

SOG Notebook for Urban Organic Vegetable & Herb Gardening **Composting**

By Rob Danforth

Outdoor Composting harnesses nature's activities to produce readily available, low-cost, mostly organic, home grown soil amendment and garden fertilizer for all gardens from recycled raw kitchen and garden waste! Composting, reduces curbside waste, and saves money since home-grown compost quietly "cooks" in your yard and will nourish soils, improve soil structure, retain moisture, feed worms, and discourage cats & some insects. Also, if handled properly, a backyard composter will not smell.



Compost:

- “Readily available” as it uses fresh fruit and vegetable kitchen waste, potting soil, and disease-free garden waste: vines, leaves, roots, weeds (seed heads removed).
- “Low cost” refers to the initial compost container purchase and then your time and effort for the years to follow.
- “Mostly Organic” is the one drawback as home-grown compost will not be 100% organic. Unless you shop only for organic fruit and vegetables there will be some small amount of chemical residue getting into your compost (e.g., insecticides and/or fungicides in the wax on some non-organic fruit, the sprays on various non-organic vegetables, some systemic chemicals, and possibly some GMO products).

- “Soil Amendment” – compost will loosen soils to improve soil structure for air and water penetration. Without air at the roots, plants may drown in the resulting swamp.
- “Fertilizer” – Compost stores a large variety of nutrients (N. P. K. + trace minerals) and will nourish soil in all gardens: florals, shrubs, herbs, & vegetables. While Nitrogen (N), Phosphorus (P), and Potassium (K) are very important for plant health, so are a multitude of trace elements such as zinc, calcium, magnesium, and sulfur to name only a few. Compost has it all.
- Although compost NPK numbers are low, compost continues to give day after day as a slow release, non-burning soil nourishment which helps fight diseases and balance soil ph.
- Best of all, you can compost year-round and you control the composition!

Composters come in all sizes, shapes, and prices:



Pit



Wire



Wood Do-it-yourself



(Roller+round+rectangle, Sleeve top+flip doors, Metal rotator)

In composting, you want to control the composition, access (your access to load, aerate, and unload, & to keep out wild things), mixture of ingredients, heat, air, and moisture. A covered container helps you do this.



An effective and convenient urban composter is a black plastic rectangle with the sleeve top cover containing two flip top doors, no bottom (allows nature's decomposing agents to enter), and a bottom exit door to access the finished compost.

The container will keep out the rain and the wind as well as all critters except raccoons, and for these, you need bungee cords or locking lids.

Technically, a composter should be filled to the top and allowed to "cook" while you aerate the pile and check periodically for heat, air, and moisture. This is necessary so you can make any needed adjustments. Some books will tell you to layer the compost ingredients, but for most urban gardeners this is not at all practical. Besides, aerating stirs the pile and destroys the layers.

Recommended Ingredients

Shredded Browns (Carbon) – egg cartons, dried leaves (small amount), unmarked cardboard, brown paper, newsprint (no gloss or dyes), nut shells, tea leaves & bags, coffee grounds & unbleached filters, straw, dry evergreen needles (acidic).

Chopped Greens (Nitrogen) – raw vegetable, fruit (limited citrus) and flower waste, seed-free weeds, fresh grass clippings (modest amounts), garden clean-up waste [NB fresh fruit and grass clippings add water to the composter].

Crushed Egg shells (calcium) – slow to break down and may appear unsightly but good addition – e.g., blossom end-rot in tomatoes & peppers results from inadequate moisture and insufficient calcium.

Compost activators -- Garden soil (1 shovel full from time to time adds bacteria, fungi, insects, & microbes; especially good to cover fresh fruit and reduce # of flies), old compost, comfrey leaves, stinging nettles, and chicken manure.

NB consider washing chemicals off non-organic fruit & vegetables before peeling to reduce waxes and sprays containing insecticides, fungicides, and anti-bacterial chemicals.

Do not include

- Animal products (meat, bone, gristle, fat, grease, lard, butter, skin, giblets, feces, cheese, treated fur/hair, fish) – These need a very hot compost pile to breakdown safely as they contain harmful bacteria, and attract rodents. Green bin this waste.
- Cooked food, oils, table scraps salted, coated in butter/margarine/oil – (attracts rodents). **However, vegetables boiled or steamed and their cooking water can be composted if no salt or oil was added.**
- Weeds or grass with seeds (seeds last a long time and will germinate after compost is used).
- Diseased plants.

- Paper that is glossy, bleached, or coloured.
- Saw dust from treated wood (e.g., decks & fences of treated wood contain either arsenic or copper sulphate).
- Wood ash if tainted by paint, varnish, creosote, fire starter/retardant chemicals, or contaminated ground soil.
- Invasive plants (like mint, dog strangling vine, or bindweed)
- Any material of which you are in doubt about the chemical contents.

Basic composting is simple: combine chopped greens and browns with a shovel full of garden soil and aerate from time to time.

Be cautious with items deemed “biodegradable.” Many items are biodegradable but some take years to decompose. Plant material biodegrades quickly. Woody material does not. Some tea bags, coffee filters, and egg shells will hang around for a while and look unsightly in the garden.

Tools & conveniences

- ✓ Compost aerator to stir the compost (*recommend 3 ft. green steel bar with folding wings & "T" handle*). Some aerators are too short to reach bottom, and may quickly break or rust out.
- ✓ Kitchen collector pail
 - ✚ stainless steel pail with lid (recommended – no smell, no filters to buy, easy clean, and does not stain!)
 - ✚ porcelain container + ventilated lid + charcoal filter
 - ✚ plastic container + ventilated lid + charcoal filter
- ✓ Spatula (to scrape kitchen collector pail).
- ✓ Compost knife (chop material into easily biodegradable chunks).
- ✓ Compost shovel to access compost (size must suit the composter).



- ✓ Rake or metal screen to sort unfinished material in the compost.
“Hardware cloth” (½ inch holes) metal screen will sift the compost.
- ✓ Garden trug, wheelbarrow, bin, or pail to transport finished compost.

Aerating mixes or stirs the ingredients to redistribute the air, moisture, bacteria, fungus, and insects. It also discourages wasps from nesting inside the composter, and reduces (somewhat) the cloud of flies.

- Aerate 3 times a week **best** – compost in 3 months
- Once a week **better** – compost in 6 months
- Once a month **good** – compost in 1 year
- No aeration – **significant delays** in decomposition, & possible bad smell (approx. 2 years).

Compost problems

- A. Too wet = slimy anaerobic decomposition, very smelly - add dry browns & aerate
- B. Too dry = low moisture discourages beneficial agents - add water &/or wet greens
- C. Too little air due to compaction stalls decomposition - aerate
- D. Too much air, pile cools & decomposition slows - reduce air (windbreak)
- E. Too little heat (pile too small) composting slows down - add material & aerate
- F. Too much heat (pile too large) kills beneficial agents - divide/aerate/reduce
- G. Too acidic (citrus fruit, pine needles) hurts beneficial agents - add small amount of agri. lime
- H. Wasps attracted to fruit sugars – aerate, cover fruit cuttings with garden soil, or use a waspinator
- I. Fly swarms - aerate or cover new additions with garden soil.
- J. Racoons - lock, bungee cord, or tie down lids.

Notes:

“**beneficial agents**” are microbes, bacteria, fungus, & insects (e.g., earwigs, centipedes, sow bugs)

“Waspinator” – wasps are territorial; an artificial wasp nest will discourage interlopers. Purchase one, or fill a brown paper bag with newspaper, shape it like a nest with the bunched end down and hang it near the composters. Check the paper bag after a rain.



(Wasp nest under my garden chair



purchased Waspinator)

Notes:

- Location: place the composter where you have easy access for loading and unloading. If possible, shelter it from sun and wind, and beware of tree roots which will feast on your rich compost.
- Insects (e.g., earwigs & sow bugs) help decomposition but locate composter away from the vegetables as earwigs will travel to your garden and eat entire rows of young vegetables like beans and Asian greens.
- If you have more than one composter, fill them one at a time and compost all year.
- Moist wood swells/rots. If you are going to build your own, Eastern white cedar or Hemlock last longest (15-20 yrs.).
- Avoid using treated wood which leaches arsenic or copper sulfate (decks, sheds, wood fences, etc.)
- Avoid using carpet as a compost cover or weed suppressor (chemicals leech out and non-organic bits fall off as it weathers).



(Hardware cloth cylinder and retired shopping bin – use the shovel to spank the compost and return the unfinished bits to the composter)

To use your compost, scoop out small amounts from the bottom escape hatch, sift it, and add compost to containers. If you want to use it all, remember that not all materials decompose at the same rate. You will have to rake out or screen out the unfinished material and put it back into the composter.

Screening the compost adds an extra step but the material is more refined for containers. If you wish to do this (I do) 1/2 inch “hardware cloth” (actually is a metal screen, not “cloth”) makes a fine screen. I roll mine into a cylinder, place the cylinder on its side over a retired shopping bin, shovel compost into the center of the cylinder and then spank the compost. What remains in the cylinder gets tipped up back into the top of the composter. Now drag the flat-bottomed shopping bin to where you need the compost.

Tip: to use all of the ready material in the composter, lift the entire composter off the pile and rake it all to one side onto a tarp if possible. Replace the composter, rake out the unfinished bits, and replace them in the composter at the bottom. Then distribute the finished compost. You can drag the tarp close to where you need the compost.

Bonus -- plants like tomatoes, potatoes, squash, pumpkins, and melons can grow from the composter to decorate your composter, enlarge your harvest, and provide a compost water meter (the leaves of these plants will droop if there is insufficient moisture). When this happens, add water or rinse your kitchen collector pail with water and add the rinse to the composter.

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