

Resolving a Problem Long Ignored:  
A Book Report on The Humanure Handbook

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Imagine a parasitic infection that has invaded an unsuspecting host. The invading organism--a bacterial species, a virus, any blood-borne illness--begins replicating and destroying the host. The infection takes hold in a few of the host's cells and then quickly blossoms into a full-blown disease. Soon, the parasitic colony will overwhelm the host and kill it.

Joseph Jenkins draws on this scenario as a metaphor to describe the effects of modern human civilization on Planet Earth since the rise of the Industrial Revolution (Jenkins: pp. 1-2). In just two short centuries, the rate at which natural resources are being consumed has skyrocketed at an exponential rate, and with it, pollution has mushroomed into a global problem. According to Jenkins, human society in its modern incarnation is the invading species, and the planet is the suffering host (Jenkins: pp. 1-2).

This environmentalist tone permeates The Humanure Handbook, by Joseph Jenkins. This charming, informative book weighs the costs of our modern system to deal with "human waste" and discusses several alternative methods with vastly reduced negative consequences. Admitting, somewhat despondently, that the recycling of "humanure" (human waste regarded as a resource rather than trash) will remain the practice of a small segment of the national population for some time to come (Jenkins: p. 22), Jenkins outlines the cataclysmic effects our current system inflicts on everyone and everything, and proposes that some time in the future we will be forced to treat "humanure" as a valuable resource rather than as toxic trash.

Jenkins describes the awesome amounts of water that are expended in our water-carry sewage systems (Jenkins: p. 16), the incredible toll on the environment that the pollution of this system inflicts (Jenkins: pp.5, 17), and the mind-boggling resource losses involved in flushing away the very nutrients that created the food we eat (Jenkins: p. 14). Jenkins describes a different approach, one which reclaims the nutrients from human waste and uses them for growing food, a composting system that eliminates the need for a water-carry system and segregates the nutrients in human waste from the pathogenic and otherwise insalubrious inputs that find their way into our water supply through modern water treatment (Jenkins: pp. 155-203). Included in his summary is proof that the system is utterly unsustainable in the medium- and long-term, and, for economic reasons, not capable of being replicated in developing countries (Jenkins: pp. 7-20).

#### THE HUMANURE COMPOSTING METHOD CONTINUOUS COMPOSTING

Jenkins describes in great detail throughout his book the method by which humanure

can be turned into agriculturally appropriate humus. The method is not so different from the main composting method we learned about in the Master Composting Course. First, humanure is deposited into a bucket over which a toilet seat is situated. After each deposit, a layer of carbonaceous material, such as sawdust, is layered over the humanure. This process is continued until the bucket is close to full. Since the composter has layered the two ingredients over and over again, the right proportion of nitrogen and carbon are already present in the mixture. When the bucket is full, the contents are carried to a larger composting pile, with similar dimensions to those recommended in our class (3' x 3' to 5' x 5', although these terms are not specifically mentioned in the book). It is not a "batch" composting operation, but a "continuous" operation (Jenkins: pp. 159-184). Thermophilic action destroys most pathogens, and then a curing time of one to two years destroys any remaining pathogens, such as the *Ascaris* worm egg. According to the book, the heat and the actual time involved will render a humus suitable for all purposes (Jenkins: pp. 151-154).

## THE HUMANURE COMPOSTING METHOD COMPOSTING or COMPOST TOILETS

Jenkins acknowledges that the simple method described above will not appeal to everyone in society. He does have a chapter on composting toilets, which require much less frequent maintenance. This is the principle charm of a composting toilet--the deposits remain in a large receptacle and undergo a slow decomposition process, often lasting a year or more--so the day-to-day experience is much more like the one most of us have with a flush toilet. This is a cold composting method, so the final product is suitable for non-food gardening and the like. Jenkins commends this method, as it prevents the distribution of pollution into the environment (Jenkins: 114-120).

## NUTRIENT RECOVERY

Jenkins proudly declares that he has been growing gardens full of nutritious vegetables and fruits for thirty years on soil fertilized with compost from his humanure composting system. He claims that the nitrogen, phosphorus, and potassium levels available from compost from a Clivus Multrum composting toilet, for example, rival the best available from compost made with livestock manure (Jenkins: p. 115). In fact, he states, using humanure in a composting operation closes the ruptured link in our food supply: by recycling the nutrients we consume, we would greatly reduce the need for artificial fertilizers, a major source of greenhouse gases and other forms of pollution (Jenkins: pp. 10-11). Food would become plentiful and even cheaper than it currently is.

## ASIAN HUMANURE RECYCLING

Throughout the book, Jenkins alludes to studies done of the Asian agricultural system, which extensively recycles humanure to replenish tired soils. "Night soil", or fresh,

unprocessed human waste, has been spread on Asian crops for millennia, resulting in massively successful agriculture. The composting of humanure, according to Jenkins's research, actually began in the twentieth century. It strikes this author as common sense that Asian, particularly Chinese, agriculture would not have been able to sustain such massive population growth if it had not been for the recycling of human waste (Jenkins: 72-75).

Jenkins lauds the Asian practice of humanure recycling for its resource conservation, but goes on to suggest that if Eastern societies, along with Western societies, adopted his simple method, the rate of pathogenic disease incidence would drop dramatically--all the benefits with none of the down-side (Jenkins: 80-82).

## PATHOGENS

Jenkins goes into great depth about the sticky problem of pathogens in humanure recycling. Jenkins suggests that the thermophilic action involved in continuous composting, in addition to the biological action that takes place during a prolonged curing period, virtually eliminates the risk of contaminating food crops with pathogens (Jenkins: pp. 151-153).

The book is loaded with graphs and factoids about various pathogens and the way they are treated in thermophilic composting. Time and time again, Jenkins drives home the point that the temperatures reached in his continuous composting method, along with the biological action that takes place during the curing process, render humus that is perfectly safe for growing food. Jenkins discusses several species of pathogenic worms, viruses, and bacteria and what to expect regarding them if human waste is composted with his system (Jenkins: pp. 127-150).

## GRAY WATER RECYCLING

One of the benefits of the humanure composting system as described by Jenkins is the massive savings in water usage. In a traditional home plumbing system, all water in the household is combined into a single current of "black water", water that has been mixed with feces and urine. In a household that practices humanure composting, no water is used in the elimination of human waste, and the remaining water from sinks, showers, and laundry machines is classified as "grey water". More and more states and municipalities are recognizing the environmental and economic benefits of recycling this relatively benign "grey water" for gardens, greenhouses, and landscaping. The savings can be enormous, and a tremendous burden can be taken off the municipal water system if practiced carefully.

Jenkins describes several different types of grey water usage: constructed wetlands, mulch basins, and even the Earthship grey water system. All of these systems recover grey water as a resource, as well as the nutrients that flow within it, including nutrients from soap and food (Jenkins: pp. 203-224).

## FECOPHOBIA

Jenkins rails against the "fecophobe mentality" that grips the nation at this time. Jenkins faults poor attitudes, ill informed commentary, and scientific error as chief reasons that people remain terrified of processing their own waste to prevent greater damage to the environment (Jenkins: 105-107).

Jenkins carefully explains his system, and the systems involved in compost toilets, to assure the reader that these methods are safe, relatively painless, and result in a valuable end material that can supplement gardens and landscaping (Jenkins: pp. 151-154).

## THIS AUTHOR'S TAKE-AWAY

I found Jenkins's book very informative, but I do not relish the idea of managing a continuous compost pile in the manner he describes. I am more interested in using a compost toilet like the Clivus Multrum, and then finding a way to convert the cold-composted end product into a sterilized product that can be used to grow fruits and vegetables in a greenhouse. Jenkins argues that most human pathogens die in a matter of months, and that two years in a cold compost pile will kill almost everything. I have imagined taking the end product of a two-year cold compost and placing it in steel canisters underground for five to ten years, then recycling the material in a greenhouse. I would imagine that every organism in a canister of this material would die in that amount of time. The process of chemical decomposition would have already taken place during the cold compost period, so the chemical composition of the end, final product wouldn't change much, even if it spent that much time underground. I imagined that the soil to which the ten-year-old humus would be added would inoculate the sterile humus so that it becomes "alive" with the correct proportion of biological ingredients needed by the plants in the greenhouse. The only additional material needed, vis-a-vis the original Jenkins system, would be the steel canisters to hold the humus from the original cold compost cycle.

## CONCLUSION

I highly recommend Jenkins book because he has obviously read thousands of papers, as well as all the traditional literature on composting techniques, including Howard and Rodale, and uses all of this information to present a fascinating summary of all the literature to date as well as his own contributions in a tidy, pointed, cogent primer on a new method that must be given respectful attention, considering the dire situation we find ourselves in today.

## CITATIONS

Joseph Jenkins, The Humanure Handbook. Third Edition. Copyright (c) 2005 by Joseph Jenkins. Published by Joseph Jenkins, Inc.