

A Starter Manual for the Urban Composter



Basics of Vermicomposting

Vermicomposting is the practice of using worms in the composting process so you can compost indoors year-round. Red Wiggler worms ideally can eat half their body weight every day in food waste, though realistically they will probably be able to handle an amount of waste equal to their weight every few days. The worm castings (“poop”) are very rich in nutrients and wonderful for use in the garden or in potted plants when mixed with soil. By composting you are recycling nutrients by quickly breaking down waste into a useful byproduct. Organic matter decomposes very slowly in a plastic bag in a landfill and is of no use to anyone. Congratulations for starting to vermicompost!

Bin

- Worms only live in the top 15 cm (6 “) of soil so make sure your bin is not too deep (no more than 30 cm (12’’)).
- Use an opaque bin with sides at least 25 cm (8’’) tall.
- Worms are most productive in temperatures between 15 – 25 °C (55-75 °F).
- Do not store worms in direct sunlight. It is too warm and although worms don’t have eyes, they use their light-sensitive skin cells to sense light and move away from it.
- Shady, cool areas are best in the summer time if the bin is outdoors. Of course, there is no reason to keep the bin outdoors because you can store the bin indoors year-round.
- Worms require oxygen so make sure you have good airflow (air holes in your bin).

Bedding

- Non-bleached paper, shredded cardboard or newspaper should be added regularly. Moisten the paper/cardboard so it decomposes more quickly. Ensure that any ink on the items is vegetable-based (it is for the Regina Leader Post, the Regina Sun, and many Regina circulars).
- Bury your "green" foods in the bedding to prevent odours and fruit flies.
- If you add soil ensure you use soil that has no chemicals (fertilizers, pesticides, etc.) in it. Remember, in no time at all you will have a lot of chemical-free humus of your own – for free!
- You can add some peat moss but only in small amounts or conditions will become too acidic for the worms.

Care and Feeding

Things to feed your worms:

- | | |
|------------------------------|--------------------------------------|
| Vegetable and fruit peelings | Coffee grounds and filters, tea bags |
| Grains, rice, pasta | Paper towels, napkins, etc. |
| Plate scrapings | Spoiled food |
| Vacuum bag dust | Anything else that is organic |

Exercise caution with these food items:

- Egg shells – let them dry out and then crush them before adding them to the compost. Do not add too many (soil will become alkaline).
- Citrus peels/fruit – A well-established bin can handle small amounts, but too much too fast can make the soil too acidic.
- Seeds, potato eyes, etc (they will sprout!)

Things you should not feed your worms:

- Meat, fish, bones
- Dairy products
- Greasy, fatty, or oily food

Tips:

- Worms have a gizzard rather than teeth to help them digest small bits of food. Adding ground-up eggshells, oyster shell “flour,” or a handful of gritty soil to your bin will help your worms with this process.
- Other organisms you will find in your bin (like springtails, bacteria, and fungi) assist worms by breaking down the food waste first. Some foods take longer to break down because they are more fibrous, such as broccoli stocks, carrots, and potato peels. Some people like to chop or puree their food waste first thus allowing the worms to eat more quickly and process even more food. Smaller food particles result in faster composting.
- You should add foods that are considered “**green**” (low carbon: nitrogen ratio) and some that are considered “**brown**” (high carbon: nitrogen ratio). A good green-brown ratio is important for your composting. To maintain this ratio greens and browns should be added in even amounts. See the Internet references below for ideas of green (nitrogen rich – such as kitchen waste, green leaves, coffee grounds, etc.) and brown (carbon rich – such as newspaper, sawdust, cardboard, etc.) items.
- Aeration – turn the soil to mix it up occasionally. Red wigglers (and the microbes) require oxygen.
- Monitor moisture level carefully, especially at first. Drill more holes in the bin if necessary, add more or less water-containing foods, water more or less often, etc. The bedding should be about as wet as a wrung-out sponge. If the compost seems too wet all the time and there is a lot of condensation on the inside of the lid (a little bit is normal) try adding more holes to the container or add more dry browns to the bin.
- Some people ensure that they leave any water that they intend to add to their compost out in a container for 24 hours to dechlorinate.

Harvesting The Castings

Your worms have been busy eating, and the contents of your bin are looking more like black earth than shredded newspaper and food scraps. You have compost! Since it is not necessary to harvest right away, you can plan a harvesting time that fits your schedule. The amount of time required to harvest the castings depends on the harvesting method you choose. No matter the method, it is always a good idea to stop feeding the worms for a week or two before you harvest to allow them to finish off any food that is in the bin.

Scoop Method: This is a perfect method for people who only need a small amount of compost at a time. Open your bin to allow light to penetrate the castings, gently forcing the worms to burrow away. Stirring the surface a bit will also encourage the worms to dive deeper into the compost. After a few minutes scoop off the top layer of castings. There should be few, if any, worms in the compost you have removed. If you still need more compost, continue to leave the lid off and wait another few minutes before scooping again.

Cone Method: This is a great harvesting method if you don't mind getting your hands a little dirty. Find a well-lit work area (outside on a sunny day or indoors where you have some room to spread out) and lay down a tarp or large piece of plastic or paper. Carefully empty the contents of your bin, worms and all, onto the work surface. Separate this pile into “cones” about 15 cm (6”) in diameter. Skim the compost from the surface of each pile a handful at a time until all you have left is a pile of worms. The harvested compost can be transferred to a separate storage container and will store indefinitely. The worms (and any remaining food pieces) can be returned to their home with newly prepared bedding waiting for them.

Migration Method: This is a handy method for those who want to harvest on an ongoing basis. Open your bin and gently push the compost over to one side. Prepare new bedding and place it in the now empty half of the bin. From this point on, stop placing food in the compost side of the bin and begin feeding in the new bedding area. Worms

love your food waste so it is the perfect bait for them. Once most of your worms have made the journey over to their new bedding area you can remove the compost. At this point you will want to add more bedding to fill in the empty area of your bin. You can alternate the sides on which you harvest continually.

Frequently Asked Questions

Will the worms leave the bin?

No, sometimes a few will crawl up the sides, but they do not like the light and they want to stay in the dark, moist environment of the compost. If many worms are crawling out of the bedding there might be a minor problem (see Troubleshooting).

Does the composting material smell?

No, healthy compost should smell slightly sweet or not at all. Foul odours are an indication that something is wrong in the bin (see Troubleshooting). Such problems are easy to nip in the bud.

Do I need a worm-sitter if I go on holidays?

No. Leaving the worms without food for a week or two is not a problem. If you are to be away longer, simply give the worms some food before you go and they will be alright for several weeks.

Will I ever get too many worms?

Who could have too many worms?! If the worm population gets higher than the living conditions allow the population will level off on its own. You can always take some worms out of an established population to start another bin if you desire and you have excess food waste to recycle.

What can I do with the castings I harvest?

Mix it 50/50 with potting soil for indoor uses or use it as a top or side dressing for outdoor plants. Compost is a soil conditioner which has many benefits:

- improves soil texture, erosion resistance, and porosity (the ability of the soil to hold water and air)
- adds and stores nutrients in the soil
- stabilizes the soil, making it more resistant to pH and temperature changes
- adds microbial life to the soil

I just saw a (fill in blank) living in my bin; is that supposed to be there?!

Maybe. The indoor composting bin is a thriving community with many populations – bacteria and other single-celled organisms, fungi, some insects and arachnids, the worms themselves, etc. Once in a while one species has a rapid population increase and the bin seems to be in disarray. Most of these incidents can be handled by the vermicomposter's old standby – add browns (lots of dry newspaper), mix, then watch and wait. If this does not restore balance to your composting community, there are specific methods for handling the species in question. Check reference sources (lots of info in the internet), contact Garbage Delight to see if we can point you in the right direction, etc.

Troubleshooting

Troubleshooting is based on experimentation so getting to know your bin becomes very helpful when trying to remedy a problem. If a problem does occur and you think you have found a solution, don't stop there. Continue to give your bin daily checkups until you see—or, in many cases, smell—an improvement. You may encounter some of the common problems listed below.

SYMPTOM

REMEDY

Too much food in bin.	<ul style="list-style-type: none"> • Feed worms less food and/or less often. • Start another bin.
Fruit flies in the vicinity of the bin and on exposed food.	<ul style="list-style-type: none"> • Bury food completely. • Set trap for fruit flies. • Cover air holes with cheesecloth or milkscreen.
Foul smell.	<ul style="list-style-type: none"> • Stir bedding to aerate. • Add bedding to absorb moisture.
Compost is too wet.	<ul style="list-style-type: none"> • Stop adding water. • Remove standing water (try a turkey baster). • Add bedding to absorb moisture. • Add more/bigger ventilation holes.
Compost is too dry.	<ul style="list-style-type: none"> • Add some water or more water-rich foods. • Use a spray bottle to keep a proper moisture level.
Worms are crawling up the sides of bin.	<ul style="list-style-type: none"> • Conditions in the soil are not favorable. • See above if bin is too wet. • Add less acid-causing food (citrus peels, etc.) or use crushed egg shells to neutralize acidity.
Lots of little white egg-shaped things on food (especially high-sugar food).	<ul style="list-style-type: none"> • These are mites – a normal part of the bin community. If they get too numerous, place watermelon peels on top of the soil. After a few days, discard the mite-infested peels.
Mold growing on the food before it is added to the compost bin.	<ul style="list-style-type: none"> • Don't worry – organisms like springtails and bacteria will destroy the mold, thus giving the worms a chance to eat the remains (worms won't eat living tissue).
Mold growing in the compost bin.	<ul style="list-style-type: none"> • Add browns, mix well, and give the bin some time. The fungus should die off and be eaten by the worms.
Fungus gnats in the compost.	<ul style="list-style-type: none"> • Break the life cycle of the gnats by using flypaper to trap adults near windows, etc.; fungus gnat traps are also available for purchase at local gardening centres

Further Information

Some ideas for vermicomposting print resources:

- *Worms Eat My Garbage*, Mary Appelhof, Flower Press, Kalamazoo, Michigan, 1982.
- You may also obtain print materials from the Saskatchewan Waste Reduction Council.

These sites have a lot of potentially useful information about vermicomposting:

- www.compostinfo.com/tutorial/GreensAndBrowns.htm
- www.cityfarmer.org/wormcomp61.html
- www.cathyscomposters.com
- www.wormdigest.org

Some info (& images) about the red wigglers themselves:

- www.sarep.ucdavis.edu/worms/profile5.htm
- www.wormpost.com/worms/biology.html
- res2.agr.ca/london/faq/tomlin02_e.htm

Friends:

City of Regina: www.regina.ca

Climate Change Saskatchewan: www.climatechangesask.ca

Compost Council Of Canada: www.compost.org

Recyclable Battery Recycling Corporation: www.rbrc.org/call2recycle

Regina Ecoliving: www.reginaecoliving.ca

Saskatchewan Waste Reduction Council: www.saskwastereduction.ca

thINK Foods: www.reginafoodbank.ca/index.html

Contact Info

If you have questions or need some help (or just want to chat about worms), do not hesitate to call or email and we will be available.

Daenna

Phone: 306.591.5153

Email: daenna@garbagelight.com

Mick & Elaine

Phone: 306.543.1587

Email: mick@garbagelight.com

Check out www.GarbageDelight.com for more information and an electronic copy of this manual.

Other Ideas for Local Action

Big Blue Bin Recycling Program

Call City of Regina (777-7000) for locations.

Newspapers, flattened boxes, cardboard, flyers, magazines, telephone books, writing paper, etc. Some locations also accept plastics, aluminum cans, etc. Available in many malls and community centres.

Curbside Recycling

There are recycling companies that pick up recyclable materials from your doorstep for under \$100 per year. It is easy – no staple removing, no label stripping. Look under “recycling” in the yellow pages for local businesses.

Composting and Grasseycling Info

City of Regina, Phone # 777-7000

Composting classes available – call City of Regina

Some available resources include: “Your Guide to Composting” – a booklet available for free from the City of Regina and rated among the best resources of its type across Canada; “Composting on the Prairies” – a video produced by the SWRC available in Regina libraries.

Electronics Disposal

Any Electronic Recycling and Repair, 1360 Scarth St. Phone # 352-7466

Recycle computer and electronics parts, DVDs, VCRs, TVs, etc.

Girl Guides of Canada

Girl Guide Office, 1530 Broadway Ave. Phone #: 352-8057.

The Girl Guides provide many services right out of their building here in Regina. All services are provided as a service to the community and no profit is made from these programs.

They accept for recycling: Paper, cans, plastic (#1,2,4,5,7), used magazines, ink cartridges, cell phones.

They accept for charity: Campbell soup labels (School for the Deaf), Heinz baby food labels (Children’s Miracle Network), aluminum can tabs (Tabs for Tots), old eye glasses.

The Girl Guides also manufacture and sell cedar compost bins.

Kidney Car Program

Phone # 775-1778.

Donate your old, unwanted vehicles and receive a tax deduction receipt.

Sarcan

Return for refund: all approved beverage containers, aluminum cans, tin and bi-metal cans, plastic bottles, glass bottles, refillable beer bottles, juice boxes and cartons.

You may return cardboard milk cartons and plastic milk jugs for recycling but no refund.

Sarcan also handles **paint recycling**.