



Recycling in Utah: Green Waste for Compost

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Introduction

This fact sheet is part of a series highlighting different recyclable commodities. According to www.dictionary.com, a commodity is as “an article of trade or commerce; something of use, advantage, or value; any unprocessed or partially processed good.” When a product is recycled, the original commodity material becomes new products. The recyclable commodity fact sheet series is designed to answer common questions about what happens to items before, during, and after the recycling process, the economic and environmental impacts of recycling, and Utah connections to recycling. The goal of providing recycling related information is to help individuals and businesses make informed decisions about recycling. This fact sheet will focus on green waste recycling for compost.

Green Waste for Compost

Green waste is the biodegradable organic material from yard trimmings, food scraps, plants and trees. Under the right conditions, microorganisms and bacteria break green waste down into usable compost. Compost, whether produced on a small scale at home or on a commercial level, is useful as mulch in gardens and landscaping, or to reintroduce vital nutrients, such as trace minerals, to existing soils (United States Environmental Protection Agency, 2012).

According to the Environmental Protection Agency, in 2010, food scraps and yard trimmings amounted

to 27.3% of the 250 million tons of waste generated in the United States; the second largest category of all wastes collected behind paper products. The recovery (or recycling) rate of yard trimmings in 2010 was eighth highest among all recyclable products at 58% (United States Environmental Protection Agency Office of Solid Waste and Emergency Response, 2011). High recovery rates show that the efforts of homeowners and compost businesses are making a difference, despite the high percentage of waste being generated in the United States. In addition, the true waste generation/recovery rates may be even higher, as these numbers only reflect municipal solid waste nationwide and would not reflect home recovery and composting.

Green waste recycling, or composting, can take place inside homes, in backyard settings, at a community level, and a commercial level depending on factors such as space, quantity of green waste, or availability of services.

Home based composting, whether inside or in backyard settings is a way for home owners to reduce the amount of green waste sent to the landfill. Vermicomposting uses worms to break down food scraps and generates a nutrient rich product that can be incorporated into fruit, flower, and vegetable gardens. Vermicomposting bins are typically kept indoors to avoid exposure to extreme heat and/or cold. The basics of backyard

composting include creating an area where yard, garden and/or kitchen wastes are combined then given proper moisture, oxygen, and time for micro-organisms to break the organic matter down into a soil-like product.

Other options allowing homeowners and businesses the opportunity to recycle green waste include centralized drop-off locations and curbside collection programs. Drop-off locations and curbside services may be provided by local government or private corporations and, in Utah, are more often available in urban areas. This is a good option for home owners and businesses who might not have sufficient space or desire to compost onsite. In communities that collect other recyclables

curbside (i.e., plastics, paper, cardboard), green waste collection may be picked up separately from other common recyclable items and garbage because of the processing methods required after pickup. Green waste recycling from drop-off and curb-side collection starts with shredding all the green waste into smaller pieces. Different additives (vitamins, minerals) may be used to enhance the finished product. The shredded material is then left to biodegrade over time. Piles of compost are typically turned every week to aid in the breakdown of organic material. Coarse compost (larger pieces) is utilized for mulch in landscaping while compost broken down further into a soil-like state is used or sold as a soil additive.

USU Extension Fact Sheets related to composting	
For step by step instructions and information on composting consider the following:	
Farrell-Poe, K. & Koenig, R. (Reviewed 2011). <i>Backyard composting in Utah</i> . Utah State University Extension Fact Sheet. Retrieved from http://extension.usu.edu/files/publications/factsheet/HG-Compost-01.pdf	Farrell-Poe, K., Barnhill, J., Koenig, R., & Miller, B. (1997). <i>Using compost in Utah gardens</i> . Utah State University Extension Fact Sheet. Retrieved from http://extension.usu.edu/files/publications/factsheet/HG_Compost_02.pdf
Koenig, R., Farrell-Poe, K., & Miller, B. (Reviewed 2010). <i>Using mulches in Utah landscapes and gardens</i> . Retrieved from http://extension.usu.edu/files/publications/factsheet/HG_Compost_04.pdf	Waldbillig, H., & Brain, R. (August 2012). <i>Vermicomposting</i> . Utah State University Extension Sustainability Fact Sheet. Retrieved from https://extension.usu.edu/files/publications/publication/Sustainability_2012-08pr.pdf

When collecting green waste for compost, whether for home or commercial use, it is important to know what should and should not be included in compost.

What to Compost

((United States Environmental Protection Agency, 2012)

- Animal [i.e., livestock] manure**
- Cardboard rolls
- Clean paper
- Coffee grounds and filters
- Cotton rags
- Dryer and vacuum cleaner lint**
- Eggshells
- Fireplace ashes**
- Fruits and vegetables
- Grass clippings
- Hair and fur**
- Hay and straw
- Houseplants
- Leaves
- Nut shells
- Sawdust
- Shredded newspaper
- Tea bags
- Wood chips
- Wool rags**
- Yard trimmings

What Not to Compost**

(United States Environmental Protection Agency, 2012)

- Black walnut tree leaves or twigs
- Meat or fish bones and scraps*
- Coal or charcoal ash
- Pet wastes (e.g., dog or cat feces, soiled cat litter)*
- Dairy products (e.g., butter, milk, sour cream, yogurt) and eggs*
- Yard trimmings treated with chemical pesticides
- Diseased or insect-ridden plants
- Fats, grease, lard, or oils*

* Some commercially run composting facilities may be able to process the asterisked materials.

**Items not suitable for vermicomposting (Waldbillig & Brain, 2012).

Economic Impacts of Green Waste Recycling for Compost

Economic impacts of recycling are often measured in dollars saved or costs diverted rather than in

dollars earned. The following is an illustration of costs associated with applying commercial compost:

Area in Square Feet	Depth in Inches	Cost of Compost (avg \$4-10/cubic ft)	Depth in Inches	Cost of Compost (avg \$4-10/cubic ft)
	1 inch		3 inches	
50	4 cubic feet	\$14-\$40	13.5 cubic feet	\$54-\$135
100	8 cubic feet	\$32-\$80	27 cubic feet	\$108-\$270

(Richards, 2010)

As a result of home composting, the cost of purchasing similar commercially produced garden and landscaping products is saved. The addition of compost or mulch in landscaping also helps retain moisture in the soil and decreases evaporation, reducing irrigation need by as much as 50% (Whiting, O'Meara, & Wilson, 2012). Similarly, by diverting home wastes into compost, an impact may be seen in landfill costs to the consumer. In some parts of the United States, residential garbage pick-up rates are determined by the amount of garbage produced in the home, creating an incentive to recycle not only green waste but other items as well (Skumatz, et al., 2011).

For city and county governments that manage municipal waste collection, the economic impacts of composting may be less clear. Renkow and Rubin (1998) found that unless land is scarce (such as in the northeastern United States), the economic impacts are relatively small for municipalities to begin composting as opposed to placing organic materials in the landfill. In some areas of the United States, landfills have been mandated not to accept green waste and, in an effort to accommodate citizen disposal needs, have begun composting operations at or near landfill sites. The landfills included in the Renkow and Rubin (1998) study

didn't make any measurable profit off of compost sales. Ultimately, as economic impacts can be measured in costs diverted, composting materials extends the life of the landfill and the usable product (compost) is available for use in city/county landscaping needs or provided at a small fee or for free for citizens to use.

Environmental Impacts of Green Waste Recycling for Compost

Farrell-Poe & Koenig (2011) note that the addition of composted organic waste "increases soil tilth, fertility, water holding capacity, aeration, and drainage." These conditions improve poor soils by increasing the amount of organic material and nutrients available resulting in a healthier condition and environment for plants.

Compost also helps in bio-remediation which is when compost is used to "break down contaminants in water or soil" (United States Environmental Protection Agency, 1997). Compost used in bioremediation promotes healthy microbial activity, thereby increasing the uptake of harmful metals and other hazardous materials from the soil. Microbes also absorb odors and pesticides to prevent contamination.

A third environmental impact of composting is the reduction of pollution when green wastes are diverted from the landfill. In a report discussing the link between greenhouse gasses and green waste in landfills, the Environmental Protection Agency (2011) found “diversion of food scraps from landfills offers the greatest quantity of in-state [greenhouse gas] emissions reductions” (p. 10). Placing the green waste in an environment to biodegrade naturally produces less green house gases.

Utah Connections to Green Waste Recycling

The following examples highlight different types of green waste recycling businesses and efforts in Utah. Local city/county officials have information for residents and businesses interested in nearby opportunities.

According to Utah Department of Environmental Quality (DEQ) data from 2013, there are over 20 major composting operations in Utah, with most being located at landfill sites throughout the state. The Utah DEQ estimates that, in 2013, these composting facilities received over 197,000 tons of material for composting (Utah Department of Environmental Quality, 2014).

The Green Waste Facility located at the Logan Landfill in Logan, Utah, is an example of a composting program association with a municipal landfill. Residents can drop off green waste materials for free and finished compost, mulch, and wood chips are available for purchase at various prices (Logan City, 2014).

Private composting businesses in Utah include agricultural facilities like dairies, feedlots, horse farms, egg farms and landscaping companies. For example, Miller Companies, LC, in Hyrum, Utah, started over 100 years ago by composting steer manure produced at a feedlot associated with their meat processing facility. Today the company has diversified to produce a variety of different compost mixes that include materials like forest products, steer manure, poultry manure, and mushroom compost (Miller Companies, LC, 2012).

Another example of a unique composting model is the Utah-based company EcoScraps. EcoScraps focuses on taking waste from food vendors like restaurants and grocery chains and converting it into

compost. The company has one facility in Orem, Utah, and another in Phoenix, Arizona. Food waste in a landfill creates methane gas during decomposition but by intercepting the food waste, and creating a compost product, EcoScraps is making a difference in the environment and the economy. EcoScraps products are available in retail locations throughout Utah or online (EcoScraps, 2013).

Conclusion

Waste from food, yards, plants, and trees is a significant portion of the overall municipal solid waste generated in the United States. Efforts to minimize the amount of green waste going into landfills include home and commercial composting where green wastes are broken down by microbes, creating a useful and beneficial soil and plant additive. When green waste is converted to compost, consumers have access to economic savings and environmental benefits for yards and gardens. In Utah, consumers have access to a variety of options to participate in green waste recycling from creating a backyard/kitchen composting bin, to drop off sites, or commercial products. Every effort at all levels of the green waste cycle can make a difference to improve soils, reduce landfill waste, and beautify landscapes.

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