Scalable Organics Diversion
Getting to Zero Waste with Compostable Products and Packaging

Michigan Recycling Coalition
36th Annual Conference - Kalamazoo, MI - May 17, 2018

® BIODEGRADABLE PRODUCTS INSTITUTE
North America’s Leading Certifier of Compostable Products and Packaging
Agenda

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• Solving the Organics Diversion Problem
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Introduction:
Connecting The Dots Between Food Waste and Packaging
Intro – Connecting the Dots

Packaging can reduce food waste by extending the life of food, but conventional packaging is a barrier to composting.

Comprehensive approach needed to addresses food waste and packaging in tandem.
The Organics Diversion Problem: A National View
The Problem – A National View

Figure 7. Total MSW Discards (by material), 2012
164 Million Tons (after recycling and composting)

- Food waste: 21.1%
- Plastics: 17.6%
- Paper & paperboard: 14.8%
- Yard trimmings: 8.7%
- Metals: 9.0%
- Glass: 5.1%
- Wood: 8.2%
- Rubber, leather, & textiles: 11.2%
- Other: 4.3%

>50% is organic waste

Source: US EPA
The Problem – A National View

52.4 million tons of food sent to landfill annually, plus 10.1 millions tons never harvested.

The U.S. spends $218 billion a year growing, processing, and transporting food that is never eaten.

Source: ReFED
The Problem – A National View

VALUE OF WASTE — $218 BILLION

The financial cost of food waste ends up costing consumers the most due to the difference in retail pricing versus wholesale pricing for consumer-facing businesses.

Source: ReFED
The Problem – A National View

The Extraordinary Life and Times of Strawberry | Save The Food | Ad Council

1,192,468 views

Click to Play
The Problem – A National View

1 Closed-loop recycling: Recycling of plastics into the same or similar-quality applications
2 Cascaded recycling: Recycling of plastics into other, lower-value applications
Source: Project Mainstream analysis – for details please refer to Appendix A.

Source: Ellen MacArthur Foundation
The Organics Diversion Problem:
A Michigan View
The Problem – A Michigan View

15% recycling rate is one of the lowest in US.
17 million tons/year landfilled, 25% from out of state.

Source: MRC
The Problem – A Michigan View

Tip fee surcharge is $0.36/ton
- SB 943 would raise this to $4.44/ton ($0.37/hh/month)

Source: MRC
Solving the Organics Diversion Problem
Collection and Composting

Yard trimmings composting prevalent (supported by landfill bans), and pre-consumer (back of house) food scraps collection is becoming widespread.

Pre-consumer food is easy to separate, and fairly easy to compost – existing infrastructure for yard trimmings is being converted/re-permitted to accept food.

But it is only scratching the surface. We need post-consumer collection, and to do that we need compostable products.
National Infrastructure

4,714 composting facilities in the US

1,657 may be eligible to take food waste (35%)

Source: BioCycle (2017)
Product Redesign for Reuse and Recovery

1. Create an Effective After-Use Plastics Economy

2. Decouple Plastics from Fossil Feedstocks
   - Anaerobic digestion
   - The role of, and boundary conditions for, energy recovery in the New Plastics Economy need to be further investigated
   - Source: Project Mainstream analysis

3. Renewably Sourced Virgin Feedstock

4. Recycle Radically Improved Economics & Quality

5. Use Ad &/or Composting

6. Leakage

7. Energy Recovery

Source: Ellen MacArthur Foundation
What is a Compostable Product?

• Compostable products are designed to biodegrade in commercial composting environments.
• Testing, standards, and a certification are required to verify that products marketed as “compostable” will break down.
• BPI was formed as a non-profit in 1999 to address this need…
Can Compostable Products Help Divert More Food Waste?

Three year AgReycle study of venues that added FOH to BOH food scrap collection. Source: www.biocycle.net
BPI’s Goal

Scalable diversion of organic waste to composting, by verifying that products and packaging will successfully break down in professionally managed composting facilities, without harming the quality of that compost.
How Do You Know What’s Compostable?
The BPI Compostable Label

Qualification: Certification seal from BPI

Clear claim: Compostable in a specific set of conditions, per ASTM standards.

Disclaimer: A large percentage of the population does not have access to curbside composting programs.

Disclaimer: Reinforcing that it was tested for industrial composting conditions, not home composting, which has lower temperatures.

Each company has a unique ID number where you can look up certification status (products.bpiworld.org)
ASTM Specifications

ASTM standard specifications D6400 and D6868 provide pass/fail criteria for compostability:

1. **Biodegradation/Mineralization** — In no more than 180 days, at least 90% of the organic carbon must be converted to CO2, when compared to the positive control.

2. **Disintegration** — After 12 weeks, no more than 10% of a product's original dry weight may remain after sieving on a 2.0-mm sieve.

3. **No adverse impacts** on ability of compost to support plant growth — Heavy metals in the product must be less than 50% of those prescribed for composts; germination rate and plant biomass of the sample composts shall be no less than 90% of the blank composts for 2 different plant species.
Elements of 3\textsuperscript{rd} Party Certification

ASTM

“BPI Certified Compostable”

DIN CERTCO

Labs

BPI Staff
Search for Certified Products

FEATURED PRODUCTS CATEGORIES

- HOT CUPS
- CUTLERY
- YARD WASTE BAGS
- COLD CUPS
- FOOD WASTE BAGS
New BPI Website

Earning the Logo

BPI is North America's leading certifier of compostable products and packaging. Our certification program ensures that products and packaging displaying the BPI logo have been independently tested and verified according to scientifically based standards. We promote best practices for the diversion and recovery of compostable materials through municipal and commercial composting.

SEARCH FOR CERTIFIED COMPOSTABLE PRODUCTS

COMPANY OR PRODUCT NAME, SKU, KEY WORD

SEARCH

SHOW RESULTS BY  PRODUCT COMPANY

BPI & DIN CERTCO Partnership

DIN CERTCO has been hired for the administration of technical reviews under the BPI certification program, effective December 1, 2017. This will not change the appearance of the BPI certification. DIN CERTCO brings more than 2 decades of experience administering compostability certification to the partnership with BPI.

Approved Laboratories

As part of the third-party certification, BPI utilizes independent laboratories. These labs must either be accredited in the scope of ASTM D6400 and ASTM D6868, or have demonstrated compliance, ensuring they are capable of performing the tests.

Benefits of Membership

Certification for compostable products is critical for ensuring that items have been properly tested, meet international standards, and can be identified as such by composters, municipalities, restaurants, consumers, and others engaged in the diversion of organic waste. BPI advocates for compostable products as tools for scalable diversion of organic waste to composting.
Is Compostable the Right Choice?

Not everything that is technically compostable (ie, meets the ASTM specs) is eligible for BPI’s certification – WHY?

- If only part of the item is compostable, would need to be disassembled, consideration is needed for appropriate labeling, and likelihood that a consumer will actually do the sorting
- If the item is a redesign of something readily recyclable, consumers might still place it in the recycling bin (i.e., it’s not getting composted, and recyclers may worry about contamination)
- If the item isn’t associated with desirable feedstocks like food scraps and yard trimmings, composters might not want it, and municipalities may suggest that consumers place it in the trash

https://bpiworld.org/Planning-Guide
Importance of Certification

Plastics Industry Association “Checklist” examples
Programs and Access
National Residential Access

Reporting on:
- Type of program
- Starter kits
- Unit-based pricing for trash
- Frequency of collection
- Disposal tip fee
- Type of collection vehicle
- Program success
- Drop-off programs (government-supported)
National Residential Access

Organix Solutions program in several MN communities

Falls Church, VA

Portland, OR

Scarborough, ME

Davis, CA

Source: BioCycle
National Residential Access

U.S. communities with curbside food waste collection

148 Programs reporting

Source: BioCycle
National Residential Access

U.S. communities with access to curbside food waste collection by state

148 Programs reporting

Source: BioCycle
National Residential Access

U.S. households with access to curbside food waste collection

148 Programs reporting

In millions


Source: BioCycle
National Residential Access

U.S. households with access to curbside food waste collection by state

148 Programs reporting

Source: BioCycle
National Residential Access

- Fruit and vegetable scraps (all programs)
- Meat, fish, and dairy (91%)
- Green waste/yard trimmings (71%)
- Paper bags (69%)
- Food soiled paper - Uncoated (71%)
- Food soiled paper - Coated with compostable plastics (35%)
- Molded fiber containers, such as bagasse (22%)
- Compostable plastic foodservice items and packaging (42%)
- Compostable plastic bags (42%)

Source: BioCycle
Michigan Success Stories
Michigan Composting Infrastructure

*BioCycle State of Organics data (2017):*

- 114 composting facilities in Michigan
  - 102 yard trimmings only
  - 10 food and yard trimmings
  - 2 biosolids
- Composted annually
  - 1,568,500 tons yard trimmings
  - 29,800 tons food waste
Residential Food Scraps Collection

• Ann Arbor (2006)
  • 47,000 households (11,000 subscribed)
  • Seasonal (April – Dec) at no extra cost besides the $25 cart
  • All food scraps, soiled paper, wooden utensils, and compostable bags.

• Mackinac Island (1992)
  • 240 households
  • Collected by horse-drawn trailers
  • All food scraps accepted, collected in compostable bags (charged per bag for trash and food scraps)

photo: A2gov.org
Restaurant Compost Collection

HopCat

• Composting at 15 locations, and reaching **85-93% diversion**

• Mix of BOH and FOH, using compostable straws, napkins, to-go boxes, cups, bowls, silverware, and bags

• Partnering with several composting facilities: Hammond Farms, Tuthill Farms, SeedLeaf Community Farm

• Would only be at 60-65% diversion without composting

Source: BarFly Ventures
Summary and Conclusions
Summary and Conclusions

• More than half of what is thrown away today is organic waste.
• Scaling up food waste diversion requires discussion on compostable products and packaging.
• Michigan already has a small but strong food waste composting network, with success stories of businesses and communities collecting post-consumer food waste with compostable products.
• Connecting the dots on food scraps and compostable packaging means economic and environmental success, diverting waste from disposal and returning organics to the soil.
Summary and Conclusions

Source: Sustainable Packaging Coalition
Summary and Conclusions

We define waste as anything unused, unproductive, or not properly utilized.

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Contact

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