How-to Guide for Vermicomposting

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Resilient Palisades recently held our first Vermicomposting workshop led by local Palisadian and Resilient Palisades member Valeria Serna. We demonstrated the setup of the Urban Worm Bag: [https://shop.urbanwormcompany.com/products/urban-worm-bag-version-2](https://shop.urbanwormcompany.com/products/urban-worm-bag-version-2).

Following Valeria's demo, this document provides detailed instructions describing how she set up the Urban Worm Bag system.

What is Vermicomposting?

Vermicomposting is the process of decomposing organic waste (food scrap recycling) by an ecosystem of worms and microbes to create a rich organic soil amendment called worm castings. The worm castings, rich in minerals essential for plant growth and overall soil health, has 5 times more nitrogen, 11 times more potassium, and 7 times more phosphorus than traditional hot composts and helps to retain moisture in the soil.

By composting, in this case vermicomposting, food scraps are diverted from going to landfill. The compost helps sequester CO2 as well as keeps methane, a volatile compound that is 84% more harmful than CO2, out of the atmosphere.

Why the Urban Worm Bag Vermicomposting system?


Valeria chose the Urban Worm Bag system as she found it to be the most user-friendly vermicompost system on the market. Several DIY methods are available, yet she believes for the price and efficiency this system is worth the investment.
Whether you live in a home with a lot of yard space or an apartment/condo with limited space you can easily set up this system, feed it, and check on it from time to time knowing the worms and microbes will do all the work. There is no rotating, mixing/aerating needed on your part. Although you do have to keep an eye on how the worms are processing the food scraps, this system is not nearly as intensive as the traditional hot compost pile or stacking vermicompost systems.

Materials needed for the worm bag:
- 1-2 sheets of unbleached non-chemical paper (for example, paper grocery bags)
- 10 cups non-bleached/shredded paper and shredded corrugated cardboard
- 2-3 cups Coco coir: shredded coconut fiber used to provide aeration and help retain moisture. This can be purchased from local nurseries or the Urban Worm Bag website.
- 2-3 cups Sphagnum “peat” Moss, a moisture retentive as well as a good source of food for worms. Available at most nurseries or online various options
- 1-2 cups leaf litter, pieces of paper towel rolls, mulch, wood chips.
- 2 cups or 1 lb. food scraps/week: cut up uncooked vegetable and fruit scraps, used coffee grounds, unbleached coffee filters (non-synthetic) eggshells, nuts, and shells (except walnuts), seeds, pits, bread, green leaves, grass clippings, old flowers. Absolutely NO meat, dairy, or animal products which can potentially attract vermin and create a toxic environment for the worms. Add only small quantities of citrus, onion/garlic skins try as these can upset the pH of the bag.
- Worms: red worms or nightcrawlers. These can also be purchased from a local source Will’s Worms http://www.willsworms.com or online via the Urban Worm Bag.

Set up the vermicomposting system by layering materials
Beginning at the bottom of the worm bag, layer materials in the following order:
- A few pieces of non-bleached paper (brown paper bag) over the drawstring of the worm bag. The paper catches any leaking (leachate) out of the bag.
- Shredded or torn paper. The paper should be non-bleached/non-dyed paper free of toxic chemicals.
- Shredded or torn corrugated cardboard with all tape and/or stickers removed.
- Organic coco coir or coconut husk which comes in compact blocks or loose options. If coco coir is in blocks, add water to the block for about an hour before use. The water will help break up the block while retaining moisture for the bedding. Squeeze out excess water so that the coco coir is not soggy.
- Moistened sphagnum moss
- Chopped-up food scraps, about 1/2 to 1 pound
- Dried leaves, mulch, and more shredded cardboard

The layers should measure about 10 – 12” in depth.

Allow layers to sit for a month
The bag should now sit undisturbed for about a month in a shaded, level spot where it is protected from wind and rain. A tarp or protective covering over the worm bag can help protect the bag from the elements but be sure not to block air from circulating through the bag.
During this time microbes begin to break down some of the material and create an ideal place for worms to thrive and produce their castings that will fall into the bottom layer of the worm bag.

**Addition of worms**
After the bag sits for a month, add one to two pounds of worms along with fresh food scraps and bedding (shredded paper and cardboard) to the bag. With time, care, and proper conditions the worms will self-regulate to about five to six pounds which is the maximum capacity for the worm bag.

In the beginning, feed the worms about one-half pound of food every three to four days depending on how quickly they process the food. If the worms haven’t processed the food, hold off on adding more food until the original material is digested.

**Continued maintenance**
Once the worms begin to actively break down the food and multiply, add more food scraps (about one-half to one pound per week) along with bedding (bedding to food ratio by volume 2:1). If the mixture is not moist enough, sprinkle on some water and, if too moist, mix in more bedding.

Stick a hand in one side of the bag to check on the worms and see how much they are processing the food. Adjust the feeding, accordingly. The contents of the bag are doing well if there’s a moist, earthy smell. If the bag smells or there are flies, this indicates an imbalance of material in the worm bag. Stop adding food scraps and add more bedding (carbon).

If the bag is dry, sprinkle the top with additional water, not too much and not too little. (The “Goldilocks method”)

**Harvesting**
From the time of set up to the time of harvest, about six months will pass. By six months the bag will be about 75% full. Place a tray or catchment tray below the Velcro opening of the worm bag to get any leachate that may have accumulated at the bottom. Then remove the Velcro straps and loosen the drawstring. Note that the first harvest might contain some unprocessed bedding and worms. You can sift and return the unprocessed material back to the bag.

Fall is a great time to start in order to have composted material ready for spring planting. However, you can begin any time.

**Further resources:**
There is a complete manual for the Urban Worm bin system, which you can download: https://urbanwormcompany.com/wp-content/uploads/2021/03/UWC_Instruction-Manual-2021.pdf