

# Green Gardener Nutrient Recycling Booklet



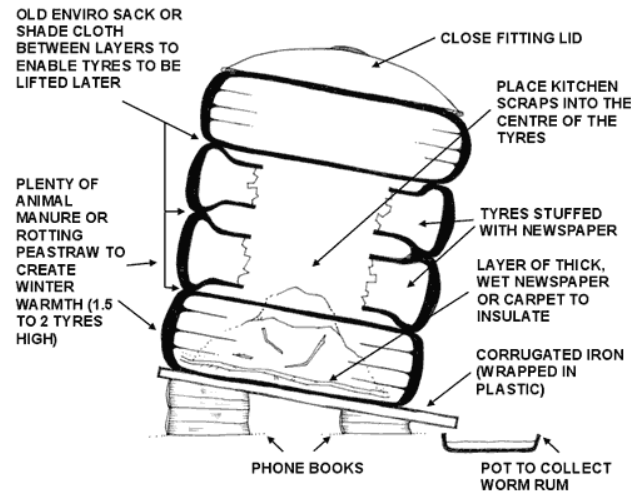
- Worm Farming
- Art of Compost
- Liquid Feed

## Worm farms

Worm Farms are the good way to recycle your food scraps. A worm eats its own weight in food scraps every day, so a good population of worms can get through quite a lot of food waste.

Worm Farms also save you the job of making liquid feed – a natural byproduct of worm farm is the very nutritious worm juice (vermiliquid).

### How to make your own wormfarm:



You can easily make your own worm farm using a stack of recycled tyres.

1. Soak newspapers in water and stuff three tyres full, one sheet at a time
2. Place some corrugated iron on top of bricks or telephone books, wrap it in silage/heavy plastic so that the liquid doesn't

touch the metal.

3. Put the first stuffed tyre on top of the corrugated iron. Put an old sack or carpet inside to make a sort of nest for the new worms
4. Fill this bottom tyre with bedding material (ie horse manure, rotting peastraw, compost) and then tip the worms in. Cover immediately with a thick layer of wet newspaper. Now put the other two stuffed tyres on top.
5. Feed regularly with kitchen scraps by lifting up the newspaper. Make sure the farm is kept moist to the touch. Always replace the newspaper to keep it dark.

### How to make it:

- $\frac{3}{4}$  fill your drum with water.
- Fill a sack with your chosen mix of ingredients
- Lay a pole across the top of your barrel.
- Tie the sack to this pole on rope long enough that the sack is well submerged in the water
- Leave a big stick in your barrel so you can give it a brisk stir each day
- Cover with a lid or net curtain to keep flies out
- Brew for 3 to 4 weeks



### How to use it:

Dilute your liquid manure to the colour of weak tea and apply. Give your garden a good drink first so the plants will uptake the nutrients more readily. Ideally do this in the morning. The best time to liquid feed is 3 days before or after the full moon – mark it in your diary so you don't miss a month! If plants are unwell you can feed once a week or fortnight. Watch your plants to see if they like your brew – if they don't they will yellow off. Seaweed and plant based liquid manures can be either poured on the soil or sprayed on the foliage. Animal manure based liquid feeds are for soil application only.

### And when the barrel is used up.....

Empty the leftover sludge into your compost – clean out your barrel and start again!

## Liquid feed

Liquid feed is a very important tonic in the organic food garden. It helps keep the immunity of your plants high while they are working hard over the growing season. It's a handy tonic for any plants suffering pest, disease or stress. It's a great compost activator.

### How to Setup:

I use two forty litre barrels – one for brewing and one for using.

Choose a size that suits your garden.

Use barrels that are clean – ie not used for fuel or chemicals beforehand, and ideally with a lid. Tin or galvanised drums can also contaminate your brew.

If you have a big area to liquid feed each month its worth it to set your barrels up on a pedestal just the right height to put a watering can or bucket beneath. Insert a tap into the bottom of your barrels about 10cm above the bottom to avoid blockage.

### Choose a Site:

Near the hose

Far enough away so you don't smell it! (Or grow some honeysuckle and daphne nearby.)

In the semi-shade so its not freezing cold or boiling hot (under a deciduous tree is good)

### What to use:

Choosing what to use to create your liquid brew depends on what resources you have available. If you are aiming for sustainable practises in your garden then recycle what you have, or grow something specifically for your feed.

Choose from: Comfrey or stinging nettles; Seaweed or fish waste; Weeds or grass clippings; Animal manure

6. Keep the worms and bedding covered with damp newspaper, plus an old sack or carpet (also damp). Place your lid on top of the tyre stack to prevent fly problems.
7. As the tyre stack fills up you can slide out the bottom tyre and empty it of worm castings/ vermicast to spread around your garden as needed or use as part of seed raising or potting mix. The paper in the tyre will probably be full of worms and can be replaced as is.
8. The empty tyre is now ready for reuse - stuff with fresh, moist newspapers and place on TOP of the tyre stack.
9. The nutrients from your kitchen scraps are now available for you to use in your organic garden and your worm population will have increased remarkably.

### Keeping your worms happy....

Add food scraps regularly – little and often is the key. As your worm population builds up your wormfarm will be able to take more food at a time. (The biggest error people make with their wormfarms is overfeeding.) Every now and then sprinkle dolomite lime in your wormfarm - worms enjoy a slightly alkaline environment. Put your onion skins and citrus scraps in your compost bin – worms don't like them!

### Using your worm juice

Wormjuice (or vermiliquid) is a very nutritious liquid feed. Use it as it comes by diluting it to the colour of weak tea and feeding to any fruiting or flowering or ailing plant as a wonderful tonic.

### Troubleshooting

- Rotting food – you are feeding too much – the worms can't keep up with you!
- Tiny white worms – these are scuttlefly larvae and indicate that your wormfarm is too acidic – add a sprinkle of lime and moisten

## The art of compost

Compost is a mix of animal and vegetable waste which ferments and eventually breaks down to a dark, crumbly brew. Finished compost should smell good and earthy. The following recipe will allow you to make good compost without having to turn it.

### Compost Needs:

**AIR** – air holes in the bin; don't compact matter when adding it; loose layers in your compost eg: straw

**WARMTH** – sunshine and active bacteria

**MOISTURE** – moisten each layer as you go till its like a wrung out dishcloth

**ORGANIC MATTER** – needs the right mix of Carbon (C) and Nitrogen (N) and Activator

### Create your compost bin:

Recycle something! Get building! (use untreated wood)

Keys to success are:

- Soil contact – for access to important soil bacteria
- Good airflow
- A lid or cover to stop rain leaching
- A semi shaded spot (eg: under a deciduous tree) for winter sun and summer shade
- Near a hose for moistening
- An area for carbon collection

<b>Carbon Brown, dry material</b>	<b>Nitrogen Wet, fresh material</b>
Sawdust Leaf Mould Hay, straw Shredded paper/ card Pine needles Ponga fronds	Manure Food scraps Green waste Liquid feed Chook poo

Activators: To stimulate breakdown, add Comfrey, Tansy, Yarrow, Seaweed

### How to make your compost:

Each time you have a layer of nitrogen to add do the following:

**Start with a thick carbon layer; then a thin nitrogen layer; a sprinkle of activator; moisten; cover**

As you layer up your compost make sure you keep the layers flat and spread out so that the heat is evenly distributed. When you come to the top of your bin - finish with a thick layer of carbon, moisten, cover it all under an old ack or carpet and leave it to brew!

### How to recycle pernicious weeds back into your garden:

Either make liquid feed with them; add them back into your compost once drowned OR sludge by filling black plastic bags with weeds and leave till there is an unrecognisable sludge. Add this back into compost

### Trouble shooting

<b>PROBLEM</b>	<b>SOLUTION</b>
Smells off	Needs oxygen or is too wet – mix it up add lime and activator. If too wet add carbon too
Smells of ammonia	Too much manure/ nitrogen. Aerate, add carbon and activator
Smells musty	Dying bacteria – aerate, add lime and scrunched up newspaper and activator
Mice	Not enough heat. Add activator, lime and correct Carbon : Nitrogen Ratio
Flies	Don't add meat scraps or cooked food. Cover food with a thick layer of carbon.

### Don't use:

- **Diseased plant matter**
- **Cat or dog poo**
- **Fresh perennial weeds that will spread through your compost (eg: dock, convolvulus, oxalis )**