

RESIDENTIAL/HOUSEHOLD COMPOSTING

ENVIRONMENTAL HEALTH ISSUE PROFILE

Community Action for a Renewed Environment (CARE)
Environmental Sustainability for the Salina Community

Issue: Residential/household compostable waste going to the landfill

Background: Twenty-four percent of the U.S. municipal solid waste stream is made up of yard trimmings and food residuals alone. Waste reduction and recycling prevents greenhouse gas emissions, reduces pollutants, saves energy, conserves resources, and reduces the need for new disposal facilities. Composting offers the obvious benefits of resource efficiency and creates a useful product from organic waste that otherwise is landfilled, using valuable space and decreasing the life of existing landfills. Compost is organic material that can be used as a soil amendment or as a medium to grow plants. Other benefits of composting include

- 1) Suppresses plant diseases and pests by removing food and plant wastes from the landfill.
- 2) Reduces or eliminates the need for chemical fertilizers and pesticides when used as soil amendments or mulches.
- 3) Promotes higher yield of garden crops by increasing soil health.
- 4) Can cost effectively remediate soils contaminated by hazardous contaminants.
- 5) Can be used to remove solids, oil, grease, and heavy metals from stormwater runoff, preventing pollutants from reaching surface water resources.
- 6) Absorbs odors and treats semivolatile and volatile organic compounds. It has been shown to bind heavy metals and prevent them from migrating to water resources or being absorbed by plants.
- 7) Greatly reduces production of methane gas and leachate formation in landfills.
- 8) Can be used to prevent erosion and silting on embankments roadsides, hillsides, playing fields, and golf courses.
- 9) Reduces water use by increasing water infiltration and water-holding capacity of soils.
- 10) Extends municipal landfill life by diverting organic material from landfills.

Standards: KDHE promotes composting as an alternative to landfill disposal of organics. Kansas Administration Regulation 28-29-3 defines composting as a controlled process of microbial degradation of organic material into a stable, nuisance-free, humus-like product. There are no laws that mandate citizen participation in composting programs.

On March 12, 1996, the U.S. Environmental Protection Agency (EPA), under authority of the Clean Air Act, issued a final rule that controls emissions of a variety of air pollutants from new and existing large municipal solid-waste landfills [landfills designed to hold 2.5 million megagrams and 2.5 million cubic meters or more of waste that emit greater than or equal to 50 megagrams per year of non-methane organic compounds (NMOC)].

Community-specific indicators: Currently Salina has yard waste curbside collection for composting.

What does the data say?

Yard trimmings and food residuals together constitute 24 percent of the U.S. municipal solid-waste stream going to landfills. In a 2004 study by the city of Salina, this waste stream was 23 percent of the municipal solid waste stream. Wood waste, paper, and paperboard products combine with our food residuals and yard trimmings to makes up more than two-thirds of the

U.S. municipal solid-waste stream (61% of that solid waste stream going to Salina's landfill). In 2007, 245.1 million tons of municipal solid waste were generated in the United States. In 2004, the Salina landfill received 80,000 tons. Composting household organic waste has the potential to reduce landfill loading by approximately 23 percent—representing a significant extension of landfill capacity and reduction of greenhouse gases—in addition to creating a usable product from the diverted waste.

Who is affected?

Salina, Kansas, United States, and global

How is the community affected?

When last week's leftovers go to landfills, they do not return the nutrients they pulled from the soil while growing. If composted, the food can be broken down and returned to the earth as a non-chemical fertilizer with no methane by-product.

What are the environmental conditions?

When organic materials are processed by aerobic and anaerobic bacteria in the landfill, methane and carbon dioxide (each 40-60% by volume), as well as very small amounts (0.01-0.6 % by volume) of toxic organic gases, are released as by-products into the local atmosphere. Although these are both potent greenhouse gases, methane is 20 times more effective at trapping heat in the atmosphere.

What are the contributing factors and behaviors of the community?

There is currently no food waste composting program in the community that will support this recycling activity. However, education programs as well as local guidelines and political and financial support are needed to increase citizen understanding and participation in a composting program to address this issue.

How does the community protect itself?

The community can implement an education campaign to help citizens understand how they could create a residential/household composting program.

Data sources:

Where did the data come from?

U.S. EPA, Journal of Environmental Systems, Vol 30, #4/2003-04, pp 317-332(New Zealand); www.ci.lawrence.ks.us/wrr/lawncare, City of Lawrence Waste Reduction and Recycling Division Website; City of Salina Solid Waste Management Committee Website; Table 5-1 of the 2004 Landfill Study; www.kdheks.gov/waste Website, New York Times newspaper; EPA's Air Regulations for Municipal Solid Waste Landfills Website: www.epa.gov/reg3artd/airregulations/ap22/landfil2.htm; and the Agency for Toxic Substances and Disease Registry's *Landfill Gas Primer—An Overview for Environmental Health Professionals*: www.atsdr.cdc.gov/hac/landfill/html/ch2.html

Age of data?

2000-2007

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