

Hot Composting Tipsheet 50p

in converted chest freezers



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Minimise the amount of waste you and your neighbours send to landfill, recycle an old freezer and make great compost for your garden with this hot composting technique.

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Composting is a great way to minimise the amount of your waste that goes to landfill. It is also a good way of returning nutrients to the soil and stimulating healthy plant growth.

Micro-organisms, worms and insects break down the waste into smaller and smaller particles, and the type of creatures doing the work depends upon the temperature. Look at the table (below) to decide which method is best for you.

Cool composting is great if you want to take a slow, relaxed approach to making compost. But if you're willing to put more effort in and you have a lot of difficult materials to compost, you might like to try hot composting in a converted chest freezer. Because the freezer is so well insulated, the material heats up and composts very quickly. Converting a freezer into a compost bin isn't too hard and you should be able to do it in a day.

Hot composting (thermophilic)	Cool composting (mesophilic)
Operates between 50 and 70°C	Operates around 10 to 25°C
Requires regular turning of the material to maintain the temperature	Less labour intensive
Composting process is fast and produces high quality compost in 3 months	Process is slower, often taking a year
High temperatures ensure that weed seeds and harmful micro-organisms are killed by pasteurisation	Weed seeds may remain and natural predation by other decomposers is relied on to kill harmful micro-organisms
Best suited to situations in which large batches of material are available	Addition of material is 'little and often'

Converting the freezer

You should be able to get an old chest freezer from your local civic amenity site. Ring first and make sure that the refrigerant and the motor have been taken out (not all councils will have a degassing facility: don't try and do this yourself as the refrigerant is very bad for the environment if it is released). There shouldn't be any charge, though it may take a few phone calls to get a result.

Draining the liquid

During composting a lot of liquid will be lost from the material. Some of this liquid evaporates (you may see steam coming from the chimney when you've converted your freezer), but most will be a brown leachate that needs to be drained out of

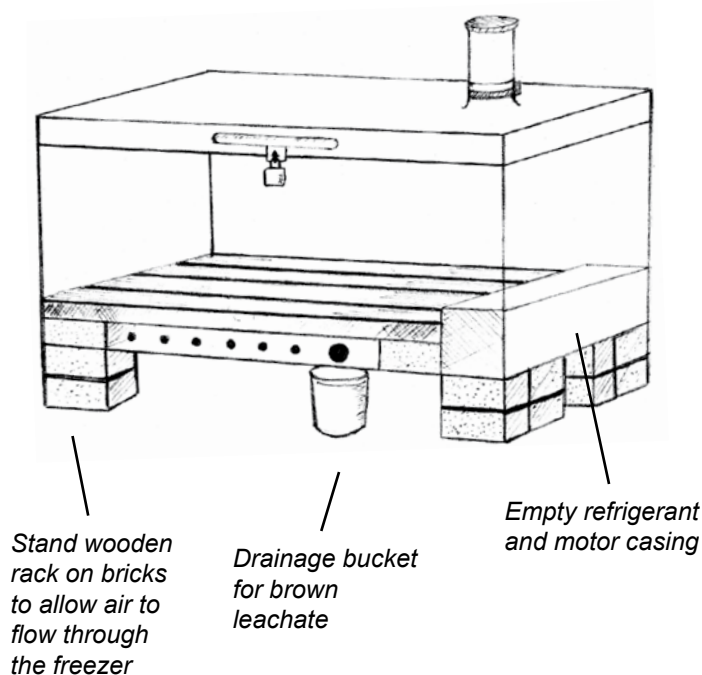
the bottom. Most freezers have a drainage hole at the bottom to let the water out when you defrost them, but it's normally a bit too small for draining leachate (which may have some lumps in it). You should enlarge the hole by drilling it out and relining it with a piece of plastic pipe (up to 20mm diameter). It's also a good idea to tilt the freezer slightly towards the drainage hole.

To help prevent the drain blocking up and to improve airflow through the bin, you need to make a slatted wooden rack for the bottom. 2" x 1" (52mm x 26mm) timber is good for this, with the slats about 10mm apart. Bigger gaps may cause the composting material to fall through and block the drain, while smaller gaps may impede airflow. The rack should be the same size as the inside of the freezer, and should be raised about 100mm from the bottom (e.g. by standing it on bricks). (See figure 1).

Getting air in

To draw air through the material and speed the composting process the freezer needs to be fitted with a chimney at the top and some ventilation holes at the bottom. To fit a chimney, cut a hole in the lid of the freezer big enough to accommodate

Figure 1: A slatted wooden rack keeps the drain clear and improves airflow



a plastic pipe (about 300mm of rainwater downpipe is ideal, but any spare bit of pipe over 50mm diameter will do just as well). Put the pipe in and secure it with a jubilee clip. Cover the top of the pipe with something to stop flies getting in or out (like wire mesh, net curtains or an old stocking). (See figure 2).

The ventilation holes near the bottom need to be about 10mm in diameter. Drill through the side of the freezer about 100mm up from the bottom on the outside; on the inside of the freezer these holes will be below the level of the wooden slats but above the level of the insulation. Cover the holes with a flyproof mesh like you did with the chimney. Cut the flyproofing (mesh or net) to the appropriate size (approx 20mm squares) and glue on.

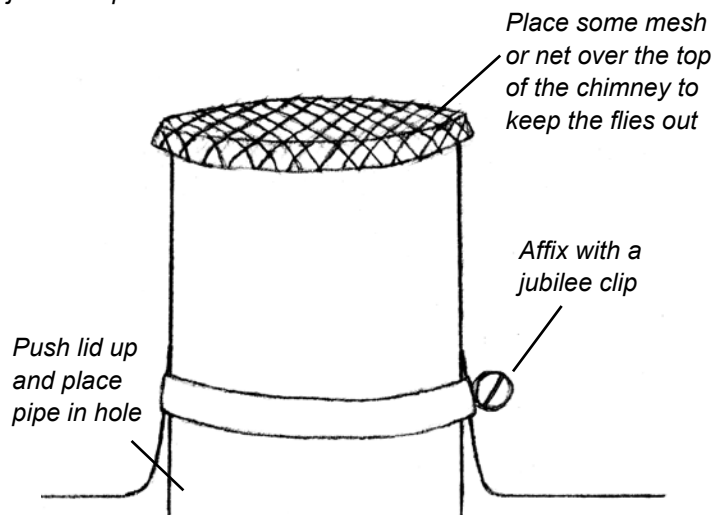
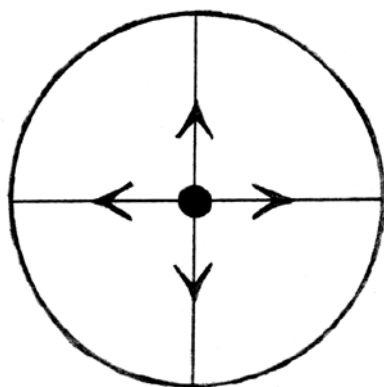
In addition to fly proofing, you may want to attach some metal sheet around the base of the freezer, where the motor has been removed, to make the freezer rodent proof and a lock on the lid to deter children.

Using the freezer to make compost

A chest freezer compost bin is ideally suited to batch composting large volumes (a couple of wheel-barrows full of food waste at a time) and is hence better suited to use by small communities rather than individual households. Add the food waste (and soft garden waste if you have it) to the freezer with a similar volume of partly rotted woodchips or straw. Cardboard is not suitable for hot batch composting as it dries out too quickly.

Figure 2: Fix a chimney to the lid to draw air through the waste material

To make a hole for the chimney: mark out a circle the diameter of the pipe, drill a hole at the centre and jigsaw out to the edge. Push the plastic up and fix the pipe in place with a jubilee clip.



After a couple of days it will start to warm up, steam will start coming out of the chimney, the contents will start to sink and there may be a white mould forming on the top. Leachate will come out of the drain; you should collect this and dilute it one part in 20 as a plant food (outdoor plants only, it can be a bit smelly!)

A week or two after filling the freezer you should mix the contents as much as you can by digging through it and turning it over. This will speed up the process and if you can do it every week, so much the better. When you're digging through the pile you should wear a dust mask so that you don't breathe in any mould spores.

After about 6 weeks to 2 months you should dig out the contents of the chest freezer into a conventional compost bin. This maturing phase occurs at lower temperatures, and you will see insects and worms in the heap. After about 6 weeks of maturing your compost should be ready to use in the garden.

Composting organisations

• Community Composting Network

tel. 0114 258 0483

www.communitycompost.org

email. info@communitycompost.org

Provides advice and support to new and existing community composting projects across the UK. Contact them to receive their free information pack.

• The Composting Association

tel. 0870 160 3270

www.compost.org.uk

The Composting Association promotes best practice in composting and the uses of composts. The association acts as a central resource for composting, researching, collecting and disseminating information.

• Garden Organic

tel. 024 7630 8202

www.compost-uk.org.uk

The consultancy wing of the HDRA carries out research and provides advice on composting as a sustainable solution to organic waste management.

You may also be interested in the following titles from CAT publications:

• *Creative Sustainable Gardening*, Diana Anthony, CAT Publications, 2000, £12.99

The complete guide to gardening without chemicals. Includes sections on home composting, soil drenching, foliar feeds and biological controls.

• *Cool Composting* factsheet, £3.50

Describes in detail the 'high fibre' composting system developed at CAT.

• *How to Make Soil and Save Earth*, Allan Shepherd, CAT Publications, 2003, £4.99

The easiest and most stylish guide to composting ever.

• *Urban Gardening* tipsheet, £0.50

Gardening in urban spaces.

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