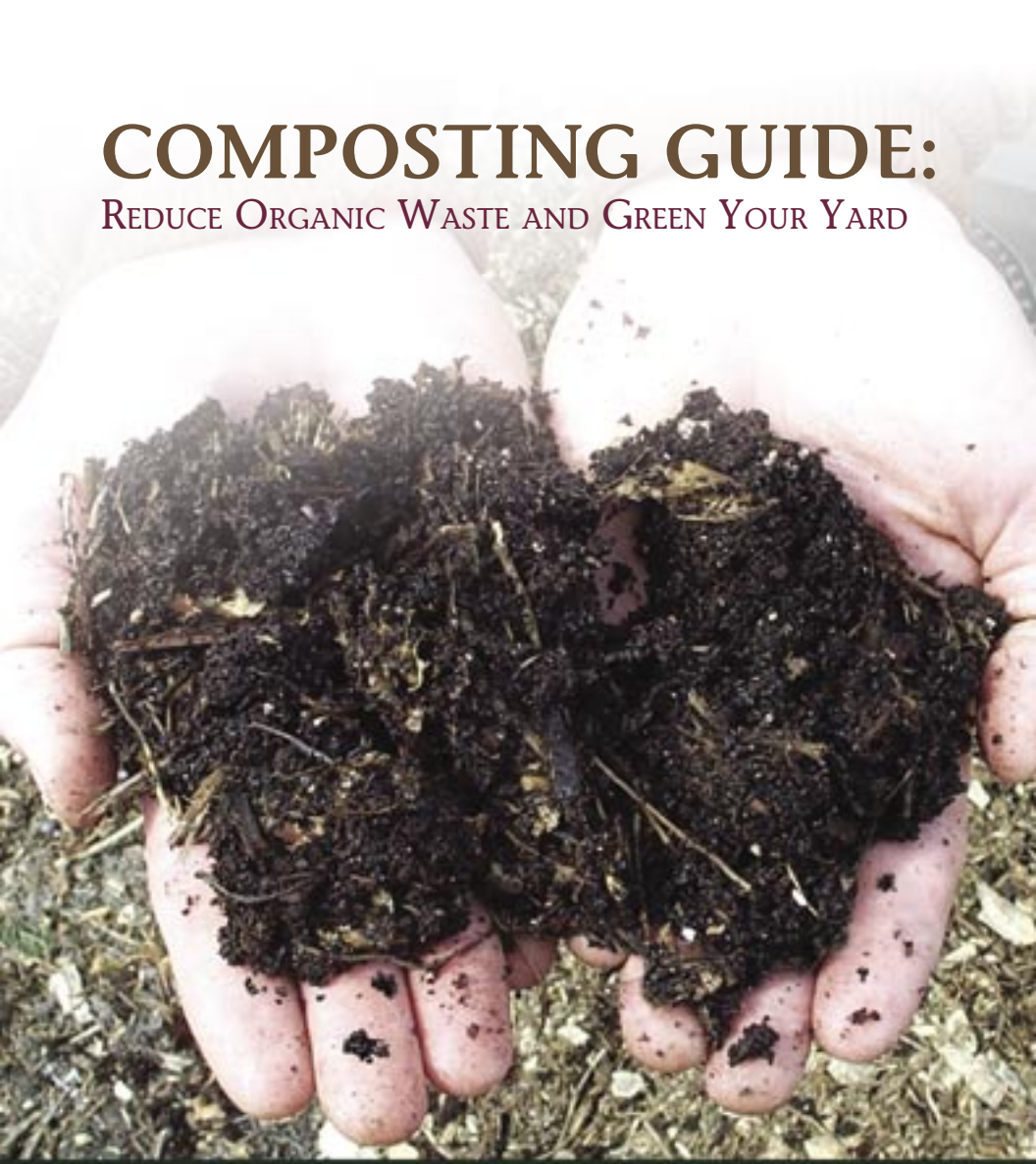
COMPOSTING GUIDE:

Reduce Organic Waste and Green Your Yard



COMPOST

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COMPOST IS

- A dark, crumbly soil amendment.
- A waste reduction strategy for yard and food waste.
- Nature's way of recycling.
- Natural mulch.
- Nutrient rich.
- A simple way to prevent methane gas production.

INTRODUCTION

Composting is a great way to keep organic material out of landfills. It is a good environmental practice, and an inexpensive way of adding nutrients back into the soil. Applying compost to soil improves its texture, structure, aeration ability and water holding capacity. It adds-up to improved soil fertility and root development. Trees, flowers or vegetables will grow healthier with less chemicals or fertilizers.

SUPPLIES

- Bin or outdoor area to compost
- Shovel
- Aeration tool such as a pitch fork or compost aerator
- Kitchen compost container
- Thermometer
- Organic material such as yard waste, food scraps and shredded paper
- An activator, which helps the compost process start more quickly and efficiently

COMPOST BIN

Buy

There are many types of compost bins that can be purchased. Ask a master composter or gardener to help decide which compost bin will best suit your needs. Try the local garden store to see if they sell a bin or tumbler. Only Gale's Garden Center and Chagrin Pet & Garden Supply carried bins in stock. The Home Depot has one model of compost bin that can be ordered online. Earth Machine, Tumbleweed Compost Tumbler, EnviroCycle, Sun-Mar Composters, ComposTumbler, Earth Engine, Prestro Hoop and Garden Gourmet are brand names of compost bins that can be purchased online. www.planetnatural.com and www.cleanairgardening.com are sites that have a variety of compost bins available.

Consider a rolling compost bin for more flexibility in placement, i.e. close to the house or in the garage. Also, small scale composting can be done indoors by either buying a kitchen composter or making one out a plastic container.

-Or-

Build

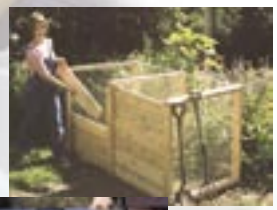
Compost piles can be contained in chicken wire, bricks or wood pallets. Follow the proper pile size when building. The least expensive method is just creating a pile.

Pile Size

An effective compost pile must be large enough to hold the heat in the center while still allowing air to permeate the pile. When creating a pile, maintain the size between 3′ x 3′ x 3′ to no larger than 5′ x 5 x 5′. Adding the same volume of materials to a purchased bin will optimize decomposition.

Placement

- Look for a level, well-drained area.
- Keep it accessible from all sides.
- Keep the pile or bin in a sunny spot to trap solar heat. The compost may need water in the summer.
- Shelter it near a building or landscaping that blocks wind to protect the compost pile from freezing winds.
- Build a pile over permeable soil or lawn.
- Look for a spot that allows you to compost discretely, especially if you have neighboring yards close by.



START A COMPOST PILE

1. Place 4″ – 6″ of base material such as chopped brush, twigs or wood chips on the ground. This will allow air circulation around base of pile. (*Skip this step if using a compost mixing container).*

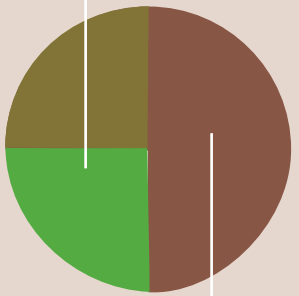
2. Alternate 2″- 4″ layer of green organic material containing nitrogen and 4″- 6″ brown organic material containing carbon. Keep a ratio of 1-part green and 2-to-3- parts brown. Do not compact layers to allow for air circulation.

3. After each green and brown layer add 1″ to 2″ of an activator to introduce microorganisms into the pile. Activators such as manure, garden soil, bone meal or urea fertilizer will provide nitrogen to encourage the reproduction of microorganisms. A pile must have microorganisms to decompose the organic waste.

4. Water the pile, so it's moist, but not wet.

ESSENTIAL ELEMENTS OF A COMPOST PILE

25-50% green or nitrogen containing organic matter
Vegetables, fruits, flowers, plant clippings, grass clippings, coffee grinds, manure, etc.



50-75% brown or carbon based organic matter
Dead leaves, straw, sawdust, wood chips, shredded newspaper, corn stalks, cotton rags, nut shells, pine needles, etc.

The correct mixture affects quality of the compost and the speed of decomposition. Another method is comparing C:N ratios of organic material planned to be composted. The optimal ratio is 30:1. Ratios of common organic material can be researched online.

MAINTAINING A COMPOST PILE

The instructions below will help you create compost within six months. Composting is like a science experiment; it needs to be observed and adjustments made. Passive composting can be practiced, but will take twelve to twenty-four months for the composting to be ready.

How to Produce Optimal Compost Conditions

The following things are needed to keep a compost pile actively decomposing:

Compost creatures:

- Micro-organisms
- Bacteria and fungi
- Macro organisms
- Insects and arthropods like worms, centipedes, sow bugs, beetles, snails or slugs

An initial source of compost creatures can be added through garden soil or aged compost. Also, the pile should be maintained to provide them appropriate food, water and oxygen. The creatures will help decompose the materials faster.

Moisture

The compost should have 50% moisture content and feel damp like a wrung-out sponge. Water can be added to the compost pile by either adding green material or sprinkling the pile with water.

Oxygen

The pile should be aerated about once a week by:

- Turning the pile outside to inside or top to bottom,
- Stirring the pile,
- Using an air stack or aerator tool to bring air into the center of the pile, or
- A tumbler compost bin should be rotated every two to three days.

Surface Area

Increase the surface area by shredding or cutting organic material into smaller pieces.

Proper size

Keep the volume around 3 cubic feet.

Proper Temperature

When optimal conditions are maintained, the compost pile will heat up, and the center of pile may measure between 90° to 140° F. If you do not keep a consistent aeration schedule, then turn the pile when the temperature peaks. Most backyard compost piles only reach 90° – 120°. If the pile no longer heats up, it may be an indication that the compost is ready for application.

PROBLEM SOLVING

A properly working pile has little earthy smell to no odor. If it does not, try the following suggestions below.

- To help dry an over watered pile, add sawdust, straw or wood chips or place wood planks underneath the pile to ensure good drainage.
- When the pile is too dry, turn it over, and add greens and water.
- If the pile is damp, sweet smelling and will not heat up, it needs nitrogen. Turn the pile and add grass clippings, coffee grounds, manure, blood meal or urea fertilizer.
- When the pile smells like ammonia, add brown leaves, sawdust, straw or wood chips.
- If the materials do not seems to be decomposing, then add nitrogen, turn the pile and maintain 50% moisture content.
- When unwanted creatures are interested in compost, bury the food waste close to the pile's center and avoid "compost dont's."

For more information on problem solving, use the compost resources.

Compost Do's

Leaves
Grass clippings
Plants
Nut shells
Straw and hay
Fruits, vegetables and grains
Egg shells
Coffee grounds or tea leaves
Sawdust and wood chips
Dryer lint
Shredded paper and newspaper
Dead flowers
Certain manures

Compost Don'ts

Meats
Fish
Dairy products
Oil or fatty foods
Bones
Cat and dog droppings
Cat litter
Diseased or insect ridden plants
Noxious or invasive weeds
Ashes from coal or charcoal
Branches or limbs
Yard trimmings treated with chemical pesticides

USING FINISHED COMPOST

The composting process will take six months or longer in Northeast Ohio climate before the compost is ready for use. Compost is ready when it has decomposed into small, crumbly, dark brown soil-like particles. Remove the fresher yard debris from the top of the pile and start a new pile. Use compost:

- as a potting mix. Add soil and sand.
- to plant seedlings.
- as a seed starter. Add top soil, not to burn out the seeds.
- to encourage healthy growth of trees by digging in a layer of compost around the trees' drip line.
- to mulch around plants.
- as fertilizer on grass, indoor plants, landscaping, around trees and in the garden.
- as a top dressing for the lawn, twice a year.

OTHER COMPOSTING METHODS

Vermicomposting

This composting uses red wiggler worms to decompose food scraps.

Passive Compost

It is similar to active composting, but it needs a longer time to finish decomposing because the pile is managed less. Basically, deposit organic yard waste in an open pile, bin or a wire cage and let nature take its course. For better results, follow instructions to start a compost pile. Skip the maintenance section. It takes one or two years to produce a finished product.

Trench or Pit Composting

Dig up to a 12" trench or 18" hole and deposit food and yard waste. Cover with several inches at soil. Let nature do the work. Trench composting is good for next season's garden rows. Plant a tree, shrub or other plant over the pit. This is also a simple away to decompose food and yard waste.

Grasscycling

Leave grass clippings on the lawn to return the nutrients to the soil. Use a mulching mower or cut dry grass more frequently with sharp blades to encourage grass to decompose quickly. If large grass clumps are left on the lawn after mowing, then allow them to dry and mow lawn again to disperse piles evenly.

Composting Toilet

Some people may find a composting toilet a good environmental idea, especially for cabins or remote areas. It decomposes human waste into usable compost. The finished product should not be put around plants in a food garden, but it is full of nutrients for trees and landscaping. It prevents the loss of nutrients and decreases waste going into an already taxed sewer or septic system. It may only need to be emptied once a year. Also, a composting toilet can be placed in an area where plumbing is challenging.

Pet Waste Composter

You may need to check into city regulations with this one. It's been a suggested method, in cities that do not allow dog poop in the garbage. A pet waste composter works like a small septic system. It involves digging a hole, cutting out a plastic bin and adding a septic starter (enzyme-active biological compound formulated to increase the digestion rate of sewage), water and dog poop.

Composting Benefits

- Reduces your ecological footprint by reducing garbage being landfilled.
- An inexpensive way to amend the soil and reduces fertilizer requirements.
- Conserves natural resources such as water, organic matter and nutrients.
- An environmental friendly way to improve soil health and the health of plants.
- Reduces garden chores by applying compost like a mulch to limit weeds and retain moisture.
- Saves city waste disposal fees.
- Combats climate change by decomposing organics with oxygen, preventing the release of methane gas when organics decompose without oxygen in a landfill.
- Reduces water pollution by reducing the need for fertilizers, which prevent algae blooms and kills fish in streams and lakes.

Compost Resources

US Composting Council -
http://compostingcouncil.org/index.cfm

Compost Guide -
www.compostguide.com or www.ranchomondo.com/compost/compost.doc

Dog Waste Composting System -
http://homepage.mac.com/cityfarmer/PhotoAlbum22.html

How To Compost -
www.howtocompost.org or http://ohioline.osu.edu/hyg-fact/1000/1189.html

Composting Toilet -
www.compostingtoilet.org

Composting Video *Turning Your Spoils into Soil* -
http://www.ct.gov/dep/cwp/view.asp?a=2718&q=399598&depNav_GID=1645

Grasscycling -
www.wastediversion.org/grasscycling.htm or
www.turffiles.ncsu.edu/pubs/management/gc592.html

Master Composter - www.mastercomposter.com/

For Kids

Composting Coloring Book -
www.dnr.state.wi.us/org/caer/ce/eek/cool/natrec.htm

Compost for Schools -
http://compost.css.cornell.edu/schools.html

Adventures of Herman the Worm -
www.urbanext.uiuc.edu/worms/