Details

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Contact

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Dimensions and Capacity

1m high x 1m diametre
Mass 30kg (empty)

Capacity 500litres

Additional Worm Habitat Products

- Liquid Collection Tray
- Scrap Bucket
- Casting Trowel
- Compost Mate
- pH testing kit
- Waterproof Menu Sticker

Australian Owned and Manufactured in

- Glenview, Qld.
- Melbourne, Vic.
- Red Hill, W.A.

Please contact us for Australia wide delivery.

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Worms Downunder www.wormsdownunder.com.au

Change the world...

Worm Habitat Grande

Making a commitment to organic waste recycling

Worms Downunder

www.wormsdownunder.com.au

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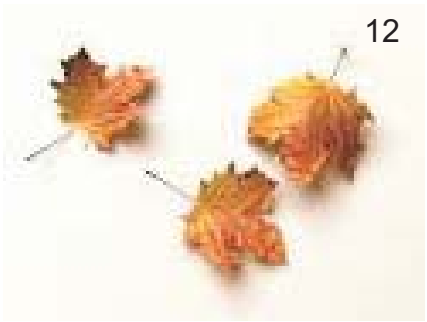

Worms Downunder About Us

Worms Downunder was started by Paul Harrey (PhD, Bsc Hons) and Pene Mitchell (PhD B Arch) because of their concern for the environment. The concept for Worms Downunder is to become a hub for sustainable organic waste management, including:

Established in 2005, the overall aim of Worms Downunder is to provide cost-effective sustainable waste-management solutions using vermiculture.

- Provision of worms and worm farm systems across Australia;
- Support for individuals and organisations in dealing with organic waste;
- Undertaking of research & development to determine appropriate solutions to waste management problems which address environmental concerns;
- Dissemination of information about the environmental benefits of recycling organic waste using worms.

Worms Downunder has successfully supplied hundreds of worm farm systems and worms across Australia. In response to a need for larger, low-cost, easy to use worm farm systems, Worms Downunder has developed the Worm Habitat range, which includes the Worm Habitat (suitable for domestic use, offices, schools, cafes, etc.) and the larger Worm Habitat Grande (suitable for horse agistment properties, universities, sporting clubs, etc.).

Paul and Pene bring to Worms Downunder a background in sustainability as environmental scientists, researchers and developers, consultants to large organisations, such as CSIRO, private companies, universities and industry. They consult in industrial design, architecture and life cycle assessment, determining environmental solutions for products, buildings and industry, and their ability to analyse problems and find sustainable resolution has been applied to waste management

If you would like to know how you can take responsibility for your organic waste on any scale using worms , please do not hesitate to contact us.

Worms Downunder is passionate about ensuring a clean, safe and sustainable future for the earth.

Worm Liquid and Castings

Worms literally eat their way through organic waste, leaving nutrient and bacteria rich castings in their wake. Their digestive system is comparatively simple: firstly, food is ground to a fine consistency in their gizzard; calcium carbonate is then secreted onto it, neutralizing the acidity; it is then passed to the actual digestive tract for processing; and finally, the food is excreted as castings (vermicast) along with the enzymes and bacteria produced.

The worms convert insoluble minerals into plant soluble form and in addition, the bacteria they excrete along with the castings, continues to convert minerals and further break down cellulose into rich humus. The resultant vermicast is ideal for plants and soil improvement as it is natural, nutrient and bacteria rich, with a neutral pH level of 7.

Worm castings improve the soil, not only by providing nutrient rich organic matter, but also by locking in carbon which has great water storage capacity. Locking in carbon has immediate environmental benefits... and you won't need to water as often!

Uses of castings

- Plant fertiliser
  Layer worm castings around plants and water
- Lawn top-dressing
  Three parts cocopeat/ one part castings
- Seed raising Mixture
  Three parts cocopeat/ one part castings
- Potting Mixture
  Two parts cocopeat/ one part castings
- Tree fertiliser
  Layer around base regularly and water in

Worm liquid, or leachate, which collects in the bottom compartment of the Worm Habitat picks up nutrients and bacteria as it passes through the compost and worm castings. This can be collected, diluted with water (anywhere from 1:2 to 1:10) and used on plants as a liquid fertiliser.

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Composting for the Future

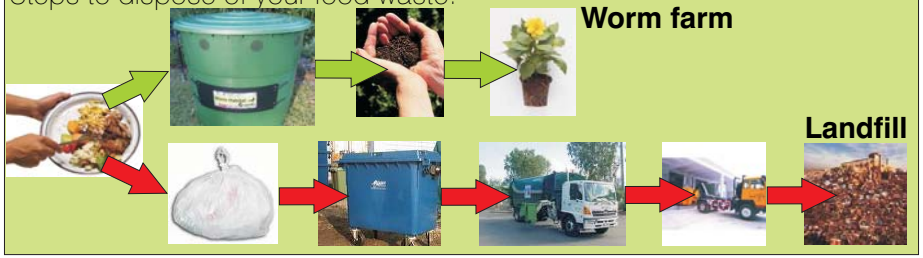
There is no question that the world's environment is in crisis. People are changing their daily behaviour and beginning to recycle, ride bikes, demand less packaging, switch off lights, install water saving devices, buy local, organic food and chemical free products, and in general reduce their negative environmental impact.

Methane holds 21% more heat than carbon dioxide, so reducing methane emissions has a positive effect on global warming. Using worms to compost food and garden waste stops the release of methane, and using the nutrient rich castings and liquid on the soil can help lock-in carbon and aid in establishing a fertile, ecologically balanced earth.

Organisations are also experiencing a quiet revolution, with the introduction of green star building ratings and environmental choice labeling. Workers realise the need to use recycled paper, switch off computers, and use public transport. The effect of increasing greenhouse gas emissions on the planet however adds urgency to the changes required. Rotting landfill waste is a major contributor to greenhouse gas emissions. Sending food scraps, garden waste and paper to the tip contributes directly to global warming. In addition, transportation of waste to landfill creates even more problems.

Allowing compost worms to do what they do best, compost waste, provides a positive contribution to the environment. Waste can be dealt with sustainably on-site by worms who turn this waste into nutrient rich, fertiliser which enriches the soil.

Steps to dispose of your food waste:



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The Worms

Using worms to compost your food scraps is not an innovation: worms have been composting organic matter for over 650 million years!

Worms are living creatures and need to be treated with care and respect. Contrary to popular belief, if you cut a worm in half, you do not get two worms, but one dead worm. Like all animals worms have some basic requirements: habitat, food and water.

The worms supplied with the Worm Habitat Grande are the main types of compost worms found in Australia. They are Tiger worms, Indian Blue worms and Red worms. These worms love rich, moist and rotting material and will compete with each other to dispose of waste. In ideal conditions they can eat up to their body weight in food a day. Therefore a ton of worms can turn up to a ton of waste into nutrient rich fertiliser every day.

'Worms have no eyes or ears but, in compensation, an extremely sensitive nervous system. They are able to notice a bird walking above them or sunlight on their tender skin. Either of these sensations will send them diving for cover.' David Murphy (2005) Organic growing with worms

Worms are photophobic which means that they do not like light. If exposed to light for more than 2 hours they will die. Their normal life span however varies with the average being 2 years, up to 20 years for a very healthy worm.

Worms are hermaphrodites and when mating each of the partners produces a capsule (worm egg). On average a capsule contains 4 young, but can contain up to 22! In ideal conditions, a pair of mature worms can produce 1500 young <u>each</u> per year.

Worms have a digestive system, circulatory system (with up to five hearts) and a respiratory system (breathing oxygen through their skin).

Worms and Water

Water is a critical element in the Worm Habitat. Moist conditions in a worm farm are ideal for worms, but too much or not enough water can be lethal. If the compost becomes saturated with water the worms will suffocate with no oxygen to breathe. If the bedding is too dry, the worms will dehydrate.

Worms breathe through their skins and need a moist aerated environment to facilitate the diffusion of oxygen.

Ideally moisture levels should be 60-70%. A simple and effective test is to squeeze a handful of bedding. Only a few drops of liquid should run out between your fingers.

The Worm Habitat Grande has an in-built watering system which ideally should be used for 2 minutes every day. Recycling the leachate back over the farm is very beneficial as it puts good bacteria straight back into the systems aiding the breaking down of food particles.

Decomposing fruit releases a lot of moisture into the worm bed, so adjust your watering accordingly. If conditions are too wet, aeration (using a Compost Mate for example) and the use of dry paper buried in the bedding can remedy this.

Soil that contains little or no organic matter will not hold water, with soil granules becoming wet on the surface only, leading to evaporation. In prolonged rainfall, vital trace elements are washed away in run-off. Soil containing even just 5% organic matter can hold water at a rate of 2:1 (water: organic matter).

Therefore, a hectare of soil with 5% organic matter to a depth of 25cm has the capacity to hold more than 2500 tonnes of 'life-giving, crop-raising' water. In our home gardens, the more organic matter in the soil, the less watering will be required.

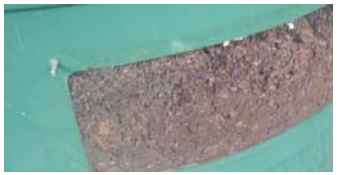
Continuing on

Maintaining a healthy, vibrant, odourless and effective worm farm is relatively straight forward. Worms need enough food, a reasonable temperature range, plenty of oxygen, and adequate moisture. As you become more familiar with your worm farm you will be able to quickly judge when these basic requirements are being met.

The Worm Habitat Grande has sufficient vents to allow oxygen to move freely through the system. However, your worm farm will benefit tremendously from aeration by garden fork or compost-mate. Aerate before feeding to prevent food from being buried below the surface of the bedding.

Collecting Juice.

Worm juice (leachate) will naturally collect in the base of the farm and drip out of the tap into a container if the tap is open. The Worm Habitat will also benefit from running the leachate back through the system as it is full of bacteria which will help to break down the food more rapidly. The resulting leachate will be even more potent as it picks up additional nutrients as it passes through for a second or third time.



Harvesting Castings

It is beneficial to keep the worm farm relatively full of castings for the worms to live in, however when the level is approximately 300mm from the top of the lid, the castings can be harvested from the port-hole. Unscrew the porthole for access and use a trowel to scrape out the castings - be careful not to damage the mesh covering on the false floor. Once finished hose-out the porthole thread and replace the porthole cover.

Setting up

The Worm Habitat Grande comes to you fully assembled, but requires some preparation for the worms. A moist bedding material is required while the compost process is being established. The worms will gradually fill the worm farm with castings in which they will happily live. The bedding supplied with the Worm Habitat Grande is natural coco-peat which requires re-hydration. The following steps need to be undertaken to establish your worms in their new habitat:

- Fill a wheelbarrow or large container with water, and submerse the bedding block/s (separately) and break them up until 'fluffy' with a fine mulch consistency (approximately 15mins).
- Spread newspaper over the false floor in the Worm Habitat Grande and place the bedding evenly over the newspaper.
- Introduce the worms to their new home by gently emptying them from the calico bag onto the surface of the bedding. The worms will burrow down relatively quickly.
- Replace the lid and allow the worms a day to settle in and explore before feeding them. They won't starve; the bedding supplied contains enough food for this period.

Picture of newspaper on false floor?

The Worm Habitat Grande will need to be placed in a location where it will be fully shaded in the summer to avoid over heating. Worms live comfortably in bedding temperatures of between 10 and 30deg Celsius. Maintaining a relatively thick layer of castings will allow the temperature of the worm farm to be more stable and will allow the worms to burrow down in particularly warm or cool weather.

Worms and Food

Worms will eat almost anything organic - that is anything that was once living. They thrive on a variety of food and a good diet includes everything in moderation. The Worm Habitat Menu on the following page provides an indication of appropriate foods but is not comprehensive.
The golden rule for feeding worms is:

DO NOT OVER FEED

Over feeding will mean the worms will not be able to efficiently process all the food in a timely manner, thus providing the opportunity for odours, mould growth, etc. to occur. Cutting, chopping, or processing food will allow the worms to consume it more quickly and promote bacterial action, as smaller sized food particles offer greater surface area.

The process of eating organic waste, letting it pass through the digestive system, through to excretion of carbon and nitrogen laden worm castings, takes only 24hours.

A sprinkling of fine sand or dolomite (which also provides other essential minerals) every few weeks will also aid digestion. Worms rely on grit to help break up food particles.

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2kg of worms should easily eat 1kg of food a day. This is equivalent to about one ice-cream container full of food. Within 3 months the worms should be able to deal with 2 kg of food a day and after 6 months this should double.

Collect food scraps, garden waste, and manures.

Prior to feeding to worms chop with a spade or mulch to size reduce particles.

Mix with shredded paper or moistened cardboard which provides a good carbon source.

Feed on the surface to allow oxygen to reach food and prevent odours.

WORM FARM MENU!

Yes

Kitchen Scraps including Raw or cooked **fruit** and **veggie** peelings.

Tea bags, coffee grounds and cold cup.

Manures incl. horse, goat, pig, cow. and **Dog** (check worming).

Shredded and soaked **paper** and cardboard and pizza boxes.

Grass clippings, leaves and plant prunings.

Sparingly

Raw or cooked **meat** including red meat, pork, poultry, fish

Bread, cake, biscuits, pasta, rice

Citrus including **oranges**, lemons, grapefruit and their peel

Onions and garlic and their peel

Dairy products incl. cheese and milk products