Backyard Composting &   
Vermicomposting (Indoor Composting)

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Vermicomposting

What is Vermicomposting? What are Red Wigglers?

Vermicomposting is the use of earth worms, red wrigglers, and other worms to convert organic waste into fertilizer. While earth worms are mainly used for aerating your soil or compost by eating your soil and tunneling deep into soil or compost, they are not best suited for composting due to their preference for cooler soils. Red Wigglers (a.k.a. compost or trout worms) are experts in breaking down organic waste into usable compost within just a few days or even weeks and tend to only dwell in the top layer of decaying matter about 6” deep and generally go no further than 12” deep. They love warm soils where they can clump together and eviscerate all decaying matter around them. Not only can red wigglers break down your organic waste, but they are great bait for trout, snacks for your fish, reptiles or birds at home.

What are the dos and don’ts of Vermicomposting?

**How many worms do I need?** First things first, do not over-feed your red wigglers. If you over feed the compost will begin to start to smell and produce rancid smells that are not very appealing for compost (especially indoors). If you start to smell anything or you feel your compost has too much nitrogen or water, add an ample amount of carbon (cardboard, paper, etc) and mix it thoroughly then add a nice top layer of carbon. *So how do you know how many worms are right for you and how to best avoid this problem?* These worms are expert eaters and can eat up to half of their body weight when living in an ideal environment. Start by measuring the amount of food waste you have over a week and divide it by 7 to derive an average of food wasted per day. (Once you have saved this food waste, you can throw it in your freezer and save it for your worms for later. Freezing and thawing out the food will help the worms break down the organic matter more quickly.) Multiply your average food wasted per day by 2. This is the least amount of worms that you should start with. I generally buy extra worms to be on the safe side. Lastly, the population will eventually taper off or increase to best fit the food inputs (as long as there is enough carbon available…keep your 3C-1N ratio in mind).

**Where do I keep my Red Wigglers?**

The best site would to be a DIY or used a Vermicomposting bin. This will require the least amount of attention when composting. When creating your own, you may employ screened bins and layer them in similar fashion to retail vermicomposting bins. Any bin will be suitable for a worm bin. However, without proper air flow/ human intervention by rotating the compost, the bin will inevitably start to create a vacuum and become anaerobic, leading to decreased productivity of your bin and the potential for smells. Most people keep vermicomposting bins in their kitchen since they are relatively easy to maintain, so that’s where the initial inputs generally come from. Most worms will not try to leave the bin, as they are already living in their ideal environment. Excess vibrations, rotations, or improper environment are all reasons you may see worms start to try and leave the bin. Most often than not they return to the compost once realizing they are no longer in an ideal environment. You may find one or two that have escaped and dried up every once in a while but they won’t make it more than a foot or two away from the compost before they shrivel up and die. This normally only happens when taking too long to harvest worm castings, agitating the worm bin too much, or by having excess water in the bin, or the bin not being the correct temperature. Use the PH/moisture meter described on the previous handout to get an accurate look at your moisture content. And use this separate temperature probe from amazon here to make sure your worms are at an ideal temperature

Worm Farming Thermometer for Live Red Wiggler Compost Bins - Accessories Keep Your Worm Composting Container Safe! - An Essential Part of Any Worm Farm Starter Kit - Perfect For Kids & Adults = $13.95

**What to feed my Red Wigglers?**

The same basic rules apply when feeding your vermicomposting vs your regular compost with a few minor differences. The main difference is that citrus fruits, onions, and garlic will not be consumed by Red Wigglers. Red Wigglers love bananas, pumpkins, apples, cherries, cucumbers, tomatoes, corn, strawberries, teabags and more! Don’t forget about your carbon, as red wrigglers need carbon and other gritty material that they use it to help grind other organic material in their gizzard. Carbon can include, but is not limited to, cardboard, coffee grounds, crushed egg shells, wood chips/ shaving, twigs, newspaper, recycled paper(less print the better). **When in doubt Google it out!** Most veggies and fruits are acceptable, and if they are not, the worms will simply just avoid them.

**ITEMS TO AVOID:** Plastics, Dairy, Salted or Spiced fruits and veggies, Grease, Fats, Meats, Bones, Onion, Garlic, & Citrus Fruits with high acidity.

Red Wiggler Facts:

* Life span: about a year
* No eyes; however, cells that can detect light
* No teeth; grind food using grit (Gizzard)
* No lungs; skin (Moist environment necessary similar to the human lungs)
* Can eat ½ their body weight in food
* Hermaphrodite; still need a partner
* Reproduction starts at 2 months of age
* Mature adult can produce 100 worms/ year
* Coelomic Lucid; yellow secretion
* 5 “heart-like” organs (aortic arches)
* Difference from earthworms: reddish-purple color, yellow tip at the tail, some species have stripes

Troubleshooting:

What if there are small bugs all in my compost? Leave them go mostly these are sow bugs and pill bugs their manure is just as rich and useful as worm casting. Check to make sure your ratio is still in a good order. Add greens and/or water if the pile is too dry or contains too much carbon. Add carbon if the compost is over saturated, cold, and/or has any unpleasant smells. If there is an abundance of fruit flies in your compost, make sure you turn your pile and bury your food scraps so that they are not easily seen or reachable by these surfacing-dwelling insects. Compost should have a nice-smelling, earthy smell when pulled apart, and the pile should feel warm to the touch. Lastly, if you feel your carbon is not sufficiently masking any odor problems, feel free to add a layer of top soil to your compost and mix thoroughly. This will reintroduce beneficial microorganisms, fungi, & bacteria and can help kick start your compost. Mostly likely your carbon is not fine enough to properly cover your nitrogen surface area.