

# Lifting the lid

**Master Composter Tony Curtis has been looking into the composting toilet: a practical, but perhaps surprising, newcomer to allotment sites around the country.**

Composting toilets, popular in North America, Australia and parts of Europe, are now catching on in the UK. They are a cost effective alternative to a septic tank, and at many

locations they may be the only option. Funding opportunities have enabled allotment associations to make toilets on site a possibility. They are also being installed

at churchyards, nature reserves, angling lakes – in fact anywhere not connected to the main sewer system.

Less sophisticated versions of the modern compost toilet have been used for centuries. Garden Organic had two working examples on their old site in Essex in the 1970s. What makes a modern system so much better is the controlled maturation process, which ensures that a useable and valuable end product is produced and easily harvested.

## What is a composting toilet?

These are toilets that use the aerobic composting process to treat excreta. After each “visit”, the user sprinkles wood shavings on top to provide the carbon to nitrogen balance required in all good aerobic composting systems. Usually the urine is directed to a separate soakaway to prevent excessive amounts of nitrogen and water in the compost mix.

## Sponsor a toilet?

We’d like to install a compost toilet at Ryton Gardens and a food waste composter to make best use of cooked food waste from our kitchens. If you are interested in sponsoring either of these exciting projects, please contact fundraising@gardenorganic.org.uk or phone 024 7630 8210.

## Use one, compost one

Generally a composting toilet has two collection chambers. After 12-24 months, depending on how much it is used, the

“ (using the compost toilet) is as simple as following the instructions on the door. Everyone has taken to it. There is no smell and the toilet is greatly appreciated. ”

*An allotment holder from Aylestone*

toilet seat is moved from the first to the second chamber. The contents of the first chamber are left to mature for a year or two before being removed. If properly managed, the composting processes kills pest and disease organisms that can be transmitted in human faeces,

but one can’t be sure that those introduced by people who have been overseas will be killed. So the advice is not to use the resulting compost on food crops that could come in contact with it when it’s spread on the soil – particularly crops eaten raw. The compost can be used around fruit trees for example, if covered with another mulch – and of course, on non-food plants.

## In action

Aylestone Allotments in Leicester have a Natsol composting toilet (above). The clubhouse is often locked for security, so a stand-alone composting toilet, housed in a structure built to resist vandalism, was a practical solution. All allotment holders have a key. The toilet was installed over a year ago now and it looks like it’ll take another year before the first chamber is full.

*Editor’s note: we would be very interested to hear from readers with experience of composting toilets.*



## Master Composters

The Leicestershire Master Composter programme now has 72 volunteer Master Composters, who have all been trained by Garden Organic. In the last two years, these volunteers have spoken to over 10,000 people and carried out over 2,000 hours of valuable work encouraging home composting. The county council estimates that the press coverage engendered has been worth over £13,000.

## New recruits needed

We are now recruiting Master Composters for Norfolk. Training will take place on 11-12 March 2011 in Holt, Norfolk. If you live in the county, have a passion for composting, and want to make a difference, please get in touch. Contact 024 7630 8236 or email info@homecomposting.org.uk. For more information about Master Composter programmes go to homecomposting.org.uk.



# Lifting the lid, again

The article "Lifting the lid" by Master Composter Tony Curtis (*The Organic Way* 202) prompted quite a response from readers. Our thanks to those who took the time to share their thoughts and experiences on composting toilets. In this article, Heather Jackson responds to some of the issues raised.

## Spending the pennies

Several people asked about sources of funding. Aylestone Allotments in Leicester, mentioned in Tony's article, installed a Natsol composting toilet; Castle Hill Allotments in Ipswich did likewise in May 2009. Funding came through their local authority councillors' locality budget. The total cost of the project was £7,500 including VAT. It pays to be aware that grant funding will not always cover the VAT. They said, "We are delighted with it and would thoroughly recommend the Natsol composting toilets as they are ideal for allotment sites, and with the number of families taking on allotments, toilet facilities need to be provided."

One Tree Hill Allotments in south-east London reduced their costs by constructing a twin vault system for £4,000. They obtained a grant and kept costs down by using allotment holders and volunteers to help on the build.

## Not just for allotments

Several readers passed on their experiences of building and using compost toilets. One reader uses a small toilet bucket bought from a camping and caravan centre. He lines it with newspaper and covers each deposit with a trowel of sieved soil to prevent flies and odour. Urine is collected separately. The bucket is emptied weekly, and the contents buried in a designated pit among his comfrey plants. Once full, the pit is covered and left for at least a year before being used again. By this time the faeces have decomposed. No vegetables are grown on this patch, just the comfrey, which is harvested to feed the garden.

Another reader explained how they have used a home-made, two-chamber system in their caravan. The design was



The "Ladies" – in the woods

adapted from one featured in the book *Lifting the Lid*\*. It has been used successfully for 16 weeks a year, over a 10-year period. When one chamber is full, the other is used while the first one is left to mature. He comments, "There is a low wattage fan to ensure that the air goes down when you lift the lid, and the interior is coated with black bitumen to keep it dark. The key feature is the urine separation system that reduces the risk of anaerobic conditions, which helps reduce odours."

## Pathogen problems?

Concerns were expressed regarding the possibility of pathogens, such as *Salmonella* and roundworms, surviving the composting process. One reader suggested that our article should have had "a greater focus on ensuring aerobic digestion, and safe and conservative retention times where people may have been abroad or unwell."

As Tony Curtis mentioned in his article, when properly managed bacteria and viruses are generally killed in the composting process, especially if it is left

long enough to mature. There are many natural pathogen-killing processes that occur in composting human manure (humanure), but time is a major factor. The longer the composting process the better for removing pathogens<sup>1</sup>. Although hot composting kills pathogens more quickly, cooler composting is just as reliable but over a longer time period. In the UK climate, cold composted humanure should be left to mature for at least two years. At this point, we have been advised, it should be safe to use for vegetable growing, particularly if it's your own and you know whether pharmaceuticals are present. No pathogens should survive past two years; worm eggs are the longest lasting – up to two years – as they have a hard, protective shell. You might like to be more cautious about using the output from a communal facility. As usual, always take the normal hygiene precautions when handling the compost.

A two-chamber toilet ensures that the compost does not have to be handled until all pathogens have died. Once a chamber is full, it is sealed and left to compost, while the other is used.

## Medication question

A common theme in readers' comments was concern over harm to the environment from medication taken by people who use the compost toilet. At present, it is impossible to provide a definitive answer about specific medications that may or may not pass through the composting process and any environmental effects. Steroidal hormones produced naturally by humans and animals, as well as those taken artificially, are constantly excreted into the environment in their active forms. These are primarily progesterone, estrone, estradiol, testosterone and



Above: Hulme Community Garden Centre's composting toilet  
Below: installing a two-chamber Natsol composting toilet



## For more information and further reading, try:

\**Lifting the Lid (an ecological approach to toilet systems)* by P Harper & L Halestrap. Centre for Alternative Technology publications.

*The Toilet Papers: recycling waste and conserving water* by Sim Van der Ryn. Design Press.

*The Humanure handbook* by J Jenkins.

*Sewage Solutions: Answering the call of nature*. Grant, Moodie, Weedon. Centre for Alternative Technology publications.

<sup>1</sup> References – see [gardenorganic.org.uk/tow](http://gardenorganic.org.uk/tow) for a full reference list.

Our thanks to Grace Crabb, Centre for Alternative Technology, for her assistance with this article.



The end product – mature compost

cortisol<sup>1</sup>. Many of these are destroyed rapidly in the environment; however, some, like the estrogens, do not break down as readily, either in a composting system or in sewage treatment plants. They are an ongoing concern, especially to aquatic environments. Perhaps it is better to contain them in a composting system, where they will eventually decay, rather than releasing them into the environment.

One reader also asked if there could be a problem with heavy metal contamination. On a positive note, human excreta have been found to contain very low levels of heavy metals. Research in Sweden<sup>1</sup>, for example, found that urine contained less than 3.2mg of cadmium per kg of phosphorous, compared to 26mg Cd/kg P in commercial fertilisers.

## Against organic guidelines

The use of human sewage in organic growing, which has justifiably high claims for sustainability, is anomalous. Readers pointed out that our *Organic Gardening Guidelines* classify "products containing sewage" as "never acceptable" in an organic garden. This is because we reflect EU organic standards.

Yet sewage contains vital plant nutrients, particularly phosphate. The world is running out of new sources of phosphate, yet we wash this scarce resource down our sewers rather than capturing it for reuse. For this reason, Garden Organic is happy to encourage discussion of "non organic", in the official sense, but sustainable concepts, such as human waste recycling.