



Health and Safety Guidance for Small Scale Composting

A significant fraction of the solid waste generated in the United States is organic material that can be recycled through small scale composting. There are many advantages to this strategy of waste management. Households, businesses and institutions may save money by composting items such as food scraps and yard trimmings while sending less waste to landfills and incinerators. In addition, small scale composting is often the most environmentally sound way of recycling organic materials. The finished compost is a good soil amendment for a variety of gardening and landscape uses.

A possible concern with composting is the potential for the presence of human pathogens (disease-causing organisms). In situations where materials such as plate scrapings are added to a compost pile, questions have been raised about relative health risks and transmittal of human pathogens - particularly when composting involves multiple households. Pathogen reduction occurs in larger compost piles (3'x3'x3' minimum) due to self heating if properly managed. In small compost piles, raised temperatures are often not achieved, and the potential for the survival of pathogens is increased as a result.



Many designs are available for composting. Some generate heat and others do not.

Many pathogens found in commonly used materials such as potting mixes and garden soils are also found in small compost piles, and require the same level of attention.

Little is known about pathogens in typical small scale compost piles. The Cornell Waste Management Institute (CWMI) completed a study to explore the presence and distribution of bacterial pathogens in composts made in small scale bins and piles that are common in home, multi-family, and school settings. A goal was to develop guidance for the public on ways to minimize any potential health risks (see the full report at: <http://cwmi.css.cornell.edu/coldcompost.pdf>).

This project focused only on bacterial pathogens. The high population of many different species of molds and fungi in an active compost process can cause an allergic response or illness in some people, though most experience no adverse reaction.

The criteria for choosing bacteria to measure in this study were 1) that they are themselves pathogens of concern, or 2) that they are representative of a family containing pathogens of concern. Fungal spores, molds, and other composting byproducts were not examined.

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Results of testing 20 small scale compost piles several times showed no correlation between the various microbes analyzed in the project, meaning that the number of one type of bacteria present in the samples could not be used to predict the number of a different bacterium present in the same pile. No single test was considered to be a reliable indicator of compost hygiene.

The quality of compost from small scale piles is not regulated. But for the purposes of this study, CWMI chose to compare test results of small scale composts to pathogen standards established by the US Environmental Protection Agency for composted sewage sludges. Using these bacterial standards as a measurement for hygienic quality, most small scale composts analyzed in the project fared well.

Based on the results of this study, a review of current literature, and common sense, the following guidelines are suggested for use in small scale compost settings to minimize any potential health risks. Small scale compost provides many environmental benefits. When good hygiene practices are used, the relative health risks are low.

GUIDELINES FOR PRUDENT COMPOSTING

1. Avoid certain inputs to the compost pile such as raw poultry or meat wastes, pet feces, and plate scrapings from people who are ill.
2. Consider managing your composting system to ensure that it gets and stays hot long enough to reduce pathogens. There are methods available for small scale compost piles.

For more information visit:

<http://cwmi.css.cornell.edu/smallscale.htm>

3. Practice good personal hygiene when handling compost. Proper personal sanitation is the most effective method for controlling the impact of any pathogens that may be in the compost. Wash hands after handling compost and/or use gloves. If the compost is particularly dusty, watering is an option.
4. Persons with weakened immune systems or medical conditions that compromise the body's ability to fight infection should use caution when handling compost.
5. If possible, allow composts that are produced in a small scale setting to age for at least a year before use.

*For more information go to:
<http://cwmi.css.cornell.edu/smallscale.htm>*