecticides such as rotenone, pyrethrin and insecticidal soaps, insect baits and traps often work well under average conditions.

Organic gardening is on the increase, and there is an opportunity for conventional gardeners to try growing using the “natural way.” We have taught organic gardening for many years and found it to be achievable by using good soil-building techniques — primarily compost — along with many of the practices listed above. Gardening in general is a challenge in Louisiana because of the extremes and abrupt changes in weather. Organic gardening can be successful by following the principles and techniques outlined above and using proven horticultural practices that have been used for centuries before the advent of modern agricultural chemicals.

**Author**

Carl Motsenbocker, Ph.D. (Horticulture)  
School of Plant, Environmental and Soil Sciences

**Visit our Web site:**  
**[www.lsuagcenter.com](http://www.lsuagcenter.com)**

**Louisiana State University Agricultural Center**

William B. Richardson, Chancellor

**Louisiana Agricultural Experiment Station**

David J. Boethel, Vice Chancellor and Director

**Louisiana Cooperative Extension Service**

Paul D. Coreil, Vice Chancellor and Director

Pub. 2948-A

(3M)

6/09 Rev.

Issued in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. The Louisiana Cooperative Extension Service provides equal opportunities in programs and employment.