



**WHY BE SUSTAINABLE  
& RECYCLE?**

**WORMS, WORMS,  
WORMS!**

**HOW TO SET UP  
YOUR WORM FARM**

**HOW TO MANAGE  
YOUR WORM FARM**

**WHEN YOUR WORM  
FARM IS FULL**

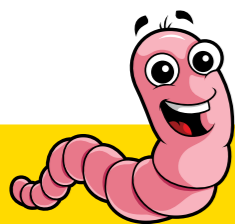
**WORM FARM  
PROBLEM SOLVER**

# ***Worm Farming Tutorial***

## Why be sustainable and recycle?



**39-45%**  
OF HOUSEHOLD DOMESTIC  
WASTE IS **COMPOSTABLE**



### FUN FACT

Worms are the ploughs of the earth. They play a vital role in sustaining life and fertility of all our agricultural and horticultural systems.



### HINT

Food scraps mixed with other rubbish releases methane, a potent greenhouse gas which is a pollutant.



Watch the video

### ✗ STOP THIS

**METHANE**  
(a very strong greenhouse gas)  
Produced from food and garden waste kept in anaerobic conditions.



FOOD SCRAPS & GARDEN WASTE

**LANDFILL**  
Organic waste (food scraps and garden waste) in landfill breaks down and releases methane, a potent greenhouse gas.

### ✗ STOP THIS

**COMPACTOR**  
Removes air in the landfill to save space which creates anaerobic conditions.



### DOMESTIC WASTE STREAM

Organic waste also contributes to landfill leachate that can impact on the environment by polluting water.



### INTRODUCE THIS TO YOUR COMMUNITY



### WORM FARMING & COMPOSTING

Recycling your organic waste with a worm farm will turn your food scraps into rich fertiliser that you can use to nourish your garden.

# Worms, worms, worms!

## WHY HAVE A WORM FARM?

- Approximately 39-45% of household waste is organic and compostable.
- When worms eat your kitchen waste they process it into rich plant food and liquid fertiliser for your garden.
- Worms are amazing creatures! These living fertiliser-tubes are full of countless numbers of beneficial bacteria and enzymes. By digging and aerating the soil, they allow more water to soak in, playing a vital role in sustaining the life and fertility of all our horticultural and agricultural systems.
- Worm farming is fun, particularly when you get your whole family involved... you can even get your kids to name the worms!



Watch the video



### FUN FACT

Every worm is hermaphrodite (a boy and a girl) that breathes air through holes in its skin. This makes it important to keep your worm farm aerated.



### HINT

Worm farming helps the environment while dealing with your own organic waste at home.

# How to set up your worm farm.

## ONE Assemble your worm farm

Your worm farm consists of several trays:

- *A water collector tray with a tap* – This is the bottom tray that needs to be left empty as it will catch water that flows through your worm farm. From time to time, as the worms move up and down in the trays, you'll see worms and casting in this tray (this is normal).



- *Working Trays* – One tray with holes in the floor will be your worm's 'home' and should be filled with bedding. The second tray with holes in the floor should be placed on top of the home tray. This is where you will place your food scraps.



## TWO Find a convenient shady position

- Position your worm farm in a convenient shady spot in your garden, laundry, kitchen, garage or on your balcony.
- Make sure it's easy and convenient to access your worm farm so that 'feeding it' with your kitchen scraps doesn't become a chore!



## THREE Prepare the bedding

- Fold and place a layer of cardboard or newspaper on the base of the working tray that is to become your worm's home.
- Fill a bucket with water and place your supplied Worm Farm Bedding Block in it to expand (you may need to break up the bedding block while it's in the water).



- Once the bedding has expanded, mix some organic soil and mature compost into it.
- Spread the expanded Worm Farm Bedding Block and soil mixture on top of the cardboard/ newspaper until it is about 5cm from the top of the tray.



### FUN FACT

It will only take you 10 minutes a week to look after your worm farm. This includes feeding, watering, aerating and harvesting worm tea for your garden! Worms like to be cosy and don't enjoy too much variation in temperature – between 18 - 25 degrees Celsius is perfect.

## FOUR Add your worms

Wet the bedding well, then release your worms into their new home tray (we recommend 1,000 composting worms).

Stack the second working tray on top of the home tray and add your organic food waste.

Your worms will work their way from their home tray into the working tray above to feed on the food scraps.



Watch the video



### HINT

The best place to keep your worm farm in summer is in a shady cool spot in your garden where the temperature is roughly between 18 - 25 degrees.

# How to manage your worm farm.

## MYTHS OF WORM FARMING

**Myth:** Many people believe worm farms are hard work.

**Fact:** It only takes 10 minutes a week to maintain your worm farm by feeding and watering it and checking to make sure the environment is healthy.

**Myth:** Worms chew through all your food scraps.

**Fact:** Worms don't have teeth! Instead, they eat the bacteria on the surface of rotting food and process it through their gizzards.

## VARIETY IS THE SPICE OF LIFE

The more variety of organic waste you feed your worms, the better the castings/fertiliser will be. Every time you feed your worms, sprinkle a handful of organic soil (from your garden is fine), crushed egg shells or vacuum dust to the working tray. The grit from these materials will help the worms' gizzards grind the food waste.



### FUN FACT

Worms have five hearts and two brains! If you chop a worm in half, you'll be left with two dead worms.

## YOUR WORM FARM CHECK LIST

- ✓ **Worms**  
Worms are amazing creatures, but only composting worms – Tiger Worms (*Eisenia Foetida*) and Red Worms (*Lumbricus Rebellus*) – will survive and thrive in your worm farm.
- ✓ **Food**  
Worms eat anything that was once living. Whenever you feed your worms, sprinkle a few handfuls of soil on top of the food to provide the grit worms need to grind their food.
- ✓ **Aerate**  
Worms breathe air! To ensure your worm farm is well aerated, keep the tap open with a bucket underneath, and regularly turn the organic matter in the working tray.
- ✓ **Moisture**  
Keep your worm farm moist by pouring 4 - 6 litres of fresh water over the entire surface of the feeding tray every week.
- ✓ **Drainage**  
Keep your worm farm moist by pouring 4 - 6 litres of fresh water over the entire surface of the feeding tray every week.
- ✓ **Darkness**  
Worms love the dark! Keep the surface of your worm farm covered with a breathable Tumble-weed Worm Blanket.
- ✓ **Position**  
Worms need a sheltered position, in the shade. A shady area in your backyard, on a balcony or in your laundry or garage are all suitable spots for your farm.
- ✓ **Temperature**  
Worms like a soil temperature of about 18 to 25 degrees celsius. If it's too hot or too cold they will slow down and eat less.
- ✓ **Harvest**  
When your working tray is full it's time to clean and rotate the trays, and harvest the rich worm castings.



## WORMS

### Did you know...

Worms will eat most of your kitchen waste and process it into rich plant food.

The worm castings and worm tea they produce will increase your plants' immune systems.

### What types of worms are used in worm farms?

All worms found in worm farms and compost bins are earth worms, however, there are different species of earth worms. The species of earth worm you need to ensure your worm farm thrives, is a composting worm. Composting worms live up high in the composting layer of the soil where they decompose organic matter and turn it into nutritious worm tea for your garden.

The most common species of compost worms sold are Tiger Worms (*Eisenia Foetida*) and Red Worms (*Lumbricus Rebellus*).

### Where from and how many?

Start off your worm farm with at least 1,000 composting worms. To ensure they are fresh, purchase them from a reliable source, such as the Tumbleweed website, a local worm farmer or reputable hardware store or nursery.



### FUN FACT

Worms weigh about 250 grams per 1,000 worms (4,000 worms = 1kg). They can eat up to their own weight every day.

## FOOD

### What do worms like to eat?

As a guide, worms will eat anything that was once living. This includes:

- Leftover leafy vegetable scraps and stalks, cooked or raw.
- Vegetables, fruit peel and cores, cooked or raw.
- Coffee grinds, tea leaves and tea bags (not the new plastic tea bags).
- Crushed egg shells (these will also help with the pH balance).
- Citrus and onions can be added in small amounts, so long as you sprinkle in a teaspoon or so of Worm Farm Conditioner each week.
- Torn up newspapers, shredded non-glossy paper, soaked pizza cartons and straw.
- Vacuum cleaner dust, hair clippings (including animal hair).

Remember, variety is the spice of life.

### What don't worms like to eat?

Your worms will not eat meat or dairy.

### Feeding your worms

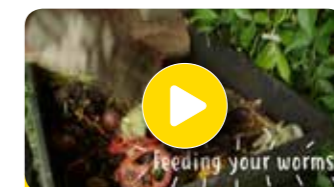
As a guide, worms will eat anything that was once living. This includes:

- Lift the Worm Blanket and add a thin layer of food scraps to the surface of the feeding tray. Sprinkle with a few small handfuls of organic soil to give them the grit they need to grind their food.
- Feed your worms a diversity of food scraps, excluding meat and dairy.
- The more you chop up the food scraps, the quicker they will be converted into humus by microbes and worms.
- Use a small hand tool to dig in and aerate the soil.
- Replace the worm blanket and the worm farm lid.



### HINT

Worms will eat most kitchen scraps, including vegetables and fruit.



Watch the video

## AIR

Aeration is one of the keys to successful worm farming.

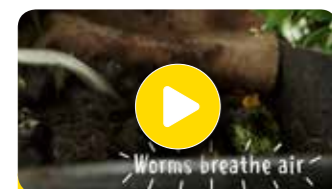
Keep your worm farm's tap open with a bucket underneath, so that air can flow through the farm and liquid can drain out. This will ensure your worms can breathe easily and won't drown.

Overfeeding your worms will restrict air movement, causing anaerobic bacteria to breed, which will start to smell bad. To prevent this from occurring, use a small garden tool or stick to mix and aerate the contents of the working tray every time you feed your worms. Add a bit more soil and a sprinkle of 'Worm Farm and Compost Conditioner' about once a week.



### HINT

**Aeration is important in your worm farm because worms need to breathe air to live & to allow water to flow through the worm farm.**



Watch the video

## MOISTURE

Worms love the wet, so long as the water can drain and they can breathe.

Once a week, flood the entire surface of the working tray with 4-6 litres of fresh water until worm tea is running out the open tap.

Leave the tap open 24/7 to ensure you get a regular supply of worm tea to spray and water on your plants and living garden soil.

To prevent the bucket of worm tea from becoming anaerobic and smelly, empty it every day. This will also stop mozzies from breeding in there.

By keeping your worm farm moist, you'll also help to maintain it at a comfortable temperature.

### TIP

**If it's a really hot day in summer, add more water to your worm farm before you head to work.**



### FUN FACT

**Worms can sense air pressure. When there is low pressure and it rains, they will move higher in the soil to avoid drowning.**



## DRAINAGE

The bottom tray of your worm farm catches water that flows through the trays. We recommend you never store water in the bottom tray because it will become stagnant and inhibit airflow that your worms need to breathe.

Keep the worm farm raised and the tap open all the time with a bucket underneath to catch the brown worm tea as it drains out. Make sure your worm farm is level so that water doesn't pool in one spot.

## DARKNESS

Worms don't like light, and with light sensing organs on their skin they are very sensitive to it. This makes it important to keep them in the dark. Always keep their working tray covered with a Tumbleweed worm blanket. This will encourage your worms to migrate up and down, while also allowing air to flow. Don't be tempted to use thick newspaper as this can restrict air flow, which will suffocate your oxygen breathing worms.

Your worms will eventually eat the worm blanket, as it's made from organic fibers. When your worm blanket starts to break down, remember to buy a new one, or alternatively you can use a hessian bag or old cotton towel.

## TIP

Make sure it's easy and convenient to access your worm farm so that 'feeding it' with your kitchen scraps doesn't become a chore.



## POSITION

Worms need a shaded, sheltered position. A shaded area in your backyard or on a balcony, in the laundry, kitchen or garage will be a suitable location for your worm farm.

## TEMPERATURE

Worms like a soil temperature of about 18 to 25 degrees celsius. If it's too hot or too cold they will slow down and eat less. Any extreme variations outside these temperatures may cause your worms to perish, so it's important to keep your worm farm in a sheltered position that minimises temperature fluctuations.

## TIP

Maintain the moisture level in your worm farm. On an extremely hot day add extra water and cover your worm farm with a wet hessian blanket, or shelter it with an umbrella.



## HARVESTING

### What do worms like to eat?

When your worm farm's working tray is full, it's time to rotate the trays and make use of your worm farm castings. Here's how to do it:

- Remove the 'worm blanket' (it may be time for a new one!)
- Lift off the full, top working tray and carefully put it to one side.
- Lift off the home tray and set aside the black worm castings then clean the tray.
- Rinse out the water collecting tray.
- What was your working tray will now become your worm's new home tray.

- Put the clean working tray on top of the home tray, add a couple of handfuls of soil and a layer of food.
- Distribute the castings in small amounts on your potted plants or around the drip line of plants in your gardens then cover it with mulch. You can also mix castings in with your maturing compost.

Use this rotation method every time your feeding tray fills up. This is likely to be every two to three months, depending on the number of worms in your worm farm and how much you feed them.



## Worm farm problem solver.

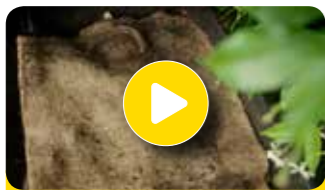
### MOSTURE LEVELS

#### Too wet (common)

- *Unpleasant odours:* Insufficient oxygen in the farm is causing a smelly anaerobic process. Tear up dry newspaper or egg cartons and bury them into the bedding.

#### Too dry

- *Slow break down of organic matter:* Spray the bedding layer to keep it moist. Maintain a wet newspaper or hessian layer in your worm farm and remove it from sunlight.
- *Attracting ants:* Place the legs of your farm in small buckets/trays of water, or put Vaseline around the base of the farm.



Watch the video

### PH LEVELS

#### Too acidic (common)

- *Vinegar flies or sour smells:* Stop feeding the worms fruit and coffee grinds for at least one week. Sprinkle approximately 2 tbsps of Tumbleweed Worm Farm and Compost Conditioner on top of the working tray and spray with water.

#### Too alkaline (rare)

- *Excessive lime:* Add more fruit.



#### HINT

If your worm farm starts to smell from overfeeding, stop feeding for a few days and mix the contents around to get air into it.



#### TIP

Refer to our website for more problem solvers!

[Visit website](http://www.tumbleweed.com.au)

## WORM FARMING QUIZ QUESTIONS

- 1** Approximately what is the percentage of organic waste that Australian households throw away?
  - a) 39-45%
  - b) 10-20%
  - c) 90-100%
- 2** What happens to organic waste when it is put into landfill?
  - a) It breaks down into soil
  - b) It naturally disintegrates
  - c) It releases methane, a potent greenhouse gas which is a pollutant
- 3** Why have a worm farm?
  - a) To dispose of all rubbish, including plastics and glass
  - b) To help the environment by recycling your households organic waste
  - c) To recycle garden waste
- 4** Where should I keep my worm farm in summer?
  - a) In a very hot, sunny spot in the garden
  - b) In a shady cool spot in the garden where the temperature is roughly between 18 – 25 degrees
  - c) In full sun on a concrete slab
- 5** What will worms eat?
  - a) Most kitchen scraps including vegetables and fruit
  - b) All kitchen scraps including meat, fish, dairy and bones
  - c) Only leaves and vegetable scraps
- 6** Why is aeration so important in your worm farm?
  - a) To ensure the worms stay big and strong
  - b) Because worms need air to breathe and live & to allow water to flow through the worm farm
  - c) So the worms taste better for birds
- 7** What do I do if I overfeed my worms and my farm starts to smell?
  - a) Stop feeding for a few days and mix the contents around to get air into it
  - b) Throw out all the worms and start again
  - c) Give the worms lots of vegetable scraps
- 8** How can a worm farm benefit my family?
  - a) It is a fun and educational activity for the kids
  - b) It will help us to reduce our landfill waste
  - c) It will provide fantastic free fertiliser for the garden
  - d) All of the above

