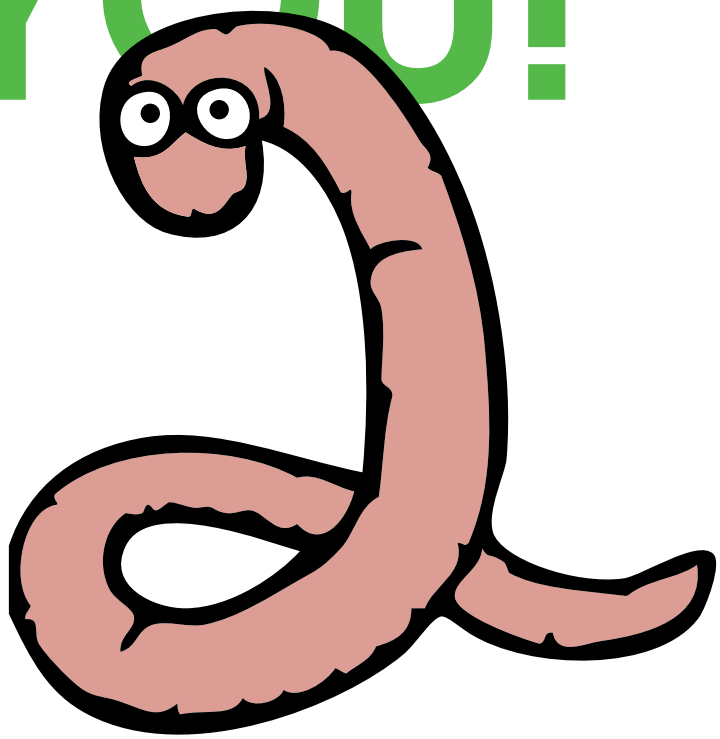
green ACTION centre

VERMICOMPOSTING

WORMS WORKING FOR YOU!



WHAT IS VERMICOMPOSTING?

Vermicomposting (or worm composting) is a process where Red Wriggler worms turn food waste into a nutrient-rich natural fertilizer – worm manure! It's a fun and beneficial way to turn garbage into a valuable resource.

WHY WOULD I VERMICOMPOST?

- **It can be done indoors and it doesn't smell.** It's a great way for apartment-dwellers or those who don't have outdoor space to take advantage of the benefits of composting. When done properly, it will not create any odours.
- **It can happen quickly.** Red Wrigglers can eat approximately half of their own body weight in food each day, so the decomposition process can happen faster than with outdoor composting.
- **Finished worm compost is a rich natural fertilizer.** It's even richer in nutrients than outdoor compost, so a little worm compost goes a long way!
- **It's a great way to reduce your waste.** About 40% of household waste can be composted, so you will send less garbage to the landfill.

WHAT DO I NEED TO GET STARTED?

To get started with vermicomposting all you need is worms, a bin, bedding, and organic waste (worm food).

Red Wriggler Worms

Vermicomposting requires a special type of worm, "Red Wriggler" worms. These worms reproduce quickly, process large amounts of organic material, and, unlike earthworms, will live happily in a small container. One pound is the ideal amount of worms to start your bin with.

Need to find Red Wriggler Worms?

Art Crane
St. Andrews, MB
Phone: (204) 482-1244
Email: acrane1@highspeedcrow.ca

Nature's Perfect Plant Food
Steinbach and Winnipeg, MB
Northern Sun Farm Co-op, Steinbach
Phone: Mike Jaques (204) 434-6887 (Sarto)
or Jen Unwin (204) 837-4190 (Wpg)
Email: nppf@mts.net

Worm Bin

You can make your own bin or you can buy one pre-made. To make a bin all you need is a large opaque plastic tote with a lid. A Rubbermaid® style container approximately 60 cm long, 40 cm wide, and 25 cm deep is good for most users. You can use a different size, but we recommend that the bin be about 25 cm deep. If you plan to reuse an old container, make sure it has not been previously used to store chemicals or pesticides, which might be toxic to your worms.

Once you've got your container, you'll need to drill small holes about 5 mm in diameter along the top and lid to provide ventilation. You don't have to worry about worms escaping through the holes. If you maintain your worm bin, they will be happy to stay where they are.

It is also a good idea to drill some holes in the bottom to allow for drainage so your bin doesn't get too wet. Place your bin on a tray or in another container to catch moisture; make sure you empty it occasionally. You can use the liquid from the tray diluted with 10 parts water to feed your plants.

Pre-made stackable tray systems are also available. These towers allow the worms to move upward as materials are added and makes harvesting of the finished compost in the tray below much easier than a traditional bin. They can also handle more waste than a single compost bin.

Red Wrigglers are most productive at room temperature. Exposure to very hot, sunny conditions or temperatures below 10° C should be avoided, as your worms will die in extreme temperatures. Keep your worm bin indoors, somewhere easy to access like under the kitchen sink, a closet, in the basement or garage (only if it is heated in the winter).

Bedding

Once your bin is ready, you'll need to add moist bedding material such as shredded newspaper or computer paper. Don't use glossy paper like flyers or magazines. The bedding should be about as wet as a wrong-out sponge: not soggy, but not dry either. Bedding is essential for regulating moisture and providing a medium in which your worms can live.

To aid with worm digestion, you can also add a handful of soil or sand when you first start your bin. Your worms should always be covered with a loose layer of bedding.

Worms' skin needs to be moist to allow them to "breathe". It's important to keep your content moist, but also not too wet. If it's too wet, worms can drown and your bin may smell. If your bin seems too wet, you can always add additional dry bedding to help absorb the moisture.

Food

Red Wrigglers are vegetarians. Any fruit or vegetable scraps can be worm food. Foods like citrus peels, coffee grounds and tomatoes can make the bin acidic and should be used only in moderation. Crushed egg shells (finely ground is best) are good for controlling acidity. Animal products and oily foods may cause odours and attract unwanted insects.

Good Worm Food

- Fruit scraps
- Vegetable scraps
- Tea bags
- Coffee grounds (in moderation)
- Egg shells

Bad Worm Food

- Meat / fish
- Bones
- Eggs
- Dairy products
- Oily foods
- Garlic
- Onions

Collect your worm food in a container and feed your worms once or twice a week. To help break down the food as quickly as possible, you can cut the food into small pieces. Storing food in the freezer also helps to break it down and reduces any odours from the stored food. Thaw food before feeding your worms.

To feed your worms, simply bury the food under the bedding and the worm manure/ castings. Avoid over-feeding your worms as this can result in unpleasant odours and fruit flies. If you notice that there is still a significant amount of food in your bin, wait a few more days before adding more.

TROUBLESHOOTING

Vermicomposting is not an exact science: what works for others may or may not work for you. Given time, you'll develop your own unique approach and understanding. Here are some common questions and concerns that people have with vermicomposting.

Fruit Flies

One of the most common concerns is the presence of fruit flies. Fruit flies are often found where organic waste is exposed. While they are not harmful to your bin, they can create a nuisance in your home.

In order to minimize fruit flies, we recommend storing your worm food in the freezer. It is also important to always bury food under the bedding and worm manure/castings when you feed your worms. You may also want to cover the bedding with a sheet of moist newspaper which acts as additional cover on top of the worm food. Don't forget that flies come into your house on produce, so be sure to keep your counters clean and store fresh food in the fridge whenever possible. You can also limit tropical fruits or wash the skins to reduce the presence of fly eggs.

If you do have a problem with fruit flies there are a number of different methods that you can use to get rid of the little pests. The most common is to build a trap that will both attract and trap the flies. The simplest trap is one part apple cider vinegar and one part water in a jar, covered with plastic. Make a small hole in the plastic and make an inverted cone to prevent the flies from leaving the jar once they enter.

Odour

It is unlikely that your worm bin will have an unpleasant odour if you follow all the recommendations mentioned previously. If it does, there are a number of possible causes and steps you can take to remedy the problem.

Your worm bin shouldn't smell if you follow these instructions. If it does, you might have too much food or moisture. If you notice there is a significant amount of food in the bin, wait until most is eaten before adding more. Remember that adding food introduces more moisture into the bin. If it is too wet or if the worm castings are too compacted, simply gently stir up the contents and add more dry bedding. Leaving the lid slightly ajar for a short time will also help it to dry out.

Acidity

If it appears that your worms are trying to escape, this may be a sign that your bin has problems. One common problem is that the bedding is too acidic. To reduce the acidity, add finely ground up egg shells and cut down on the amount of citrus peels, tomatoes, coffee grounds and other acidic food waste.

It is normal for worms to crawl up the walls of the bin in order to bathe in the warm water that collects on the lid. Unless the worms are escaping this likely does not indicate an acidity problem.

HOW DO I HARVEST THE FINISHED COMPOST?

After about 2 to 3 months there should be a few inches of brown earth-looking worm manure/castings ready for harvesting. There are several methods of harvesting finished compost from your worm bin.

The Food Migration Method

- Move all of your bin contents to one side
- Add a fresh layer of bedding to the vacant side
- Place food under the new bedding and wait a few weeks
- Your worms will migrate to the fresh food, leaving the finished compost almost free of worms and much easier to harvest

Note: *Red Wriggler worms love melon scraps so if you use these on the vacant side of the bin, they will gravitate to that side more quickly. Melons scraps are high in moisture so you will want to make sure not to use too much or the bin might get very wet.*

The Light Method

- Open your bin, remove any loose bedding and shine a flashlight for a few minutes over the castings
- Your worms will burrow down away from the light (they prefer dark places)
- Carefully scrape away finished compost from the top layer
- When you reach the worms, stop scraping and wait approximately ten minutes to allow them to burrow further down.
- Remove the next layer of compost and repeat as necessary

Stackable Tray Systems

- Once the bottom tray is full, simply add food and bedding to the tray above
- The worms will migrate upwards to the next tray
- Keep adding food and trays as necessary
- By the time you reach a 3rd tray, the bottom tray should be free of worms

Remove the bottom tray and harvest your compost. For each method, as you remove the finished compost you will need to remove any worms that are remaining. You should also keep an eye out for worm eggs. Eggs are lemon shaped, white to brown in colour, and slightly larger than the head of a match. If you spot any worms or eggs simply put them back in your bin. In can be difficult to find them all, but don't worry if you miss a few. Once you have harvested your finished compost, you can fill the bin with some fresh bedding and start again.

HOW DO I USE MY FINISHED COMPOST?

Vermicompost is very rich in nutrients and can be used in many different ways. It can be used outdoors or indoors as a natural fertilizer for plants. Remember that worm compost is richer than outdoor compost; a little goes a long way!

Vermicompost is especially good for making a rich liquid fertilizer called compost tea, which can provide nutrients for your plants or garden. It can also suppress leaf disease when sprayed directly on the plant leaves.

To make compost tea, simply fill an old sock (nylon sock works well) or a burlap bag with finished compost and tie it with a string to make a "tea bag". Steep the bag in a bucket or jar filled with water, until the water becomes a light or medium brown colour and smells earthy. Stir the tea occasionally and use within a day. Tea bag content can then be added to your potted plants or garden.

Additional information:

Worms Eat My Garbage by Mary Appelhof, Flower Press: A very thorough book on worm composting systems.

VERMICOMPOSTING.
IT'S EASY, IT'S FUN!

CONTACT US

If you have questions about composting, Green Action Centre is here to help. Visit our website at **www.greenactioncentre.ca** for detailed information on home, school and workplace composting, vermicomposting, compost bin plans, and many other subjects. You can also call us on our toll free compost info line at 1-866-394-8880 or in Winnipeg at 204-925-3777.

Green Action Centre would like to thank
Sustainable Development Manitoba for financial support.

Manitoba

Green Action Centre is a non-profit hub that promotes greener and better living by sharing practical solutions and advocating for change.

Sign up for our e-newsletter. Stay informed and make a difference in your community.

green ACTION centre

303 Portage Avenue, 3rd Floor
Winnipeg, MB R3B 2B4

P 204-925-3777
E compost@greenactioncentre.ca
W greenactioncentre.ca