



COMPOSTING FOR THE CLIMATE

Information Service, Centre for Alternative Technology, Machynlleth, Powys, SY20 9AZ.
Tel: 0845 3308373 or 01654 705989 e-mail: info@cat.org.uk
For more information sheets, see our web site: www.cat.org.uk/information

Composting tips

Mixing together your kitchen waste and cardboard waste (such as toilet roll tubes and egg boxes) is an easy way to make compost. The kitchen waste is high in nitrogen and the cardboard is high in carbon, giving a good mix for making fine compost. Crumpled cardboard also helps keep air in the heap, so worms and other beasties can get to work. Green garden waste can be put in as well, but twigs and woody waste will take longer so it's best to have a separate heap for that if possible.

Composting your 'green' (biodegradable, organic) waste is great for many reasons. It reduces the size of your waste bin, so means less transport is needed to move household waste. It gives you fine, homemade compost so you don't need to buy in artificial fertiliser. And it also removes some of the most damaging, greenhouse-gas-causing, waste from landfill sites.

What's the problem?

About a third of the waste sent to landfill in the UK is biodegradable organic matter, such as food, paper, cardboard, textiles, and garden waste. In a landfill site, these materials will be broken down (decomposed) by microbes to produce a mixture of carbon dioxide (CO₂) and methane (CH₄).

Methane is a very damaging greenhouse gas - it has over 20 times as much 'global warming potential' as carbon dioxide (by weight). At the moment, about 70% (over two-thirds) of landfill gas is flared off or captured, so a damaging impact will still come from the remaining 30%.

Methane is produced in 'anaerobic' conditions - which means that there is not much oxygen present. The emission to the atmosphere of large amounts of methane can be avoided by not sending lots of biodegradable waste to landfill. Instead, it can be composted at home or at a community level, or sent to a special anaerobic digestion facility, where the biogas (methane and CO₂) can be collected.

How much can I cut from my emissions?

By composting all their food, garden and cardboard waste, an average individual would prevent about about 5kg of methane per year from landfill, which is equivalent to just over 100kg of carbon dioxide per year.

An average household that composts this waste would prevent emissions of 13kg of methane per year, equivalent to 280kg of carbon dioxide per year (just over one quarter of a tonne of carbon dioxide).

By comparison, A small petrol car doing 40mpg will need to travel about 1000 miles to release one quarter of a tonne (250kg) of carbon dioxide, and a small diesel car doing 60mpg will need to travel about 1200 miles to release the same amount.

How is that worked out?

A detailed analysis of the eco-footprint of York was undertaken by SEI York (The Stockholm Environment Institute at the University of York). It uses figures for methane (CH₄) and carbon dioxide emissions after 70% capture from the local landfill site (so the same as the UK

average). The report also includes the carbon dioxide emissions from transport to the landfill site and from landfill machinery, although these are very small compared to the methane emissions.

The York report calculated that municipal waste amounted to 0.47 tonnes per person, and about 1.28 tonnes per household. It also measured the amount of waste as including 18% food waste, 11% garden waste, 7% card and 30% paper. Paper is usually unsuitable for composting, as it is better to recycle it and keep it in the paper stream, and separating sheets of newspaper for composting is difficult anyway. Ignoring the paper still leaves 36% compostable waste.

These tables shows the potential carbon savings. Calculations are based on the fact that methane (CH₄) is about 21 times as potent a greenhouse gas as carbon dioxide (CO₂).

Per Person (from 0.47 tonnes of waste):

Material	kg per year	kg CH ₄	kg CO ₂
Cardboard	33	1.8	38.6
Garden waste	52	1.2	26.2
Food waste	85	1.8	38.5
Total	170	4.8	105

Per Person (from 1.28 tonnes of waste):

Material	kg per year	kg CH ₄	kg CO ₂
Cardboard	90	5	105
Garden waste	141	3.3	71
Food waste	230	4.8	104
Total	461	13.1	280

So a York household that composts all their food, garden and card waste should prevent emissions of 13kg of methane, equivalent to 280kg of carbon dioxide - just over one quarter of a tonne of carbon dioxide.

Further Information / Contacts

For more advice on composting, including different techniques and compost bins, see the book **'How to make soil and save Earth'**.

For further details of the 'high-fibre' method of mixing card and green waste, see the factsheet **'Cool Composting: a fresh approach'**.

These books, and many others on composting and organic gardening, are available through **CAT Mail Order**.
Tel: 01654 705959 / 0845 330 4592
Web: www.cat.org.uk/shopping

See also www.cat.org.uk/catpubs for details of all **CAT's publications**, including many tipsheets on organic gardening and composting techniques.

CAT runs many **residential courses**, including organic gardening courses that cover compost making as a key topic.
Tel: 01654 705981
Web: www.cat.org.uk/courses

You can also contact **CAT's Information Service** with any further questions.
Tel: 01654 705989; email: info@cat.org.uk

SEI York (The Stockholm Environment Institute at the University of York)
'Material Flow Analysis and Ecological Footprint of York' study:
www.york.ac.uk/inst/sei/ecofootprint/york-footprint.html