

Compost Guide

“My whole life has been spent waiting for an epiphany, a manifestation of God’s presence, the kind of transcendent, magical experience that lets you see your place in the big picture. And that is what I had with my first compost heap. I love compost and I believe that composting can save not the entire world, but a good portion of it.”

Bette Midler, in a Los Angeles Times interview

“Artificial fertilizers lead to artificial nutrition, artificial animals and finally to artificial men and women”

Sir Albert Howard, father of the organic farming movement



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Compost is not soil, but it does make it better!

WHAT IS SOIL?

Soil is made up of four main components: rock or mineral particles, organic matter, air and water. Rock and mineral makes up roughly 90% of the soil, while the other 10% is comprised of organic matter. Although only comprising 10% of soil, the importance of organic matter cannot be understated. It is organic matter – the various stages of decomposing plant residues, leaves, animal manure, et cetera – that makes the soil work. Without it, a soil will quickly deteriorate, and unhealthy soil creates unhealthy plants and people.

Soil texture is a soil property used to describe the way soil handles, or feels in your hand, and is typically grouped according to particle size as separates: silt, sand and clay. All soils have varying proportions of these separates, influencing the soils ability to retain water, nutrients and air. Any extreme is undesirable. Sandy soils are prone to rapid drainage and nutrient loss, while clay soils suffer from poor drainage, excluding air, water and thus, nutrients. A good soil has equal parts of silt, sand and clay, often referred to as loam. In an ideal soil, the silt, sand and clay particles are grouped together with organic matter to form large particles called aggregates.

Testing Your Soil

Test 1: If you are unsure of the type of soil you have, a simple jar test will help. Take a wide-mouth jar and fill it half-full of the soil you are testing. This is best accomplished by taking a 15 cm (6inch) slice of soil from your garden, making sure that you have at least 2 cups of mixed soil. Now, fill the jar until it is nearly full. Remove any large pebbles, sticks, or plant parts. Add a teaspoon of salt to aid the clay in settling out and seal the jar. Shake the jar vigorously until the soil is well mixed in. Watch the different components settle out and get ready to mark the different layers with a marker. Sand is heaviest so it will settle out first, usually within 30 seconds. Make your mark. Silt will take up to 30 minutes to settle out and after marking it, leave the jar to settle overnight. After 24 hours you will have noticed that the final layer has been formed. This is the clay layer. To calculate the percentages of each component, measure the height of each layer and divide the total height into the height of one layer; multiply the result by 100.

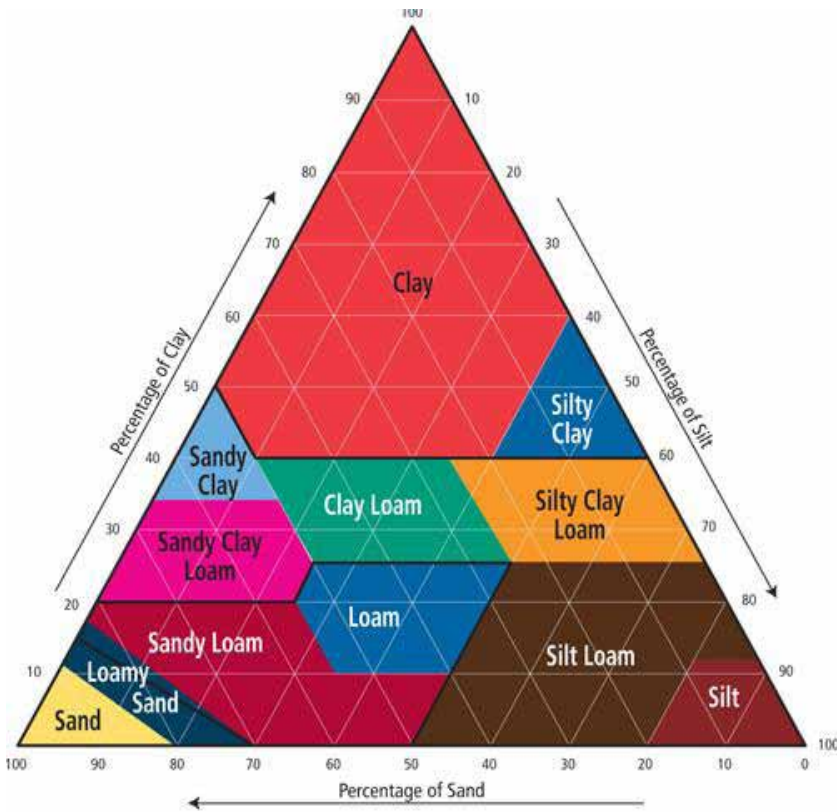
Test 2: You can also test the soil by rubbing a sample between your fingers. If it feels gritty and crumbles in your hand, there is a lot of sand. If, on the other hand, the soil smears between your fingers and feels smooth, the soil has silt and clay. A moist sample will roll into a ball if there is a high proportion of clay.



Left: Soil sample and water after vigorous shaking to suspend all the material.



Right: After 24 hours all of the material has settled out into discernable layers.



No matter what soil type you have, compost improves its structure.

Left: The soil triangle is used to classify soils based on the proportions of silt, sand and clay.

Classifying your results

Soil Classification	Clay Soil	Loam Soil	Sandy Soil
Percent Clay	40-100%	7-27%	1-10%
Percent Silt	0-40%	28-50%	1-15%
Percent Sand	0-45%	23-52%	85-100%

WHAT IS COMPOST?

Compost is a rich mix of organic matter – kitchen waste, plant remains, leaves and grass clippings and animal manure – piled together so that it rots down to a fine, crumbly consistency. Compost is a premium soil conditioner, replacing what has been stripped from the soil through cultivation. It provides vital nutrients, while improving soil texture and drainage.

Healthy Soil = Healthy Plants

Healthy plants are dependant on good soil, carbon, hydrogen and oxygen (provided in the form of water and air) and a number of essential major nutrients and micronutrients. Major nutrients include nitrogen (N), phosphorus (P) and potassium (K), together known as N-P-K, as well as calcium, magnesium, and sulfur. These are the macronutrients. Compost raises the level of organic matter and provides nitrogen, phosphorus and potassium. Compost increases the availability of existing soil nutrients while also supplying additional amounts already contained in the compost.

Micronutrients are also called trace elements because only a small amount is required for healthy plant growth. They include iron, boron, manganese, copper, zinc and molybdenum. Crops that are void or deficient in micronutrients may fail to provide humans with dietary needs, even if the plants don't appear to be suffering. Deficiencies can be avoided by routinely adding compost.

WHY SHOULD I COMPOST?

Organic materials are a valuable resource in the garden as either compost or mulch. Mulches and compost improve soil texture and plant health, prevent erosion and hold moisture and nutrients. Their production and use in this way can enable a typical household to reduce the amount of garbage they send to the landfill by one third to one half. Finished compost made from household wastes is free to the householder.

Waste diverted to composting or mulching saves the City of Calgary (and ultimately the taxpayer) the cost of collecting our organic material and disposing of it. Organics decomposing in landfills breakdown anaerobically, meaning there is no oxygenation to aid in proper bacterial biodegradation. Methane gas is a byproduct, which is a greenhouse gas. Composting saves landfill space and climate change inducing gases are reduced.

Composting Benefits

- Recycles organic waste
- Reduces pressure on landfill sites
- Saves the city (and ultimately the taxpayer) money
- Creates a free soil conditioner
- Saves money on other fertilizers
- Reduces the need for chemical use
- Reduces the need to use scarce resources like peat in the garden
- Suppresses plant disease
- Makes more nutrients available to plants
- Improves soil structure and texture (helps break down heavy clay soil)

THE COMPOST HEAP

Compost can be made in either a pile or in a bin. Bins or composters help keep a compost pile neat, provide some weather protection, and will keep out rodents and pests. They are recommended for a close urban environment. Composters can be made or purchased.

Should I build or buy a composter?

The correct decision as to what composter to build or buy will depend upon a careful consideration of a number of factors such as the amount of material to be composted, the amount of room available, the cost, its appearance and the amount of time and labour will be devoted to operating it. Home composters can be made of various combinations of wood, plastic, and metal.



Left: A home-made bin made from wood from used wooden pallets.

Right: The Earth Machine – a commercially available compost bin made from plastic. These bins are available year-round at [Green Calgary](#).



How big should the composter be?

This will depend on the amount of material you have and the amount of room available for your bin(s). With an average Calgary lot, most of which is given over to grass, one to two holding type bins should be adequate. As decomposition occurs in the compost bin, material shrinks to a large extent. Finished compost will only occupy from 10% to 40% of the original waste volume.

Bin placement

A composter should be placed on a well drained site to prevent the material from becoming water logged. A sunny location will help it heat up and speed decomposition. In an urban setting, a composter should be sited in a yard so that its presence and operation is not a nuisance to the neighbours.

A Word on Picking a Site

Convenience should be the number one consideration when selecting a site. If the sunniest place in your yard is 100 feet from the door, it might not get used, especially in winter. Try to pick the sunniest convenient spot for you bin. This way it will get used, even if decomposition isn't happening at the fastest rate.

Thinking of building your own? Here's how.



Least expensive [Wood pallet instructions \(pdf\)](#)



Sturdy 3-bin system [Three bin instructions \(pdf\)](#)



The wood & wire bin [Wood and wire instructions \(pdf\)](#)



Low impact [Wire mesh instructions \(pdf\)](#)



The block bin [Concrete-block instructions \(pdf\)](#)

WHAT CAN BE COMPOSTED?

Ideally we want a ratio of 30 parts carbon to 1 part nitrogen (see chart below for some example C:N ratios). Mixing equal parts of nitrogen-rich (Green) kitchen scraps with carbon-rich (Brown) yard scraps will typically give good results. If you are short on leaves, try adding dried (brown) plant remains, straw or shredded newspaper (avoid using the high-gloss coloured sections).

Greens (nitrogen-rich)

- Kitchen scraps (i.e. potato & other vegetable and fruit peelings)
- Banana peels and apple cores
- Corn cobs (chopped)
- Coffee grounds
- Tea bags
- Plant debris
- Weeds that have not gone to seed
- Tree fruit and evergreen needles
- Flowers

Browns (carbon-rich)

- Coffee filters
- Dried leaves or grass
- Dryer/vacuum lint
- Cat and dog hair
- Human hair
- Wood chips/shavings
- Straw
- Newspaper
- Wine corks (non-synthetic)
- Bird cage cleaning
- Peanut hulls

Do Not Compost

- Meat, bones, fish scraps - attracts dogs, cats, insects & rodents - takes a long time to break down
- Oil, fatty material, dairy products - oils and greases take a long time to break down - affect the breakdown of other materials - attracts insects
- Pet litter - may contain disease organisms harmful to humans
- Diseased Plants - the heat of a home compost pile may not kill the diseased organisms or any insects or eggs infecting a plant.
- Dishwater - most dishwashing soaps contain perfumes and greases
- Barbecue Ashes/coins - highly resistant to decomposition - contains excessive amounts of sulphur



Left: The compost bin after receiving a fresh load of kitchen scraps.

Other materials that can be added in moderation

Algae, Blood meal, Bone meal, Cotton rags, Feathers, Felt waste, Granite dust, Hay, Hops, Leather waste & dust, Leaf mould, Manure, Muck, Peat Moss, Rope (non-synthetic), Sawdust, Seaweed, Soil, Straw, String (non-synthetic), Wood Ash, Wool, Rags (non-synthetic).

THE COMPOSTING PROCESS

Composting is a lot like cooking. If you have the right ingredients, in the right proportions, you'll get fairly good results. Carbon and nitrogen are two essential elements to the compost heap and getting the correct balance is necessary for making good compost. The joy, though, comes from using materials you have on hand and still getting pretty good results. We don't need to get hung up about not having the "perfect" mix because rarely does anyone have the perfect mix. The other important ingredients are dirt, water and air (oxygen).

Basic Recipe

Ingredients

- 1) Greens
- 2) Browns
- 3) Dirt
- 4) Water
- 5) Air (Oxygen)

Directions

- 1) Layer Greens and Browns
- 2) Add Dirt when necessary
- 3) Add water when dry
- 4) Stir Occasionally



To get a good balance of carbon and nitrogen you can layer the Greens and Browns in order, similar to the graphic above. Note that the bottom and top layers are browns, and the browns 'contain' the greens on the sides. This is to create keep animals and insects such as flies out, and the smell contained. The bottom layer can be course material such as sticks or rocks, or just an extra layer of browns, to keep the pile aerated.

With a good mix of carbon and nitrogen rich materials (see above), along with sufficient moisture and the beneficial bacteria, insects and animals (such as worms) that thrive in these in environments, the compost process begins. The final product of compost is called humus (pronounced Hue-mus).

Right: The Wingdigger, an easy to use compost aerator. A pitchfork, broken hockey stick or any garden implement may be used to stir or turn the compost heap.



Moisture Makes it Happen

Keeping the compost pile moist is essential if composting is going to happen. Dry piles just sit there, while overly wet piles can begin to stink. Ideally, the compost pile should be able to "breathe" and this is best judged when the material feels like a wrung-out sponge. If dust kicks up when you stir the pile it is probably too dry. If the pile smells sour or like ammonia it is too wet.

Common Organisms in the Compost Heap

- Psychrophiles ("cold-loving"): low temperature bacteria that work during the frosty months from late fall to early spring.
- Mesophiles ("medium-temperature-loving"): mid-temperature bacteria that thrive at temperatures of 20-30 degrees Celsius.
- Thermophiles ("heat-loving"): the heat-lovers that work at temperatures of 40-70 degrees Celsius. They are the workhorses of biodegradation.
- Fungi, such as actinomycetes and streptomycetes, produce natural antibiotics.

- Nematodes: as the most numerous animal on the planet, nematodes prey upon bacteria, protozoa and fungal spores.
- Mites: feed on yeasts that are in fermenting material.
- Springtails: feed on fungi
- Wolf spiders: do not build webs but roam freely, feeding on arthropods.
- Centipedes: commonly found in healthy soil communities.
- Ground beetles: feed on various organisms, seeds and vegetative matter.
- Slugs and snails: aid in the decomposition of organic matter.
- Worms: consume organic matter and pass on their worm castings (worm poop)

How Do You Tell When Compost Is Finished?

For home composting purposes, compost may be assumed to be fully “finished” when a number of indicators coincide. Stable compost has been described as dark brown or greyish black in colour, with a sweet, earthy smell and a loose, crumbly texture that feels and looks like topsoil. Some large pieces remain but everything’s a relatively uniform dark brown/grey colour. The centre of the pile is no longer hot, and if you turn the pile it no longer heats up.



Left: Finished, screened compost. Ready for mulching or digging into the garden.



Right: This compost is almost finished. Screening will remove sticks, straw and any unfinished material.

Timing is Everything

Be wary of using fresh compost too quickly, as it may rob plants of valuable nutrients if it is not fully decomposed. It is better to leave it for several weeks until you are sure the microbial life has died down completely. Alternatively, you may opt to do a “bag test” as described below

The Bag Test

Compost readiness can also be tested through a “bag test”. Place a handful of compost in a zip-lock bag and leave it for a week. At this point open the bag and have a sniff. If it smells of ammonia or sourness, then the microbes are still at work and the compost still needs time to mature. Test the compost again in several weeks.

SCREENING COMPOST

If using compost for mulch, you may want to screen it. People planning to dig their compost into the soil do not need to be as concerned with screening, although it can help with removing large materials that haven't completely decomposed. Screens are commercially available but it is easy enough to make your own. Simply build a simple frame and stretch 1/2 inch wire mesh over it. Push finer material through the mesh, removing larger pieces that can be either dug into the garden or put back into the compost heap.

Right: This homemade screen was built to fit on a wheelbarrow. With a little pressure, compost falls between the screen, ready for use.



USING FINISHED COMPOST

There are a variety of uses for finished compost. Its most beneficial use is as a soil conditioner incorporated into an ornamental or vegetable garden or spread on a lawn as a top dressing. Though low in nutrient value compared to chemical fertilizers, compost nutrients are in a slow release form due to their chemical bonding with organic matter. Mixed with garden soil, it will help to improve its water retention properties, its workability and pH buffering capacity. Materials in the compost that have not really broken down, such as woody twigs, may be screened out and put back into the compost pile.

Finished compost can also be used as a potting soil amendment for house plants. The caution here is that it should be completely sterilized first through heat treatment in order not to infect house plants with insects that migrate into the compost pile during its later cooler stages. These insects are useful in the further breakdown of organic material in a compost pile, but are a nuisance around house plants.

As previously stated, the volume of finished compost produced is very small in comparison to the volume of the original waste materials. It can be used virtually any place in the garden. The more usual problem with experienced home composters is an insufficient quantity of the material rather than an oversupply.

How Much Compost is Needed?	
Where:	Quantity:
New lawns	1-2" mixed into top 4-6" of soil
Reseeded lawns	1" mixed into top 2-3" of soil
Top dressing of lawns	1/8-1/4" spread uniformly
Top dressing for veggies, flowers or shrubs	1-2" spread uniformly
Groundcover and annual planting beds	3" mixed into top 6" of soil
Garden soil	1-3" mixed into top 6-8" of soil
Around shrubs	3" mixed into top 6" of soil
Potting-soil mix	25-30% by volume
Mulch for deciduous trees and rose beds	3-4" spread uniformly
Mulch for veggies, annual and perennial planting beds	2-3" spread uniformly
Mulch for exposed slopes	2-4" of coarse compost
	<i>Source: Easy Compost</i>

COMPOST TEA

Compost tea is sprayed directly onto crop leaves, restoring beneficial microbes to the soil and plant. Beneficial microbes protect plants from fungal infections and other disease-causing organisms. Compost tea also improves nutrient uptake and retention, soil tilth and root depth.

Starting with rich compost, a compost tea brewer can grow and multiply the beneficial microbes by 1,000 times or more simply by feeding and protecting them for 72 hours under the right conditions.

Making Compost Tea

Step 1:

Once you have fully mature, earthy-smelling compost, it is time to brew compost tea. You will need:

- A bucket (5-gallon plastic bucket works well)
- A few aquarium supplies
 - A pump large enough to run three bubblers or air stones.
 - Several feet of tubing
 - A gang valve which distributes the air from the pumps to the tubes that supply the bubblers
 - Three bubblers
- A stick to stir the mixture
- Unsulphered molasses (preferably organic)
- An old pillow case, tea towel or stocking to strain the tea.
- An extra bucket is handy to decant the tea



Above: the compost tea set up.

Note: aeration equipment is important to avoid the organisms from using up all of the oxygen and creating an anaerobic soup. Anaerobic tea may harm your plants. The tea must brew for two or three days and then used immediately. Rainwater is also best for the compost tea process.

If you are using municipal water it is important to leave the water sitting out for several hours to evaporate off the chlorine. Chlorine will kill off the beneficial organism in the compost, so make sure the water is not straight from the tap.

Step 2:

Once you have safe water, start by loosely filling the bucket half full with compost. Cut a length of tubing and attach one end to the pump and the other to the gang valve. Cut three more lengths of tubing, so that they easily reach from the rim to the bottom of the bucket. Connect each one to a port on the gang valve and connect a bubbler to each of the ends.

Step 3:

Hang the gang valve on the lip of the bucket and bury the bubblers at the bottom, under the compost. Fill the bucket to within 7.5 cm (3 inches) of the rim with water, and start the pump.

Step 4:

Once it's going, add 1 oz. of molasses, stirring vigorously. The molasses feeds the bacteria, helping the beneficial species get well established. After stirring, rearrange the bubblers so they're on the bottom and well spaced. If you can, stir the teas several times each day. Stirring moves more of the organisms from the compost and into the tea. The bubblers will have to be repositioned after each stirring.

Step 5:

After 3 days remove the aerating equipment. Let the brew sit for 15 or 20 minutes until most of the compost is settled out, straining into the second bucket or into a sprayer. You'll have 2 _ gallons of tea. Use the tea within one hour if possible. You can put the soils back into the compost pile.

Step 6:

If your garden is fairly healthy, spraying the plants with compost tea in the spring will carry the benefits throughout the season. If you've had problems, it may be worth spraying monthly to increase the number of beneficial organisms. To prevent damping-off, spray the soil with tea as soon as the ground is planted.

LEAF MOULD

Leaf mould is one of the longest lasting organic materials. It improves the physical structure of the soil, helping to improve soil fertility. Leaf mould can be dug into the garden or used as a moisture-retaining surface mulch. Using leaf mould can replace the need to use peat – a resource that takes thousands of years to form – or shredded bark to condition the soil. Using leaves that fall annually is a sustainable and free option for improving soil condition.

Making Leaf Mould

Leaf mould is created by piling leaves up in some form of a container and leaving them to rot down. The ideal container is at least 1 m X 1 m in size, and this can be done in a wire mesh cage, or even in a plastic garbage bag. Leaves are best collected after a rainfall, when the leaves are well soaked. Stuffing the moist leaves into the bin or bag and leaving them for a year, watching to make sure they don't dry out, will yield a young leaf mould that will help to improve your soil.

GRASSCYCLING

What is grasscycling?

Grasscycling is the simple practice of leaving grass clippings on the lawn when mowing. Once cut, grass clippings first dehydrate, and then decompose, quickly disappearing from view.

Grasscycling:

- o Encourages a healthier lawn by returning nutrients to the soil beneath the lawn.
- o Reduces work because you don't have to bag or rake and dispose of your clippings.
- o Saves you money because you don't have to pay for disposal of your clippings.
- o Benefits the environment by naturally recycling the clippings.

Simply put, grasscycling is good for your lawn and can help you reduce waste. Learn how easy it is for you to begin grasscycling.

How to Begin

Proper mowing is required for successful grasscycling. Cut grass when the surface is dry, and keep mower blades sharp. Follow the "1/3 Rule": mow your lawn often enough so that no more than 1/3 of the length of the grass blade is cut in any one mowing. Frequent mowing will produce short clippings that will not cover up the grass surface. You may have to cut the lawn every 7 days when the lawn is growing fast but only every 7 to 14 days when the lawn is growing slowly.

You can grasscycle with most any mower (push, electric or gas). The mower collection bag should be removed to allow clippings to drop on the lawn. However, if your mower does not have a safety flap covering the opening where the bag fits into the chute, it is important that you purchase a retrofit kit from your local retailer.

Most lawnmower manufacturers have developed “mulching” mowers which cut grass blades into small pieces and force them into the soil. These types of mowers are effective in grasscycling and have become very popular. They are sold at many yard and garden equipment retailers, nurseries, and home supply stores.

Common Questions About Grasscycling.

Does Grasscycling Cause Thatch? No!

Research has shown that grass roots are the primary cause of thatch, not grass clippings. Thatch is composed primarily of roots, stems, rhizomes, and other plant materials. These plant materials contain large amounts of lignin (fibrous material) and decompose slowly. Grass clippings are approximately 80-85 percent water with only small amounts of lignin, and decompose rapidly.

Does Grasscycling Spread Lawn Disease? No!

Improper watering and fertilizing have a much greater impact on disease spread than grasscycling. If a desirable environment for turf grass disease is present, infestation will occur whether clippings are collected or not!

Will Grasscycling Make My Lawn Look Bad? No!

If a lawn is properly mowed, watered, and fertilized, grasscycling can actually produce a healthier looking lawn. It is important to cut the lawn frequently to produce small clippings that will decompose quickly. If a lawn is not cut frequently and clippings are left on the lawn, it will produce a “hay-like” look which can be unsightly.

GREEN MANURES

The Benefits of Green Manures

Green manures protect and enhance the soil. They protect the soil from nutrient loss by taking up nutrients that are otherwise carried away by rain. A bushy green layer is also great at suppressing weeds. Structure is improved when organic material is added. Some green manures take up nitrogen from the air, improving the soil characteristics. Many have extensive root systems, improving drainage and bringing up minerals that other plants can't reach.

Green manures differ from compost in that they are plants, such as rye, buckwheat or clover. Their regular use can have a transformative effect on soil and the plants that grow in it. The process is straightforward – seeds are sown, plants are allowed to grow for a certain amount of time, and then they are dug into the soil. As they decompose, nutrients are added to the soil.

Green manures are particularly useful when sown in late summer or early autumn. The ground is still warm and if it lays bare, nutrients may be simply washed away if nothing is there to take them up. Hardy plants like clovers, tares, and grazing rye are left to grow over winter, digging them into the soil the following year. If you have extra room in the garden, you may want to plant a crop in the spring and let it grow for an entire year. The soil that receives the nutrients will be much improved.

Green manures are also useful when reclaiming poor land, or when creating a new garden. Depending on the seed type, they can either be planted in rows (larger seeds) or broadcast sowed (smaller seeds) – where seeds are broadcast over the ground and raked in.

When plants are young, the plant matter will decompose quickly. Plants should be dug in before they get slightly woody and tough. Digging in is best done with a sharp spade. Plant material should be dug in 5 to 10 inches. Once a green manure has been dug in, some time must elapse before planting the desired crop. This can take several weeks but it depends on the maturity of plants, how much they have been shredded, and the temperature of the soil. A tender mustard crop in the height of summer can have a turn around time of one to two weeks.

FREQUENTLY ASKED QUESTIONS

Can I compost weeds or diseased plants?

Broad leaf weeds that have not gone to seed may be safely composted at home. Care must be taken with those that have. Weeds that spread by rhizomes (runners), such as crab grass, should not be placed into a compost pile fresh, even if shredded. They will be acceptable if they are first dried out thoroughly. This can be done by spreading them out in the sun. Placing them on pavement is an effective method for quick drying.

Finally, diseased plants should not be added to a home compost pile because of the possibility of the disease organisms surviving the composting process and propagating further as the finished material is used throughout the garden.

Can I compost plant material treated with herbicides & pesticides?

This is not recommended, as these compounds may persist in the compost pile, spreading to the soil and affecting the beneficial organisms.

Can I compost paper?

Small amounts of certain types of paper, such as shredded newsprint pulp, coffee filters and tea bags are acceptable in a compost pile. Paper has no structural strength when wet and will reduce the overall percentage of air voids in the composting mixture. Due to its cellulose content, it also takes longer to break down than other organic materials. Glossy magazines should not be composted because the clay coating on the stock inhibits decomposition and some of the printing inks used are toxic. Paper stock from newspapers (pulp) and magazines are best dealt with through the recycling depots.

Can I compost pet wastes?

Care must be taken when dealing with pet wastes. Wastes from dogs, cats and other carnivores may contain human pathogens that survive the home composting process. These materials should therefore not be used in food gardens.

A digester may be used to deal with pet waste though. This is a separate container from the compost bin and when used according to the directions, is very effective in dealing with pet waste. A hole is dug beneath the digester unit and pet waste is added until the hole is full. The unit is designed to compost the waste anaerobically, releasing the nutrients into the surrounding soil. Once the bin is full, it is moved to



another place in the yard to start the cycle over again. Visit www.greencalgary.org for more information.

Note: this unit is NOT to be used in vegetable gardens!

Pet wastes from certain herbivores such as rabbits, guinea pigs and hamsters, however, are not pathogenic and may be composted in the usual manner.

What is the ideal size of the materials put into the compost pile?

Materials should be broken into small pieces and well mixed to evenly distribute the organic materials and create air voids. If materials are left too large, they will take an extremely long time to decompose.

Do I need a bin or container to compost?

No. The composting process is a natural one and will take place in an open pile as well as a compost bin. Bins or composters help keep a compost pile neat, provide some weather protection, and will keep out rodents and pests. They are recommended for a close urban environment. Composters can be made or purchased.

How long does it take to produce finished compost?

Under typical Calgary conditions, with a moderate amount of care and attention, it will take a growing season to produce stable, humus like, “finished” compost. For people not overly diligent with their pile, compost can take up to two years to be produced.

How do I deal with sod?

Stack the sod upside down in a pile and cover with a tarp for several years.

Can I compost in winter?

Bacterial activity slows down drastically under typical Calgary winter conditions. Some heat may be generated in a home composting operation as quantities of fresh household waste are added to the pile. Any rise in pile temperature is very short lived however, and conditions will soon revert to ambient.

Materials may continue to be added to the pile over the winter. As the pile is in an essentially dormant state, there will be very little volume reduction associated with the new materials. If the composter fills up, kitchen wastes may be stored outside in sealed containers or plastic bags and left to freeze. Odour is not a problem with these materials in a frozen state. In the spring, the wastes may undergo a number of freeze thaw cycles that will aid in the breakdown of their cell structure once they are placed in the compost pile. A Compost pile will become active again as ambient temperatures warm up. The kitchen wastes that were stored over the winter and added to the pile should be mixed with drier materials such as leaves or straw to absorb the excess water generated from freezing.

How do I prevent or solve an odour problem?

Most odour problems are caused by the composting mixture being too wet. Aerating (stirring) the pile and allowing it to dry out will help with this problem. Adding dried leaves, small quantities of sawdust or shredded paper will help to reduce moisture. Dry topsoil sprinkled on top of a compost pile will also act as an absorbent for offensive odours.

Another possible reason for odours from a home compost pile is the addition of improper materials such as

meat, grease and dairy products. In addition to being slow to break down, they also quickly turn rancid. The solution in this case is to not compost these materials or to remove them from the pile if already present.

What can be done with the ammonia smell?

The may be too many greens (too much nitrogen). Add more browns.

Are pets, rodents or other animals attracted to a compost pile?

Animals are typically attracted to a compost pile for two reasons: food and warmth. Cats, dogs and rodents will not be attracted if meat, bones, fish and other food products eaten by these animals are not placed in the compost pile. Maintaining a very hot compost pile will also aid in keeping animals away.

In the winter, small rodents, such as mice and voles, will be attracted by the insulating qualities of the pile. Keeping the pile moist (like a wrung out sponge) will deter small rodents from getting too comfortable. Turning the pile often will also help.

How do I prevent attracting flies and other insects?

Flying insects are attracted to kitchen wastes with high sugar content such as fruit and vegetable peelings. These materials should be buried immediately and covered inside a compost pile. The maintenance of a hot compost pile will also destroy insects at the larval stage.

How can I get rid of ants in the compost pile?

Ants are attracted to compost piles that are too dry. Add water and some fresh cucumber peels.

How can I get rid of pale green mold in the compost pile?

The pile needs more oxygen. Turning it will help get rid of pale green mold.

How can I control the temperature of my compost pile?

If it is cold, the pile may be too small; make the piles bigger. It may need more moisture; add water and cover the top. It may be poorly aerated; turn the pile. It may lack greens; mix in greens. If the pile is too hot, reduce the pile size.

Do I need to use a commercial compost starter or an accelerator?

No. Commercial compost starters or accelerators sold as such typically contain a source of nitrogen or protein or dehydrated bacteria. No commercial nutrient activator is required if care is taken to ensure that the composting mixture contains the proper C:N ratio. If an additional nitrogen source is required, high nitrogen “green” materials such as grass clippings may be added or a natural activator such as bloodmeal or bonemeal sprinkled in. On a weight basis, the latter are more economical than commercial nutrient starters.

It is also unlikely that any commercial bacterial based activator is any better adapted to decompose the waste materials than those already present. If required, garden topsoil or finished compost may be added to the composting mixture to introduce more of the composting microorganisms to the waste materials.

FURTHER READING

Compost, Clare Foster, Cassell Illustrated, Great Britain, 2002

Compost This Book!: the art of composting for your yard, your community, and the planet, Tom Christopher and Marty Asher, A Sierra Club Book. 1994

Easy Compost: the secret to great soil and spectacular plants, Beth Hanson, editor, Brooklyn Botanic Garden Publications. 1997

Let it Rot!: the gardener's guide to composting, Stu Campbell, Storey Communications, Inc, 1990.

Rodale Book of Composting, Deborah L. Martin and Grace Gershuny, editors, St. Martin's Press, New York, NY, 1992

The Real Dirt: the complete guide to backyard, balcony and apartment composting, Mark Cullen and Lorraine Johnson, Penguin Books USA Inc., New York, NY, 1992

YEAR ROUND ACTIVITIES OF GREEN CALGARY

Empowering Calgarians to create healthy homes and communities by providing environmental education, products and services.

Green Calgary offers a variety of programs to help achieve mandates of waste reduction and water protection including:

Environmental Education

Green Calgary is pleased to offer a wide variety of presentations to businesses and employees to help answer tough questions about the environment, explain how to practically become green and share Calgary specific knowledge. These can be done as part of a staff meeting, as a 'Lunch and Learn' or any other time.

Waste at Work: Reducing your company's environmental footprint

Green Procurement: Using buying power to influence change

Waste at Home: How individuals can make a difference in daily life

Getting There Green: Environmentally friendly driving and alternative transportation

Green Cleaning: How to improve indoor air quality and choose green products

Composting: Learn how to recycle your organic waste and make great fertilizer

Vermicomposting: Don't have a yard? Learn to compost indoors with red wiggler worms!

Please contact the Education team at [403] 230 1443 ext 225 or education@greencalgary.org for more information or to book. Member discounts apply.

Healthy Homes Calgary

The Healthy Homes Calgary program is our newest residential service, providing free home visits to Calgarians interested in creating a healthy living environment, while reducing the home's "eco-footprint". We will provide the tools and information needed to improve indoor air quality, energy and water efficiency, waste reduction, and more.

Please call Ashley at [403] 230 1443 ext. 223 or email ashley@greencalgary.org.

Commercial Environmental Services

Assisting companies to reduce their environmental impact associated with waste. We offer customized, one on one service and the information, education, resources and tools necessary to divert waste from landfill and reach your waste diversion goals.

Services include:

- Waste Reduction Solutions / Consultation
- Online Recycling Directory
- Waste Measurement Toolkit Assessments
- Calgary Materials Exchange - www.cmex.ca

Please call Sarah at [403] 230 1443 ext. 226 or email sarah@greencalgary.org.

EcoStore - selling environmental products that reduce our environmental footprint

The Green Calgary EcoStore sells products that are environmentally sustainable and help to reduce waste and conserve water. Products include compost bins, recycling bins, rain barrels, water saving kits and much, much more. Visit the website for details: www.greencalgary.org

We are wheelchair accessible and located in downtown Calgary on the southwest corner of 4th Avenue and 7th Street SW.

809 Fourth Avenue SW

[403] 230 1443 ext. 222

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Thursday 10-7

Friday and Saturday 10-4

Closed Sunday and Monday

Information Services & E-newsletter

We respond to thousands of public requests for environmental information. Calgarians want to know how to recycle their household waste and otherwise reduce their environmental footprint.

Please contact Green Calgary if you would like more information about our programs or if you are interested in volunteering.

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