Composting at Home

If you eat food, which I hope most of you do, you have the power to reduce waste and take climate action. After you finish eating an apple or chopping up a carrot, have you ever asked yourself what happens to that leftover waste? Within a short period, what was once food becomes trash. Throwing it away with municipal waste means it will likely end up in a landfill, where it decomposes without oxygen and releases methane—a greenhouse gas with 80 times more warming potential than carbon dioxide over 20 years (EPA, 2023). So, how can we solve this issue? Composting is the solution.

I remember growing up, my Nana lived in Belvoir, North Carolina, and the closest dump was 20 minutes away, so to avoid having to drive every time she had to toss out rotten produce or smelly leftovers, she'd take them to the edge of her property. There, she had a pile of yard debris and would throw the food waste on top. Occasionally, she would throw water on it and use a rake to turn the pile. I thought she was crazy messing with a pile of rotten veggies and sticks, but looking back, Nana had the right idea. She made dealing with her food waste convenient, and so can you. First, let's talk about the basics of food decomposition.

The natural breakdown of food waste is called aerobic digestion. For food to naturally break down, air must be present, allowing microorganisms to decompose organic matter and turn it into nutrient-rich material. This material is called compost and it's the end product of aerobic digestion. Finished compost can be added to landscaping, houseplants, and garden beds as fertilizer. Turning food scraps into compost reduces food waste and the greenhouse gas emissions associated with it.

When food breaks down in oxygen-deprived environments like landfills, it produces significantly more carbon dioxide and methane than in oxygen-rich conditions. These gases contribute to climate change and negatively impact air quality and public health. Composting, on the other hand, reduces these emissions by 50% and turns waste into a valuable resource (Project Drawdown, 2015).

Good compost is all about balance. You need nitrogen, carbon, water, and oxygen. Too much of any one component can cause problems. Nitrogen-rich materials, often called "greens," include food scraps like vegetable peels and coffee grounds. Carbon-rich materials, known as "browns," include yard debris

like leaves and sticks, as well as cardboard (without tape), paper, and sawdust. To get the best results, aim for the ratio 3:1. Three parts browns to one part greens. This golden ratio helps your compost break down properly. To speed up decomposition, make sure larger pieces (especially the browns) are chopped or shredded.

Your compost should be moist (sorry if you hate that word), NOT WET. If the bin becomes too wet, the greens won't break down properly. To fix this, add more browns, specifically sawdust or wood chips. Aerating your pile is also essential. Use a shovel, metal rod, or as my Nana did a "big ole stick" to turn the compost regularly. Compost needs airflow to decompose naturally, and the more often you turn it, the faster it will break down and the fewer odors it will produce. A stinky compost bin is no fun, trust me.

Finally, and most importantly: WAIT**!** Composting takes a few weeks to several months. When it's dark, crumbly, and has no visible food waste, it's ready to be used in your garden or for your houseplants.

Don't have a yard or unable to have a composting bin? No worries, try supporting organizations that are committed to reducing food waste in Iowa such as Table to Table and across the world such as Full Belly Brasil.

Another great way to reduce food waste is to change your habits. Intentional shopping helps ensure you're only buying food you'll actually eat. If you notice that produce is spoiling before you have a chance to use it, consider choosing longer-lasting options. Potatoes (russet or sweet), cabbages, onions, apples, and grapefruits are examples of produce that store well in the refrigerator when kept properly (Moncel, 2020).

It's also helpful to understand what expiration labels actually mean. "Best if used by" refers to quality, meaning the product may not taste or perform as expected but is still safe to eat. "Use by" is reserved for products that are highly perishable and may become unsafe to consume after that date (RTS, 2025) such as meats or milks.

While expiration labels are important for food safety, much of the food thrown away in the U.S. is still perfectly safe to eat. Everyone has their own level of comfort with expired foods, but learning more about what these labels mean can help you reduce waste in your home.

HOW TO COMPOST

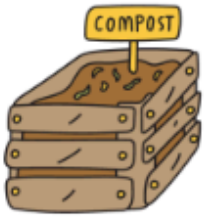
1. **Select a dry, shady spot near a water source.**
The ideal size for a compost area is 3 feet wide by 3 feet deep by 3 feet tall. You can buy a bin, use chicken wire, or just isolate an area of ground for your compost heap.

2. **Add brown and green material in alternate layers.**
Aim for the ratio 3 parts browns to 1 part greens. Larger pieces should be chopped or shredded.

3. **Keep the compost moist, NOT WET!**
Moisture helps with the breakdown of organic matter. Overwatering can harm your compost.

4. **Occasionally turn your compost mixture to aerate it.**
Turning the compost quickens the composting process and reduces the risk of odors.

5. **Wait. As materials breakdown, the pile will get warm.**
You may see steam—don't worry, that means it's working! Compost takes a few weeks to months. When it's dark and crumbly with no visible waste, it's ready to use on lawns, gardens, or plants.



Quick Tips:

- Use a designated container indoors to collect food waste and other material.
- DO NOT compost meat, fish, dairy, and pet waste, as these can attract pests and slow the composting process.
- When composting cardboard, be sure to remove any plastic coatings or tape beforehand.
- To prevent pests, cover your compost pile with a lid or chicken wire.
- Some commercial bins include built-in turning mechanisms for convenience.
- Consider vermicomposting, a space-efficient method that uses red worms to break down organic matter. This method requires proper ventilation and regular feeding.

COMPOST TROUBLESHOOTING

Issue	Solution
Too Dry	Add water.
Too Wet/Soggy	Add sawdust, straw, or wood chips. You can also place wood planks underneath the pile to ensure good drainage. Hold off watering until it dries out.
Strange smell	If the pile is damp and sweet smelling, it needs nitrogen. Turn the pile and add grass clippings, coffee grounds, eggshells, or manure.
Smells like ammonia, not like humus	The pile has gone anaerobic. Add carbon material such as leaves, sawdust, straw, or wood chips. Turn pile.
Decompostion dilemma	If materials are not decomposing, try adding more nitrogen-rich materials, turn the pile, and maintain 50% moisture content.
Critter concerns	Bury the food waste close to the pile's center and cover with carbon material (leaves, woodchips). Put a lid on your pile. Remember to keep meats, fats, and salad oils out of the pile.

FOOD WASTE IN AMERICA

- The world wastes about 2.5 billion tons of food each year.
- The United States discards nearly 60 million tons (120 billion pounds) of food annually, more than any other country (RTS, 2025).
- The economic cost of global food waste is approximately $750 billion, based on producer prices (FAO, RTS 2025).
- The average U.S. household wastes 250–300 pounds of food per person per year.
- Each household throws away about 2.1 pounds of edible food and 3 pounds of inedible food weekly (NRDC, 2024).
- Food waste generates approximately 0.6 to 1 metric ton of CO_2-equivalent emissions per household each year.
- Food waste accounts for 6.1% of total U.S. greenhouse gas emissions (USDA, 2022).

Where our waste comes from:

43% homes

40% restaurants, grocery stores, food service companies

16% farms

2% manufacturers

Photo Source RTS, 2025

WHY?

- Over 80% of Americans throw away edible food due to confusion over labels like “sell by” or “best by” (RTS, 2025).
- Other common reasons include overbuying, poor meal planning, and fear of foodborne illness.

SOLUTIONS

- Plan your grocery shopping and reduce impulse buying.
- Plan, rethink, and revive your meals.
- Understand expiration labels
  - **BEST IF USED BY** describes quality “where the product may not taste or perform as expected but is safe to consume”;
  - **USE BY** applies to “the few products that are highly perishable and/or have food safety concern over time (RTS, 2025).”
- Support food waste reduction efforts and organizations such as **Table to Table.**
- START COMPOSTING AT HOME!

Scan for food waste reduction resources.