Composting Organic Waste

When you throw vegetable scraps and gardening waste into your garbage bin it costs you and the environment.

Recycling household organic waste into compost allows us to return valuable organic matter to the soil. In this way, we participate in nature's cycle and cut down on garbage going into rapidly filling landfills.

Did you know?

- *Compostable material includes vegetable and fruit scraps, hair, newspapers, prunings, grass clippings and weeds.*
- *Studies have shown that home composting can divert an average of 300kg of material per household per year from the waste stream.*
- *Composting vegetation transforms material into a nutrient-rich, soil-like material.*
- *One landfill in South Australia produces nearly 8000 tonnes of methane per year. That amount of methane could provide enough electricity to power 5000 homes for an entire year.*[1]
- *Compost produced from organic waste and added to soil can save up to 73% of water evaporation.*[1]
- *A Vertical Composting Unit (VCU) is a large enclosed aerobic composting system used to process biological waste. VCUs are available for small to medium sized municipal and industrial applications.*

Environmental Impact of Organic Waste

Landfill space

In many areas the land allocated to waste disposal is rapidly filling up. Approximately half of all household waste is organic. Most of this waste can be recycled through composting – turning waste materials into a rich soil supplement for use in your garden. By composting, not only can you help to reduce the amount of waste that goes into landfill but you can also help to reduce contamination and greenhouse gasses.

Contamination

Much of the land used for waste disposal cannot be reused in the future because of contamination. This occurs when rubbish in landfills is compressed and the air is squeezed out. The rubbish breaks down anaerobically (without oxygen), which means that acids are produced. The acids affect other rubbish items, such as plastic, to create a toxic mix known as leachate. Leachate collects at the bottom of landfills where it then seeps into the ground water and from there into the waterways.

Greenhouse gases

As organic waste decomposes in landfill it produces the greenhouse gases, methane and carbon dioxide. These greenhouse gases contribute to worldwide climate change.

Most landfill gas is made up of 54% methane and 40% carbon dioxide. Methane is twenty four times more damaging as a greenhouse gas than carbon dioxide. Scientists predict that climate change will impact on all our lives, especially in the areas of agriculture and human health.

Benefits of Composting

- The rich nutrients in compost are released into the soil, as your plants need them.
- Compost improves drainage in clay soils and helps sandy soils retain water.
- Compost assists plant growth and disease resistance.
- Compost also helps to absorb and filter runoff, protecting streams from erosion and pollution.
- Composting reduces unwanted insects, limiting the need for commercial herbicides or pesticides, therefore preventing runoff pollution.
- You won't have to bag and drag garden waste to the kerb for collection or pay to have it trucked to the tip.

Guide to Composting

On average, approximately half of all household waste is organic. Composting garden waste and kitchen scraps is one of the most effective things you can do to reduce waste and grow a healthy, sustainable garden.

How does composting work?
There are five conditions required to turn your organic waste into nutrient-rich soil. Getting the correct balance is the trick.

Worms and Micro-organisms
These are introduced into the heap along with the raw materials. Micro-organisms include bacteria and fungi which are compost activators.

Nutrients
A lot of garden refuse is dry, brown and woody. This material tends to be high in carbon. Soft green garden waste and kitchen scraps tend to be high in nitrogen. The ideal mix is about 20 parts carbon to 1 part nitrogen.

Air
Oxygen is essential for composting. Initially your compost heap will be loosely mixed and have lots of air space. As the material settles, after two weeks or so, it is important to turn it over to re-aerate the pile. Both the micro-organism population and the temperature will fluctuate according to how regularly the pile is turned.

Water
Micro-organisms need moisture, but not too much. The moisture content of the heap should be around 50%, feeling feel damp but not wet. Check this each time the heap is turned.

Time
If all is well within the compost heap decay may take as little as eight to ten weeks. One of the keys to rapid and successful composting is building a big heap. The outside layer will insulate the pile and allow high temperatures to be maintained in the middle. In time, with constant turning, all parts of the pile will have been in the middle and all will be decayed.

Making a compost heap
There are many kinds of compost heaps from commercially available lidded bins through to larger wooden bins. You can also make your own frame or start an open heap.

The base of the heap should be open to the soil as worms must be able to escape the heat within the heap.

The first layer of the heap should be made of course material such as garden clippings, straw, dry leaves and torn newspaper. This will help air flow through the heap.

Next add a layer of rich soil, finished compost or manure to weigh down the organic matter. This will encourage the bacteria to grow.

Then start adding your kitchen and food scraps, including layers of coarse materials in between. You can even add cotton clothes.

If you do not have a lidded bin, it is advisable to cover your heap with hessian, underfelt or a layer of mulch to prevent unwanted pests. Keep the heap well watered, and remember to turn your heap every week or so.

When the compost is ready to use, it will have a rich soil texture with no lumps of organic matter.

Mulching
Mulching is simply a very slow method of composting. It helps to reduce water loss, regulate soil temperature, prevent soil compaction and suppress weeds. To mulch, spread organic materials in a layer over the surface of the soil. Common organic materials used for mulching include wood chips, lawn clippings, compost, sawdust, straw and leaves.

For further information

[1] **NSW Department of Environment and Conservation – 'Down to Earth' publication**
www.environment.nsw.gov.au/publications/html/downtoearth/composting.htm

[2] **Environmental Protection Agency, QLD**
www.epa.qld.gov.au

[3] **Compost Resource Page**
www.oldgrowth.org/compost/

[4] **Urban Agricultural Notes**
www.cityfarmer.org

[5] **ABC Online**
www.abc.net.au/gardening

[6] **EcoRecycle, Victoria**
www.ecorecycle.vic.gov.au

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