

Compostable Grocery Bags Successful in New England Composting Plant!



21st November 2018

Grocery bags go into compost pile

→ → → 20th December 2018

Bags are degrading

→ → → 10th January 2019

Only small pieces remain

→ → → 25th January 2019

Bags are almost entirely gone

New England Compost, LLC. is a medium size composting facility located in Danbury, CT. The facility makes use of Aerated Static Pile technology similar to that used by many compost facilities across the United States. Aerated Static Piles are long piles of food scraps and yard waste, known as windrows, built on top of pipes through which air is pumped in order to ensure efficient breakdown of the organic wastes and elimination of odours.

In the Winter of 2018-2019 we were invited to participate in a trial of compostable shopping bags from a number of retail sources. The test protocol used involved putting the shopping bags into non-degradable mesh bags along with some food scraps and yard waste. The mesh bags were then buried in the active windrow so that the shopping bags would be exposed to the microbial action of the composting process.



The grocery bags used in the trial were:

- PA T-sac shopping bags
- Co-op UK T-sac shopping bags
- Trader Joe's produce bags
- Biobag food scrap bags

The Trader Joe's produce bags and the Biobag bags are BPI certified for industrial composting and TUV OK Home certified for backyard composting. The PA T-sacs are BPI certified for industrial composting. The Co-op bags are TUV OK compost Home and industrial certified.



Each of the mesh bags was attached to a rope and a cone marker so that it could be found when the time came to remove it from the windrow.

After about 30 days of composting in the windrow our process requires that the organic material be thoroughly mixed and formed into a new windrow for another 20 days of composting. We do this with a loader so it was necessary to remove the mesh bags from the composting system. This gave us an opportunity to review the progress of the compostable bags. We found that most of the bags had broken down into small pieces with only a few large pieces remaining, especially where the plastic film had formed a tight knot when the bag was tied off at the top.

After about 20 further days of composting the organic material is removed from the Aerated Static Pile and transferred to a new pile in which the material is matured for 15 days before being screened and prepared for shipping to customers. At this time the contents of the mesh bags were again examined and it was found that only small pieces of the compostable bags remained.

TECHNICAL DATA

Material in the windrow	80 - 100 yd ³
Retention time - first phase	30 days
- second phase	20 days
- maturation	15 days
Time to complete degradation of bags	65 days
Composting temperatures	
- phase 1	>165°F for 16 days
- phase 2	>156°F for 15 days

The mesh bags were buried in the maturation pile and at the end of 15 days maturing Jeff Demers, CEO of New England Composting, declared "there was nothing noticeable" of the compostable shopping bags found during the screening process: "I can't believe how well these materials broke down within a short period of time".



New England Compost, LLC.
57 Great Plain Road Danbury, CT 06810

New England Compost, LLC. expresses its thanks to Novamont North America for providing the compostable grocery bags and for assisting with the trial reported here. All the compostable bags used in the trial were made from Novamont's Mater-Bi compostable resin. New England Compost is a member of the Connecticut Nursery & Landscape Association.



Compostable Grocery Bags all Break Down as Fast or Faster than Food Scraps in New England Composting Trial!

The composting trials at New England Composting show that all the compostable bags in the trial broke down as fast or faster than food scraps but some bags do break down faster than others. The rate of break down depends on a number of factors including the type of resin used to make the bag and the thickness of the film from which the bag is constructed. The following photographs taken during the trial illustrate the varying rates of break down of the bags. Note that the blue mesh shown in the photographs is the non-compostable bag material that is needed for conduct of the trial. Detailed results for each of the bags are as follows:

Trader Joes Bags (BPI industrial and TUV OK Compost Home certified)

21st November 2018 → → → 20th December 2018 → → → 10th January 2019



Biobag (BPI industrial and TUV OK Compost Home certified)

21st November 2018 → → → 20th December 2018 → → → 10th January 2019



Co-op T-sack (TUV OK compost Home and industrial certified)

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PA T-sac (BPI industrial certified)

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