



Compost Site Management

Feedstock Sampling

Feedstock Sampling Protocol

When sampling feedstocks you are attempting to obtain a representative sample of a given material. You will eventually secure a one-quart to one-gallon sample (check with your lab for their preference); however the pile you are sampling from could contain 10, 100, or 1000 (or more) yards of material. As a result, pulling a sample from one location in the pile will not provide you with information that represents all of the differences in the material throughout the pile. In order to overcome this, you need to take multiple sub-samples that, combined, will represent the entire pile in a quart- or gallon-sized sample. You will want to take at least 16 sub-samples according to the protocol listed below, and combine them in order to obtain the representative sample that will be sent to the lab. For large volumes of material (>100 yards) or where the material is highly variable, it is best to take more than one sample from a given pile in order to fully represent the variability of the material.

Additionally, you want to prevent cross-contamination of the feedstock you are sampling with other feedstocks or materials that you may have sampled recently. It is therefore important to ensure that all tools and equipment used for sampling are clean.

Tools

- 5-gallon bucket (clean)
- Spaded shovel (clean)
- Trowel (clean)
- Sample container or zip lock bag (new)
- Permanent marker

Sample Collection

1. Take at least 16 sub-samples (one shovel-full) from around the pile, including all sides and at various depths. Approximately 75% of sub-samples should be obtained 12" in from the outer edge of the pile. See Figure 1 on page 2 for pile sampling process.
2. Remove any distinctly unrepresentative matter (trash, branches, etc.)
3. Collect the sub-samples in the 5-gallon bucket and thoroughly mix the materials together.
4. With your trowel remove roughly one quart to one gallon (check with your lab) and place in sample container (zip lock bags will work, however with liquid or semi-solid dairy or hog samples, plastic screw-capped jars are best).
5. Label and date each sample clearly in permanent marker.

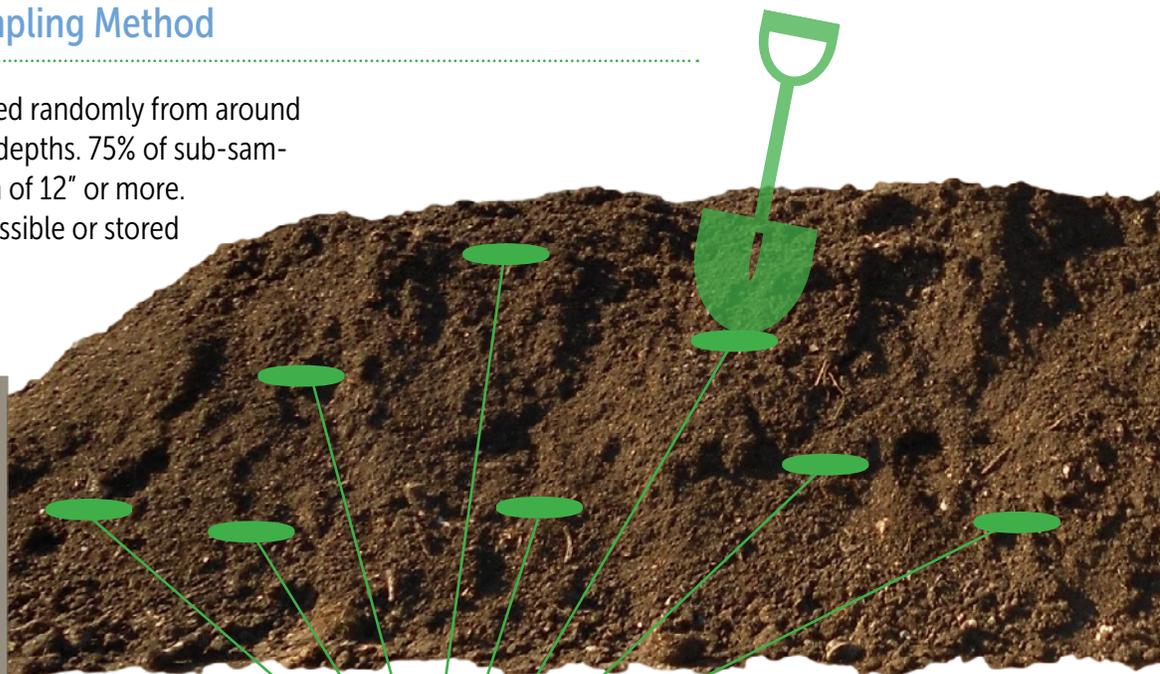


Figure 1. Feedstock Sampling Method

Sub-samples should be gathered randomly from around the pile at various heights and depths. 75% of sub-samples should be taken at a depth of 12" or more. Samples should be frozen if possible or stored and shipped on ice when not.

Companion Resources:

Weed Seed Testing
Temp Probe Recalibration
Pile Monitoring and Logs
Recipe Development
Recipe Calculator
Food Scraps & Feedstock
Acceptance



Sample Handling and Shipping

1. Store sample on ice while in transit and freeze as soon as possible.
2. Complete necessary lab forms making sure that the sample is identified the same way on the container and the form – ex. "Ayers Farm Heifer Manure – 07/08/15"
3. When sample is completely frozen, send to lab as Priority Mail in order to ensure rapid delivery.
4. If freezing the sample is not possible, ship immediately with ice packs.



Note: Follow this protocol when sampling compost as well as feedstocks.

Submitting Your Sample for Analysis

While there is a wide variety of feedstock characteristics you may be interested in testing for, if you are intending to use the lab analysis for compost recipe development, you will, at the least, want to request the following information from your lab:

- % Moisture Content (% MC) or Percent solids
- Bulk Density
- Conductivity (salts)
- % Carbon
- % Nitrogen and possibly % nitrate nitrogen
- Carbon: Nitrogen ratio
- pH
- % Organic Matter or Volatile Solids (not critical, but informative)



Resources

At the time this guide was written, Pennsylvania State Agricultural Analytical Services Lab, was the only east coast lab that was approved by the US Compost Council's Seal of Testing Assurance (STA) Program:

Ag Analytical Services Lab
Penn State University
Tower Road
University Park, PA 16802
<http://agsci.psu.edu/aasl>

Woods End Lab is another lab that specializes in compost:

Woods End Lab
290 Belgrade Road
Mt. Vernon, ME 04352
www.woodsend.org

For an updated list of USCC STA labs visit:
<http://compostingcouncil.org/labs/>

Photos

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Acknowledgements

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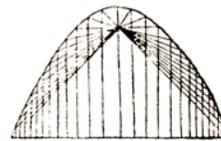
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Content Updates



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