TOWN OF NORTH HEMPSTEAD
OFFICE OF SUSTAINABILITY

Town of North Hempstead Composting Cooperative

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How to Compost

Composting involves mixing yard and household organic waste in a pile or bin and providing conditions that encourage decomposition. The decomposition process is fueled by millions of microscopic organisms (bacteria, fungi) that take up residence inside your compost pile, continuously devouring and recycling it to produce a rich organic fertilizer and valuable soil amendment.

Sound complicated? It's really not. All you need to know about composting is a basic understanding of a few simple principles, and a little bit of elbow grease. Nature does the rest.

Note: Decomposition, or the composting process, occurs constantly and gradually around us every day. The dark, rich soil covering the forest floor is an excellent example of this. When we compost, all we're really doing is speeding up Mother Nature.

Location & Appearance

First you'll need to select your location for composting. Where you put it depends on function and aesthetics.

In terms of appearances and good relations with your neighbors, you probably don't want to place your bin on your front lawn next to the mail box. (Your neighbors, and not to mention your mail man, will also appreciate a more behind-the-scenes location.) Instead, opt for the backyard.

Moisture

The microbes that do your dirty work in the compost pile require water for survival, but it can be hard to judge how much water to add and when. Too much water means your organic waste won't decompose and you'll get a slimy and smelly pile that could well answer to the name "swamp thing." Too little water and you'll kill the bacteria and you won't get your compost. One rule of thumb: the more green material (cut grass, weeds, leaves) you put in, the less water you'll need to add. In fact, if you need to add dry ingredients such as straw or hay, soak the material first in water so it won't dry out your compost pile. In general your compost should be moist, but not sopping wet.

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Temperature

As they eat, the organisms responsible for composting generate large amounts of heat, which raise the temperature of the pile or compost bin and speeds up decomposition. A compost pile that is working well will produce temperatures of 140-160 degrees Fahrenheit. At these temperatures almost all weed seeds and plant diseases are killed. A "very hot" compost pile will generate temperatures of up to 170 degrees Fahrenheit for up to a week or more.

Note: As organic material in a compost pile heats up it breaks down and takes up less space. A compost pile can shrink up to 70% as it "cooks."

Adding Materials

When adding organic waste to your compost, don't squash the materials down to make more space. Squashing the contents will squeeze out the air that microbes in the compost pile need to turn your garbage into gold. (Instead you'll be promoting the anaerobic microbes, which also do a good job converting carrot peels and other organic matter into compost but tend to be a lot smellier.)

Also be strategic about filling your bin. Include a mixture of brown fibrous ingredients and greens. A well-balanced "diet" will ensure that composting doesn't take too long and that you don't end up with a slimy, smelly heap. Also shred, dice or otherwise make scraps smaller, which will help the resident bacteria do a good job in converting the garbage into compost.

Finally, after you've added kitchen vegetable waste, throw some leaves or grass clippings on top of it. This will help keep things balanced, reduce smells and make your compost bin less attractive to critters who are trying to sniff out a free meal.

What to Compost

Now that you're ready to start making compost, you need to know what organic materials can -- and cannot -- be used in the compost bin or pile.

Composting Ingredients

Organic waste is the best raw material to make compost from. This can come from your garden, your kitchen and even your home at large.

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Note: According to the United States EPA, yard trimmings and food residuals together constitute 23 percent of the U.S. municipal solid waste stream. That's a lot of waste to send to landfills when it could become useful and environmentally beneficial compost instead!

Ingredients that can make good compost include:

Materials to Compost	
Browns = High Carbon	**Greens = High Nitrogen**
Ashes, wood	Alfalfa
Bark	Algae
Cardboard, shredded	Clover
Corn stalks	Coffee grounds
Fruit waste	Food waste
Leaves	Garden waste
Newspaper, shredded	Grass clippings
Peanut shells	Hay
Peat moss	Hedge clippings
Pine needles	Hops, used
Sawdust	Manures
Stems and twigs, shredded	Seaweed
Straw	Vegetable scraps
Vegetable stalks	Weeds*
*Avoid weeds that have gone to seed, as seeds may survive all but the hottest compost piles.	

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Materials to Avoid

• **Coal Ash** - Most ashes are safe to mix into your compost pile, but coal ashes are not. They contain sulfur and iron in amounts high enough to damage plants.
• **Colored Paper** - Some paper with colored inks (including newsprint) contain heavy metals or other toxic materials and should not be added to the compost pile.
• **Diseased Plants** - It takes an efficient composting system and ideal conditions (extreme heat) to destroy many plant diseases. If the disease organisms are not destroyed they can be spread later when the compost is applied. Avoid questionable plant materials.
• **Inorganic Materials** - This stuff won't break down and includes aluminum foil, glass, plastics and metals. Pressure-treated lumber should also be avoided because it's treated with chemicals that could be toxic in compost.
• **Meat, Bones, Fish, Fats, Dairy** - These products can "overheat" your compost pile (not to mention make it stinky and attract animals). They are best avoided.
• **Pet Droppings** - Dog or cat droppings contain several disease organisms and can make compost toxic to handle.
• **Synthetic Chemicals** - Certain lawn and garden chemicals (herbicides - pesticides) can withstand the composting process and remain intact in the finished compost. Poisons have no place in the natural micro-community of your compost pile.

Speeding Up the Compost Process

Compost decomposes fastest between 120 and 160 degrees Fahrenheit, so anything that will increase the heat will "cook" your compost faster. Here are four tips for fast composting:
1.) Chop and shred larger items, which makes it easier for the bacteria to break them down. For example, one easy way is to slice and dice garden waste is to run your lawn mower over leaves and other garden waste. Take scissors to newsprint or cardboard.
2.) Turn, turn, turn.
3.) Give your compost heap a "big meal" versus small snacks. Collect all your organic waste over a couple of days and then add it in one big bunch. The more you add at one time, the more

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your compost will heat up.
4.) Keep your compost pile in the sun. The heat will speed up the process.

A Word About Activators

A compost activator contributes either high nitrogen, microorganisms, or both, and provides a quick boost to the decomposition process. Consider throwing some algae, seaweed or lake weed into the pile. Just be sure to rinse off any salt water before adding. You can also "jump start" your compost by adding aged manure, alfalfa meal, cottonseed meal, blood meal or compost starter. Also you may want to add ashes from a wood-burning stove if you've added a lot of acidic materials such as pine needles and oak leaves. Wood ashes are alkaline and can help adjust the pH of your compost pile if it gets too acidic.

A Balancing Act (Carbon-to-Nitrogen Ratios)

All organic matter is made up of substantial amounts of carbon (C) combined with lesser amounts of nitrogen (N). The balance of these two elements in an organism is called the carbon-to-nitrogen ratio (C:N ratio). For best performance, the compost pile, or more to the point the composting microorganisms, require the correct proportion of carbon for energy and nitrogen for protein production.

High C:N ratios may be lowered by adding grass clippings or manures. Low C:N ratios may be raised by adding paper, dry leaves or wood chips.

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Using Compost - The Finished Product

Compost is finished when it's a dark, rich color, crumbles easily, and you can't pick out any of the original ingredients. It should have a sweet, earthy smell. If it's too stringy or lumpy, it may need more time. If this is the first time you've tried making compost, keep in mind that the amount of time can really vary. It can take anywhere from three to 12 months to produce compost. Decomposition depends on a number of things including temperature, what organic matter you've filled your bin with, type of compost bin used, how fine the waste material was chopped, how often you've turned it, and more.

Once you have achieved finished compost, you can add it to the soil any time of year without the fear of burning plants or polluting water. The benefits of compost are numerous. It builds good soil structure; enables soil to retain nutrients, water, and air; protects against drought; helps maintain a neutral pH, and protects plants from many diseases commonly found in the garden. It also feeds earthworms and other microbial life in the soil. In general, it doesn't matter what kind of soil you have. All soils can be improved with the addition of compost.

One easy way to apply compost is to mulch with it. Spread the compost in a thick layer on top of exposed soil. Worms and other creatures will help the compost meld with the soil. Mulching is not only an easy way to apply compost but also keeps down weeds and helps your soil retain moisture. Don't have a garden? You can also use compost when potting indoor plants. Use seven parts soil to three parts compost to two parts sand.

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How Compost Helps Your Soil

• Compost contains nutrients that your plants need for optimum growth, such as nitrogen, phosphorus, and potassium. And it's an especially good supplier of micronutrients that are needed in small quantities and are sometimes overlooked by gardeners, such as boron, cobalt, copper, iodine, iron, manganese, molybdenum, and zinc. The more varied the materials used to make the compost, the greater the variety of nutrients your compost will provide. In some situations, you will not even need to fertilize soil enriched with compost.

• Nutrients are released at the rate your plants need them. In early spring, as your plants are slowly starting their growth, the microorganisms in compost are slowly releasing nutrients. As the weather warms up and your plants begin rapid growth, the microorganisms also work faster, releasing more food for your plants. Isn't nature wonderful?

• The organic matter in compost binds with soil particles (sand, silt, and clay) to form small aggregates, or crumbs. Crumbly soil is said to have good structure, as opposed to sand, which has poor structure because it's too coarse to form aggregates, or clay, which can act like cement when wet. These aggregates hold water on their surfaces, making it available to your plants as they need it. As aggregates form, more spaces are created for oxygen, an essential for good root growth. At the same time, the soil spaces form channels for excess water to percolate through the soil, improving drainage.

• Increases water-holding capacity of soil. Compost can hold an amount of water equal to 200 percent of its dry weight, compared to 20 percent for a low-humus soil.

• Acts as an inoculant to your soil, adding microorganisms and larger creatures such as earthworms and insects, which are nature's soil builders. The compost environment is teeming with life, and all soils can benefit from such rejuvenation.

• Neutralizes various soil toxins and metals, such as cadmium and lead, by bonding with them so they can't be taken up by plants.

• Acts as a pH buffer so plants are less dependent on a specific soil pH. The earthworms in the compost help in this process, because in passing organic matter through their bodies they modify the pH of the soil. And you can lower the pH of your soil by adding compost made from acidic raw materials, such as oak or beech leaves, sawdust, and pine needles.

Excerpt from Let it Rot!, by Stu Campbell

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Composting Problems

Q: My compost pile has a bad odor.
A: If your compost pile is smelly chances are it has an overabundance of anaerobic microbes. They're doing a great job feasting on your garbage, but at the same time are creating a big stink. Usually, stirring and turning your compost pile regularly will put a stop to it.

Q: I just noticed bugs in my compost pile.
A: Some fly species lay eggs on decomposing plant material. Try adding a layer of hay to the pile and cover with screening.

Q: My pile is damp and has a pleasant smell... but it's not heating up
A: You're running low on nitrogen. Try adding some fresh grass clippings, manure or blood meal. You can also "recharge" a cool pile with a compost activator.

Q: What's that ammonia smell?
A: Too much nitrogen. Add some high carbon materials, like straw, sawdust, or peanut shells to the pile and mix them in well.

Q: My compost pile keeps getting smaller.
A: As organic material goes through the composting process it takes up less space. You'll be surprised at how long it can take to fill a bin. When you do reach maximum capacity, dig down to the bottom of the pile and you'll probably find finished compost, which can be removed. If not, then you'll need to wait. If a full bin without compost is a continual problem you may need to invest in a second bin.

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Q: How do I make use of compost tea?
A: The liquid (compost tea) that is collected in the base is an excellent source of nutrient-enriched substance for trees, flowers and indoor plants. Due to its high concentration, the compost tea should be mixed 10 parts water (10/1).

Q: How does one equalize the carbon-nitrogen ration required for composting?
A: To equalize the carbon-nitrogen ratio, pile up your dead leaves in bags; when added to your household wastes, they will help equalize the carbon-nitrogen ratio. As an alternative, newspaper cut into strips will also work.

Questions? Call 311 or outside of the town

call 516-869-6311

All information gathered from composting101.com