

# *Gardening*



# *with*

# *Nature*

A Simple Approach to  
Organic Gardening



Presented By-

Indiana Organic Gardeners Association  
[www.gardeningnaturally.org](http://www.gardeningnaturally.org)

# Organic Gardening – Why...and How?

**Isn't it easier to grow plants if you use chemicals?**

**No bugs? Fewer diseases and fungi?**

**No holes in those leaves? The perfect landscape!**

Unfortunately, this kind of perfection comes at a price: to you, your children, your pets and the living things that share this space with you.

Every time you spray your lawn with chemicals to pre-empt the grubs, the grasshoppers and the crab grass, you are supposed to stay off the grass for 24 – 48 hours. Why? Because the grass is now unsafe. The same with your vegetable garden. Every time you spray your vegetables with chemicals, you end up eating a certain amount of them yourself. And if the unwanted visitors are dead, what about the rest?

Your baby/toddler/dog/cat cannot read. He/she/it crawls on the grass, puts hands/paws in mouth – and gets stomach ache. Perhaps ten years later for a pet or fifty years down the road for humans that stomach ache returns in the form of cancer. More and more lawn and garden chemicals have been taken off the market in the past decade after further testing revealed properties detrimental to our health. Why take that risk?

Did you want butterflies and birds in your garden? Perhaps you have even planted special plants to attract them? Or you have put out feeders? But look at those labels on the chemical containers. They all say the same thing: if ingested, get to a hospital. The creatures you have invited into your yard have no hospital to go to. They die. Or the more intelligent amongst them learn to avoid your space.

**So what can we do to prevent harming ourselves  
and our nearest and dearest? Organic Gardening.**

Once the effort is made to become acquainted with organic gardening methods, the long term benefits are priceless beyond compare: healthier humans and the continued presence of those very important life forms which are our life support. (Where would we be if all the pollinating bugs and bees were dead?)

In this booklet, the first of what we hope will be a series of booklets on 'How to', we are listing as many organic gardening resources as possible to help you get started on a path we hope will lead you and those you love to a safer and healthier life. You will have beautiful, healthy gardens - nature's version of *Perfect landscapes!*

# Composting

Good soil is the basis of healthy plants and compost is the secret ingredient. Compost is Mother Nature's fertilizer, the age old method employed to care for her plants by "just letting it rot".

Using compost does not have to be difficult, and in fact can be as easy to use as chemical fertilizers, whose only real benefit is convenience. Compost can be purchased (in bags or by the yard) or you can make it yourself. Making compost can be as simple or as complex as you wish; you do not need complicated formulas or equipment.

## GREENS and BROWNS

Compost consists of decayed natural materials. You supply "brown" materials mixed with "green" materials and provide adequate moisture. Then nature steps in, adds bacteria, and does the rest. Green materials are those that contain nitrogen, such as grass clippings, fresh garden cuttings, manure, and vegetable kitchen waste. Brown materials supply carbon. Dried leaves, dried garden waste, hay and shredded twigs are some examples. The website [www.mastercomposter.com](http://www.mastercomposter.com) has complete lists of both brown and green ingredients plus materials *not* to compost.

## WHERE and HOW

You may build your compost pile in a secluded spot on your property, just on the ground if you have space, provided there are no neighborhood restrictions. Begin with a layer of brown materials (mixed with some soil), dampen, add a layer of green, then brown and so on. Be sure to cover kitchen vegetable scraps with brown material or soil to prevent odor and discourage critters. Don't add diseased plants, human or pet wastes, meat or fatty food wastes, chemically-treated wood or pernicious weed seeds. To promote faster composting, the pile should be turned periodically to add air to the mixture. The more often the pile is turned, the quicker you have compost. Compost, **done properly**, has no odor! Maintain a balance of green to brown and don't let green material lie exposed to sun.

## BINS and COMPOSTERS

Many gardeners choose to build a composting bin for neater appearance. Instructions may be found at [www.mastercomposter.com](http://www.mastercomposter.com). Also, many good composters are sold commercially via garden supply catalogs or at garden centers. These are fine for composting in limited space and help to both speed up and simplify the process. Shop around as prices and styles vary widely.

Vermiculture (composting with worms) is another option, and can be done in a basement or garage or on a patio or back porch. The end product is richer in nutrients than regular compost – 'a little goes a long way'.

# Organic Fertilizers

Crops depend on balanced and fertile soil for all their nutrients “feed the soil, feed the plants”), and for keeping plants resistant to insect damage and disease. Adding organic matter as fertilizer improves the structure of soil, enhances water holding capacity and good drainage, makes nutrients available to plants, aids in “nitrogen fixation” (the process by which bacteria in the soil make nitrogen usable by plants), and keeps the soil pH at 6.5 to 7, which is “neutral”, meaning not too acid and not too sweet.

## NPK

Fertilizer can be thought of in terms of the “Big 3”—nitrogen, phosphorus and potassium, or “NPK”. (The ‘K’ comes from ‘kalium’, the Latin name for potassium)---along with numerous “micronutrients”, the minerals that plants need only in tiny amounts.

One of the most common organic fertilizers is compost, which was discussed in the previous article. The manure of farm animals, especially cow, sheep, horse, chicken, or goat, is a great source of nitrogen and potassium. However, avoid the waste produced by cats or dogs.

Other organic nitrogen sources include fish emulsion, bone meal, grass clippings, cotton seed meal, bean and peanut shells and comfrey leaves. Phosphorus can also be supplied by bone or cottonseed meal, dried blood or rock phosphate, a mined rock product. Potassium is found in plant residues (wood ashes, straw, hay and leaves), granite dust, “green sand”, basalt rock and seaweed. The options are many; use what is available in your area.

## GREEN MANURE

For more advanced gardeners, especially those with large vegetable plots, “green manure” is a great source for the “Big 3”. Green manure involves the growing of a cover crop, such as grasses, clovers or grains, either in the fall, to help put back nutrients and to keep soil erosion down during winter weather, or in spring to re-nourish the soil and make it ready for re-planting. In either case, the remains of the cover crop are just tilled directly back into the soil before your garden is re-planted. Green manure is also a good option for a garden that needs to remain unused (“fallow”) for a season.

## FORMULAS

Finally, here are three simple fertilizer formulas you can make yourself:

### Formula 1

4 parts coffee grounds  
1 part bonemeal  
1 part wood ashes

### Formula 2

1 part fish emulsion  
1 part seaweed

### Formula 3

10-20 leaves comfrey in 5 gallons of water; let sit 2-3 days, strain out leaves, and use the comfrey “tea” as your fertilizer

# Controlling Your Weeds

**W**hat is a weed? Is a sunflower a weed? (No? Just ask a bee!) It takes much time to research the answers to all the questions about weeds, but here is an easy start: hints for coping with them. Aside from learning to recognize young weeds and yanking them out or scraping them off before they spread, the best coping methods are those that take advantage of how weeds spread and heading them off before they get started. Here are a few of the best long-term organic methods.

## **OPM (Organic Pest Management)**

OPM works on the idea that a stable and diverse ecosystem + healthy soil = healthy strong plants that can beat out weeds. Cultural controls, such as removing diseased plants or plant parts before the disease has a chance to infect and weaken nearby plants, are part of OPM. Plant selection is also important. Those varieties that are native to your area and well adapted to local soils are more likely to be strong growers that can out-compete weeds. OPM also stresses plant placement. By assessing what light, water and drainage conditions particular garden plants require and placing them in spots that best meet those needs, the plants are set up for success against weeds. Finally, if the above methods alone aren't successful, OPM encourages physical methods to thwart weeds, such as erecting vertical barriers between garden & turf areas to keep weed seeds, runners, or roots from slipping over into garden areas, or killing weeds with boiling water or burning them off with flame throwers.

## **SOIL BUILDING and STAGED WEED SLICING**

Prepare the garden for planting by adding organic matter (see previous articles) and then letting it rest for 7-10 days. Slice off ALL newly emerged weeds, disturbing the soil as little as possible. Let the soil rest another week, and repeat the weed slicing before planting seeds or setting out plants.

## **SOIL PREPARATION with SOLARIZATION**

After pulling out large weeds, scratching the soil surface and heavily watering it, cover the soil with black plastic for 6-7 weeks, preferably during periods of hot sun. Pin down the edges and corners with weed-cloth stakes (giant staples!) and heap extra soil & rocks along edges to seal completely. After the 6 or 7 week period, remove plastic, wait about a month, and then spread compost over the plot to replace the helpful bacteria killed by the solarization process. Wait 7-10 days before cultivating and planting.

## **MULCHING**

Mulching around and between plants is a simple but effective means of weed control. Use weed-free mulch such as tree bark and leaves, (start with a 2" layer, and increase depth as necessary for your particular site). Use landscape fabric topped with a thin mulch layer (NOTE: this method will not add to the soil's tilth or nutrients). Use newspapers (those printed with soy ink); grass clippings (no more than 1" deep, and from an organic lawn!); field straw; pine needles (no more than 2" to 3") or buckwheat hulls.

# Controlling Disease and Insect Pests

Start with the basics. Healthy soil increases the chances plants can withstand disease and pest attacks. Rotate crops around your garden each year to avoid build-up of insects and diseases that live in the soil. Learn to identify the common insect pests and diseases in your area. Reference books with color photographs and good descriptions are most helpful. Observe your plants for early signs of insect pests (look for larvae, eggs and adults), and watch for shriveled, wilted or yellowed leaves or stems, which are often signs of disease. A habit of observation may allow you to take action while the problem is still small enough to be manageable. Water sensibly, since both overly wet and dry soils encourage disease and place stress on plants, making them vulnerable to disease and insect attack.

## **CONTROL by PREVENTION**

Buy disease resistant plants or seeds when possible. Check for resistance in seed catalogs and on plant tags, and note that partial resistance is better than no resistance. Avoid plants or plant families that are particularly vulnerable to the diseases or pests in your area.

Practice good garden sanitation by removing diseased plants and leaves. Pick insect pests or their larvae from plants as soon as they are detected. Wear rubber gloves to avoid transmitting disease or insect eggs to other plants. Dispose of diseased material away from the garden area to avoid re-infection. Since some disease-causing organisms survive for long periods even in extreme temperatures, never discard diseased material in your compost pile. Allow room for air circulation both between plants and where leaves meet the soil. Follow spacing instructions when planting, since poor air circulation allows moisture buildup which in turn encourages disease.

## **ACTIVE CONTROLS**

Try biological controls first. Since less than 5% of the insects in our gardens are harmful, encourage beneficial insects that are natural enemies to pest species. Plant “trap crops” that attract pests away from your garden, or use naturally repellant plant species such as marigolds, garlic, and aromatic herbs (basil, oregano, mint, etc.) around bed edges. Microbial controls such as milky spore and BT can be very effective, but be aware that microbes will kill some beneficial insects as well as the pests.

## **LAST RESORT**

Use “cide” interventions (organic fungicides, viricides, insecticides) only as a last resort. Even natural chemicals that are approved for organic use will kill a broader spectrum of organisms than the ones harming your plants. Start with the mildest (soaps, oils, baking soda) first. If mineral interventions such as sulfur, lime sulfur, or copper are used, be aware that these can harm the plant as well as beneficial soil organisms. Always use the minimum effective amount of any intervention for the shortest possible time.

## RESOURCES FOR MORE INFORMATION

The following websites offer further information to help you get started or improve your current practices:

[www.gardeningnaturally.org](http://www.gardeningnaturally.org)

[www.mastercomposter.com](http://www.mastercomposter.com)

[www.organicgardening.com](http://www.organicgardening.com)

[www.spcpweb.org](http://www.spcpweb.org)

IOGA recommends the following publications for those interested in pursuing organic practices:

Let it Rot by Stu Campbell

Worms Eat My Garbage by Mary Appelhof

Rodale's All-New Encyclopedia of Organic Gardening

Fern Marshal Bradley and Barbara Ellis, Editors

Organic Gardening—The Organic Garden Book by Geoff Hamilton

Rodale's Illustrated Encyclopedia of Organic Gardening

Pauline Pears, Editor in Chief

Organic Garden Design School: a Guide to Creating Your Own Beautiful,  
Easy Care Garden by Ann Lovejoy

Books are available at Barnes and Nobles or Border's  
Also see [www.amazon.com](http://www.amazon.com) or [www.dk.com](http://www.dk.com)

**Contact:** Purdue Extension Knowledge to Go: 1-888-EXT-INFO



We also recommend joining the Indiana Organic Gardeners Assoc. (IOGA) to learn more about the benefits and methods associated with organic gardening. See the next page for association information.



# Indiana Organic Gardeners Association

**IOGA.** is a non-profit organization established in the late 1960's dedicated to ecologically friendly growing. Home gardeners make up the majority of members.

**Our goal** is to educate ourselves and others in the reasons for and methods of environmentally friendly gardening and to encourage the reduction of chemical dependency in gardens, lawns and farms.

**Our newsletter, *HOOSIER ORGANIC GARDENER*,** offers methods that develop healthy soil, alternatives to toxic chemicals, and info for growing healthy plants.

**Our website, [www.gardeningnaturally.org](http://www.gardeningnaturally.org),** offers further information and lists meeting times and places. Meetings are the 3rd Saturday of January, April, July, and October. Guests are always welcome.

To Join    Send dues to:    I.O.G.A.  
7282 E. 550 South  
Whitestown, IN 46075

Name \_\_\_\_\_

2nd Name if dual Membership \_\_\_\_\_

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Phone \_\_\_\_\_ email \_\_\_\_\_

Dues: \$10 individual \_\_\_\_ \$12 dual \_\_\_\_ (1 address)

Please cut and send this box -OR- include all information with check