

Be part of the **Compost Revolution!**



**Your guide to home
composting, worm farming
and reducing food waste.**

www.reduceyourfootprint.com.au



This 3-Council project is assisted by the New South Wales
Government through its Environmental Trust





The Compost Revolution

The Compost Revolution is about changing our attitudes and behaviour towards food to help reduce our environmental impact and ecological footprint. It's about buying only the food we need, cutting down on waste, diverting food away from landfill and keeping it in the natural cycle.

One fifth of all food bought in Australia is thrown away, not scraps but good food that could have been eaten.

Australia's food system is estimated to be responsible for about 23% of Australia's total greenhouse gas emissions. This takes into account the growing of food, its transport, processing and wastage.

If we avoid wasting food we will save valuable resources such as water and save money, as approximately \$5 billion is wasted on uneaten food each year.

If so much food is going to waste, there's a simple way to minimize this and as a result reduce emissions and lessen our footprint...

We can cut down the food we waste by **avoiding** unnecessary purchases and finding ways to use unwanted food.

Some food scraps are unavoidable but we can turn them into compost, saving them from landfill where they contribute to greenhouse pollution and the valuable nutrients are lost.

Reducing food waste is simple. Here are a few tips taken from the *Love food hate waste* website. For more tips, please visit www.lovefoodhatewaste.com

- **Get familiar with your fridge and friendly with your freezer**

Know what's in your fridge or freezer, check use-by and best before dates and use food accordingly. Make good use of the freezer and fridge to keep food lasting longer.

- **Be store cupboard savvy**

Keep a record of what's in your cupboard and what you need. Keep it well stocked with long-life foods like tinned food. Make sure you have good jars and containers to store food correctly.

- **Carb control**

Measure your portions so you don't make too much. Often too much rice and pasta is cooked and then thrown out.

- **Lovely leftovers**

With a little bit of thought and creativity so many tasty meals can be made from leftovers.

- **It pays to plan**

Plan out your week by thinking how many meals you will need to cook and choose or buy food accordingly. Know what you have already and what you need to buy.

For more tips, please visit www.lovefoodhatewaste.com

Composting and worm farming guide

Composting is part of the natural cycle of life and nature does the work for you if you provide the right conditions. Compost does not breed disease and pests, it's food for your soil. Healthy soil will give you healthy plants and composting helps to keep organic matter out of landfill.

It is a wonderful feeling the first time you make good compost, you will not forget it!

The compost system

Microorganisms and bacteria break down organic matter. The warmth you can feel in a pile of recently cut green grass is the microbial activity at work. When you start to build your compost the microbes start doing their job, the compost will begin to heat up in three to four days and should rise to approximately 50 to 60 degrees celsius. After the compost cools down, worms come in and do their job.

Compost is a living thing, to keep it alive your compost needs the following conditions:

- **Air** – this allows the microbes/ bacteria to breathe and reproduce
- **Diversity** – different types of food and all sorts of once living things
- **Moisture** – your compost should be 50% to 60% moisture. Put some in your hand, make a fist and squeeze hard – tiny little droplets should appear.



Ingredients for compost

Anything that was once living can go into your compost. These fall into two types of ingredients – ‘rich’ and ‘poor’. As a rule of thumb ‘rich’ ingredients are anything that has colour while ‘poor’ is anything that is brown or has gone brown.

Rich ingredients

All fruit and vegetables (cooked or uncooked), including:

- onion and citrus (these can go into compost but not into a worm farm)
- bread, pasta and rice
- human hair, animal hair and feathers
- flowers
- fresh grass cuttings
- decomposing leaves from the gutters around the house
- vacuum cleaner dust, which is alive with little mites
- seaweed
- manures from chickens, horses, ducks and sheep.

Weeds can add valuable nutrients to your compost, but before you compost them, put them in a black plastic bag, tie it up tightly, make sure there are no holes and leave it out in the sun for 10 days. This will kill the seeds and stop weeds from spreading.

Poor ingredients

- paper – it does not matter if it's bleached
- kitchen roll paper
- egg cartons
- toilet rolls
- brown dry leaves
- twigs
- dried grass cuttings
- tea leaves and coffee grounds.

Liquids

Most liquids from around the kitchen can go into the compost, including water from cooked vegetables or pasta, tea, coffee, fruit juice, cordial, left over wine and beer.

Advanced composting

Meat, chicken and fish

When your compost is working well, try putting in meat, fish and chicken. The smaller the pieces the easier it will be to break down. Bones take a while to break down so you may have to throw these back into a couple of composts.

Note: If it starts to attract pests or begins to smell, remove the meat immediately and put it in your general waste bin. In this situation it is best to stick with vegetables.

Dog and cat faeces (only for seasoned composters)

Animal faeces contain pathogens harmful to humans. You **must** ensure the compost reaches 55 degrees celsius to kill the pathogens and you should not use this compost on or around plants you are growing for human consumption.

Choosing a location

Find a warm sunny spot that is close to the house, if possible, for your convenience. If you have enough space, position your compost with room to build another one next to it. While one is 'cooking', the other one can be building.

Building the compost

Build your compost heap using a layer upon layer system, but regularly mix it together to help it decompose faster.

If you have some, a handful or two of ready-made compost can be added to give a microbe boost to your new compost heap.

Adding organic matter to the compost

There are two ways you can add to your compost: most convenient is to add to it whenever you have food scraps to get rid of or garden matter, usually every few days.

This method takes longer to create usable compost. But it suits most people, as the food scraps container in the kitchen needs to be regularly emptied.

Alternatively, you can fill your compost to the top using one part 'rich' ingredients to two parts 'poor' ingredients and then stop adding food. If the ingredients are right and you turn it, you will get good compost in about eight weeks.

Step 1

Use prune cuttings, small sticks, twigs, dry leaves, brown grass clippings to make a layer two hand widths deep. This will allow the air to flow. Finish this first layer with some dry leaves and water.

Step 2

Make a layer from 'rich' ingredients approximately one width of your hand deep.

Step 3

Add another layer of 'poor' ingredients approximately one hand deep, with some water.

Step 4

Continue adding rich and poor layers, finishing with a poor layer.

Step 5

Always cover the last layer with a thick newspaper or a hessian sack. Finally, put the lid on the bin – our native animals are adapting very well to suburban life and just might want a midnight snack from your compost bin if the lid is not on firmly.

Turning your compost

Turning it once every week to ten days is enough. Any more will stop the compost producing valuable soil antibiotics (the white webby stuff that appears on the top of the heap).

Using your compost

Take the compost from the bottom of the compost bin – it's ready when it looks like soil and smells sweet and earthy. After applying compost to your garden don't forget to add mulch over the top. This will help keep the life and water in the soil. Use compost for any of the following:

Pot plants – use on indoor and outdoor pot plants.

Your garden – sprinkle it around your vegetables and flowers. Use sparingly on natives as they don't like soil too rich.

Seedlings – some seedlings require specific soil mixes so read the packet before sowing your seed.

Compost tea – put a few handfuls of compost into a bucket, add water and stir. Leave for a few hours, stirring occasionally, before pouring onto your plants.





Guests in the compost

When creating a compost system you are creating a living creature, which includes many wonderful micro and macro organisms, but also some you may not want around.

Ants – if ants are enjoying your compost this may mean it's too dry. Without disturbing their nest, add some water and this will give them the hint to leave.

Cockroaches – the pile is not hot enough so the food is not breaking down. Add some lime, dolomite or wood ash and turn the pile to heat it up.

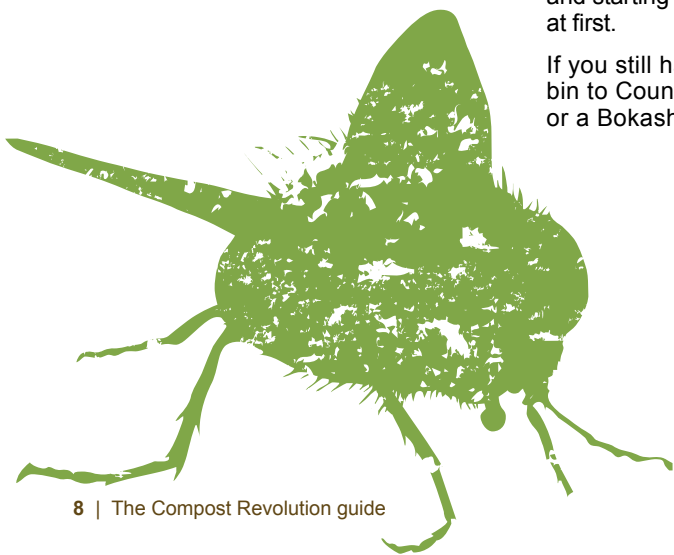
Slugs, slaters, wood lice, pill bugs and snails – if you have these, congratulations! This means the moisture content in your compost is just right. These little creatures are all part of the process for decomposing vegetable matter.

Little annoying flies – these are vinegar flies, sometimes known as fruit flies, and are completely natural to have in your compost. You can cover your compost with newspaper and a hessian sack and put the lid on to help alleviate the problem.

Rats and mice – Keep your compost secure and make it difficult for them with chicken wire. Place your bin where you want it and, with a hand trowel, go around the inside of the bin digging it into the soil approximately 10 centimetres deep. Remove the bin and insert chicken wire into the dig mark you have made. Gently place the bin on top of this, and push the chicken wire against the inside wall of the bin.

If you still get rodents, check for any holes and block them. You can also try throwing away the contents currently in your bin (to your general waste bin) and starting again with no food waste at first.

If you still have no luck, return the bin to Council and try worm farming or a Bokashi Bucket.



Troubleshooting

It smells? All compost systems go through a stage of being a little smelly because the organic matter is decomposing. If it becomes too smelly ask a couple of questions:

- Is it too wet?
- Have you added too much 'rich' and not enough 'poor' material? If so, turn the compost while adding more 'poor' material, and sprinkle in a handful of lime.
- Does it have adequate drainage? If not you may need to rebuild the compost. Choose another spot for your compost. Place twigs and dry leaves in the bottom of the bin and then transfer the smelly heap across, adding some 'poor' materials and a handful of lime or wood ash as you go to help aerate the heap.

Facts



On every square centimetre (a thumbnail size) of our bodies, we have between one and two million microbes – nearly all beneficial to our health. We would be dead without them!

In each teaspoon of good compost, there are between four to six billion microbes – the soil is a living creature.



This guide is courtesy of
Teresa Rutherford at Compost Happens
composthappens@ozemail.com.au



Worm farming

Worm farms are simple and easy to maintain systems that help you avoid sending food to landfill. They create a rich natural fertilizer which you can use on your plants or give to someone else to use if you have no garden. They work very well indoors or on your balcony.

Worm farm set-up

If you look after your worm farm you will very soon have thousands of worms turning your food scraps into rich castings and worm juice for your garden or pot plants.

Your worms can be kept inside or outside – close to your kitchen is always the most convenient (if looked after properly, they won't smell). In summer you may need to keep them in the shade and gently pour a bucket of water over them if it's really hot. Worms breathe through their skin so good drainage is a must.

To make it easy to understand the worm farm layers we will describe it as a 'worm house'. Each house has:

- **a bathroom**, to collect the worm juice
- **a bedroom**, where the worms spend a lot of their time, and
- **a kitchen**, where we put the food and the worms come up to eat.

Worm farming is not an exact science. You can do it many different ways but here is an easy step-by-step guide to get you started:

- Take the solid tray with no holes in it. This is the bottom layer which we call the **bathroom**, where the worm juice is stored. Your worms don't live here but they sometimes fall down into this layer and will drown. Put an ice cream container that sits firmly under the next layer (the bedroom) so the worms can climb back up. Keep a small bucket under the tap for collecting any drips of worm juice.
- The middle layer is the **bedroom** where the worms spend a lot of time. This layer should always be moist. Place a layer of wet cardboard or six newspaper sheets down then put a layer of bedding on top of this (use the coconut husk or aged compost). This layer must touch the bottom of the next layer.
- The top layer is the **kitchen** where you feed the worms. Make sure it's touching the bedroom.
- Attach the legs and screw in the tap and it's ready for the worms.
- Place the worms in the kitchen layer and cover them with damp newspaper and a hessian sack or old clothes made from natural fibres (do not use synthetic materials as the worms can't eat this).
- The worms will be happy for a week or so, then you can start putting small amounts of food in.

Worms menu

Worms get through food much faster if you cut it up into small pieces. Start by giving them small amounts, then build it up.

Worms like to eat...

- fruit and vegetable scraps and leftovers
- tea bags and coffee grounds
- crushed egg shells
- small amounts of cardboard, such as egg cartons
- hair.

Worms don't like to eat...

- citrus fruit
- onion, garlic or chilli (a bit in leftover food is okay)
- dairy products
- meat (and bones), fish or tofu
- oil or fat.

Troubleshooting

The worms aren't breeding

Worms will only start breeding when the conditions are right. Your worm farm should be 18 to 25 degrees celsius and moist.

The worms tend to self manage their population, so once they start eating well you can keep adding more food gradually and they will rise to the challenge.

If you give some worms away, they will increase breeding to replace the lost worms.

Guests in your worm farm

Worm farms aren't just home to worms. Spring tails, earwigs, mites and microorganisms (especially bacteria) are also important in the system.

Ants and cockroaches are not bad for your worms but you probably don't want them around. Ants generally mean it's too dry. Try putting the legs of the worm farm in jars of water, as this makes it difficult for pests to get in.

Keep a brick or something heavy on the lid so other critters can't get in.

Using the worm liquid

The worm juice collected in the bathroom is a fantastic fertilizer. **Use it diluted, one part to seven parts water.** It also works well to keep insects away if you spray it on your garden.



Using the worm castings

When the castings have built up to five to ten centimetres thick in the kitchen layer, take them out and use them in the garden. To collect it without taking the worms, move the castings to one side and place fresh bedding down and they'll move, or try placing that tray in the sun and scrape off the castings gradually as the worms move down to escape the light. Mix the castings in with soil for a rich fertilizer.

Collecting scraps for your worms or compost

- Keep a kitchen scrap bin by the kitchen sink to collect your food scraps.
- If this bin starts to smell, rinse it and sprinkle bicarbonate soda inside. Put the lid on and within seconds the smell will go. Bi-carb is a natural deodoriser that won't hurt your worms.

Tips & facts

Your worms will be fine while you're on holidays for a few weeks. Just load them up with a good chunk of newspaper, make sure it's damp and in the shade.

If you're leaving your worm farm outdoors, keep the tap open so when it rains it doesn't fill up and drown your worms. Keep a container underneath to catch the liquid.

Worm farm worms are mostly red worms or tiger worms.

However, you can take worms from a compost bin and use them, or just buy them from a nursery.

Worms eat their body weight in food each day. They actually don't eat the food scraps, they eat the bacteria that are feeding on the surface of the food scraps.





This 3-Council project is assisted by the New South Wales Government through its Environmental Trust



Randwick City Council
a sense of community





FOR MORE INFORMATION:

Call Randwick Council on **9399 0999** or

Waverley Council on **9369 8000**

www.reduceyourfootprint.com.au

Printed on 100% recycled paper