

Using Human Excrement As a Compost Feedstock

USCC 2013 Conference, Joe Jenkins, CompostSanitation.com



7 billion humans produce over 3 billion metric tons of excrement each year, containing about *50 million metric tonnes of agronutrients.*

A metric ton is 1,000 kg (2,204.6 pounds).



Human manure contains:

5-7% Nitrogen

3-5% Phosphorus

1-2% Potassium

Urine contains:

15-19% N

2-5% P

3-4% K

Almost all of it is flushed down a drain mostly into our drinking water supplies.



Yet, U.S. consumption of N, P and K has nearly tripled since 1960.

Why not recycle our organic fertility rather than dump it down a toilet?



Most toilets are disposal devices, not designed for recycling.

- The wastewater they produce threatens public health and pollutes the environment.



Example: “Human Waste Continues to Pour into NY Harbor After Sandy.”

- NBC news, Friday, November 16, 2012



U.S. beaches were closed 23,481 days in 2011,

- **due to bacteria levels from human or animal waste.**



Toilets can collect excrement for recycling.

Example: portable toilets in Australia:



Australian Collection Toilets



Sawdust is used as a “cover material.”



Wheelie bins collect the toilet material.



This is a recycling toilet in Belgium.

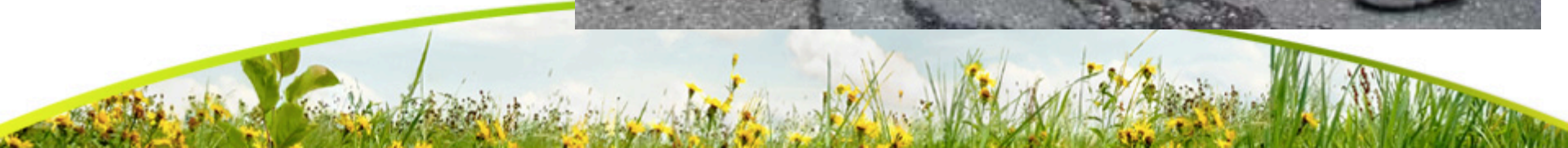


The toilet material is composted in outdoor bins made from pallets.



© Photo : éc'eau-logis® Association

This is a recycling toilet in Finland.



The toilet material is collected in plastic wheelie bins.



These are recycling toilets in France.



French portable composting toilets.



French toilet receptacles



Toilet contents are removed by pallet jack.



Canadian household recycling toilet.



**This is a “Loveable Loo”
style toilet in an
American office.**



Another example of an American recycling toilet.



A recycling toilet in Hawaii.



Another American collection toilet. Note how the toilet contents are kept covered with a carbon material.



Haiti: this group is being trained to compost toilet material for a village.



**Toilet
construction
allows for a
cottage
industry.**



No plumbing, water, electricity or odor means the toilets can be located anywhere.



The compost crew uses sugar cane bagasse as a carbon cover material.



Pallet bins are first layered with clean bagasse on the bottom.



The toilet material is collected in 5-gallon receptacles.



Toilet materials as well as food scraps are layered in the bagasse.



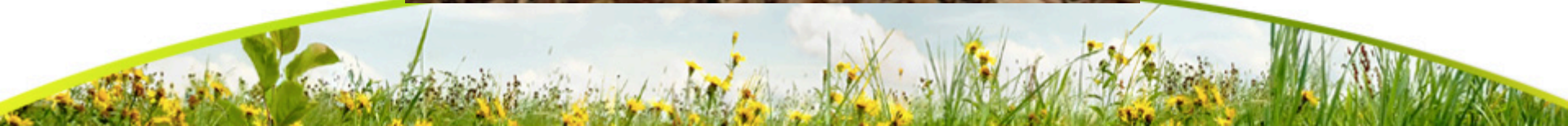
**The full bins are covered with bagasse.
No smell and no flies.**



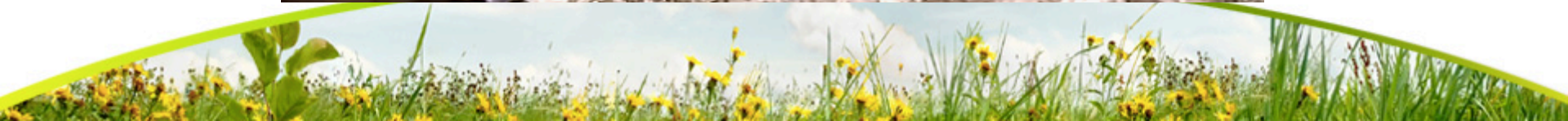
Temperatures can approach 170F (76C).



Temperatures over 131F are sustained for more than 6 months.



A thermometer set at the edge while we worked still read 130F at a depth of 6".



The compost system recycles all toilet material and food scraps beautifully.



**This school in Haiti uses the
compost to grow gardens.**



Toilets of the future will grow food.



Questions?

- Joseph Jenkins, Inc.
- HumanureHandbook.com
- CompostSanitation.com
 - GiveLove.org

