

Backyard Composting

Compost your kitchen scraps in your own backyard and make your way toward a Zero Waste home



Composting is a process that converts food scraps and yard waste, such as leaves and grass clippings, into useful, nutrient-rich soil. Composting at home is one of the easiest things that individuals and families can do to significantly reduce the amount of waste they produce. With just a little set-up you can quickly start composting kitchen scraps and yard waste right in your own backyard!

COMPOST

Make dirt, not waste.

What are you doing with your food scraps?

Most people think of compost when they are working in the yard, but a lot of compostable discards are also generated in kitchens! In fact, if you look into the garbage can of the typical Minnesota household, about one quarter of our household trash is made up of material that can be composted—things that came from plants and animals, like food scraps and paper we cannot recycle such as paper plates and paper towels.

When food scraps are thrown into the garbage, they have to be picked up, transported, and buried or burned at significant financial and environmental costs, and this valuable resource is destroyed. When food scraps decompose in the anaerobic (without oxygen) conditions of a landfill, they create methane, a greenhouse gas that has heat trapping capabilities 23–71 times greater than carbon dioxide. Landfills are the single largest direct human source of methane. In addition, as the food scraps decompose and ooze through the surrounding trash, they pick up other toxins and create highly toxic sludge—called leachate—that leaks into the ground water. Incinerators emit carbon dioxide and nitrous oxide, a greenhouse gas that is 310 times more powerful in atmospheric warming than carbon dioxide. Burning food waste is not efficient and on average, incinerators in the U.S. emit more carbon dioxide per megawatt-hour than coal-fired, natural-gas fired, or oil-fired power plants. Most importantly, in both scenarios, the nutrients found in your food scraps are wasted instead of recycled back into a valuable and much needed product – compost!



Note: Sometimes people use their garbage disposals thinking this material goes away to biodegrade, but it actually ends up in the same place as your trash – it just takes a longer process to get there. Waste from your garbage disposal may actually have a larger environmental impact than throwing it directly in the garbage.

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Getting Started

Backyard composting is done outside, and can be as simple as a small pile of leaves in a corner of a yard to a more complex system of two-to-three bins containing yard waste and food scraps at various stages in the composting process. Composting in your backyard is very easy. Your compost pile is a living system with many insects, worms and bacteria that breakdown your food scraps, some non-recyclable paper, and yard waste into valuable, nutrient rich soil. Like many healthy, living systems, it needs three things: water, air, and food. Keeping these things in balance will help you maintain a healthy pile. You will get water from food scraps, rain, and the occasional watering. You get air from turning, and dry materials and the food comes from your kitchen and yard.

Compost recipes

Many experts will discuss at length the carbon-to-nitrogen ratio in a compost pile and the way to optimize the ratio for speedy decomposition. Do not be intimidated by the chemistry of this discussion. All you need to remember is that a good pile will have both wet material or “greens” (a nitrogen source: grass clippings, plant trimmings, food scraps) and dry material or “browns” (a carbon source: dried leaves, dead plants, stalks, straw), but even a pile with mostly dry material or mostly wet material will eventually break down.

Put these materials in your backyard bin:

Green/Wet Materials

- ◆ fruit/vegetable peels
- ◆ moldy/stale bread
- ◆ grass/yard clippings
- ◆ coffee grounds/filters
- ◆ tea leaves/bags
- ◆ leftovers without meat or oil

Brown/Dry Materials

- ◆ leaves
- ◆ hay/straw
- ◆ dead plants
- ◆ non-recyclable paper like paper towels, plates, napkins, and egg cartons
- ◆ eggshells

Do not put these materials in your backyard bin

- ◆ meat scraps or bones
- ◆ dairy
- ◆ pet feces
- ◆ fatty or oily foods
- ◆ non-organics (plastic, metal etc)

Finding Your Inner Composter

There are many ways to approach composting, and the most important thing is to find the ways that work for you, including which bin to use, turning methods and frequency, layering, location, and uses for your finished compost.

Selecting a compost bin

A variety of containers are suitable for compost bins. Bins can be as simple as a length of chicken wire around stakes or as complicated as an intricately designed wood structure. There are plans available for constructing bins and many commercial bins available for purchase. To encourage waste reduction through composting, many local governments, including the counties in the Twin Cities area, have offered compost bins for purchase at a reduced rate. To buy a bin, check

out Eureka Recycling's **Where to Buy a Compost Bin** factsheet on www.MakeDirtNotWaste.org or contact your city or county to see what they have to offer. To build your own, simply see what you have stored in your own garage: wire fencing, cement blocks or bricks, 55-gallon drums, picket fencing, and wooden pallets are all common bin-building materials. If you really want to make sure not to have mice or rodents, you will probably have to line the bottom of your bin with hardware cloth or ¼" mesh. Make sure your bin allows for good air flow and a way to turn or stir the contents of bin. When determining whether to build or to buy, decide what suits your tastes, budget, yard size and your personal style.



It's your turn

Turning your pile (a pitch fork works the best!) is very important to achieve proper aeration (getting oxygen to the good organisms) and to ensure that materials break down consistently. As the materials are decomposing, your bin will get quite warm – between 130 and 160 degrees Fahrenheit. This temperature, caused by the bacteria in the bin, helps break down your food scraps and yard waste, but may not be sustained long enough to fully break down things like diseases in plants or weed seeds (so you may want to leave them out). The pile will fluctuate in temperature, and turning will help mix the materials so that they continue to break down and keep the pile warm as well as distribute oxygen so that the pile does

not smell. If you choose not to turn the pile, it will take longer to decompose, but it will do so eventually. If you only want to turn your pile once or twice a year, a good way to do this is to remove the bin from the pile, set it next to the pile, and scoop all non-composted materials back into the bin. This will help keep the pile from becoming too compact as well as help it heat up again.

Season changes

In Minnesota your backyard pile will freeze solid in the winter months. Do not turn your pile in the late fall as you want the bin to retain its heat for as long as possible. You may want to turn it once as the leaves begin to fall, but that should be the last time before winter. In the spring, you will want to turn your pile when it thaws out so that it can be jump started into decomposition mode once again! You may even have some finished compost from last fall!

A well-managed compost pile will be ready in two to four months in the warm season, whereas an untended pile may take a year to decompose. When completed, your compost will be dark and crumbly, have a pleasant, earthy smell and you won't be able to tell what it used to be.

Location, location, location

Locate your compost pile in an area of your yard that will not interfere with activities but is still easily accessible for you to add food scraps. You may want it near a water source, in case you need to water it occasionally. The pile will work best in a partially shaded area where it is protected from drying winds but still receives some sunlight.

Size matters

Compost will happen no matter which bin you choose. However, the dimensions of your compost bin and size of the materials you put in the bin will affect how quickly your pile will decompose. If you want to create compost quickly, you will need to create a large pile of around 5 ft x 5ft x 5ft to create sustained heat regularly, layer your wet and dry materials, and regularly maintain your bin to gain consistent temperatures (in that 130-160 range). You may want to cut your food scraps into smaller pieces so the organisms can break them down rapidly (but do not pulverize your material). If you don't need compost as quickly, you do not need to have these higher maintenance measures. Your materials will break down on their own as long as they have a balance of air, water and food.

Putting the end product to use

Gardeners and farmers have used compost for centuries to improve the physical condition of soil and to add nutrients needed for plant growth. Compost is a natural alternative to commercial fertilizers, many of which are petroleum-based. Finished compost from a backyard pile can also be mixed with potting soil for house plants. In the garden it can be used as mulch around the base of plants to help retain water, or sprinkled in the bottom of a seed row before planting. Incorporating compost into light, sandy soil helps it hold both moisture and nutrients, while adding it to heavy clay soil improves drainage.



What if I have questions? Where can I get a bin?

There are numerous books and websites about composting, and many can be found at your local library and local bookstore. Eureka Recycling also offers many backyard composting workshops throughout the year. Please check out our website at www.MakeDirtNotwaste.org and read our factsheet **Where to Buy a Compost Bin**, or call our hotline at (651) 222-7678 for more details. These books are also worth reading:

- *Backyard Composting*; Harmonious Technologies.
- *The Rodale Book of Composting: Easy Methods for Every Gardener*; Debra Martin (Editor).

Backyard Composting Trouble-Shooting Chart

Backyard composting can be as easy as making a pile and waiting for it to turn itself into soil. However, if you are concerned about odor or getting the most out of your compost bin, here are a few tips for beginners.



COMPOST

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Symptoms	Possible Causes	Solutions
Unpleasant odor from pile.	Not enough oxygen due to compaction.	Aerate by mixing/stirring the pile, or embed large sticks to help air flow. Add more dry materials and stir them. Try removing your bin from the pile, set it next to pile and scoop all materials back into bin.
	Not enough oxygen from being too wet.	Add dry materials such as cornstalks, leaves, or non-recyclable paper to soak up excess water. This can also help improve air flow.
	If odor of ammonia, too much nitrogen.	Add dry materials and turn them in to help balance the pile.
Pile not heating up.	Lack of nitrogen.	Mix in a nitrogen source such as fresh grass clippings, fruit or veggie scraps, or coffee grounds.
	Not enough moisture.	Water your pile with a hose or watering can. You could also poke holes into the pile with a rod and pour water down the holes.
	Pile needs to be turned.	Use a pitchfork or garden tool, bring materials from the outside of the pile into the center.
	Compost may be finished. If it looks dark and crumbly and smells earthy, it is probably ready.	Remove finished compost from bin and begin adding new material to bin.
	Compost is damp and warm only in the center because it is very small.	Gather more materials and build a larger pile. It should be at least one cubic yard, but no wider or higher than five feet.
Pests are found in bin	This may not be a problem for you – compost bins offer good shelter for mice and other rodents.	You can line the bottom of your bin with ¼" wire mesh, bring it up the sides a few inches, but do not attach it to the bin so that you are still able to turn easily.

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Composting and the law

Backyard composting is allowed by ordinance in residential areas of many cities and suburbs. Before starting your own backyard compost pile, check with your city or county to find out about any local requirements for compost piles. For example, an ordinance was adopted in Saint Paul in 1999 to allow residents to compost food scraps in their backyard compost piles. While the ordinance may seem very detailed, its requirements are basic good advice for a healthy compost pile. The ordinance specifies it be contained, not larger than 125 cubic ft, located at least five feet from lot lines and no closer than 20 feet to any habitable building other than the resident's own home, no less than two feet from an alley. The ordinance also specifies which materials are allowed in pile (such as yard waste and kitchen scraps). It does not allow meat, bones, fats, oils, dairy products, other greasy kitchen wastes, or pet or human waste – things that should be kept out of a healthy compost pile.

Collecting compostables at the curb

Because your food scraps are so valuable, communities across the nation are now looking at this material as the next frontier in waste reduction services. Cities like San Francisco, CA; Toronto, ON and many cities in Minnesota, like Hutchinson, Wayzata, Duluth, Burnsville, Minnetonka, and Chaska, and the Linden Hills neighborhood in Minneapolis are collecting food scraps and other compostable materials at the curb, just like recycling. In these programs, the materials are delivered to a commercial compost facility that can manage the material at high temperatures for a sustained period of time. This allows them to accept ALL food scraps and non-recyclable paper, including many items that cannot be composted in your backyard such as meat, dairy products, pizza boxes or refrigerated and frozen food boxes, as well as the plastic-like products made from corn, potato or other plant materials instead of petroleum.

In 2001, Eureka Recycling tested the collection of food scraps and nonrecyclable food paper in over 400 Saint Paul households. The households in the study reduced their waste by an average of 74 percent! Because of this success, residents were enthusiastic about the opportunity to have these materials collected for composting and the City of Saint Paul embraced the goal of adding household food scraps and non-recyclable food paper to their curbside collection service. In 2005, the residents of Saint Paul affirmed this enthusiasm for composting through the a community process called the Saint Paul Environmental Roundtable, which was designed to create environmental policy for the City of Saint Paul and led to the adoption of the city's goal to be a waste-free city by 2020. Eureka Recycling and the City are currently working on plans for a citywide composting program; however there are significant barriers to address before you'll see composting collected at your curb. If you would like to learn more, please contact Eureka Recycling. In the meantime, you don't have to wait to get started composting at home! In fact, the most efficient and environmentally beneficial way to compost is in your own backyard or worm bin (See our **Wonderful Working Worms** factsheet available on www.MakeDirtNotWaste.org). Composting at home has no impacts from collecting and transporting the materials in trucks, and gives you a free supply of nutrient rich compost for your yard and garden!

Compost Away from Home: Support Restaurant Composting!

Did you know that you can compost when you go out to eat as well? Some restaurants, co-ops, farmers markets, and grocers in Minneapolis are partnering with Eureka Recycling to compost their food scraps. Support these local businesses that are making dirt, not waste! Visit www.MakeDirtNotWaste.org for an updated list and more information about the environmental benefits of composting. We're adding new partners all the time!

