

## **What IS "Organic"?**

The term “organic” is a legal definition. The National Organic Program (USDA) sets the standards, farms must go through a certification process and keep good documentation. Seeing the 'USDA organic' label means that you can have confidence in how the plant was grown.

Some myths debunked:

"It's expensive": Money spent annually on fertilizers and herbicides can be spent improving the soil, leading to savings in the long run.

"It's difficult": No more so than regular gardening, but it requires paying attention to different things. Once the soil and ecosystem are more in-balance, problems with weeds and pests lessen.

"It takes more time": No more so than conventional methods, but time is spent differently: hand-weeding instead of spraying, encouraging beneficial insects instead of spraying, building the soil instead of fertilizing, etc.

The goals of organic gardening: Provide food while using practices which safeguard the environment and human health (including the health of gardeners). Use renewable resources and recycled materials as much as possible, from local/regional sustainable sources (on-site if possible). Maintain diversity both in the farmland and in surrounding wild lands.

### **The three cornerstones of organic gardening:**

#### **Compost! Compost!! Compost!!!**

Definition: Compost is organic matter (leaves, stems, fruits, etc.) which has broken down into its more basic components. This feeds the soil, and the soil feeds your plants. Releases nutrients slowly and steadily as it breaks down. Both improves soil drainage and water retention (by addition of organic matter). Balances soil pH. Sustainability: allows garden waste products to be recycled for use on-site by next season's crops.

#### **Manure! Manure!! Manure!!!**

Composted manure adds valuable micronutrients to the soil, but it must be composted first to break it down (e.g., manure gives off heat as it breaks down, which can physically damage young plants). Do not use dog, cat, or human feces, as these can carry diseases (the compost pile does not get hot enough to kill these).

#### **Mulch! Mulch!! Mulch!!!**

Definition: Mulch is any material used to cover the soil (including compost). Suppresses weeds! Keeps soil moist (i.e., needs less watering)! Keeps soil cooler in summer! Keeps soil warmer in autumn! Feeds soil critters! Can deter pests! Frees up space in the landfill! Use leaves or straw. Do not buy processed cypress mulch (not sustainable, treated with chemicals).

## **Other Organic Concepts:**

### **Your friends, the soil critters...**

Earthworms (a good invasive species!): They aerate the soil, keep soil loose, break up hardpan, their castings are nitrogen-rich fertilizer, they balance soil pH. Soil bacteria: these digest organic matter, breaking it down for use as compost. Mycorrhizal fungi: they form a symbiotic relationship with plants, they breakdown soil nutrients for plants to use, the plants provide carbohydrates for the fungi to consume. Common nematodes break down organic matter and can prey on soil pests. Bottom line: not all bacteria/fungi/nematodes are bad.

### **Choose organic and/or heirloom seeds/plants...**

Heirloom/Open-pollinated/Organic seeds/transplants are non-GMO. If you plant a seed from this plant next year, you will likely get the same crop. Preserves our heritage and biodiversity for future generations. Organic seeds/seedlings are readily available; if your favorite nursery doesn't have them, tell them you're going somewhere else.

Selected sources (some can be found at local stores, such as Downtown Home & Garden in Ann Arbor):

Seed Savers Exchange: [www.seedsavers.org](http://www.seedsavers.org)

Fedco Seeds: [www.fedcoseeds.com](http://www.fedcoseeds.com)

Seeds of Change: [www.seedsofchange.com](http://www.seedsofchange.com)

Frog Holler – organic seedlings; find them at the Ann Arbor Farmers Market (Kerrytown) Weds./Sat.

### **No GMOs (includes seeds, soil amendments)...**

GMOs are Genetically Modified Organisms. If you think you've never had one, think again: almost all corn, cotton and soy products produced in this country are GMO. These have not been tested well enough to know their lasting effects upon humans, the environment, or other plants. Must read product labels: can only be assured GMOs are not present if the label says so ('USDA organic' means no GMOs), otherwise you must assume they are present. Buyer beware!

### **No synthetic pesticides or herbicides...**

These are usually broad-spectrum and will kill more than just the offending plant or critter. E.g., earthworms and soil bacteria can be harmed by pesticides, beneficial mycorrhizal fungi can be harmed by fungicides. Remember how DDT nearly wiped out the bald eagle? There are approved limited-use organic sprays, derived from natural ingredients (e.g., pyrethrums from daisies, Bt is a bacteria), which are permitted under organic standards -- but only as a last resort. Healthy plants typically are not wiped out by some insect damage and can sometimes fight them off on their own. Note: even approved organic pesticides kill indiscriminately (e.g., Bt kills cabbage butterfly caterpillars AND monarch butterfly caterpillars). Note: even approved organic fungicides can kill beneficial soil fungi (critical for plants to uptake nutrients).

### **No synthetic fertilizers (including soil amendments)...**

Feed the soil, not the plant. If the soil is healthy, the plants will be too. Quick-release synthetic fertilizers are one of the primary sources of water pollution in this country -- runoff from lawns and gardens. Check labels of potting soil and bagged compost for the addition of synthetics (look for the 'certified organic' label)!

### **No black plastic for weed suppression...**

Plastic can leach chemicals, and can degrade and accumulate in the soil. Use biodegradable mulch instead (leaves, straw).

### **No treated wood for garden borders or raised beds...**

Heavy metals can be harmful to plants and to whatever eats those plants. Use only untreated wood or find another solution.

### **Plan for future crop rotation...**

Each crop has specific nutrient needs. Crop rotation promotes soil health by not depleting specific nutrients. Also reduces build-up of soil pests and diseases by moving host plants out of their reach. Keep records on which plants you planted and where.

### **Plant cover crops over winter or in empty beds...**

Prevents erosion, suppresses weeds. Can be used as a green manure by tilling-in in the spring.

### **Encourage biodiversity...**

Wildflowers attract beneficial insects and pollinators. Beneficial insects eat pest insects. Spiders, snakes, toads, birds and bats all eat pest insects.

### **Intercropping vs. monocropping...**

Interspersing plants makes them harder to find for pests, and minimizes chances of disease spread. Planting different varieties of the same plant can also help. One example of intercropping is to plant corn, squash/pumpkins and beans in the same plot.

### **Avoid soil compaction...**

Once tilled, don't walk on your garden beds. 'Fluffy' soil allows air and water to reach plant roots. Create paths between beds and only walk on those. Use straw to suppress weeds on paths.

### **Raised beds...**

Minimizes soil compaction (better aeration, better drainage), warms up faster in spring, holds heat better in fall, produces higher yields. You can make raised beds simply by mounding up the soil a few inches; no need to construct raised beds out of wood. A raised bed that is 3-to-4 feet across with compacted pathways in between allows for easy access to the center of the bed from either side.

### **Weed control suggestions...**

Aesthetically, learn to live with some weeds; it actually encourages biodiversity (e.g., dandelions help to break up heavy clay soils, Queen Anne's lace attracts beneficial insects, etc.). Prevention is the key: Use mulch to prevent weeds from germinating. Remove weeds while they are small. Break the cycle by removing weeds before they set seed. Don't bury noxious weeds in the compost pile (e.g., dandelions, grasses); allow them to dry out and die first, then add them later.

### **Pest control suggestions...**

Aesthetically, learn to live with some pest damage. First, identify the problem (is it pest damage, animal damage, bacterial or fungal infection, etc.). Pick insects off by hand or douse them with a watering can before reaching for an approved organic pesticide. Prevention is the key: right plant in right location (sun/shade, wet/dry, tropical/temperate), add compost, use mulch, control weeds, attract beneficial insects, do crop rotation, practice intercropping, plant disease-/pest-resistant varieties, use row covers when insect pests are present, allow for good air circulation between plants, water at the base of the plant rather than spraying the leaves, water in the morning, don't touch wet plants (can spread disease), clean/disinfect tools/hands after touching diseased plants, remove diseased branches/plants immediately (do not put them in the compost pile; burn them instead). Regularly examine plants to find problems early before they get out of hand.