

## Making Compost

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What is compost?

The term 'compost' causes some confusion.

- Garden centres sell bags of 'compost' used as growing media
- Gardeners make compost in bins or heaps - called 'garden compost'. This is the definition I will be using in this presentation

Why make compost?

Two main reasons:

1. The compost heap an important recycling facility for kitchen and garden waste.
2. Compost is a medium fertility soil improver and its free! Good compost also improves soil structure and the water holding capacity of soil.

What is compost?

Garden compost is a rich, dark crumbly material with a slight earthy smell. • It is produced by the natural process of decay of things that have lived.

- Garden compost is a good soil conditioner and plant food, but recent reports have shown that it also contains beneficial fungi and bacteria that help to maintain healthy plants.

What is compost?

How to make compost

The most basic form of compost heap is just that, a heap of dead plant material. This will eventually produce compost but there are better methods.

There are better ways

By choosing the right mix of ingredients and making a simple container the process can be speeded up to produce a regular supply of higher quality compost.

### Bins and heaps

#### Open Pile

Easy to make, just chuck the stuff in a pile and forget. Can be unsightly.



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### **Straw bales**

A good way to contain a pile. Straw also makes an excellent insulator.



### **Wire & cardboard**

A cheap and cheerful bin. Not easy to fill and empty. The cardboard will need replacing.



### **Pallet type**

Easy to make. All you need is four pallets of roughly the same size. Wire them together making one into a door. Cover the top.



### **Modular box**

The first real bin! Very flexible, just keep piling sections on top of each other. Box sections are easy to remove to fill or empty the bin.





### **New Zealand' bin**

The 'Rolls Royce' of wooden bins. Easy to fill and empty. Do NOT use pressure treated timber.



### **Plastic bins**

Come in all shapes and sizes. Some councils now offer them at huge discounts. Avoid those with a door near the base.



## Rotating drum

There are several different models around. The idea is that you rotate the drum regularly which has the same effect as regular turning of a pile/heap. That should speed up the process. Drum composters have been around for a while and I have tried several different designs. Some become hard to turn as they are filled. One design has a gear system connected to a handle which makes life easier but increases the cost.



## What makes a good bin?

- Solid sides
- Open base
- Wide top opening for easy filling
- Rainproof lid or cover
- Minimum volume of 300 litres or 75cm x 75cm x 1m
- Removable side or lift off to access compost

## What goes into the bin?

The simple answer is **anything that has lived**. It is possible to compost the remains of any living organism - including us!

## What does not go into the bin?

Composting at home means that we need to avoid certain things.

These should **NOT** go into a compost bin:

meat and fish scraps

dog/cat faeces

used cat litter

disposable nappies

coal and coke ash

plastics

synthetic fibres

diseased plants\*

weeds in seed

(\* unless you use hot composting method)

The remains of living plant material can be split into two categories: 'greens' and 'browns'. Good composting relies on the correct mixture of greens and browns

### Greens and browns

To make good compost use a mixture of greens and browns - you may need to experiment to get it right. e.g. grass mowings are a 'green' material (high in nitrogen) and so need to be mixed with something like hay or straw which are 'brown' materials (high in carbon) to achieve the right balance (C:N) for good composting.

### Greens and browns

**Greens** - quick to rot, high in nitrogen - N

- Comfrey leaves
- Grass cuttings
- Poultry manure (without bedding)
- Young weeds and plants
- Nettles

**Browns** - slow to rot, high in carbon - C

- Old straw
- Tough plant stems
- Old bedding plants
- Tough/evergreen hedge clippings
- Cardboard, paper, egg boxes, crumpled newspaper
- Leaves (best used to make leaf mould)

**Intermediate** - good balance of N and C

- Fruit and veg scraps
- Bracken
- Rhubarb leaves
- Tea & coffee grounds
- Tea bags
- Veg plant remains
- Strawy manures
- Cut flowers
- Soft hedge clippings
- Herbivore pet bedding
- Perennial weeds

- For best results fill the heap/bin in one go
- If you do not have enough then add when it is available - you can store material for a short while until you have enough

If you have a lawn do **NOT** tip all the grass mowings into the bin - mix the grass with straw – try about 3 buckets of grass to one of straw or add layers of 'scrunched' up newspaper between layers of grass. This allows some air in the heap and balances the high 'green' (N) content of the grass with 'brown' (C) from the straw or newspaper.

The other essential ingredients for good composting are air and water.

- The material should be wet but not sodden - the advice that it should be like a wrung out

sponge. Always cover to keep out the rain.

- The bacteria that break down the material into compost also need air. A good mix of materials and 'turning' the heap ensure that air is there.
- Turning can be as simple as emptying the bin and refilling it.

### The two ways to make compost

- There are 2 main ways to make compost: hot compost and cold compost.
- The result will be the same but there are certain advantages to making hot compost.

### Hot and cold composting

Hot compost, advantages/disadvantages:

Advantages:

- The heat kills weed seeds and other harmful pathogens
- Compost is ready quickly - as little as 6 weeks in summer
- More control over the process

Disadvantages:

- Need to collect all material to build heap in one go
- Heap need turning
- More time and trouble

Cold compost, advantages/disadvantages:

Advantages:

- Material can be added when it is available
- Heap does not need constant attention - turning
- More practical for the occasional gardener

Disadvantages:

- Compost can contain weed seeds and harmful pathogens
- Takes a long time to work - 1year or more
- Uses more space

### The hot compost route

**1** Gather enough material to fill your compost container at one go. Bring in manure, scraps from the market, neighbours' weeds and so on to make up the bulk. Make sure you have a mixture of green and brown materials.

**2** Chop up tough items using shears, a sharp spade (lay items out on soil or grass to avoid jarring) or a shredder.

**3** Mix ingredients together as much as possible before adding to the container. In particular, mix items, such as grass mowings, that tend to settle and exclude air, with more open items that tend to dry out. Fill the container as above, watering as you go.

**4** The heap will get hot to the touch. When it begins to cool down, turn the heap. Remove everything, mix it all up, trying to get the outside to the inside. Add water if it is dry or dry material if it is soggy. Replace in the bin.





**5** The heap might heat up again. Step 4 can be repeated several more times if you have the energy, but the heating will be less and less each time. When it no longer heats up again, leave it undisturbed to finish composting.

#### The cold compost route

**1** Collect together a batch of compostable materials. Try to get enough to make a layer of at least 30cm or more. Weed the garden, mow the lawn, empty the kitchen bucket! Aim for a mix of green and brown items.

**2** Start filling the bin. Spread the ingredients out to the edges and firm down gently. Alternate soft and tough items, or mix them together first. Unless items are already wet, water well every 30-60cm (12-24").

**3** Continue to fill the container. Items can be added individually, but a bigger batch is preferable. If you are only adding kitchen waste, mix it with what is already there, or cover it with scrumpled newspaper.

**4** When the container is full -which it may never be as the contents will sink as it composts, or when you decide to -stop adding any more material and just leave it to finish composting.

**5** Remove the container, or everything from the container. If the lower layers have composted, use this on the garden. Mix everything else together well; add water if it is dry, dry material if it is soggy. Replace in the bin and leave to mature.

#### How do you know it is working?

If you are making hot compost, and the heap is working well, it will get hot in a few days. Check the middle of the heap but be careful, a good heap will reach 60°C+ (140°F) in the centre. Cold compost will be slower, and the heap will not heat up. The centre might get warm, but generally the heap will be cool. After a few weeks you should find that the heap begins to shrink which is a good sign that the contents are breaking down. (As the pile shrinks just add more material.)

After a while you might find that your cold compost has been invaded by striped worms! Do not worry, they are compost worms which will help along the process.

#### Knowing when it's ready

- The compost is ready when all trace of the original contents has gone.



- You should not be able to see the shape of anything you added to the bin.
- The compost will be a dark brown/black crumbly material with no smell apart from a slight sweet, earthy odour.
- Hot compost can be ready in 6-8 weeks in summer, longer in winter. Cold compost can take 12-24 months.
- There may be some tougher material, like twigs or plants stems, still visible which can be removed and added to a new heap.

#### Where to use it

- Garden compost can be incorporated when doing the annual digging, or as a surface mulch in 'no dig' and 'SqFt' gardens
- It can also be used in spring/summer on vegetable beds where winter brassicas are to be grown
- Use it on ornamental beds as a top dressing in Spring

#### Making leaf mould

- The best way to compost leaves is to make leaf mould
- Leaves are collected in autumn and put into a container leaving the top open to the elements
- The leaves are well watered and compressed
- There is nothing else to do except wait! Leaf mould can take 12-36 months to make.
- The traditional leaf mould container is made from wire mesh attached to 4 poles set in the ground. The big disadvantage of this is that the wind dries out the leaves which lengthens the whole process.
- Better results have been obtained by using scrap 1 tonne bulk bags used to deliver building sand etc

#### Worm composting

Worm composting is a method for recycling food waste into a rich, dark, earth-smelling soil conditioner. The great advantage of worm composting is that this can be done indoors and outdoors, thus allowing year-round composting.



The worms used are a bigger relative of our indigenous compost worms. Worms need to be kept in a moist, dark container which allows any liquid to drain away. A well-known commercial bin is the Can-O-worms from Wiggly Wigglers



### **Keeping your worms happy**

Acceptable foods: fruit rinds, cores and peels, grains, vegetative matter, egg shells, coffee grounds and filters, tea leaves and bags. They also like materials high in cellulose such as sawdust, leaves, paper and cardboard.

Unacceptable foods: oils, cat and dog faeces, meat, cheese, butter, animal products, fish, paper with coloured inks. Materials will be eaten faster if you chop food wastes first.

Do not put your worm bin in full summer sun, they will get too hot. Move the bin indoor in winter because they do not like being too cold either!

## Developments in home composting

### High fibre composting

High-fibre composting is a new way of composting from CAT. It makes up for the deficiency of 'browns' in household waste by composting waste paper: packaging, kitchen paper, paper bags, cardboard carton and tubes. These are crumpled before use. The heap is not turned and is relatively slow.



### Bokashi

A new way of composting kitchen waste. The main advantages over using worms are the ease of use and low odour. This means the Bokashi bin can be used in the kitchen. You can also compost citrus peel, onions as well as meat and fish. Costs around £40 for a starter kit.



### 4. Accelerated compost

#### Compost brewing

Well-made compost is mixed with water and molasses. The beneficial micro-organisms in are drastically increased by pumping air through the mixture. The results is a liquid



extremely high in beneficial organisms. It is sprayed onto plants and/or watered on to soil.



<https://medium.com/@evanfolds/the-ultimate-guide-to-brewing-compost-tea-8ddeb4622b9e>

Have a go, make compost

Whichever way you do it making compost is easy, good for the garden and good for the environment.

Have a go!