Composting

Compost: *diverts organic matter from the waste stream, makes green spaces naturally more vibrant, reduces the energy needed to make chemical fertilizers and process waste, is a key ingredient in organic food production, and increases the water retention of soils.*

What is compost and how does it work?

Compost is basically decomposed organic matter; things that used to be alive and have broken down into elements and minerals that can be absorbed by plants. Organic matter comes in two types, nitrogen-rich (**greens**) and carbon-rich (**browns**). Greens include food scraps, grass cuttings, coffee grounds, eggshells – generally things that are fresh and moist. Browns are drier, more absorbent materials – things like newspapers, dry leaves, straw, or branches.

In order for your compost pile to break down properly, it requires the right ratio of greens to browns. With too many greens (nitrogen-rich) the pile will putrefy, releasing nitrogen gas and unpleasant smells and become too wet. If there are too many browns (carbon-rich), the microbial activity will not heat the pile enough for rapid decomposition. The ideal ratio is 30:1 so 30 parts carbon for each part nitrogen, by weight. Different materials have different **C:N ratios**; sawdust is 500:1 while kitchen scraps are around 12:1.

Generally, it's easier to just approximate and troubleshoot as you go, but lists of relative C:N ratios for most materials are available. Well balanced compost is not too wet or dry, with a consistency like a wrung out sponge, and the pieces being added should be small, to speed decomposition. If compost isn't breaking down, add more greens. If compost is beginning to smell, add browns. This rule also applies for kitchen green bins, if you are noticing an unpleasant odour, adding a few pages of torn up newspapers can stabilize the green/brown balance and stop the production of ammonia.

Compost is indispensable for ecological gardeners, in many ways it is a cure-all for all types of soil problems. Soil lacking fertility? Add compost! Soil compacted? Compost! Soil doesn't hold water? More compost! While compost can't fix everything that's wrong in a garden, it creates a healthy, resilient soil, and any garden can benefit from its application.

Types of Composting

The ***standard approach*** is the most familiar, using a large black plastic or wooden backyard bin. This approach basically involves layering, and trying to stick to the 30:1 ratio of carbon to nitrogen. The bin also needs to be aerated - mixed so that the bacteria in the pile can have access to air in order to aid the decomposition process. In this kind of composter, there are certain food and plant wastes you can't add, such as meat, dairy, or weeds that have gone to seed. This is because these composters don't heat up enough to break down meat and dairy, which then decay and can attract pests, or to sterilize the weed seeds. If seedy weeds are added to compost that doesn't get hot enough to sterilize them, the compost will spread weeds throughout the garden

Vermicomposting means composting with worms. It uses one specific type of worm, *red wigglers*, which are able to eat their body weight each day. These worms can live in a specially constructed wormbin, and be kept indoors or on a balcony, which makes them a great composting option for apartment dwellers. These are the tools you will need to construct a worm bin:

Plastic container with 8-12 holes in the bottom for drainage
Basin or container to collect the excess liquid *(which can be used as an excellent plant fertilizer)*
Bedding for the worms *(torn up newspaper, leaves, compost) including a couple of handfuls of sand for worm digestion*
Worms!
Organic material relative to weight of worms *(for example, one pound of worms will eat one pound of organic material)*

When building the bin, you want it to be ¾ full of bedding material for the worms to live in. The most important thing to keep in mind with worm bins, is that you must not overfeed them, and that you want to keep food scraps small. Everyday worms eat half their weight in food and half in bedding, so a pound of worms processes about half a pound of scraps a day. If you keep the input at a manageable amount, the worms will produce extremely rich compost for you, called worm castings, out of something that would otherwise be waste.

Lasagna gardening or sheet mulching: This method is makes compost right in the place where you're going to use it, and is a way of creating both compost and a garden bed. Organic material is piled in layers in the fall, and by spring it has decayed into a fertile garden bed. This technique can be used on top of grass in order to turn it into a bed, without the heavy labour of digging up and burying turf. The lasagna garden works like this:

- Mark out the area you want for the bed by creating a border or staking the corners
- Start out with a layer of wet newspapers or cardboard 5mm (1/4 inch) thick. This creates a weed barrier so that your new bed will be able to be accessed by insects beneath, but not weeds.
- Next, a layer of compost, peat moss or something similar, 2.5-5 cm (1-2 inches)
- Then put several inches of organic material, straw, leaves, grass clippings
- Alternate levels of compost and organic material until bed is desired thickness, then finish with a layer of mulch. Water very thoroughly.
- If this bed is left to sit through the winter, by spring it should be weed-free and ready for planting.

Getting City Compost

If feeding your green bin is enough of a compost making activity for you, you can also easily get free compost for your garden at community environment days, when all that paying into the green bins pays off! Search online for Community Environment Days in your neighbourhood. These are days when the City of Toronto makes compost available for free to city residents, by dumping it at a central location, such as a school or community centre for free pickup.