

WORM COMPOSTING

consume the food source, redigest it, which results in straight worm castings that are not as rich in nutrients as worm compost, and eventually your worms can perish. If you regularly supply your worms with fresh bedding and food, they will proliferate and thrive.

USES FOR YOUR WORM COMPOST

Worm compost is rich in castings, humus, and decomposing matter. A very important component of this blend of worm compost is humus.

The humic acid found in humus is important for creating binding sites of essential nutrients for your plants, such as calcium, iron, potassium, phosphorus, and sulfur. It can enhance permeability of the soil, and also stimulate plant growth.

Seedlings and transplants benefit greatly from a small application of worm compost mixed into the planting site. As your plants grow, it can be used as a side dress. You could also use worm compost to make your own unique potting soil blend.



Vermiculture or vermicompost is the process of worms breaking down organic food waste and transforming it into nutrient-rich, soil-building material that supplies nutrients necessary for plant growth and health. The end product, known as worm compost, worm castings, vermicast, worm manure, etc, is similar to regular compost except that it utilizes worms in addition to microbes and bacteria to turn organic waste into nutrient-rich fertilizer. Red Wigglers (*Eisenia foetida*) are a wonderful worm to use for this process.

SETTING UP A WORM BIN

Location: When setting up a location to keep your worm bin, it's good to consider variables like temperature, moisture, acidity, and ventilation. There are many locations that work for the worms, and can also be convenient for you- for example, the kitchen is handy for transporting food waste scraps straight into your bin. A patio, balcony, well-ventilated garage, or basement would all be adequate locations, depending on your preference and what kind of space you have available.

Temperature: The worms thrive best at temperatures between 59-77°F. They can tolerate a fairly wide range of temperatures, though below freezing temperatures can kill them, as well as bedding temperatures that climb above 86°F.

Moisture: Moisture is very important to worms. They breathe through their skin, so air exchange and waste excretion occurs when there is moisture present in the bedding.

However, too much moisture (standing water) can cause them to drown. The bin should be placed in an area where there is no danger of natural flooding of the bin.

Aeration is also important. Allowing air to freely flow through your bins is great for your worms, as they will smother without a source of oxygen. Slightly acidic conditions are best for your worms. A wide pH range of 5-9 is completely suitable. Anything below that can be harmful, and will cause your worms to try to escape the environment.

Container Choice: There are many different varieties and materials that can be used for worm bins. Wood breathes well, but deteriorates within a couple years. Plastic is great, but needs to have plenty of holes for ventilation so worms do not suffocate. There is a convenient **Vermihut Worm Composter** that can recycle up to 5 lbs of kitchen scraps a week. Made from HDPE recycled plastic, it is compact, odorless, and easy to use and maintain. Each tray can hold up to 1,200 worms. There is a drip tray at the very bottom with a spigot for decanting your own "worm tea" which can be diluted and used on all types of plants.

How it works: The worms start at the bottom tray, munching scraps and turning it into rich worm compost. They begin to move up into the next tray above, where you can start adding fresh scraps and bedding for them to feed on. After all the worms have vacated the lower bin, you can empty your worm compost, refill the tray with fresh bedding and food scraps, then set the refilled tray on the top.

Worm Bedding: Typically a form of cellulose; ideally light and fluffy for air exchange which helps with odor control. The worms will eventually consume the bedding as well. The bedding should be kept damp, but never soggy. Many materials work for this, and you may find that some work better than others for your worms.

Every time you add a collection of scraps to your bin, add another layer of bedding on top to bury it. This provides moisture control, a long term food source, and is helpful for maintaining oxygen flow. It shrinks considerably in a short period of time. For the overall health conditions and environment of the bin, it is important to keep adding bedding every time you add food for your worms.

If you have a bin like the Vermihut, you won't have to worry about excess moisture, as it

falls to the drip tray below. If you use a different method, you may have to add additional bedding to help absorb moisture, use a turkey baster to pull out excess, or gently tip the tray to drain any standing water.

The following are great used in a bedding mix for your worms:

- Shredded newsprint (*black & white inks*)
- Coconut coir fiber
- Small amounts of shredded paper and/or cardboard
- Decaying leaves
- Handful or two of soil mixed in initially to add grit and beneficial inoculum

Worms: How many worms should be used? A good ratio of worms to food waste is 2:1. For example, if you dispose about a pound of scraps per day, two pounds of worms are a good amount to feed on it to break it down.

After preparing the bedding mix, empty the container of worms into the tray. They will hide under the bedding if exposed to light. Any worms remaining on top are likely sick or deceased. Lift up some of the bedding, deposit some food scraps, cover with the bedding, then place a lid over the top. Place food scraps in a different place each time, covering with bedding. Do not bury them in castings.

WORM HEALTH AND WELL BEING

Cut scraps into small pieces to make it easier for the worms to breakdown. As you take care of your worms, you'll notice that certain food items are more desired than others. Be sure to avoid the following:

- Excess amount of citrus- limonene can be toxic to worms
- Non-biodegradable materials
- Pet and animal wastes
- Dairy or meat products

MAINTENANCE

Taking care of a worm bin is relatively low maintenance. They can be left alone to their own devices for a week or two, so you don't need a sitter to go on vacation. If they are left alone for a month or more, they will