

# Recycling Organic Waste with Worms

## Compost Worms are special creatures

Starting with the right worm is essential. *Earthly Delights* sell a combination of two varieties of “tiger” worms (*Eisenia Fetida* and *Eisenia Andrei*) – so named for their stripes. Tiger worms are special creatures that live only above the ground in mucky organic matter – they don’t live in soil. They have *lots* of babies, often, and at a very early age, making Tiger Worms the tri-athletes of the worm world!

**Tiger worms are different than the worms found in garden soil** or under manure in farm paddocks.

A colony of tiger worms will “eat” kitchen waste and turn it into fertilisers in both a solid “Vermicast” and liquid “worm juice” form. Ideally, Tigers can eat their weight in waste everyday, making them perfect workers to process organic wastes like food scraps, paper, and selected garden waste. Tigers control their population based on food supply and environment – you can never have too many worms.

## The Worm Farm

Worm farms are essentially a container used to house both the tiger worms and the biology responsible for converting organic waste back to soil. The farm can be purchased or homemade (see [www.earthlydelight.co.nz](http://www.earthlydelight.co.nz) for more details on DIY-units), sitting on the ground or elevated off the ground.

Farms you find in a store are great inventions! Tidy, often mobile, and great for kid-viewing. Many can be used indoors. The most common style uses trays that **stack** on top each other, and have a catchment basin for easy harvesting worm “juice”. Choose a system that suits your home environment and recycling goals. Do you know how much organic waste you produce? How much do you want to recycle?

**Stacking systems** work by moving trays around every few weeks – you add food scrapes to the top tray while the worms work in the lower trays that hold older waste. Every month or two a finished tray of vermicast can be added to the soil, and the empty tray returned to the stack and restarted. Some systems use the bottom container to collect liquids that leach from the trays, and include a tap for easy emptying.

Purchased farms often come with bedding material (peat, compost, or coconut fiber block). It is important to thoroughly wet this material before adding it to the unit, filling 1/3 of the tray. Dried bedding can lack the bacteria worms **MUST** have to thrive, making the system slow to start. To “kick-start” the system add a few handfuls of worm castings, worm juice, active compost or soil, to the bedding while wetting it.

## Feeding Compost Worms – What you can Recycle

Tiger worms need water, air, and food to live - They can eat anything that was once alive! The limits are based on the size and style of your recycling unit. When space is limited, you don’t want to fill up the container with stuff worms won’t readily eat. To avoid smells and complications, stacking container-style worm farms should not be fed orange skins, onion skins, meat, grass, or too much bread / pasta.

*Items on the menu* – Kitchen scraps (all fruit & veggies), crushed egg shells, tea bags, coffee grounds and filters, potatoe skins, chopped garden wastes, manures (not de-wormed, chock), paper napkins, shredded newspaper (non-glossy), egg cartons. Chopping up stalky bits like raw cabbage or broccoli will speed recycling, as will blanching in hot water. Microwaving potatoe skins will discourage sprouting from the eyes. Only add aged dry grass in very thin layers. Garden waste is fibrous and slow to decompose – Add in smaller amounts compared to food scraps (2:1). Think of paper as bedding material – fiber for the worms – it’s very important to add regularly 1:3 to food (i.e. dryer fluff, vacuum bags, hair, toilet rolls).

*Items off the menu* – Citrus skins, onion-skins, dairy products, spicy foods, bread/pasta, meat – that’s the **HARD STUFF**. It takes up precious space and will decompose slowly or smell. Worms won’t *thrive* on this food. **But** if you have a larger worm farm, Tigers can recycle this material in moderation. Do not put anything sharp in the worm farm (fish bones, rose clippings). Seeds will not be killed in a worm farm, and will sprout later in the soil. Never **EVER** feed worms weeds like oxalis, convolvulus, ivy or twitch.

## How much and How often to feed the Worms

Feed tiger worms once a week – more often is okay, but it may begin to feel like work after a while. The more worms you have, the more you can recycle. Worms breed fast, doubling in size about every 2-3 months, if they like their food. It's often said they can eat their weight in food every day! The amount you can recycle is limited by the size of your recycling system and understanding of the power of the worm.

Most purchased recycling units recommend starting with at least 250 grams of tiger worms (about 1000). Feed the system little and often at first; 250g Compost worms can be fed about 1 litre of food scraps weekly for the first few weeks. Increase every month until you reach your unit's capacity.

Any worm-based recycling unit will take some time to mature – up to one year. During this time you are growing the worm population and establishing a biological environment capable of decomposing organic matter . . . **it's alive!** Be sure to keep feeding the worms even if you see last week's feeding still present.

Your worm population will stabilize after 6-8 months, once they know how much food is coming. If you plan to be away for more than 3 weeks, give them a bit extra food, e.g. a whole cooked pumpkin.

## General Worm Care

**Keep it moist** – Spongy wet but not dripping. Systems in contact with the earth can handle more watering than a closed container system because the moisture can seep down to the soil beneath, naturally. Empty weekly any liquids from the bottom tray, and rinse out occasionally. Reduce watering over the colder months and add shredded paper, egg cartons or corrugated cardboard if it seems too moist.

**Add a handful of garden lime** – (calcium carbonate) each feed, or monthly, to help keep the pH right and “sweeten” the bedding. Lime is chalk and should be whitish in colour, not grey. Avoid dolomite (which contains magnesium) and builder's lime (which burns the worm). If the unit becomes smelly, add garden lime, give it a stir, and stop feeding for a week or two.

**Fluff the bedding to add Air** – Gently turn the contents to add air. Adding different size material will also trap air. Always keep the top inches loose and fluffy – You may have to add shredded paper.

**Watch the temperature** – Tigers prefer temperatures between 10-25 degrees C, so keep out of direct sunlight in summer months; some sun is fine in the winter. During severe frosts cover the farm with extra layers of carpet or underlay, or move to a warmer spot. Although Tigers can tolerate cold temps, their eating and breeding will slow. When it's really hot, cool down a container worm farm with hose water.

## From Waste to Wonderful

Worms produce a soil-like black substance called Vermicast – worm castings – it's a fantastic soil conditioner that acts like a fertiliser. Worm castings add nutrients and humus to plants and soil, and improve germination and water retention. To remove worms from castings, tip the harvested material onto a large section of newspaper or black plastic, and pile into a pyramid shape. Slowly remove top layers while the worms dive away from the light. You can also lure them to a corner of the bin with fresh food over a day or two, or drive them down into the bottom tray using light.

Worm casting can be used as mulch, in seed raising mix (20-30% with sand or peat), as an ingredient in potting mix (50:50 with peat or compost), and as a quick feed before planting out new treasures from the garden shop. Worm casting will not burn delicate plants. Worm castings can be also be used to make a liquid fertiliser – just add 3-4 handfuls of the black stuff from your system into a 10-litre bucket of water. Stir and leave for 24 hours. To feed houseplants and garden plants, fresh “worm juice” can be diluted 1:10 (until it looks like a weak tea) and applied to the soil or diluted 1:50 and applied to the plant leaf.

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We sell Compost Worms, Worm Farms, soil conditioners, recycling tools, and training.  
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