

## COMPOSTING AND WORM FARMS

### TIPS TO START A COMPOST OR WORM FARM AT HOME

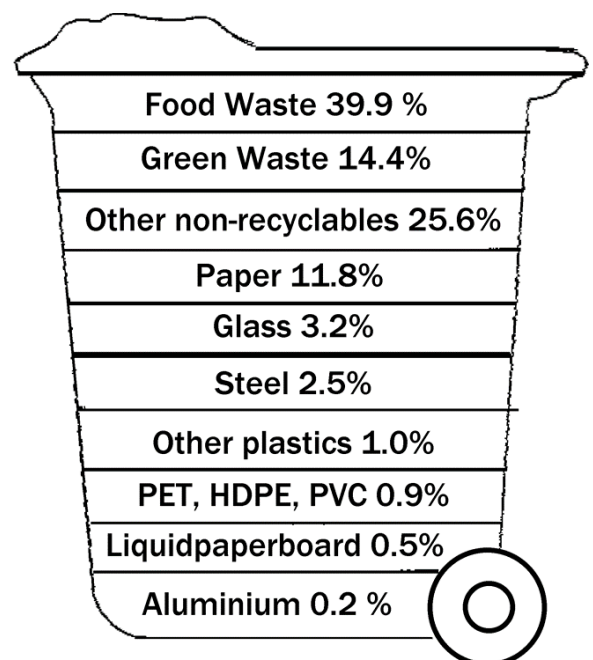
## WHY START A COMPOST OR WORM FARM?

Victorians throw away enough food waste to fill the MCG approximately five times every year! By starting a compost or worm farm you will:

- ⇒ Save space and reduce methane emissions in landfill
- ⇒ Create a valuable soil supplement that can be used in home gardens
- ⇒ Save money!



**OVER HALF THE WASTE YOU PUT IN YOUR WASTE BIN IS GREEN WASTE AND FOOD SCRAPS!!**



## WHAT IS COMPOSTING?

Composting is the breaking down of organic materials (kitchen and garden waste) in a large container or heap. Decomposition happens because of naturally occurring bacteria, fungi and small invertebrates (such as earthworms and millipedes).

## WHAT IS A WORM FARM?

Worm farms use a higher number of worms than compost to assist the decomposition process. Worms produce worm castings - a wonderful garden fertiliser - and are capable of processing approximately 1/2 their own body weight every day.

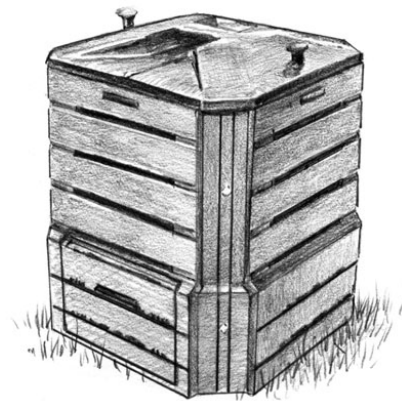
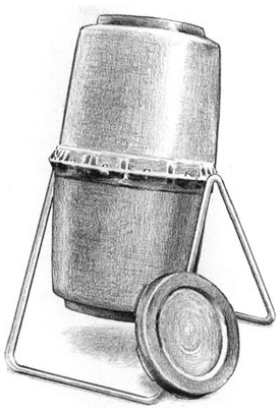


# WHAT COMPOST METHOD WILL SUIT ME?

There are options when it comes to choosing the right compost method:

⇒ **Compost** - can be made using these different methods:

- ⇒ **Heaps** - good for those with larger blocks of land or farms
  - ⇒ Needs to be 1m<sup>3</sup> enclosure using timber or bricks with front access and a covering to retain moisture and heat
- ⇒ **Bins** - good for those with smaller blocks or in town
  - ⇒ **Tumblers** - enclosed canister - Good for those who would like to move their compost and renters and those who cannot make permanent changes to their dwelling



- ⇒ **Stationary Enclosed Bins** - closed bin directly on the ground - good for those that want to keep their compost in one place

⇒ **Worm Farms**

- ⇒ **Worm Farms** are good for those who have more time as worm farms require a bit more maintenance and care than compost. Great for those who would like a fantastic organic fertiliser for their garden!



# WHAT COMPOST METHOD WILL SUIT ME?

There are options when it comes to choosing the right compost method:

## ⇒ Bokashi Kitchen Composting

- ⇒ **Bokashi Bins** are great for those who don't have a lot of space or live in a unit. This kitchen composting method mixes scraps with an inoculant (called Bokashi) of beneficial microorganisms that speed up the compost process. The liquid (which must be removed every 2-3 days) that is created is loaded with microbes and nutrients and is great to dilute (100 to 1) with water and use to water your indoor and outdoor plants.
- ⇒ More information on Bokashi Bins can be found at: <http://www.bokashiway.com.au/FAQ's.html>



	Compost	Worm farm	Bokashi
Veggie scraps	✓	✓	✓
Citrus and onions	✓	Only a bit (too acidic)	✓
Meat scraps & bones	✗	✗	✓
Dairy	✗	✗	✓
Coffee grounds & tea bags	✓	Not too much	✓
Egg shells	✓	✓	✓
Garden waste	✓	✓	✓
Cat and dog poo	✗	✗	✗
Paper and cardboard (inc. pizza boxes!)	✓	✓	✓

# HOW DO I START A COMPOST?

Follow this step by step process to start composting today:

## ⇒ **STEP 1: Choose the Spot**

- ⇒ Think Shade - In the shade and out of sight of your house (if you don't want to look at it all the time!)
- ⇒ Prevent Vermin - Dig a shallow hole and line the hole with fine chicken wire (this prevents mice, rats and other vermin from digging into the compost)
- ⇒ Air, Air, Air! - make sure there is enough air getting into your compost so that decomposition occurs quicker and prevents your heap from getting smelly

## ⇒ **STEP 2: Layer It Up**

⇒ Just like lasagne, compost bins need to be layered:

### ⇒ **Brown Layers (dry materials)**

- ⇒ Paper/newspaper (shredded is best)
- ⇒ Straw
- ⇒ Hair (from your brush or comb)
- ⇒ Sawdust and wood shavings
- ⇒ Vacuum cleaner dust
- ⇒ Wood ash
- ⇒ Dry weeds, leaves and other plant material



### ⇒ **Green Layers**

- ⇒ Grass clippings, leaves, small prunings (including flowers), weeds, twigs and small branches
- ⇒ Vegetable and fruit scraps
- ⇒ Tea leaves and tea bags
- ⇒ Egg shells
- ⇒ Coffee grounds
- ⇒ Cow, horse or chicken manure

### ⇒ **Items that cannot go into your compost:**

- ⇒ Fats and Oils (including peanut butter, etc)
- ⇒ Meat and Dairy Products
- ⇒ Cat and Dog Droppings
- ⇒ Weeds that are diseased or have gone to seed
- ⇒ Man-Made Materials (including plastic, steel, aluminium and glass)



### ⇒ **STEP 3: Maintenance**

#### ⇒ Every Time (when you put materials in the compost)

- ⇒ Always add a thin layer of soil or brown ingredients over the top of the greens (this helps prevent flies and smell) - try to keep a balance of greens and browns at all times

#### ⇒ Every Week

- ⇒ Check that it is slightly moist and warm (warmth means the bacteria and fungi are busy making your compost)

#### ⇒ Once a Month

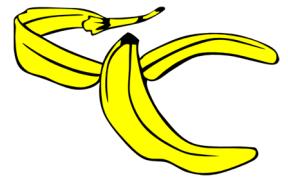
- ⇒ Give it a stir (the bacteria and fungi that make compost need air, water and food to survive)

### ⇒ **STEP 4: Using Your Compost**

- ⇒ After 12-16 weeks or so, if the compost material appears dark and crumbly and smells like rich organic dirt, it is ready to use! Congratulations!!

- ⇒ Dig it into your garden beds for a fertiliser or use it on top of gardens as a mulch

## **HOW DO I START A WORM FARM?**



Follow this step by step process to start your worm farm today:

### ⇒ **STEP 1: Choose the Spot**

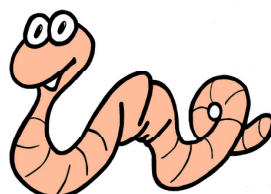
- ⇒ Shady is Best - worms need to be located in a cool shady spot - especially in the hot summer months!

### ⇒ **STEP 2: Prepare**

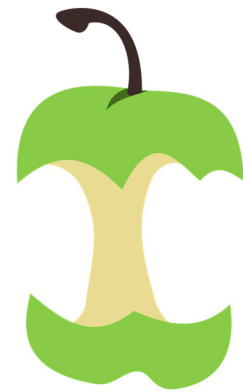
- ⇒ Purchase/Make your Worm Farm - worm farms generally consist of 3 trays (top tray - worm food, middle tray - worms, bottom tray - water)
- ⇒ Bed it Down - prepare a bedding for the worms (a combination of finished compost, leaves and shredded newspaper works well) - once the bedding is done, you can add your worms!

### ⇒ **STEP 3: Feeding your Worms**

- ⇒ Start slow - add your food items slowly at first until the worms adapt to their new home



- ⇒ What to feed your worms:
  - ⇒ Vegetable and fruit scraps
  - ⇒ Tea leaves and tea bags
  - ⇒ Crushed egg shells
  - ⇒ Coffee grounds
  - ⇒ Wet paper/newspaper (shredded is best)
  - ⇒ Vacuum cleaner dust
  - ⇒ Hair (from your brush or comb)
  - ⇒ Well aged cow, horse or chicken manure
- ⇒ What to feed your worms in smaller quantities:
  - ⇒ Onions and garlic
  - ⇒ Citrus (orange peels, etc)
  - ⇒ Potatoes
- ⇒ What **NOT** to feed your worms:
  - ⇒ Cat and dog droppings
  - ⇒ See also “Items that cannot go into your compost”



#### ⇒ **STEP 4: Maintenance**

- ⇒ Every Few Days - Check that it is slightly moist - a light spray of water should be added to the worm farm when needed

⇒ **It is very important to keep your worm farm moist or your worms will die!**

#### ⇒ **STEP 5: Using the Benefits of Your Worm Farm**

- ⇒ **Liquid Fertiliser** is produced that can be used on all plants when diluted with water (1 part worm liquid to 4 parts water)
- ⇒ **Castings** are the organic material that has been digested by worms. A small amount can be spread around your plants or dug into the soil to help increase organic matter

Congratulations if you're going well with your compost bin or worm farm so far!

Sometimes there can be problems with your new compost bin or worm farm, like smell or material not breaking down. This can be due to the addition of too much of one material and not enough of others.

See the next page for ideas on troubleshooting to get your compost bin or worm farm back into balance and making nutritious compost/juice for your garden!



# COMPOSTING TROUBLESHOOTING TIPS

SYMPTOM	CAUSE	SOLUTION
<b>PROBLEM: Compost pile does not heat up</b>		
Too Wet	Compost materials are soggy: there is not enough air	<b>Turn the pile</b> , adding dry absorbant material (BROWN-carbon)
Too Dry	Not enough moisture	<b>Moisten the pile</b> without saturating it: use a spray nozzle Should have the consistency of a damp wrung-out sponge
Pile is moist but isn't decomposing	Too much carbon (brown) material, not enough nitrogen (green) matter	<b>Turn pile</b> , adding nitrogen-rich materials such as manure, grass clippings, fresh leaves, vegetable or fruit wastes Consider adding an activator
<b>PROBLEM: Odour</b>		
Ammonia smell	Too much nitrogen (GREEN matter) in pile (possibly too many grass clippings) Or  Pile is too alkaline (possibly too much limestone, or ash and poplar/cottonwood tree leaves added to pile)	<i>If nitrogen problem:</i> <b>Turn pile and add more BROWN material</b> (carbon)  <i>If alkaline related:</i> <b>Turn pile and add acid material</b> like saw-dust, oak leaves, vegetable scraps
Putrid smell (like rotten eggs)	Pile is too wet: not enough oxygen (is putrefying, not decomposing!)	<b>Turn pile to aerate it and add dry carbon</b> (BROWN) materials to absorb excessive moisture
<b>PROBLEM: Pests (rodents, fruit flies, ants, gnats, scavengers, etc.)</b>		
Rodents & scavengers and perhaps maggots	These are attracted to meat & fatty food scraps like cheese and other diary products	<b>Remove meat/fatty foods from bin</b> <b>Turn pile</b> to increase temperature <b>Balance carbon to nitrogen ratio</b> <b>Use rodent-proof bin:</b> keep lid on, put 1/4-inch wire mesh on bottom or sides and insure air venting holes are less than 1/2-in diameter
Flies, fruit flies, gnats, etc.	These are attracted to uncovered wastes, especially fruits, melons, and vegetables	<b>Don't leave exposed!</b> Mix or cover with carbon (brown) materials, finished compost or some soil
Ants	Pile is to dry or has too much BROWN material	<b>Turn the pile</b> while moistening it with a spray nozzle. The ants will soon leave.

# WORM FARM TROUBLESHOOTING TIPS

SYMPTOM	CAUSE	SOLUTION
<b>PROBLEM: Pests (rodents, fruit flies, ants, gnats, scavengers, etc.)</b>		
Attracting Pests	Too much raw food added	Ensure worms have consumed most material before adding more.
<b>PROBLEM: Odour</b>		
Worm farm smells	Too much food, not enough air due to excess moisture, feeding with wrong foods or worms have died due to very hot conditions.	<b>Reduce amount of food added.</b> Mix in some shredded cardboard or paper into surface. <b>Remove any meat or fats.</b> Put farm in cool position and start the process again.
<b>PROBLEM: Worms trying to escape</b>		
Too dry, too wet or too hot	Not enough food, water or in direct sunlight	<b>Add more food</b> OR <b>Moisten bedding</b> OR <b>Mix in</b> some shredded cardboard or paper to absorb moisture OR
<b>PROBLEM: Worms dying</b>		
Too hot or too dry	Not enough water or in direct sunlight	<b>Add water</b> and <b>moist food material</b> and <b>More farm</b> to a cooler location.

For more information contact the Environmental Project Officer - Education on **1300 666 535**.

## WEBSITES FOR MORE INFORMATION:

<http://council.cleanaway.com.au/canadabay/recycling-matters/what-else-goes-where/composting-and-worm-farming.aspx>  
<http://www.cleanup.org.au/au/LivingGreener/composting.html>  
<http://www.livinggreener.gov.au/>  
<http://www.bokashi.com.au/>

## Or Watch Costa's Guide to Household Composting:

<http://www.youtube.com/watch?v=HngvowScx6g>