

February 2012

# MAKE A WORM BIN



# BACKGROUND

Worm tea is worm castings which have been soaked in water and oxygenated. The extra oxygen causes a bloom of the good bacteria, plus the added benefit of nitrogen, phosphate, calcium, magnesium and potash.

The liquid that drains out of a worm composting bin is leachate. Leachate contains undissolved solids and some potentially harmful bacteria. However, it can be aerated as described below and used.

Some of the benefits of the tea include:

- a natural repellent for scale, mites, white flies, and aphids
- natural fungicide in soil and on plant surfaces
- increase in plant stem size and foliage
- acts as a soil conditioner
- will not burn plants
- creates healthy soil for healthy plants
- aides in the creation of colloidal humus
- grows healthier fruits and vegetables than those treated with chemical fertilizers
- improves water retention in soil
- reduces the amount of waste going to the landfill, because worms eat our garbage
- helps accelerate the breakdown of plant material in a compost pile, thus reducing the time taken to make compost. It can also be used to re-innoculate the pile after it has gone through its hot phase, which inactivates or kills many of the beneficial microbes. Re-innoculation increases the population of beneficial microbes, which continue to breakdown organic matter and form humus.

# Making a Worm Bin

*Example 1 (this is for a very small household or those living in flats)*

You will need:

- 4 x 5 litre plastic ice cream tubs
- 1 x lid of 5 litre ice cream tub
- 1 x 2 litre plastic cooldrink bottle
- Blocks of wood to place bin onto
- Shark knife or drill to make holes in tubs
- Container to collect worm tea
- Moist soil
- Shredded newspaper or sawdust
- Crushed egg shells
- Kitchen waste
- Cupful of earthworms



You can buy earthworms from vermiculture farmers, ask someone who already has a worm farm to give you some worms or just dig for them in the soil. The worm that is mostly used is the redworm, however, success can be had with other earthworms as well).

**Hint:** It is advisable to allow your worms to settle into their new home for about 3-4 weeks before adding more green waste into the bin. This gives your worms time to multiply. If there is too much food for the worms to cope with at once they tend to migrate and the bin starts to smell. However, if you find they have eaten everything in the bin then continue to slowly add more green waste.

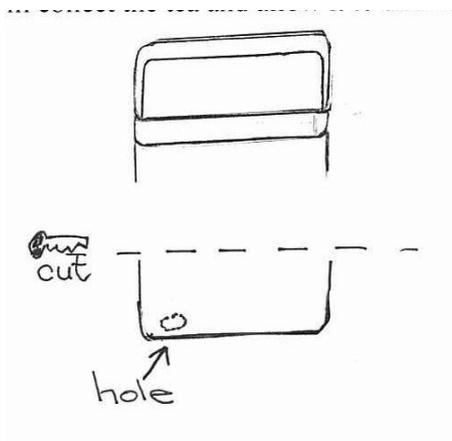
## What to do

**Step 1:** Cut one hole about the size of a mug into the bottom of each of 3 ice cream tubs. The holes should be slightly off-centre. These tubs will collect your waste and be rotated.

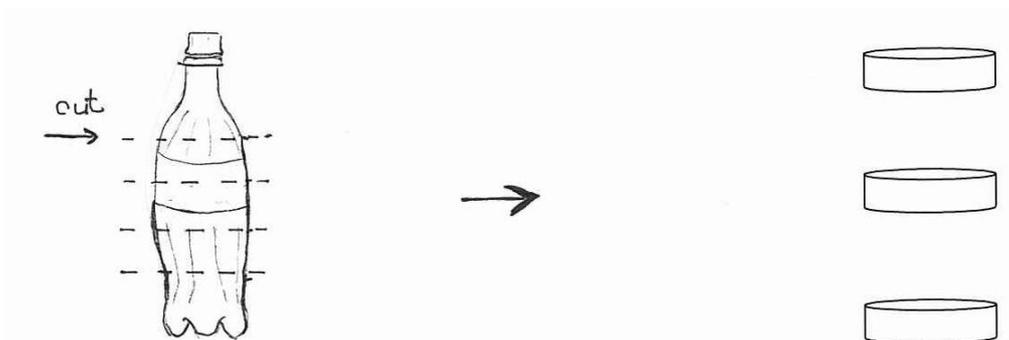


Cutting hole in the base of the tub.

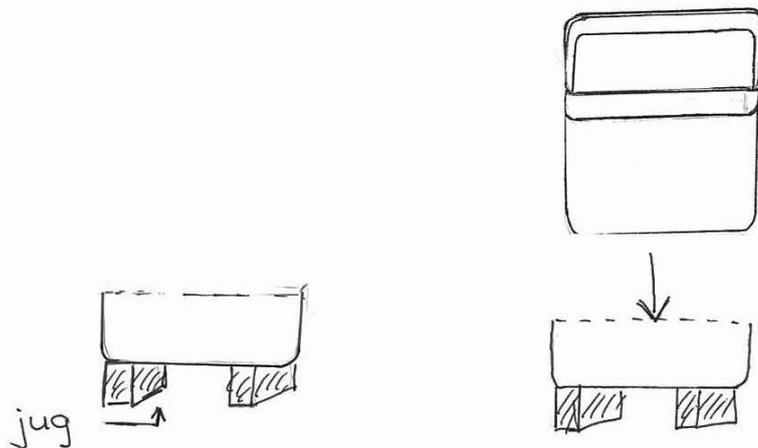
**Step 2:** Cut the 4<sup>th</sup> tub in half (horizontally) and drill approximately a 5 cm hole into its bottom. This tub will collect the tea and allow it to drain into the collecting jug.



**Step 3:** Cut the plastic bottle(s) into rings.



**Step 4:** Place the 4<sup>th</sup> tub onto your blocks of wood and then stack your first waste tub onto it.



(Keep bin away from direct light)  
(Place collecting jug underneath)

**Step 5:** Mix the newspaper, egg shells and soil together. Your mix should be about 1/3 newspaper/eggshells and 2/3 soil.

Put a sheet of wet newspaper on the bottom of the first ice cream tub and put the soil mixture on top. The mixture should be at least 7-9cm deep. Put your worms on top of the prepared mix and leave them with the lid open in the light for about 2 hours so they burrow under the surface. Then put the green waste on top. Remember to place the collecting jug under the whole of the 4<sup>th</sup> bin.

Worms will eat around 1/2 their weight each day so 1/2 kg of worms will eat 1/4 kg of food. Worms like oxygen so make sure you fluff up the soil and water every few days. Keep it moist not wet. Worms also dislike vibrations, so keep your worm bin away from fridges and other vibrating appliances.

**Step 6:** When your tub is  $\frac{3}{4}$  full, place one of the plastic bottle rings into it and place the next tub on top. Place the ring slightly off-centre. This allows the above tub to tilt and so aids in the draining process of the tea.



Plastic ring placed in tub.



Placing tub into another tub.

**Step 7:** When all your tubs are filled and you can see worms in the top tub, it is time to harvest the compost from the bottom tub and rotate it to the top.



Vegetable scraps



Worms placed in bin



Worm tea



Complete worm bin

# Making a Worm Bin

## Example 2

You will need:

- a polystyrene box with a lid or a dark coloured plastic container (about 50cm x 50cm)
- some moist soil
- few crushed egg shells
- some vegetable waste
- manure, only if available (make sure it has no antibiotics or de-worming medicine in it)
- shredded newspaper or sawdust, soaked in water
- earthworms (about a cupful to start with)
- collecting jug for worm tea
- tool to drill holes into bottom of container
- 2 blocks of wood on which to stand tub (one block should be slightly taller).

## What to do

**Step 1:** Drill a hole (1cm) in the bottom of the container to allow the tea to drain into the collecting jug. Place the container onto the blocks of wood. The container should be tilted towards the side of the hole to help drain the tea away. Place the collecting jug underneath the hole to collect the tea.

**Step 2:** Mix newspaper, egg shells and soil together.

**Step 3:** Put a sheet of wet newspaper on the bottom of the container and put the soil mixture on top. It should be at least 7-9cm deep. Your mix should be about 1/3 newspaper/eggshells and 2/3 soil.

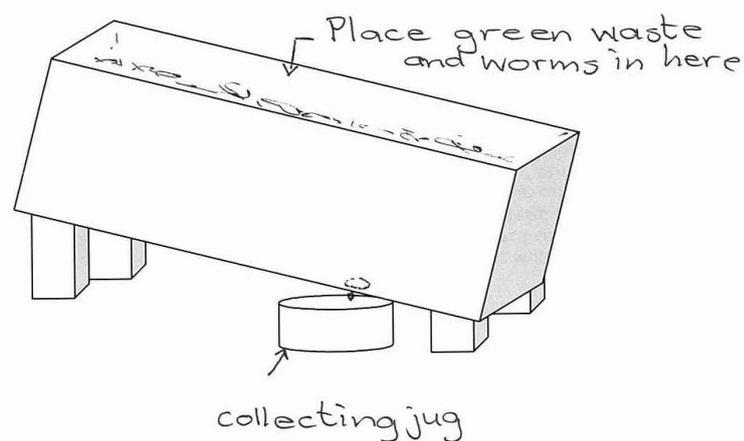
**Step 4:** Put your worms on top. Leave them with the lid open in the light for about 2 hours to encourage the worms to

burrow under the surface. Then put the green waste on top. Add manure if available.

**Step 5:** Put same weight of food as worms. They will eat around  $\frac{1}{2}$  their weight each day so a  $\frac{1}{2}$  kg of worms will eat  $\frac{1}{4}$  kg of food.

**Step 6:** Worms like oxygen so make sure you fluff up the soil and water every few days, keep it moist (not wet). Worms also dislike vibrations so keep away from fridges and other vibrating appliances. Keep the worm farm basically covered but with but with a crack of light to keep the worms in the worm farm (worms are sensitive to light and they will shy away from it).

**Hint:** It is advisable to allow your worms to settle into their new home for about 3-4 weeks before adding more green waste into the bin. This gives your worms time to multiply. If there is too much food for the worms to cope with at once they tend to migrate and the bin starts to smell. However, if you find they have eaten everything in the bin then continue to slowly add more green waste.



(N.B. Remember to place lid on box)



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