How to turn organic waste into compost
A step-by-step guide

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- Raising awareness of the benefits of proper waste management and campaigning for greater change.

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Waste from plants and animals can be used to make compost. Composting is a natural process that recycles organic material into a soil conditioner that improves soil quality and increases food yields.

**Summary:** Composting is the natural breakdown of organic materials through mixing with oxygen from the air to form a stable, soil-like material.

**Waste materials:** Food waste, agricultural waste, animal dung, used animal bedding, wood chips.

**Product:** Chemical-free soil conditioner / compost.

*To produce a quality product, always use clean materials which have been kept separate from other wastes at the source.*
Benefits:

• Compost increases organic matter in the soil.
• Higher yields – increasing the amount of organic matter and plant nutrients in the soil can improve crop yield potential.
• It can be used, at least in part, instead of expensive inorganic fertilisers – compost contains slow release, crop-available nutrients, including nitrogen, phosphorus and potassium. It also contains plant micronutrients such as magnesium and sulphur.
• Better soil structure and water management – compost improves soil structure, which improves water infiltration and retention and is good for crops.
• Inhibiting pests and diseases – the organic action of compost can help to inhibit pests and diseases within the soil.
• Fuel savings and traffic tolerance – compost improves soil structure, making it easier to work with. If you are using a rotavator or tractor it will use less fuel. Improving soil structure will make it more resistant to compaction from tractors and will extend the conditions in which it can be worked.
Key Ingredients: Carbon and Nitrogen

The fastest way to produce compost is to use about two parts of green material to one part of brown material. This will ensure that there is the correct balance of nitrogen and carbon for the composting microbes to work.

If there is too much carbon, the composting process will be slow. If there is too much nitrogen you may end up with a smelly pile. It is important that air gets into the pile to help it decompose quickly, therefore aim to ensure that the pile has enough structure.

The compost should be slightly moist. If it is too dry, add a small amount of water and mix in.

NITROGEN-rich material (green):
Smelly organic waste such as animal dung, fish heads, bones and guts, green grass and leaves.

CARBON-rich material (brown): Woody organic waste such as small branches, dry leaves, coconut husk and groundnut shell.

Figure 1: The correct balance for composting is about two parts of nitrogen-rich material (green) to one part of carbon-rich material (brown).
There are many ways to build a good compost heap. It needs to be protected from the wind and preferably not able to dry out too much.

Two different types of compost heap are described here: the Triple Pit, and the Layered Cell.
Triple Pit Compost

Dig three pits in the ground. Place the mixture (two parts green material and one part brown material) in the first pit.

After a week, remove the material and put it in the next hole, mixing it up. This helps air reach every part of the compost and speeds up the process.

After another week, move the material to the third pit.

Figure 2: The triple pit composting process.
Finally, move the compost into a small heap at the side to allow it to ‘mature’ for a few more weeks. It will be ready when it smells earthy and looks brown, usually within another 6 or 7 weeks.

You can be composting material in all three pits at the same time, each pit one week older than the next.

Layered Cell Compost Heap

Build a cell (as shown in the picture). You can build it on the ground, or raised up on legs to keep vermin out.

Figure 3: The size of your composting cell will determine how much organic waste you can compost.
On the bottom layer, put branches and twigs or groundnut shells to improve air circulation and drainage.

Then put a middle layer of mixed 2 parts nitrogen-rich material (green) and one part carbon-rich (brown) material.

If it is particularly smelly or likely to attract pests, add a layer of finished compost over the top. Leave for 6 to 8 weeks, making sure it does not dry out.

Figure 4: The layered cell composting process.
After 6-8 weeks, sieve the compost to remove any large un-composted parts, which go back in the hole/cell to compost for next time.

Allow the composted parts to mature for around 3 more weeks before using.

It will be ready when it smells earthy and looks brown.

Figure 5: The completed layered cell composting heap.
Marketing and selling compost

If you want to sell your compost to farmers or gardeners, you should sieve it. You may have to give away free samples to convince people that something made from ‘waste’ will be good for their crops. One way of convincing them is to grow a market garden on your site using your compost to demonstrate how well it works.

Talk to farmers and agricultural stores to see how much people pay for imported compost. Can you supply yours at a lower price?

Remember to explain the benefits of using compost, from the beginning of this How-to guide.¹