

-  RSS
-  Twitter
-  Facebook

#### Open Top Menu

- HOME
- BOOK SHOP
- RESOURCES »
- CONTRIBUTE »
- SUBMIT A STORY



#### Open Main Menu

- mindfulness »
- mind-spirit »
- conscious creativity »
- wholistic health »
- sustainability »
- participatory culture »
- travel-living »

### green living

## COMPOSTING TOILETS: A drier alternative



**This article was excerpted from *The Wastewater Gardener*, a book by Dr. Mark Nels that takes a global look at how we are misusing one of the world's most valuable resource: human waste!**

When I was doing research on septic tanks for my dissertation, I was fascinated to read about "miracle" microbial additives to "fix" septic tank problems. Many states in the U.S. have been banning their sale since no independent research has ever been done that shows these so-called additives to be in any way useful or effective.

The truth is sewage comes pre-packaged with plenty of microbes that can break it down. People who unthinkingly flush nasty chemicals (paint thinners, solvents, pesticides etc.) down the toilet are killing the very necessary microbes that already reside in septic tanks. When a septic tank suffers from such a toxic chemical assault, the microbes recover and resume their work of digesting the sludge. So-called miracle products, offering "super microbes" to rejuvenate your septic tank, appear to work only because the natural microbe population increases once the chemical assault ceases and the input of new shit brings with it a new batch of microbes.

## How composting toilets work

Composting toilets combine the virtues of a traditional outhouse with a few extra mod cons. They're great in terms of protecting water sources from contamination since they don't mix **humanure** with water.

Some composting toilets are designed to start the **composting process** right away. One limitation of these systems, however, is that they keep the compost relatively dry, usually by keeping out urine and drawing off any heat by means of vent pipes. That's alright but it means the toilet does not generate the high temperatures needed to ensure a complete pathogen kill.

There are then two alternatives: keep the compost for a long time, even for a year, to ensure pathogen kill; or move the partially composted material to a standard compost heap, where temperatures can get sufficiently hot to kill any disease-causing organisms.

## Challenges of using composting toilets

Some designs indeed intend that the waste be removed periodically, so that kind of toilet is more a collection device than an actual composting toilet. With the installation of small ventilating fans or a well-designed passive vent, the odour associated with old-fashioned outhouses is dispersed, such that a composting toilet can even be installed inside a home. No more runs to the "dunny" (Australian slang for a traditional outhouse).

Another drawback with composting toilets is that people have to get involved in the unloading and removal of the shit to complete the composting process. A lot of people aren't ready for that "freak out!" Also, composting toilets can get overloaded with too much liquid from urine, necessitating a safe place to dispose of it. Removal of liquids adds to the time needed to maintain the system.

Composting toilets also do not solve problems posed by graywater—the wastewater from kitchen, laundry, shower or sink requires a recycling or treatment process of its own.

## Benefits of using composting toilets

Nevertheless, since it is shit that is the most concentrated source of pollution and of pathogens, while also being a valuable resource as fertilizer, composting toilets are an important technology.

Program Yo  
Subconsciou  
To Create What You  
Simple Stpes Free E-C  
and Mp3



They are available from a number of companies around the world and there are many very suitable for in-home use. Because the composting process takes place within a sealed container (varying from a simple five-gallon bucket to a large system in the basement), potential contamination in areas where groundwater is close to the surface is avoided. The ability to eliminate smells has also made composting toilets more acceptable. There are even designs that come with a micro-flush action, for customers used to hearing the sound of running water they do their business! Composting toilets mean we deal with our shit at its source.

If we process shit intelligently, in this low-tech yet efficient way, we can ensure, either with time or through high temperatures in the composting process, that pathogens are killed. This also saves the water and prevents pollution of all the **freshwater** that would otherwise be used and we have avoided all the associated costs in terms of energy and infrastructure. As a final dividend, we recover valuable nutrients in a form safe for direct application back to the soil. Is it good to be true? Simple calculations show that even if all seven billion people on the planet could afford indoor plumbing, using water to flush away their shit, the Earth's supply of freshwater could not meet the demand.

Change is definitely coming. This situation reminds me of a cartoon I saw years ago. A man in underwear is standing in a flush toilet, holding onto the old-fashioned chain overhead. The sign reads: "Farewell, cruel world!" Well, someday soon it could be the freshwater flush toilet that says farewell.



Dr. Mark Nelson, is an expert in wastewater reuse and recycling using Wastewater Gardens<sup>®</sup>, subsurface-flow constructed wetlands. He has spent several decades in closed ecological system research, ecological engineering, the restoration of damaged ecosystems, desert agriculture, orchards and wastewater recycling.

Excerpted from *The Wastewater Gardener* by Mark Nelson. Copyright © 2014. Used with permission of Synergetic Press.

image: mwms1916 (Creative Commons BY-NC-ND)

