

Rudolf P. Hommel 1939
China At Work

FIG. 60. CHINESE PLOW.

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FERTILIZING THE SOIL

The Chinese peasants use almost exclusively night-soil for manuring their fields. It is stored in large

" ... and kept there as long as possible (before use). "

Chhen Fu [Sung agricultural writer]
 Francesca Bray 1984
 Science and Civilization in China.
 Volume 6 - Biology and Biological Technology
 Part II Agriculture. pp 290

earthenware pots, similar to the ones shown in the background of Fig. 60, either standing free or sunk in the ground up to their edges. In the latter case usually privies are built over them. These, open to the public gaze, are not used by women. For the convenience of the latter, a wooden bucket with cover is kept in the house which is emptied into the free-standing earthenware pots outside the house.

"The storage of such waste in China is largely in stoneware receptacles ... which are hard-burned, glazed terra-cotta urns, ... having capacities ranging from 500 to 1000 pounds."

F.H. King. 1911. "Farmers of Forty

Mao's agricultural policies destroyed all the ceramic night-soil pots in the 1950's.
 In the fertilizer campaign of 1958, virtually all the night-soil pots were broken into pieces and were put into the soil as fertilizer.

Night-soil "in a hole in the ground, covered by mud"
 [from "The Big Necessity"] : Chinese farmers sometimes now put night-soil "in a hole in the ground, covered by mud". This appears to be a much degraded version of the traditional method of storage in containers.

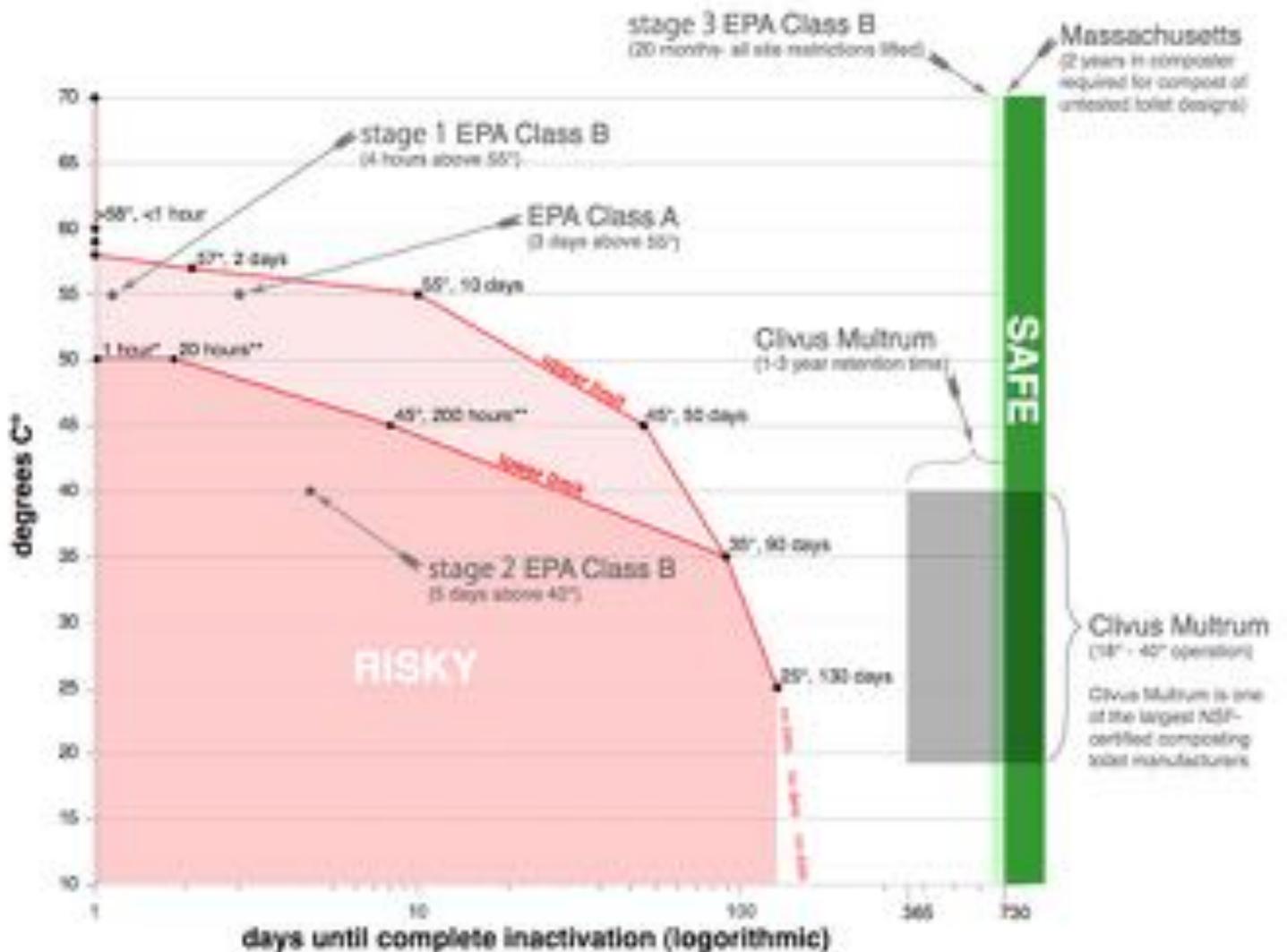
Elimination of Pathogens by Time and Temperature

Tests have shown that there are a range of combinations of temperature and time that will eliminate pathogens. This chart shows the conditions that will inactivate one of the most persistent pathogens, *Ascaris* (Roundworm).

Effective conditions include 55 degrees C (131 F) for 3 days, or a lower temperature for a longer time, such as 25 C (72 F) for 130 days.

What is not known is how long compost or night-soil has to be contained passively at low-temperature/ room-temperature/ambient-temperature to inactivate pathogens. The World Health Organization suggests that retention for 2 years is probably sufficient. Additional studies are needed to determine the length of time at ambient temperatures required to reach Class A classification, either in aerobic or anaerobic conditions.

Complete Inactivation of *Ascaris* (Roundworm) in Compost



Best Current Eco-Toilet – 2-year Containment

see:

A Report on A New, User-Friendly, Urine-Diverting, Waterless, Composting Eco-Toilet
January 2015

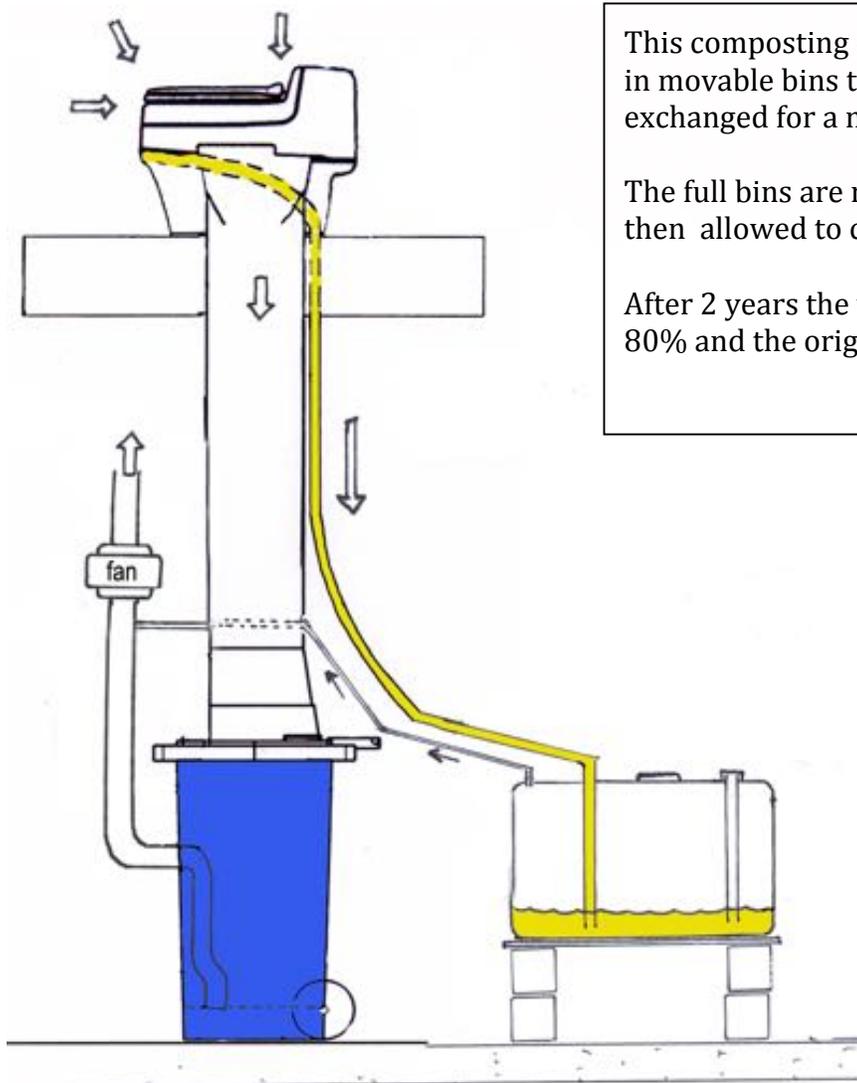
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The Green Center, Inc

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capecodalchemists@gmail.com



This composting eco-toilet contains the solid human waste in movable bins that are removed when full and exchanged for a new empty bin.

The full bins are moistened and attached to aeration lines, then allowed to compost passively for 2 years.

After 2 years the volume of compost is reduced by about 80% and the original pathogens have been deactivated.

