- 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 re human waste!

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

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



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and drawing off any heat by means of vent pipes. That's alright but it means the toilet doe 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 ens pathogen kill; or move the partially composted material to a standard compost heap, whe 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 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 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 unloa removal of the shit to complete the composting process. A lot of people aren't ready for t "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 t 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

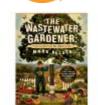
Nevertheless, since it is shit that is the most concentrated source of pollution and of path while also being a valuable resource as fertilizer, composting toilets are an important tech

They are available from a number of companies around the world and there are many ve suitable for in-home use. Because the composting process takes place within a sealed cor (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 t eliminate smells has also made composting toilets more acceptable. There are even desig come with a micro-flush action, for customers used to hearing the sound of running wate 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 wit time or through high temperatures in the composting process, that pathogens are killed. also saved the waste and prevented pollution of all the freshwater that would otherwise k and we have avoided all the associated costs in terms of energy and infrastructure. As a fi dividend, we recover valuable nutrients in a form safe for direct application back to the sc good to be true? Simple calculations show that even if all seven billion people on the plan and could afford indoor plumbing, using water to flush away their shit, the Earth's supply freshwater could not meet the demand.

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

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for several decades in closed ecological system research, ecological engineering, the restoration of damaged ecosystems, desert agricultu orchards and wastewater recycling.

Dr. Mark Nelson, is an expert in wastewater reuse and recycling using Wastewater Gardens[®], subsurface-flow constructed wetlands. He has

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