

Plastics in Compost: Farmer Perspectives

Challenges, opportunities, and lessons learned through the WSU Compost Outreach Project

May 2015

The WSU Compost Outreach Project conducts experimental trials utilizing commercial food and yard waste compost on local Snohomish and King County, WA farms. A key program objective is to increase the use of commercial compost on local farms and connect farmers to this widely available resource.

2013 Focus Group Findings (n = 12 participating farmers)

- The majority of farmers recognize the need to build and restore soil quality and see compost as a good method of doing so.
- Nearly half of the participants believed that farmers were providing a service by taking the compost and using it on their farms, this view likely originated from the need for dairy and poultry operations to dispose of manure wastes.
- Half of the focus group participants mentioned a limited supply of local poultry manure, causing them to explore compost as an alternative.

Commercial compost arrives on a farm in Snohomish, WA. Apr. 2013



Program Findings 2011-2014

2013 Focus Group Findings
2013 Farmer Survey Feedback
2014 Progress and Farmer Survey Feedback
Lessons Learned

Farmer Dale Reiner applies compost in an on-farm research trial.
5/8/13



PROGRAM DIRECTIVE

Establish the value of compost as an off-farm input and provide farmers the opportunity to use commercial food and yard waste compost through on-farm trials.

Plastic in compost works against this directive.

Single-screened compost brings contamination to farms

2013 On-Farm Demonstration Trials Farmer Feedback n = 33

- Most reported positive results of on-farm trials, observing improved crop production and soil quality.
- Compost contributed to the program was single-screened resulting in a few plastic-ridden loads.
- June 2013 survey: 18% (6 out of 33) farmers mentioned plastic in the compost and expressed hesitation to use compost with plastic.

(Continued on pg. 2)



Plastics found on farm after spreading single-screened compost. July 2013



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2013 program workshop Oct. 2013, plastic contamination is strong theme in farmer panel. Top Left: Plastics in compost on a farm in 2013. Top Right: Farmers remove plastic from hay field 4.5 months after compost was spread, Aug 2013.

2013 Farmers Comments

"There were many pieces of plastic bottle caps & garbage... I would just appreciate cleaner compost that is free of garbage residue."

- 2013 Participating Farmer

"The compost was rich and dark, till you look deeper. Ours was filled with debri from plastic bag chunks to pieces of electric wire to hard plastic chunks up to 3" in size... Way too much debris... I was very unhappy with the amount to "stuff" in the compost."

- 2013 Participating Farmer

"There was a [lot of] little plastics in the compost, like bits of grocery bags. I do not like this and it should not be in the compost I put on my fields."

- 2013 Participating Farmer

PROGRAM PREDICAMENT

Farmers are looking for low-cost soil amendments but plastic contamination requires extra processing and increases the price of finished compost.

REMOVING TRASH FROM FEEDSTOCK AND FINISHED COMPOST IS EXPENSIVE!

- Personnel for pick lines to remove contamination from incoming material can cost upwards of \$350,000* per year, adding significant costs to compost production.
- Commercial compost producers may invest around \$1 to \$1.5 million* in screening equipment. (Excluding maintenance and fuel costs).

* Estimates provided by Cedar Grove and Lenz Enterprises.

Below: Farmer Vang Lee holds small pieces of plastic pulled from double screened compost. June 2014

2014 Compost Outreach Project: Progress, Double-screening, and Farmer Comments

- In early 2014, funding was secured through an Revenue Sharing Agreement with Waste Management to pay for double screening of the compost. Staff observation & farmer feedback indicated that compost contamination decreased in 2014.

Farmer comments (from June 2014 survey):

"...pretty much free of plastic this year which was nice."

"Much better than last year."

"Compost was extremely clean and dry."

"Less trash than last year"

"...plastic is pretty prominent. There was less this year."

- Seven out of 44 (16%) farmers still mentioned plastics and one farmer shared the following comment:

"I heard from someone who was in the trial last year that a lot of garbage was in their compost. Though that didn't happen to us this year, I would be horrified if it did, so this makes me nervous to try it again."



LESSONS LEARNED

Compost going out to farms must be double screened as the standard. Farmers talk amongst themselves and if one farmer receives a plastic-ridden load of compost, that information will be shared.