19 Making Compost 1

As any gardener will tell you, there are many ways of making compost. The timescale and the quality of the end product are almost directly proportional to the amount of care and effort that are put into the making.

In a Community Composting scheme, it may be best to aim for quick hot composting – which can achieve a good quality end product in 6 to 8 weeks. Quick processing means a higher turnover from a given area, but more labour is required in its production. A slower, cooler compost will make equally valuable compost but the turnaround will be less quick and each batch will occupy space on site for longer. The end product may not be so fine in texture, and may contain more contaminants such as weed seeds.

Some compost making guidelines are given here. The method(s) used by a project are likely to be governed by the site, and available labour, ingredients and equipment.

The composting process

When organic (once living) materials are heaped up together, naturally occurring bacteria start to feed on the soft and tender items. The speed of action is remarkable, and their numbers increase dramatically. Energy is released as heat, and a compost heap can reach temperatures of 60° - 70° in a few days. If a heap is made piecemeal, then this heat is less likely to be noticeable.

As the heap settles, lack of air soon starts to slow down the microbial activity and the heap cools down; slower acting organisms that can work without air take over.

If more air is mixed into the heap, by turning it, the heat will rise again. This process can be repeated several times. Once all the readily decomposable materials have been consumed, fungi and other creatures move in to deal with the tougher items. This process is much slower, and the air demand less, so turning no longer has any effect. It is then left to mature.

Composting: "Five Basic Essentials"

1 A mixture of materials

Soft, nitrogen-rich materials, such as grass mowings and young weeds, get the process started; tougher, more fibrous material such as old bedding plants give the product body. The right mixture of tough and sappy ingredients is learned by experience.

If the heap smells strongly of ammonia, or the end product is wet and slimy, there is too much sappy material; if nothing much happens, the opposite may be the case.

2 Layering or mixing

Traditionally, materials are added to a compost heap in layers, alternating wet and dry, tough and sappy. This helps to give an idea of how much of each is being added. but mixing everything together at the start is more effective. Microbes don't move far, and prefer to have a good mix of food directly available

3 Water

An essential ingredient. Water the contents of a heap as it is built, not just at the end, so it is wet throughout. The quantity required is again learned by experience. The higher the proportion of soft, sappy materials, the less the water. Very dry material, such as straw, will need to be well soaked.

4 Air

Built in as materials are stacked. Air is essential for a fast, odour-free process, but too much can encourage drying out. Firm down compost materials, but not so as to exclude all air. Mix dense materials, such as grass mowings, that tend to settle and exclude air, with drier, open materials. Shredded conifer prunings, in particular, can be very dry and open.

5 Cover

To exclude rain and keep moisture in.

For faster composting

- **Greater volume** — Make a heap of *at least* 1m^3 in one session. This will heat up, which will speed up the process.
- **Break up ingredients** — Shred or chop tough material, or simply bash it with a hammer.
- **Turn the heap** — Turn the compost at least once or twice.

Hot heaps

A heap built using *all* the guidelines listed above should reach 60°C within a few days. This heat will kill most weed seeds and plant diseases, and also speed the composting process. Turning the heap helps to maintain high temperatures and can create a good quality compost in as little as 6 – 12 weeks.

Too hot?

There is no gain from having an excessively hot heap. The heat can drive off ammonia – which means a loss of nitrogen, and an unpleasant smell – and it can kill the more temperature sensitive microbes (though they will return slowly when it cools down). The

most efficient temperatures are said to be around 55°C, for maximum speed of decay – though slightly higher temperatures are required for killing weed seeds (63°C). pathogens should not survive 54°C – though many will be killed at lower temperatures. If temperatures rise too high, reduce the quantity of sappy material, only shred really tough ingredients and turn the compost regularly.

Cooler heaps

Heaps made following only the "Five Basic Essentials" listed above may not heat up significantly. Diseases and weed seeds are less likely to be killed, though some kill will occur as a result of the intense microbial activity. It will take considerably longer to be ready for use (6 – 12 months), but the end product may be richer as less nitrogen is likely to have been lost.

Compost additives

A compost activator gets the composting started, and may also speed up the whole process. Generally, in a good mixed heap, there is no need to add an activator – the basic ingredients will do the job. A heap that is rather woody can be "activated" by adding sappy, nitrogen rich materials, such as grass mowings, nettles, comfrey leaves or rich animal manures to get it going. A liquid activator can be made by soaking comfrey or manure in water.

Research has shown that one additive that may make a difference is mature compost, though quantities required – around 20% by volume – are rather large. Lime and soil are not essential in a compost heap.

Other relevant cards

- What Can I Compost?
- To Contain or Not
- Shredding and Shredders

Further reading

How to make your garden fertile
- Pauline Pears

Backyard Composting
- John Roulac