Designing Packaging for Compostability:

Certification, Diversion of Organics, and other Considerations

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Overview of BPI

Historical Context
BPI was formed as a nonprofit in 1999 with the mission to promote the production, use and appropriate end of lives for materials and products that are designed to fully biodegrade in specific biologically active environments, such as industrial composting.

- A certification based on scientific standards was needed to help to identify products that were truly compostable, with verifiable claims
- The certification scheme was based on ASTM test methods and specifications, similar to European specifications being used
- The certification was launched in conjunction with the USCC, referencing its “Compost Facility Operating Guide” from 1994/1997 and had the USCC name on the logo
BPI Goal

BPI’s overarching goal: Assist in the diversion of organic waste to composting, by verifying that products and packaging will completely break down in a professionally managed composting facility, without harming the quality of that compost.
The Need: Organics Diversion

Products and packaging are simultaneously one of the biggest barriers, and most significant solutions, to food waste collection and processing programs around the world.

**Barrier:** Contamination

**Solution:** Tools for diversion
BPI’s Certification Program

Elements of “Certified Compostable”

- ASTM
- Labs
- NSF
- BPI
Elements of “Certified Compostable” in more detail

- **ASTM** sets test methods and pass/fail specifications -- D6400 and D6868
- Applicants send products/materials to an accredited **independent lab**
- Test results, along with product/material samples and a full formulation disclosure are sent to BPI and **NSF International**, the program’s third-party technical reviewer.
- **BPI** sets rules of certification scheme, requiring disclosure of all constituents >0.1% (along with CAS#’s and Safety Data Sheets), prohibiting all carcinogens, reproductive toxins, and PBTs, etc., and then providing a seal of assurance for consistent labeling, managing a database of certified items (products.bpiworld.org)
Understanding the Label

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)

Qualification: Certification seal from BPI
Compostability Certification and ASTM Specifications

Context

- ASTM (American Society of the International Association for Testing and Materials), founded in 1898, develops voluntary consensus technical standards
- For compostable products: ASTM D6400 and D6868 are pass/fail, and have three basic components:

1. **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.
2. **Biodegradation/Mineralization** — In no more than 180 days, 90% of the organic carbon must be converted to CO2, when compared to the positive control.
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 planet species.
Redesigning Packaging: Is “Compostable” The Right Attribute?

Not everything that is technically compostable (i.e., 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 doesn’t help divert desirable feedstocks like food scraps and yard trimmings, composters might not want it, and municipalities may suggest that consumers place it in the trash

http://bpiworld.org/decide
Compostable Products Decision Tree

The BPI certifies products to compost completely and safely in a commercial or municipal compost facility. But the larger question: is your product a good fit for composting? Take a few moments to walk through this decision tree analysis to determine if your product should, in fact, be compostable.

For more information about ASTM D6400/D6868, click here.

Compliant with ASTM D6400 or D6868? *

- Yes
- No

Next

BPI Decision Tree for Certification

Products that cannot be certified may qualify for USDA’s BioPreferred Program.
Tools & Resources from USCC

USCC’s Compostable Products Task Force (CPTF) formed in 2011 to help address industry’s concerns, needs and opportunities

Several key documents and resources developed
Conclusions

Designing for Compostability

- Does the application make sense – Is it something composters will accept? Will it help divert organic wastes?
- Can the entire package or item be compostable? How will the claims be verified?
- BPI follows a third party certification process, utilizing the pass/fail criteria set by ASTM, where products are tested at Independent labs, with results analyzed by a Technical Reviewer at NSF; and the company being then permitted to use the Certification logo for clear identification and qualification, with lists of approved products online.

More Collaboration Needed

- BPI engaging other organizations to create unified message about compostability -- to avoid market/consumer confusion, and to help drive discussion about composting in positive direction
- Certification is starting point, but tools and resources still needed to build infrastructure for waste diversion, and systems that include compostable packaging
  - To this effect, in 2016 we launched Committees in 2016, updated our ByLaws to allow for composters and municipalities as affiliate members, and are working with State composting groups
  - Continuing our efforts with organic agriculture, and will be organizing an ad-hoc group to strategize next steps
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