

Indoor Composting with Worms



Worms are one of nature's recyclers; working in concert with microorganisms to decompose organic material. Worm excrement, called castings, is valued for its nutrient and mineral content and enzymatic properties that provide pest control to plants. Castings also help plants fight disease and aid in the uptake of nutrients and make soil more absorbent for plants to retain moisture.

Eisenia Fetida, commonly called redworms, is best suited for use with indoor worm bins, also known as vermi-composting. As surface dwellers they are well suited for living inside of a bin, devouring decomposing food wastes. Redworms eat almost half their body weight each day; one pound of worms can handle 3-5 pounds of food waste a week.

Feed the worms a good variety of produce scraps to keep an even chemical balance in the soil, which keeps them healthy. Avoid dairy foods, oils, fats and meats as they create unwanted odors. Include citrus fruits sparingly to maintain the proper pH in the bin which should be between 6 and 7. Always place food under well moistened bedding material. The food should be out of sight to reduce the incidence of fruit flies. Bedding will decompose in the bin and will need to be routinely restocked.

Newspaper works well as bedding material for the bin. Other types of paper may also be used, as long as they consistently retain moisture.

A search on the Internet will provide a number of redworm sellers. Also check the local bait shop where they may be referred to as red wigglers, red hybrids or manure worms. Bait stores may be more expensive than ordering from a grower. Growers sell by the pound (approximately 800 to 1,000 worms), where bait shops usually sell by the dozen.

The Internet is abundant with information on worm bins. Tried and true methods for composting with worms can be found in the book *Worms Eat My Garbage* by Mary Applehof.

WORM BIN RECIPE

Materials Needed:

A non-transparent shallow container with cover

- Solid colored plastic storage containers work well.
- Choose size according to the amount of food waste that may be generated.
- Rule of Thumb: one square foot of surface area is needed for each pound of food waste added to the bin per week.
- Container should be no deeper than 15" to prevent anaerobic conditions from developing. Anaerobic conditions occur when air cannot circulate through the bin, causing foul odors.

A non-transparent shallow container with cover

Jug or bucket of water

1-2 handfuls of garden soil (for micro-organisms necessary to composting)

1 pound of redworms

Food scraps

Spray bottle of water

Drill and ¼" drill bit

- Prepare container by drilling several holes around the upper third of the container to allow air to enter. Drill several holes in the bottom of the container to allow excess liquid to drain. Store bin on plastic tray lined with newspaper to absorb liquid.
- Make bedding by ripping newspapers into strips 1 inch wide. Put the paper in the container. Add water into newspaper until bedding is thoroughly moistened but not soggy. There should be no standing water in the bottom of the container.
- Mix in soil. Fluff bedding.
- Spread worms over top of bedding.
- Bury food scraps completely under bedding.
- Cover bin and place in a location where the temperature will remain 55-77 degrees Fahrenheit. Avoid areas where the bin may get direct sunlight since this will overheat the worm bin. Also, avoid areas with extended periods of vibrations i.e., next to a washing machine.
- Bedding should remain moist at all times. Mist the bedding with a spray bottle of water, as needed.

Make the Most of Your Lawn and Your Time - Grasscycle!

Grasscycling, a simple natural approach to lawn care, is the practice of leaving grass clippings on the lawn or using them as mulch. Grass clippings are 75 to 85 percent water and decompose quickly. Through decomposition, grass clippings release nitrogen and other valuable nutrients resulting in a greener, healthier lawn without the use of fertilizer, pesticides and herbicides. Inappropriate application of fertilizer contributes to pollution of waterways which can impact the health of wildlife and aquatic species.

With grasscycling there is no raking or bagging of grass which means less time spent on lawn care. Consequently, eliminating the use of bags, reducing the frequency of stops and starts of the lawn mower to bag grass, and using grass clippings to add nutrients to the lawn instead of commercial fertilizer saves money. Less time using the mower will also save gas and reduce harmful greenhouse gas emissions.



GRASSCYCLING TIPS

- *Mow when lawn is dry*
- *For wet lawns, raise the initial cutting height and gradually lower to proper height on follow-up passes*
- *Use excess clippings as a mulch around plants or leave on the lawn*
- *To prevent the growth of algae and other plants in surface waters, move clippings from sidewalks or driveways back onto the lawn.*

How to Grasscycle

Replace conventional lawn mower blades with a mulching blade or use a mulching mower. Mulching mowers and blades are designed to allow the yard debris to be cut multiple times during the mowing process.

Mow grass to no more than 3 inches tall. For healthier grass, remove only one-third of the grass blade at a time, and no more than one-inch total. Leave the grass clippings where they fall and allow them to decompose.



Manage yard trimmings and food scraps at home through backyard composting, grasscycling, mulching or an indoor worm bin. These techniques can improve the health of home lawns and gardens, save time, money, and reduce harmful greenhouse gas emissions.



Yard trimmings and food account for nearly 30% of what Americans send to the landfill each year, contributing to the production of methane gas, a known cause of global climate change.

Healthy Lawn and Garden - Guide to Composting

Backyard Composting

As much as 35% of household waste is made up of kitchen scraps and yard clippings; which are ideal for backyard composting. Composting is the result of aerobic bacteria, fungi, and other micro-organisms breaking down organic materials. The decomposed materials are called compost. Households produce a significant amount of organic material that is well suited for composting, such as vegetative food scraps from the kitchen, dead houseplants, leaves, twigs, grass clippings, garden trimmings and weeds.

Basic Composting Instructions

Materials needed: Sources of carbon (brown materials), sources of nitrogen (green materials), air and water.

Carbon, or brown material, is dry leaves, woody plant trimmings, paper, straw, pine needles and sawdust.

Nitrogen or green materials, are kitchen scraps (no meat, no fat, no bones), leafy plant trimmings, spent flowers, herbs and vegetables, livestock manure (no dog, cat or human manure), weeds (foliage only), pet bedding, hair and fur, feathers and hay.

Finished compost will take between four weeks and one year, depending on how often the pile is turned and the level of moisture maintained in the pile.

Directions:

- 1.) Mix one part green yard waste with two parts brown to form a pile (an average size is 4'x4'x4'). For fast composting, first chop up the waste with a hoe or lawn mower.
- 2.) Mix in one inch of soil.
- 3.) Keep the pile as moist as a wrung-out sponge.
- 4.) Turn the pile every week to let air in.



Do-it-Yourself Backyard Compost Bin

Materials needed: 4 wooden pallets, Wire, Wire cutters.

Instructions:

- Before assembling, select a convenient, shady area with good drainage to set up the bin.
- Stand 2 pallets up next to one another at a 90 degree angle, and wire the corners together.
- Form a U shape by adding a pallet to the first 2 pallets, and connect with wire.
- Add 4th pallet and connect with wire, forming a square. By leaving one corner unconnected, the fourth pallet becomes a swinging door, making it easier to get at the compost pile for turning.

4 RULES OF COMPOSTING - Quality Materials - Consistent Moisture
 - Adequate Volume of pile - Good Air circulation

What to Compost

Do Compost

Leaves	Manure
Grass clippings	Straw/Hay
Dead plants	Coffee grounds
Vegetative food scraps	Weeds
Fruit wastes	

Don't Compost

Weeds that have gone to seed and/or are invasive	Wood ashes
Dairy products	Lime
Cat, dog or human fecal matter	BBQ charcoal
Contaminated matter	Meat, grease, bones
Branches and wood chunks	



Composting Grass Clippings

Grass clippings are mostly water and are very rich in nitrogen. They can be problematic because they tend to compact, increasing the chance of becoming anaerobic (absence of oxygen), matting together and emitting a strong ammonia-like odor. Here are some tips for composting this valuable "green":

- Compost grass clippings in thin layers, intermixed in a 2-to-1 ratio with brown materials such as dry leaves or plant debris.
- Save and bag Fall leaves for Spring/Summer grass composting.
- Let grass clippings dry out for a couple of days before composting them.
- When attempting to compost a large quantity of grass clippings with a good source of brown material, turn the pile using a compost aeration tool, every few days to get air into the materials. This will help to prevent potential odors.

Mulching: Nature's Waste Recycling System

Mulching around shrubs and gardens with leaves, grass clippings, and woody waste will add nutrients, reduce evaporation from the soil surface and control weed growth. Mulch also provides ideal conditions for earthworms and other soil organisms to create healthy soil.

Tips for Using Mulch:

- Chip or shred woody materials
- Allow grass clippings to dry before using
- Do not use grass clippings treated with herbicides
- Pine needles can be used around acid-loving plants

