

Don't Rubbish Green Waste

Mulch Compost Worm Farms

OUR ENVIRONMENT
it's a living thing
A NSW GOVERNMENT INITIATIVE

Help the environment
and save yourself some
money by managing
your food and garden
waste at home. If
you mulch, compost
or set up a worm
farm, you will have
some fun and feel
like you have
contributed to
protecting our
environment.

Introduction

Every day we do things and make decisions that affect our environment – things like choosing which products to buy, deciding whether to take the car or walk, and disposing of our household waste.

This booklet helps you make decisions about what to do with your food scraps and garden waste – green waste – so that you can put these valuable resources to good use at home. It provides simple advice about how to:

- mulch
- compost
- worm farm

These activities can be fun and can save you money – and they help the environment too.

To find out more, keep reading.

Using Your Food & Garden Waste At Home

We all put things in our garbage bins that could be put to good use. The things we put in our garbage bins go into landfill.

When food and garden waste goes into landfill it is mixed with plastics, metals, etc. and then compacted and covered over. In these anaerobic (without oxygen) conditions green waste decomposes slowly and produces methane gas. This means that organic wastes take up valuable landfill space as well as producing greenhouse gases, which harm the environment.

This is a waste of our valuable resources and doesn't really make much sense.

Organic materials can easily be returned to the soil as useful, enriching products. It doesn't matter if you live in a home on a block of land, or in a home in a block of units, there are things you can do to use food and garden waste more wisely.

Homes with garden space

If you live in a home with a garden, you can do a number of things on-site:

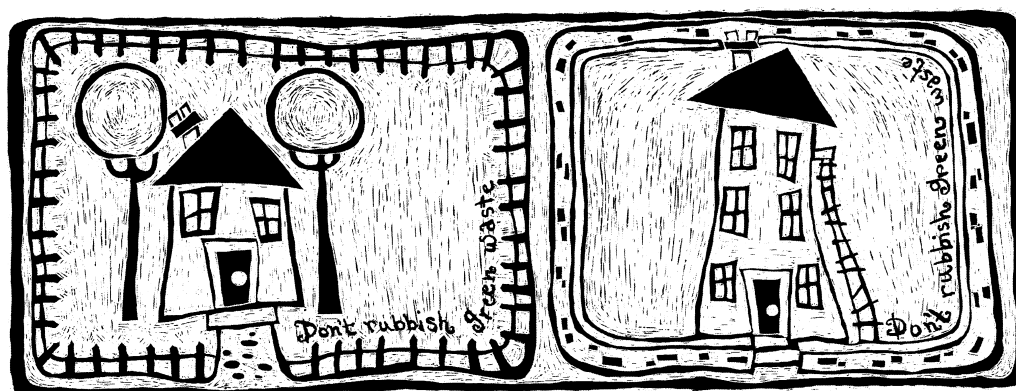
- Mulch your garden and lawn clippings.

- Set up a compost bin for food and garden waste.
- Set up a worm farm.
- All of the above!

Flats & home units

If you live in a flat or home unit your choices are slightly more limited, but there are still things you can do.

- Talk to your body corporate about mulching the garden clippings produced on-site. Set up a mulching system with the gardener's support. Use the mulch on-site or elsewhere in the community (e.g. schools or community gardens).
- Talk to your body corporate about setting up a shared compost bin. Volunteer to manage the system or to set up a roster.
- Set up a worm farm in the garden or in the corner of your balcony. This can take most of your fruit and vegetable waste. The worm castings make great soil improvers for pot plants.
- All of the above!



Making & Using Mulch

What is mulch?

Mulch is leaves, grass clippings or shredded garden waste spread over the soil. Woody twigs and other garden clippings can be shredded by running over the material with a lawn mower, or by using a petrol- or electric-powered mulcher.

Depending on the coarseness of the material that is mulched, the finished product will vary in consistency. Coarse mulch is most useful as a dense covering on the garden. Fine mulch works well in the compost bin.

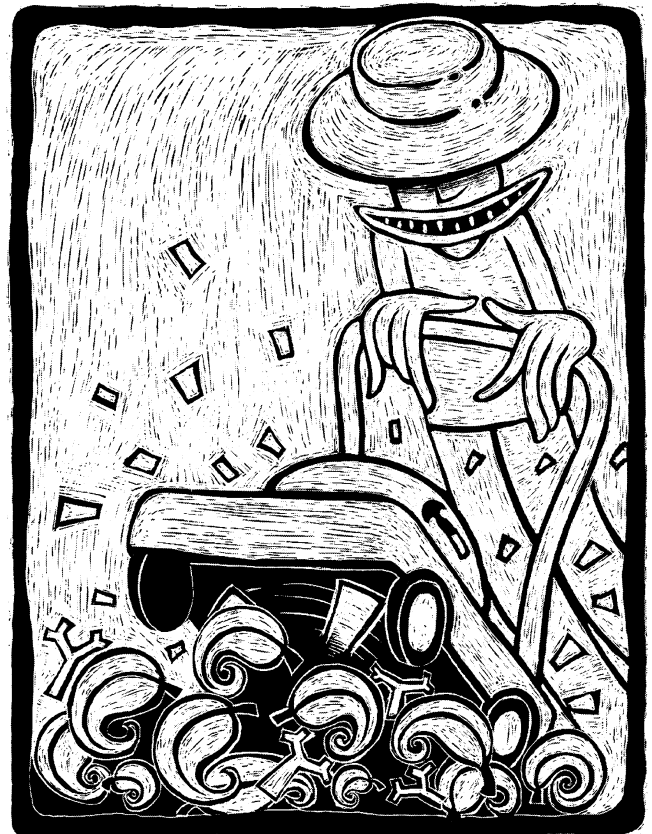
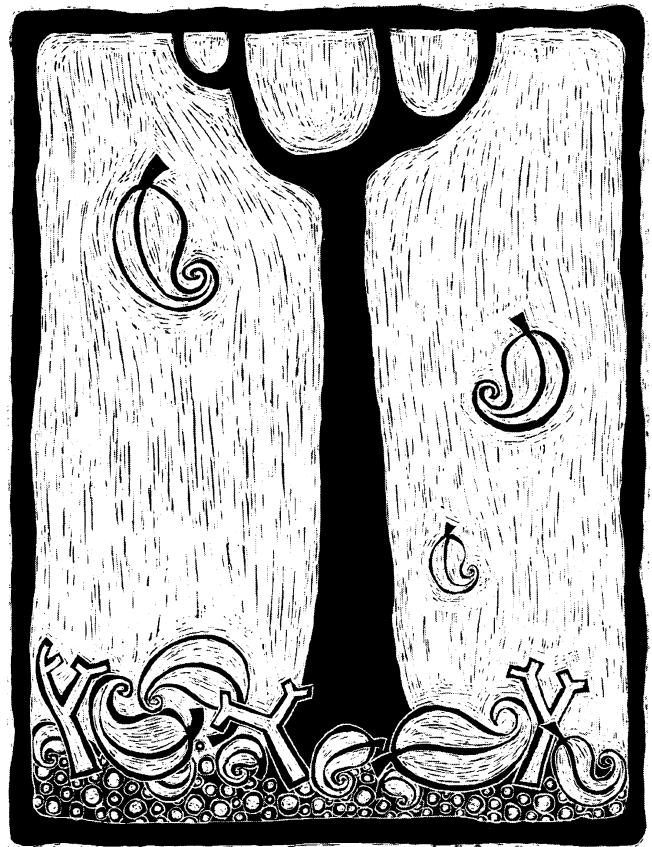
Why mulch?

- It reduces weed growth – this saves you time.
- It retains moisture so that less water is required to keep gardens healthy – this saves you money.
- It improves the appearance of your garden.
- It gradually returns nutrients to the soil.
- It encourages life back into your soil.

How to mulch

- Leave your grass clippings and fallen leaves on the lawn.
- Collect your grass clippings and fallen leaves and use them on the garden.
- Use small clippings from plants as garden mulch.
- Mow over or use a mulcher to turn woody twig clippings into mulch.

Mulching saves you time and money, and helps the environment too. Try it!



Making & Using Compost

What is compost?

Compost is partially decomposed organic matter. It is produced in the natural environment from decaying leaves and leaf litter on the ground. Over time, further decomposition of compost and its re-combination with clay minerals produces humus.

Humus is an essential component of all soil. It is the organic matter in soil that makes it resistant to erosion and maintains its fertility. Adequate levels of organic matter – compost or humus – are essential if we are to conserve our soil, and conserving our soil is critical to the preservation of our environment.

Composting is a biological decay process that converts organic matter into a crumbly, sweet smelling earth-like substance. Composting is not new. It's been used in crop production for over 4000 years, and only went out of fashion when artificial fertilisers became widely available just over a century ago. Compost is a good

alternative to artificial fertilisers.

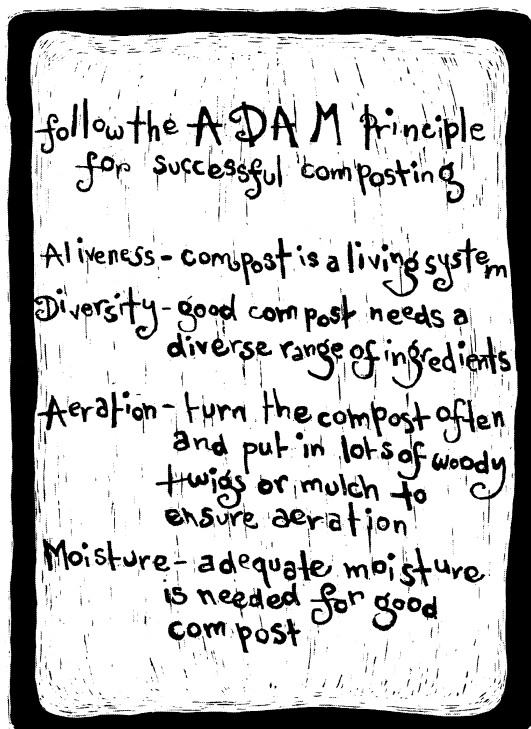
Compost adds life to soil. It can improve plant growth, increase the capacity of soil to hold water and nutrients and improve the natural capacity of plants to resist disease. Soil damaged by building and earthmoving can be improved with compost. Neglected soil that has been years under concrete can be revitalised with compost. In the home garden you can set up your own composting system.

Why Compost?

- It prevents surface crusting of silty soil.
- It improves drainage in heavy clay soil.
- It conserves water in light sandy soil.
- It increases aeration in compacted soil.
- It helps form soil aggregates in poorly structured soil.
- It improves absorption in the soil and reduces run-off.
- It improves the level of nutrients in the soil.
- It keeps the soil cooler in summer, warmer in winter.

What to do with compost

- Use for potting plants and shrubs instead of buying potting mix.
- Use it as a surface mulch around shrubs and trees, keeping it clear of tree trunks and plant stems.
- Top-dress your lawn.



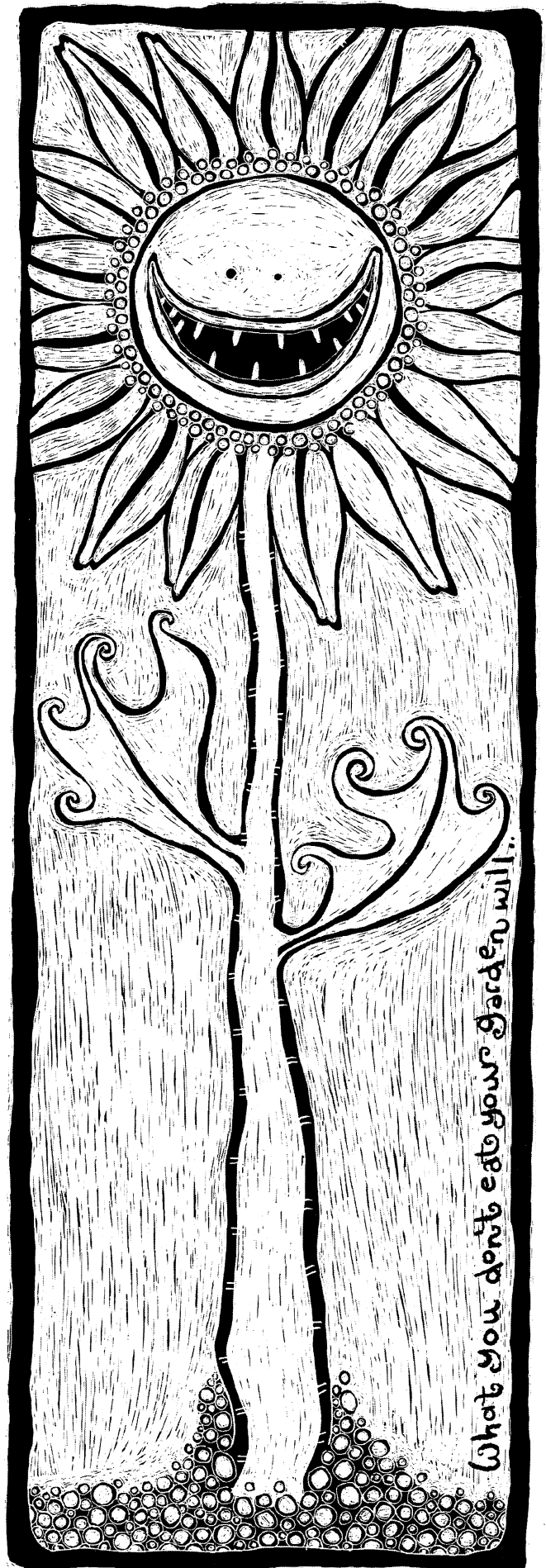
- Replace topsoil that has washed away.

How can I make compost?

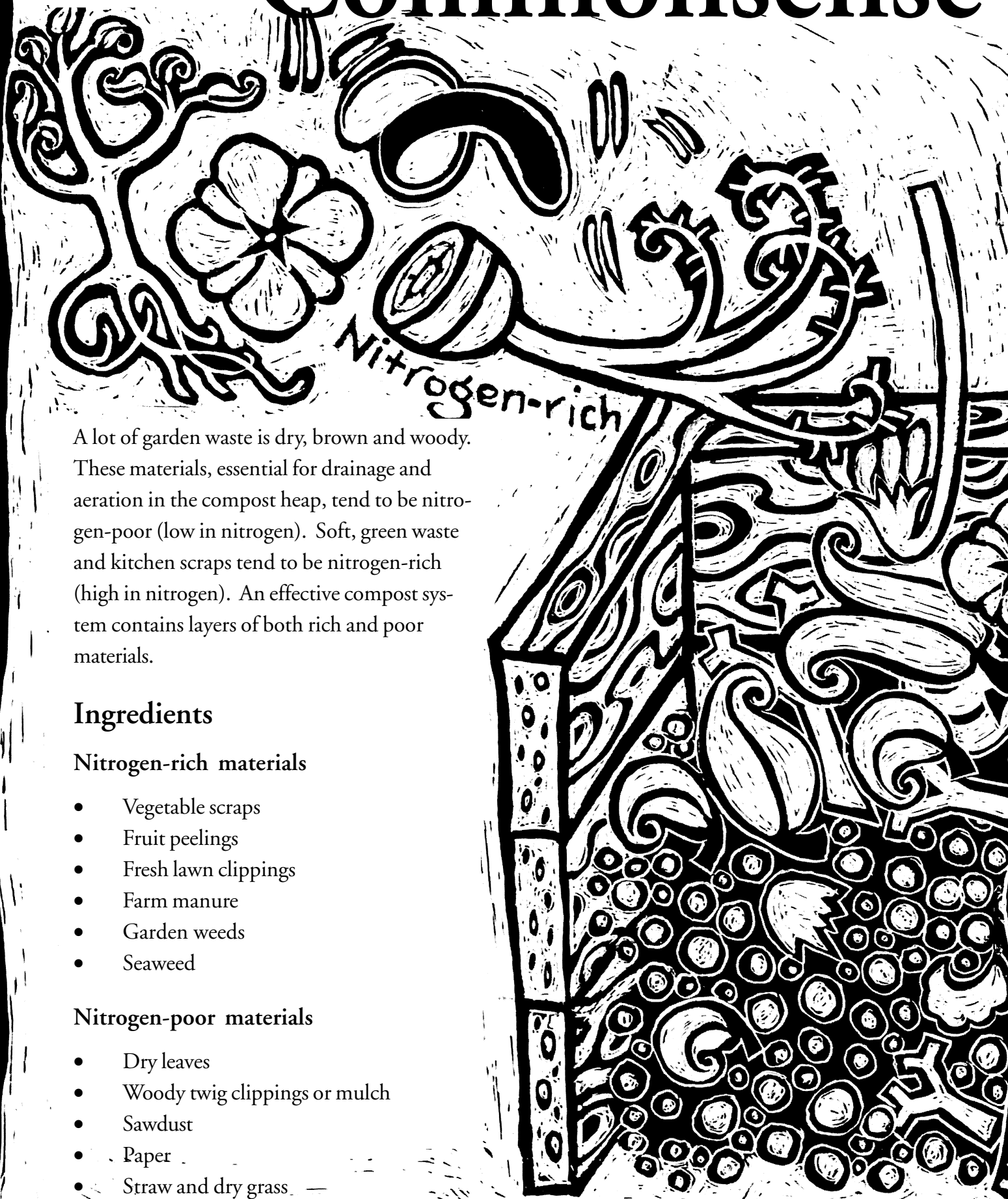
The micro-organisms (bacteria, fungi, etc.) that produce compost need:

- Oxygen from the air
- Nitrogen and trace elements from food and garden waste
- Water
- A little time to do the job

Efficient composting is performed by aerobic micro-organisms – those that need oxygen for their survival. These micro-organisms are working best when the compost heap is hot. The temperature in the middle of a well-built compost heap should rise to about 60°C (see the ADAM Principle). Poorly built compost heaps do not generate a lot of heat and can smell offensive. Cool, slow, smelly composting is the result of activity by anaerobic organisms – those that thrive in saturated, airless conditions. The waste material in the compost heap will decompose and the heap will shrink to about one-third of its original size as proteins are formed and carbon dioxide and water are lost to the atmosphere. At night and on cool days when the heap cools down, earthworms invade the heap to feed. The compost is ready when there are no recognisable bits of the original material remaining. It will have a fine texture and a crumbly structure, be almost black in colour and will have a good earthy smell.



Commonsense



Nitrogen-rich

A lot of garden waste is dry, brown and woody. These materials, essential for drainage and aeration in the compost heap, tend to be nitrogen-poor (low in nitrogen). Soft, green waste and kitchen scraps tend to be nitrogen-rich (high in nitrogen). An effective compost system contains layers of both rich and poor materials.

Ingredients

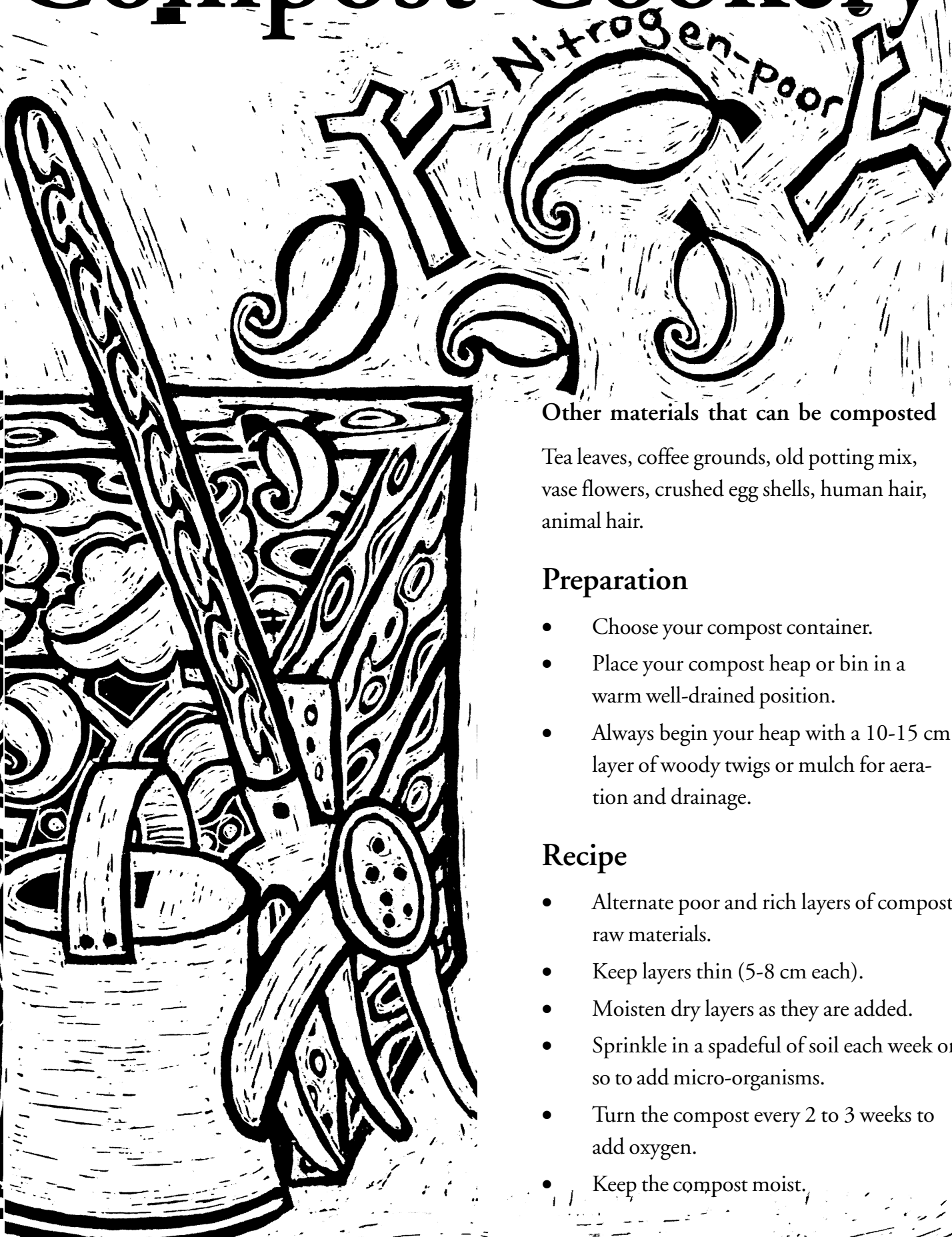
Nitrogen-rich materials

- Vegetable scraps
- Fruit peelings
- Fresh lawn clippings
- Farm manure
- Garden weeds
- Seaweed

Nitrogen-poor materials

- Dry leaves
- Woody twig clippings or mulch
- Sawdust
- Paper
- Straw and dry grass
- Wood ash

Compost Cookery



Other materials that can be composted

Tea leaves, coffee grounds, old potting mix, vase flowers, crushed egg shells, human hair, animal hair.

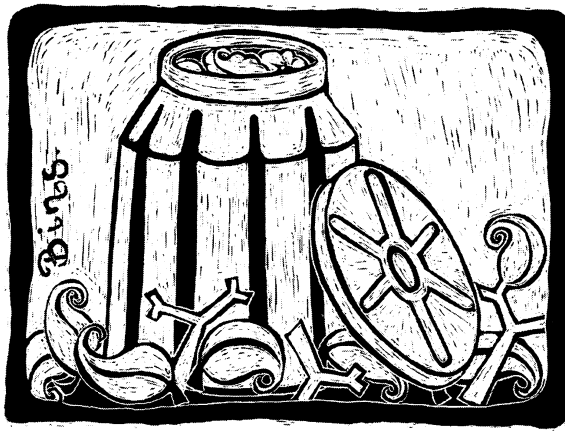
Preparation

- Choose your compost container.
- Place your compost heap or bin in a warm well-drained position.
- Always begin your heap with a 10-15 cm layer of woody twigs or mulch for aeration and drainage.

Recipe

- Alternate poor and rich layers of compost raw materials.
- Keep layers thin (5-8 cm each).
- Moisten dry layers as they are added.
- Sprinkle in a spadeful of soil each week or so to add micro-organisms.
- Turn the compost every 2 to 3 weeks to add oxygen.
- Keep the compost moist.

Choose Your Compost Container



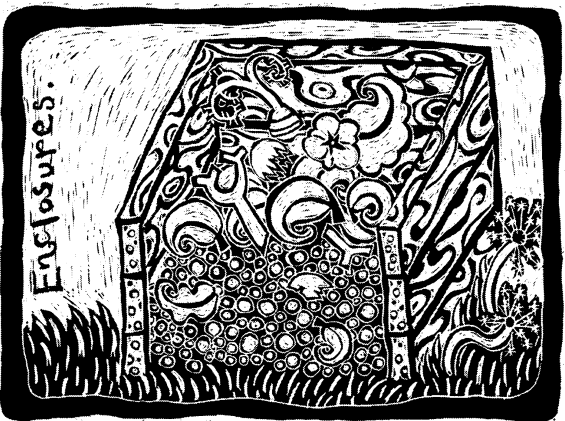
Compost bins

are made from ultra-violet stabilised polyethylene. They are black or dark green for maximum heat absorption. A bottomless drum with air vents could serve as a substitute. Because it is difficult to turn the composting materials while they are in the bin, it is a good idea to lift the bin off the compost, move the bin, and fork the contents back in. This will increase the rate of decomposition. Bins are ideal for use in gardens and may be purchased from your nursery, hardware shop or local council.



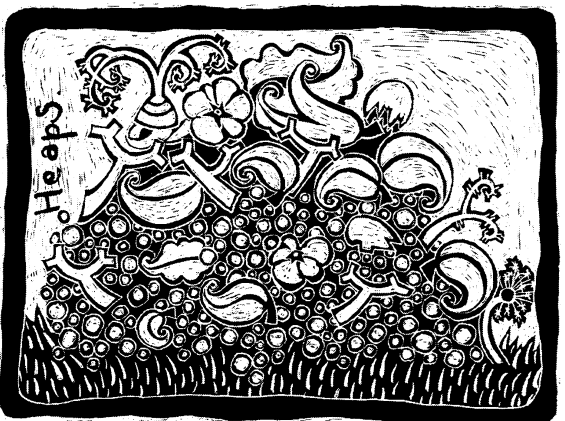
Compost barrels

are made of metal or plastic and rotate within a standing frame. The drum has a hinged opening, air vents at the end and a turning handle making it more convenient to use. When full, barrels can be heavy and difficult to turn, and they can be more expensive than other composting containers.



Enclosures

are simple structures made of timber, chicken wire, bricks. Railway sleepers, bales of hay – anything. A three-sided construction is all that is needed to retain the compost while providing easy access for turning. Because it is more likely to get wet, frequent turning and a waterproof cover during prolonged rainy spells are useful. Build the enclosure on soil rather than on paved or concreted surfaces. Where space is available, enclosures provide the best conditions for home composting because material decomposes rapidly.



Compost heaps

are very low-tech. They require nothing more than 1 square metre of space on soil, preferably in a sunny spot.

Having a container that costs more is not necessarily an indicator that it will work better. All systems will work if you understand the process of composting and follow the simple steps outlined in this booklet.

Solving Composting Problems

Problem	Cause	Solution
Foul Odours	Heap is too wet	Add dry leaves
	Not enough air	<ul style="list-style-type: none"> • Turn the heap to improve drainage and aeration. • Add 250g of garden lime. • Cover the heap during rain.
Slow Decay	Not enough nutrients	Add a small amount of nitrogen-based material (e.g. blood & bone fertiliser).
	Not enough air	Turn the heap more often.
	Not enough water	Moisten the heap.
	Too cold in winter	Cover the heap with insulation material (such as hessian or carpet).
Maggots	Meat, seafood, fats	<ul style="list-style-type: none"> • Remove the cause.
	or faeces in the heap	<ul style="list-style-type: none"> • Cover the maggots with lime. • Add soil to the top of the heap • Turn the heap the next day.
Mice & Rats	Excess bread in the heap	<ul style="list-style-type: none"> • Put fine wire mesh underneath the bin/heap. • Turn the heap regularly.
	Heap is too dry	Moisten the heap.



Setting Up & Using A Worm Farm

Worms can do wonders for your garden: they aerate the soil and their castings are an excellent fertiliser. To get a constant supply of this worm fertiliser, as well as extra worms for the garden, start a worm farm.

Red worms or tiger worms (available from most plant nurseries) are best for worm farming. Common Australian garden worms are not as voracious, and they tend to leave the farm for the lower density living conditions of the garden.

Worm farms are simple structures that you can make yourself or buy from the nursery or your local council. They consist of three or four

stackable crates or bins made of plastic, wood, or any other lightweight, waterproof material.

The base bin has a solid floor to catch liquid run-off that percolates down from the upper bins. The upper bins have holes in the floor.

The worms live in the bins and simply wriggle their way up from the lower bins to where they can smell fresh food – fruit, vegetables and other scraps – place in the top ‘food’ bin.

These scraps are consumed and turned into the worm castings that makes such good fertiliser.

To create congenial living conditions for the worms, you need newspaper and soil to start the farm, and a continuing supply of suitable food scraps (preferably not meat). Follow the instructions on the worm farm or obtain additional information from the NSW EPA (131 555) or your council about how to set up the worm farm.

Hints for happy worms

Light

Worms usually live underground so they thrive in an environment that is cool, dark and moist; cover the top ‘food’ bin with a hessian bag.

Moisture

Worms like moisture. A light spray of fresh water when the farm is started, and the moisture that comes from the food scraps in the farm, should be adequate.



Food

Once the worms are settled in and growing, give them a good supply of suitable food, but do not overfeed.

Worms like most vegetable and fruit scraps, but as worms do not have teeth, scraps should be cut into small pieces. Waste from a vegetable juicer is ideal.

Worms also like:

- Soaked and ripped pizza boxes/egg cartons
- Shredded and soaked cardboard
- Paper
- Most fruit and vegetables (variety is important)
- Leaves
- Soil
- Hair
- Egg shells (crushed)

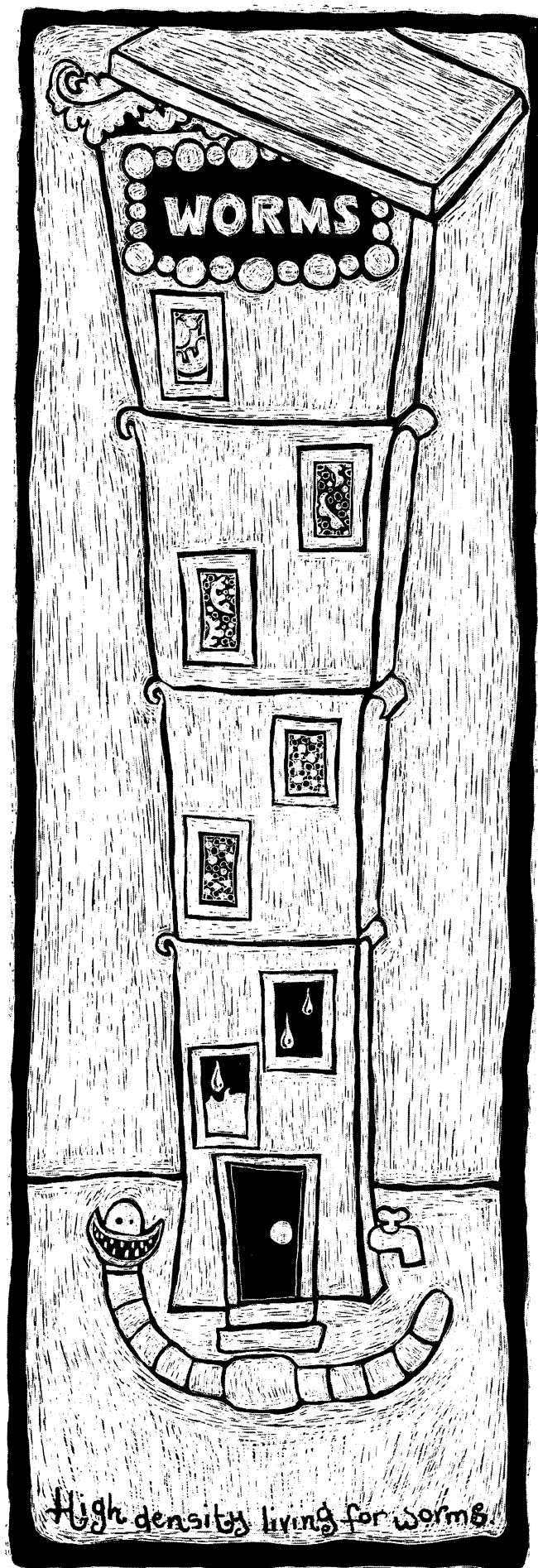
Worms don't like onion, including garlic and shallots) or citrus fruit, and will climb out of the bins to get away from them. Worms will eat meat but it can lead to smells and maggots in the worm farm and is best avoided.

What to do with the worm castings

Castings can go straight onto the garden or pot plants. If they are covered with mulch their moisture and nutrient content will be conserved. An excellent liquid fertiliser can be made from the castings by adding water until the mixture looks like weak tea. African violets and other plants that like being fed from the roots just love this mixture.

Moisture drained from the bottom bin of the worm farm is also a good liquid fertiliser, but it should be diluted.

Excess worms can be put in the compost heap where they will help speed up composting.



Learn more about
mulching, composting
and worm farming
by taking part in
an Earth Works course.
To find out more
contact your
local council.

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