



Worms, Worms, Worms

Why Have a Worm Farm?

Worm farming is another great way to compost food scraps. Worms will eat most of your kitchen waste and process it into rich plant food.

Worms are amazing creatures! Worms dig and aerate the soil and allow more water to soak in. Worms are living fertiliser tubes full of countless numbers of beneficial bacteria and enzymes. Worms help to balance the pH of the soil. Their 'casting' (which is actually HUMUS rich SOIL), is usually close to a pH of 7. This is 'neutral', neither acid, or alkaline and most plants prefer a pH just below or above pH 7. Humus is the 'HEART' of rich organic soil.

Large amounts of scientific research over the last 10 to 20 years, allows us to understand the incredible importance of the humble earthworm. These unsung heroes play a vital role in sustaining the life and fertility of all our horticultural and agricultural systems. Charles Darwin called them 'Natures Plough'

Please say aloud with me - **WORMS MAKE SOIL! WORMS MAKE SOIL!**

How to Set Up a Tumbleweed Worm Farm

- The bottom tray is used for catching the water that flows through the worm farm. We recommend that you **never** store water in the bottom tray. It goes stagnant and inhibits air for the worms to breathe. **Keep the tap open all the time.** Place a bucket under the hole to catch the brown liquid coming out. Use the legs that come with the worm farm or use a milk crate or bricks to raise it.
- The first tray with holes in the floor is the 'home' for the worms. Fill this up with a good soil or mature compost, wet it well and then put in your worms. This is their 'home'. From here they will feed on the layers above them.
- Now place the next tray (with holes), on top of the 'home' tray. Ensure the bottom of the empty tray is touching the soil/compost in the home tray. If ever a 'gap' appears between trays you must top up the home tray with some extra soil or mature compost.. This 'contact' ensures that the worms can move easily between the home tray and the feeding tray, to allow aeration & encourage worms up.
- When adding a new feeding tray always throw a few handfuls of soil or mature compost mix into the empty tray before you start feeding it.
- Use a 'Tumbleweed WORM BLANKET' available from Kimbriki Ecohouse & Garden, hardware stores, or use an old hessian bag, as a cover over the surface of your feeding tray (the top tray). When feeding the worm farm always lift out/up the 'worm blanket. You are now 'SET UP'.

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How to Manage a Worm Farm

- **Ensure that excess water can drain freely** through the worm farm. Leave the tap open **all the time** (or remove the tap completely). Use a bucket underneath to collect the valuable liquid and use regularly.
- **Lift up the 'Worm Blanket'** – add a thin layer of food scraps on the surface of the feeding tray, sprinkle with a few handfuls of soil, worms don't have any teeth and they need the grit from the soil to grind their food. Feed with a **high variety/diversity** of food scraps. Any food scraps except meat, can be used to feed your worms. Citrus and onions can also be added in small amounts, as long as you are sprinkling in a teaspoon or so of Tumbleweed Worm Farm Conditioner (Dolomite Lime) each week.
- The more chopped up the food scraps are, the quicker it will be converted by the microbes and worms into humus.
- **Replace the 'worm blanket' and put on the lid.** Put a brick or something 'weighty' on the lid to hold it down.
- **How much food?** This will depend on how many worms are in your farm and the daily temperature. Worms like a soil temp of about 18 to 25 deg C. If it is too hot or too cold they will slow down and eat less. One of the biggest mistakes people make with worm farms is **OVERFEEDING!** If you are overfeeding and the worms can't eat it all, it will start to smell bad! If this happens, get a small garden tool like the Little Digger or stick, and mix & aerate the tray you are feeding into. Add a bit more soil and a sprinkle of 'Tumbleweed Worm Farm & Compost Conditioner' and do not feed for a few days or even a week.
- **Every time you feed your worms**, sprinkle a few handfuls of soil on top of the food. This gives the worms some grit, which they use in their gizzard, to grind their food (worms don't have any teeth!).
- **Keep the surface covered** with a 'Tumbleweed Worm Blanket' or a hessian sack. Do not use thick newspaper over the surface as this can limit aeration to the oxygen breathing worms.
- **Keep the system moist at all times.** Once a week flood the worm farm with a bucket (4-6 litres) of fresh water over the entire surface of the feeding tray until 'worm juice' is running out the open tap. Leave the tap open 24/7. This will also ensure that you get a regular supply of worm juice to spray and water onto your plants and living garden soil, (NB empty out the worm juice bucket every day – this will stop it smelling -going anaerobic- and will stop mosses breeding in there).
- **Once a week sprinkle** a teaspoon of 'Tumbleweed Worm Farm & Compost Conditioner' or dolomite lime onto the surface of your feeding tray, this balances the pH. Then pour several litres of water into the top of your worm farm, until water is running out the bottom tap hole.
- **OPTIONAL:** Sprinkle a handful **once a month of Basalt Rock Dust** into your worm farm. Good rock dust can add 70 or more different minerals into the system and then into YOU, when you eat the plants grown using some of these wonderful worm castings. Rock Dust can also be added to your veggie and herb gardens directly – about a handful per sq metre – every 1 or 2 years.

When your Worm Farm is FULL! (changing trays and using the castings)

- Take off the 'worm blanket', (it may be time for a **NEW ONE!**).
- Lift off the full, top feeding tray – put it to one side carefully (90% or more of your worms will now be living in this tray)
- Lift off the home tray. Empty the contents & clean this tray, (this beautiful black worm casting material can either be used in small amounts on your potted plants or around the drip line of plants in your gardens - always cover with a mulch-. You may also mix it in with your maturing compost). Don't worry about worms left in this tray, they will be happy in your garden.
- Rinse out the bottom liquid collection tray.
- Now the full feeding tray is put back in position as their new home tray.

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- Put the clean empty tray on top, add a couple of handfuls of soil in here & continue feeding.
- This rotation method is repeated every time your feeding tray fills up (usually around 2 to 3 months – depending on the number of worms in your worm farm & how much you are feeding them).

How to Encourage Worms Back to Your Gardens

- Always have a layer of organic mulch on the soil surface, eg grass clippings, leaves, recycled organics from Kimbriki EcoHouse & Garden, council pick-ups, shredded garden prunings, newspaper, hessian /jute sacks, etc
- Continue to increase the diversity (variety) of mulches added to your garden – Sugar Cane, Lucerne Chaff, Pea Straw etc
- Keep your garden soil moist.
- Add ‘pockets’ of worm castings under your mulch, (take castings from your worm system). These surface living (compost) worms will encourage the deeper living worms into your garden as well.
- Lucerne hay or mulch is great for attracting & feeding worms. Good holiday food for your worms (when you go on holidays, and leave your worms for a week or two) – place a layer of wetted Lucerne Chaff into your feeding tray and cover with your blanket.

How to Use ‘Worm Juice’ on Your Gardens

‘Worm Juice’ can be used in two main ways with your plants.

1. Poured directly onto the soil of either your potted plants or veggie and herb gardens.
2. As a special foliar spray to use as a ‘tonic’ on the leaves of your plants.

1. Directly onto the Soil

Always water into the soil at the **drip line** – if possible – otherwise water into the main area of root mass of the plant.

Always use fresh and aerated ‘juice’. You can use it **undiluted** around well-established plants, however **dilute** the ‘worm juice’ to the colour of weak ‘tea’ if using around young plants and seedlings!

2. As a Foliar Spray to use as a ‘Tonic’ on the Leaves of your Plants

This ‘juice’ can help prevent many fungal organisms from damaging your plants and is also a good ‘foliar feed’ for your plants at flower and fruit set times or just for a ‘nice little boost’ for your lovely herbs, veggies and fruit trees.

- Always use fresh and aerated ‘juice’. Dilute the ‘worm juice’ to the colour of weak ‘tea’
- Filter the juice through a fine strainer or use an old stocking as your strainer.
- Strain the filtered juice into your spray bottle.
- Now you can spray this ‘juice’ or you can add some Fish Emulsion and also a good liquid seaweed product into the mix – at their recommended rates – and spray your plants with this!
- Spray onto plant leaves directly making sure to cover the fronts & backs of the leaves

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Worm Farm problem solver

Below are four of the most common problems people have with their worm farms:

Problem 1: Water tap blocks up on bottom tray. Moisture can't drain through the worm farm and oxygen is diminished.

Remedy – Leave the tap open all the time, OR remove the tap completely and place a bucket under the hole to catch the 'worm juice'. Once you have removed the tap, a good practice is to flood the worm farm with fresh water, from the top, once a week. Use 5 litres or more, until juice pours from the bottom. The worms love a moist home but it must be **WELL DRAINED!**

Problem 2: Gap between top of 'home' tray and the bottom of 'feeding' tray.

Remedy – Lift off feeding tray and simply add some soil, mature compost or potting mix to the surface of the 'home' tray. Put feeding tray back on top of home tray ensuring contact between the two trays.

Problem 3: Overfeeding! (worm farm will be smelly!)

Remedy – Stop feeding for a week. Sprinkle on a handful of 'Tumbleweed Worm Farm & Compost Conditioner' or dolomite lime and gently dig and mix the smelly food layer with a Little Digger or strong stick. Also sprinkle on a few more handfuls of garden soil onto the surface, under the 'worm blanket'.

Problem 4: Worms seem slow to process the food scraps

Remedy – Sprinkle a couple of handfuls of soil on top of the food scraps every time you feed the worm farm. This gives the worms some 'grit' to use in their gizzard to grind the food before they digest it in their stomach. Gently dig and mix the food layer with a Little Digger or strong stick to aerate and allow the worms to breathe better. Also add a sprinkling of 'Tumbleweed Worm Farm & Compost Conditioner' every week to prevent acidity.

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