

# 6 Steps to COMPOST

1

## Pick Your Bin

There's a perfect bin for every household, not one perfect bin. Ask a Master Composter to help you choose.



2

## Site Your Bin

The **best place** for a compost bin is where you **will remember to use it!**

3

## Collect Browns!



The primary reason compost gets slimy or is unsuccessful is **lack of browns** (carbon). Collect enough **leaves** in the fall (straw or shredded newspaper work too) to layer **3 to 1** over all food scraps.

4

## LASAGNA LAYER



A. Start with **sticks** at the base for air.  
B. Add a bowl-shaped layer of **browns**.  
C. Add **food scraps** to the bowl.  
D. **Cover** the scraps with 1"-2" of browns in a bowl shape. Repeat C-D.

5

## Turn

**Strictly optional!** Turning does speed up the process so you will have more finished compost faster. If you're not concerned with speed, let it sit, it will rot just fine without your attention as long as you used the lasagna layering technique.

6

## Harvest & Use

When the stuff at the bottom of the bin **looks and smells like rich crumbly earth**, not recognizable food, it's time to use it in your garden or on your houseplants.

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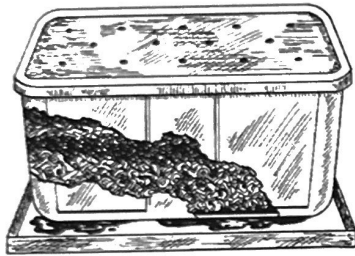
LOVE  
YOUR  
COMPOST!

Master Composters of Tompkins County



# Indoor Worm COMPOST

If you have limited outdoor space ...  
If you want to produce an incredibly rich soil amendment ...  
If you love to learn from nature ...



## ... TRY VERMICOMPOSTING!

Composting worms (red wigglers aka *eisenia foetida*) will eat up to 1/4 their own body weight each day, producing nutrient-rich castings. Worms need darkness to survive and need lots of moisture to breathe. They are like us and live best at 50-85°. A well-maintained bin is a balanced ecosystem and should never smell bad or inspire worms to escape. Happy worms will reproduce after 3 months.

## Prepare A Bin

- 1 You can use any plastic, wood, or styrofoam container, as long as it's at least 8-12" deep and provides 1 sq foot of surface per pound of food scraps you want to compost each week. It must be opaque, worms will become paralyzed when exposed to light. Drill or poke pencil-sized holes in the top and upper sides of the bin for good air circulation.

## Add Bedding & Worms

- 2 Soak bedding in water, then wring out till it's as moist as a damp sponge (shredded newspaper works best) and fluff it up to ensure your worms have plenty of air. Your bin should have about 8" of loose bedding. Now add your red wiggler worms to the bin (regular earthworms will not survive in your worm bin). Worms will try to escape if their bedding is too wet or too dry.

## Feed Your Worms

- 3 Feed your worms a vegetarian diet (no meat or cheese) and avoid lots of oil. They will eat most fruits and veggies, but will avoid onion, garlic, and citrus. Start with one handful of scraps and feed by pulling back the bedding and burying the food in one corner of your bin, rotating feeding spots. Feed weekly until your bin is well-established. Keep the food completely covered with bedding to discourage smells or fruit flies. If your bin gets smelly or moldy, you are feeding more than your worms can handle. Slow feedings or remove food until the bin comes into balance again.

Contact CCE Tompkins for sources of worms and free upcycled bins. Vermicomposting classes are held twice a year.

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LOVE  
YOUR  
COMPOST!  
Master Composters of Tompkins County



# STARTING A WORM COMPOST AT HOME!

*STARTING UP YOU NEED:  
A BIN, BEDDING, WORMS, AND FOOD*

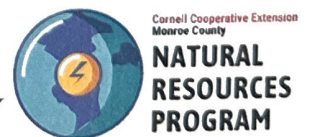
## *GETTING YOUR BIN READY:*

- *CAN USE ANY PLASTIC CONTAINER BUT IT HAS TO BE DARK AND BETWEEN 4-12 GALLONS IN SIZE*
- *DRILL 1/4 INCH HOLES ON TOP AND BOTTOM YOUR BIN FOR AIR FLOW*
- *STACK ANOTHER BUCKET WITH NO HOLES DRILLED BELOW TO CATCH ANY ESCAPING WORMS*
- *STORE IN A PLACE WHERE TEMP IS CONSISTENTLY BETWEEN 55-77 DEGREES FAHRENHEIT*

## *MAKING THE BEDDING:*

- *USE SHREDDED PAPER OR NEWSPAPER*
- *SOAK PAPER IN WATER*
- *MAKE SURE THE PAPER IS "FLUFFY", NOT CONDENSED SO WORMS CAN BURROW INTO THE BEDDING*
- *FILL BIN WITH BEDDING*
- *ADD A SMALL AMOUNT OF SOIL*
- *ADD WORMS!*

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# VERMICOMPOST DO'S AND DON'TS?

## DO FEED

FRUIT AND VEGGIE SCRAPS  
AND TRIMMINGS (THEY  
LOVE BANANAS!)  
COFFEE GROUNDS  
COFFEE FILTERS  
TEA LEAVES  
TEA BAGS  
WASHED OUT GROUND  
EGG SHELLS

## DON'T FEED

MEAT  
FISH  
DAIRY  
CITRUS  
OILY FOODS  
(DRESSINGS, BUTTER,  
COOKING OILS, FATS)

- WORMS CAN EAT FATTY AND OILY FOODS SUCH AS MEATS, DAIRY, AND FISH, HOWEVER, THESE WILL ATTRACT PESTS AND CAUSE A STENCH AS WELL AS BACTERIA AND PATHOGENS TO GROW TO SO IT IS BEST TO AVOID FEEDING WORMS THIS FOOD
- YOU CAN FEED THE WORMS BREAD AS LONG AS THERE IS NOTHING ON IT (BUTTER, PEANUT BUTTER, ECT)
- MAKE SURE TO CUT UP THE FOOD YOU FEED TO THE WORMS. THE SMALLER THE FOOD THE FASTER IT WILL DECOMPOSE!

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# TIPS FOR VERMICOMPOSTING!

IF THE BIN SMELLS THEN YOU MAY BE PUTTING TOO MUCH FOOD IN. FEED THE WORMS LESS FOR LESS STENCH.

IF THE BIN IS TOO WET THEN YOU ADDED TOO MUCH WET PAPER. JUST ADD DRY PAPER TO FIX!

IF YOUR BIN IS ATTRACTING PESTS THEN MAKE SURE TO BURY THE FOOD WHERE PESTS WON'T SMELL OR GET ACCESS TO THE FOOD

IF THE BIN IS DRY IT IS BECAUSE THERE IS NOT ENOUGH MOISTURE. ADD FOOD WITH HIGH WATER CONTENT OR SOAKED PAPER

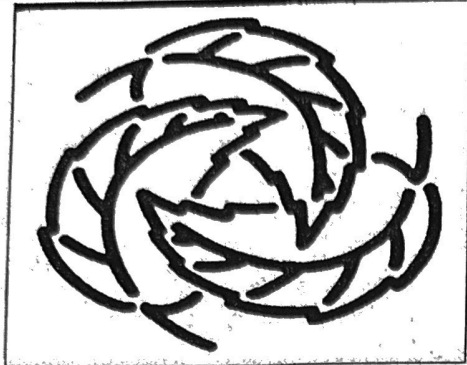
THERE ARE MANY WAYS TO HARVEST YOUR VERMICOMPOST. LOOK ONLINE FOR THE WAYS THAT BEST SUPPORT YOUR BIN AND WORMS!

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# HOME COMPOSTING



## What is Compost?

Compost is a dark, crumbly, and earthy smelling form of decomposing organic matter.

## Why Should I Make Compost?

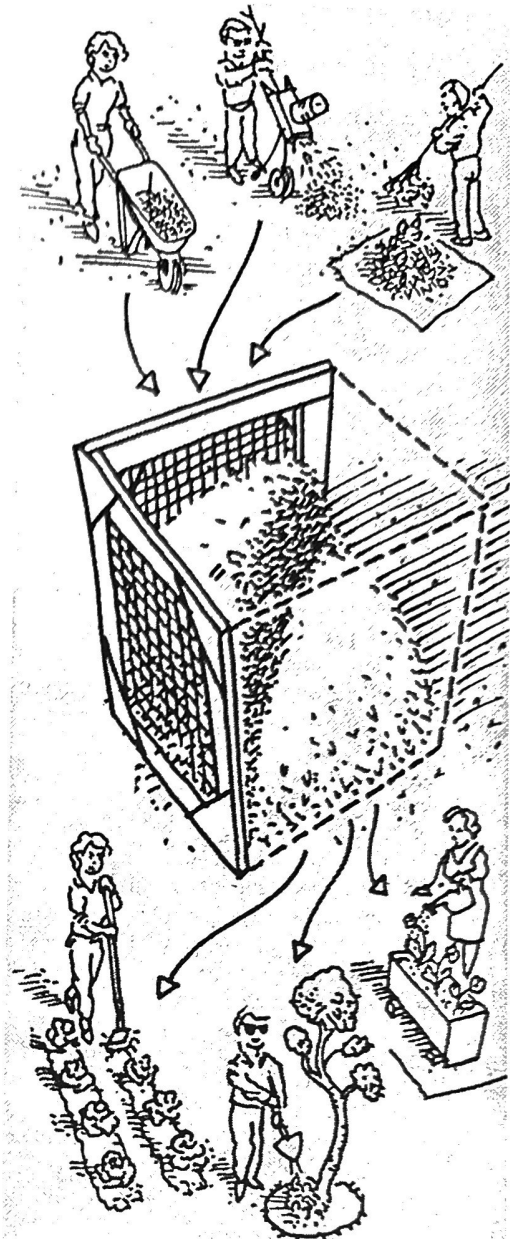
Composting is the most practical and convenient way to handle your yard wastes. It can be easier and cheaper than bagging these wastes or taking them to the transfer station. Compost also improves your soil and the plants growing in it. If you have a garden, a lawn, trees, shrubs, or even planter boxes, you have a use for compost.

By using compost you return organic matter to the soil in a usable form. Organic matter in the soil improves plant growth by helping to break up heavy clay soils and improving their structure, by adding water and nutrient-holding capacity to sandy soils, and by adding essential nutrients to any soil. Improving your soil is the first step toward improving the health of your plants. Healthy plants help clean our air and conserve our soil, making our communities healthier places in which to live.

## What Can I Compost?

Anything that was once alive can be composted. Yard wastes, such as fallen leaves, grass clippings, weeds and the remains of garden plants, make excellent compost. Woody yard wastes can be clipped and sawed down to a size useful for the wood stove or fireplace or they can be run through a shredder for mulching and path-making. Used as a mulch or for paths, they will eventually decompose and become compost.

Care must be taken when composting kitchen scraps. Compost them only by the methods outlined in this brochure. Meat, bones and fatty foods (such as cheese, salad dressing, and leftover cooking oil) should be put in the garbage.



## COMPOST FLOW CHART

## How Can I Use Compost?

Compost can be used to enrich the flower and vegetable garden, to improve the soil around trees and shrubs, as a soil amendment for houseplants and planter boxes and, when screened, as part of a seed-starting mix or lawn top-dressing. Before they decompose, chipped woody wastes make excellent mulch or path material. After they decompose, these same woody wastes will add texture to garden

# The Essentials of Composting

With these principles in mind, everyone can make excellent use of their organic wastes.



## Biology

The compost pile is really a teeming microbial farm. Bacteria start the process of decaying organic matter. They are the first to break down plant tissue and also the most numerous and effective composters. Fungi and protozoans soon join the bacteria and, somewhat later in the cycle, centipedes, millipedes, beetles and earthworms do their parts.



## Materials

Anything growing in your yard is potential food for these tiny decomposers. Carbon and nitrogen, from the cells of dead plants and dead microbes, fuel their activity. The microorganisms use the carbon in leaves or woodier wastes as an energy source. Nitrogen provides the microbes with the raw element of proteins to build their bodies.

Everything organic has a ratio of carbon to nitrogen (C:N) in its tissues, ranging from 500:1 for sawdust, to 15:1 for table scraps. A C:N ratio of 30:1 is ideal for the activity of compost microbes. This balance can be achieved by mixing two parts grass clippings (which have a C:N ratio of 20:1) with one part fallen leaves (60:1) in your compost. Layering can be useful in arriving at these proportions, but a complete mixing of ingredients is preferable for the composting process. Other materials can also be used, such as weeds and garden wastes. Though the C:N ratio of 30:1 is ideal for a fast, hot compost, a higher ratio (i.e., 50:1) will be adequate for a slower compost. Table 1 provides an estimate for the C:N ratio of common materials.



## Surface Area

The more surface area the microorganisms have to work on, the faster the materials are decomposed. It's like a block of ice in the sun—slow to melt when it's large, but melting very fast when broken into smaller pieces. Chopping your garden wastes with a shovel or

machete, or running them through a shredding machine or lawnmower will speed their composting.



## Volume

A large compost pile will insulate itself and hold the heat of microbial activity. Its center will be warmer than its edges. Piles smaller than 3 feet cubed (27 cu.ft.) will have trouble holding this heat, while piles larger than 5 feet cubed (125 cu.ft.) don't allow enough air to reach the microbes at the center. These proportions are of importance only if your goal is a fast, hot compost.



## Moisture & Aeration

All life on Earth needs a certain amount of water and air to sustain itself. The microbes in the compost pile are no different. They function best when the compost materials are about as moist as a wrung-out sponge, and are provided with many air passages. Extremes of sun or rain can adversely affect this moisture balance in your pile.



## Time & Temperature

The faster the composting, the hotter the pile. If you use materials with a proper C:N ratio, provide a large amount of surface area and a big enough volume, and see that moisture and aeration are adequate, you will have a hot, fast compost (hot enough to burn your hand!) and will probably want to use the *turning unit* discussed in the next section. If you just want to deal with your yard wastes in an inexpensive, easy, non-polluting way, the *holding unit* (also discussed on the next page) will serve you well.

Material	C:N Ratio
Sawdust	200-750
Peatmoss	50
Straw	50-150
Cow manure	20
Poultry manure	3-15
Horse manure	20-50
Leaves from oak	40-80
Sun-dried grass clippings	20
Fresh grass clippings	15
Fresh garden debris	20
Vegetable wastes	~12
Garbage (food waste)	~15
Hay from legumes	15-20
Hay-general	15-32
Corrugated cardboard	~560
Newsprint	~400-850

Table 1  
Some Typical C/N Ratios  
(based on dry weight)



## BASICS

- ▼ “Composting” means the controlled decomposition (decay) of organic material such as yard trimmings, kitchen scraps, wood shavings, cardboard, and paper.
- ▼ “Compost” is the humus-rich material that results from composting.
- ▼ Compost contributes nutrients and beneficial life to the soil, improves soil structure, and helps prevent runoff that can pollute rivers and lakes.
- ▼ Compost helps the soil absorb and retain nutrients and moisture, and protects plants from diseases and pests. Better moisture retention means less watering, allowing you to conserve water and reduce runoff pollution.

## COMPOST BENEFITS

Compost makes good mulch. It can also be mixed into garden and potting soils.

**Nutrients.** Compost contains the full spectrum of essential plant nutrients. However, you should test the nutrient levels in your compost and soil to determine what supplements your landscape requires. Ask your county extension agent for more information.

- ▼ Compost contains micronutrients such as iron and manganese that are often absent in synthetic fertilizers.

## Composting

- ▼ Compost releases its nutrients slowly, over several months or years.
- ▼ Soil enriched with compost retains fertilizers better than lifeless soil does. Less fertilizer runs off to pollute waterways.
- ▼ Compost balances both acid and alkaline soils, bringing pH levels into the optimum range for nutrient availability.

**Soil Structure.** Compost helps bind clusters of soil particles (aggregates). Soil rich in aggregates is full of tiny air channels and pores that hold air, moisture, and nutrients like a sponge.

- ▼ Compost helps sandy soil retain water and nutrients that would normally wash right through the sand.
- ▼ Compost breaks up tightly bound particles in clay or silt soil, allowing roots to spread, water to drain, and air to penetrate.
- ▼ Compost alters the texture and structure of all soils, increasing their resistance to erosion.
- ▼ Compost particles attract and hold nutrients strongly enough to prevent them from washing out, but loosely enough so that plant roots can take them up as needed.
- ▼ Compost makes any soil easier to work and cultivate.

**Beneficial Soil Life.** Compost introduces and feeds diverse life in the soil, including bacteria, insects, worms, and more, which support vigorous plant growth.

- ▼ Compost bacteria break down mulch and plant debris into plant-available nutrients. Some soil bacteria also convert nitrogen from the air into a plant-available nutrient. Beneficial insects, worms, and other organisms are plentiful in compost-enriched soil; they burrow through the soil keeping it loose and well aerated.
- ▼ Compost suppresses diseases and harmful pests that overrun poor, lifeless soil.

**Water Quality.** Compost increases soil's ability to retain water and decreases runoff. Runoff pollutes water by carrying soil, fertilizers, and pesticides to nearby streams.

- ▼ A 5 percent increase in organic material quadruples the soil's ability to store water.
- ▼ Compost promotes healthy root growth, which decreases runoff.
- ▼ Compost can reduce or eliminate your use of synthetic fertilizers.
- ▼ Compost reduces the need for chemical pesticides because it contains beneficial microorganisms that protect your plants from diseases and pests.

Be sure to contain your compost pile so that it doesn't wash off your yard during a rainstorm. An excess of nutrients in water can deplete the oxygen available to fish and other aquatic life.



# Composting Do's and Don'ts!

## GREENS (NITROGEN-RICH)

FRUIT SCRAPS  
 VEGETABLE SCRAPS  
 GRASS CLIPPINGS  
 YARD WEEDS (BEFORE GROWN TO SEED)  
 COFFEE GROUNDS/FILTERS  
 TEA LEAVES  
 GARDEN WASTE  
 FRESH LEAVES  
 TABLE SCRAPS  
 HEDGE CLIPPINGS  
 POTATO PEELS  
 SEAWEED AND KELP



## BROWNS (CARBON-RICH)

DRY LEAVES  
 PINE CONES/NEEDLES  
 WOOD ASH  
 CHOPPED TWIGS/BRANCHES  
 SHREDDED PAPER/NEWSPAPER/PAPER BAGS  
 CARDBOARD  
 EGG SHELLS  
 CORN COBS  
 DRYER LINT  
 SAWDUST  
 NUTSHELLS



## DO NOT COMPOST

YARD WEEDS AFTER GONE TO SEED

DAIRY PRODUCTS

YARD TRIMMINGS WITH PESTICIDES

PET WASTE/CAT LITTER

FISH PRODUCT

WALNUTS/TREE LEAVES AND TWIGS

DISEASED PLANTS

FATS/OILS/BUTTER

MEATS/BONES

COAL/CHARCOAL ASH

GRAINS

Avoid Fats, oils, dairy products, meats, fish, and bones as they will create odor and attract pests.

Avoid diseased plants, pet waste, and trimmings with applied pesticides as they can carry disease, harmful chemicals, and/or bacteria's not good for the plants.

Avoid Walnuts, Walnut trees, coal, and charcoal ash as they may release toxic chemicals into the soil.

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 2449 St Paul Blvd Rochester, NY 14617 Phone: 585-753-2564 Fax: 585-753-2560  
 Web: [monroe.cce.cornell.edu](http://monroe.cce.cornell.edu)

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