THE ROLE OF COMPOSTABLE FOODSERVICE PACKAGING

Every year in the U.S., consumers and businesses including foodservice establishments generate over 50 million tons of food waste, and over 95 percent of this food goes to landfills. Communities are increasingly looking to achieve zero waste goals, and recovery of this valuable organic material must be part of their plans. Meanwhile, composters are looking for new feedstocks as they manufacture compost.

Composters have long enjoyed contamination-free loads of food waste from industrial food manufacturers and commercial kitchens. But most food waste originates with the consumer after the point of sale, and capturing that waste is more challenging because it’s often accompanied by non-food materials, such packaging. Asking consumers to take additional time to separate food from packaging, particularly in away-from-home settings, is a tall order that results in lower participation and/or more contamination. Successfully diverting food waste at scale will rely on simple, fast solutions that reduce the time and effort for businesses and residents and minimize contamination for composters.

Compostable foodservice packaging such as plates, cups, take-out containers and utensils enable consumers to throw food scraps and packaging in a single bin. Compostable packaging manufacturers have designed products that perform as well as their non-compostable counterparts for the consumer, and yet readily biodegrade appropriately in a compost facility.

COMMON COMPOSTABLE FOODSERVICE ITEMS

Compostable foodservice packaging refers to a variety of foodservice items that are conducive to composting in commercial systems. These items are typically designed to meet relevant composting standards such as ASTM D6400 or ASTM D6868 in the U.S. and CAN/BNQ 0017-088 in Canada and are often certified as meeting these standards by third parties like the Biodegradable Products Institute. Below is a list of foodservice items generally considered as compostable.

- Paper carryout bags
- Uncoated food soiled paper like napkins, towels and some plates
- Coated food soiled paper like cups and take-out containers
- Molded fiber take-out containers
- Corrugated containers like pizza boxes
- Compostable plastic cups, plates, take-out containers and cutlery
- Compostable plastic bags
RESIDENTIAL COLLECTION OF COMPOSTABLE PACKAGING

In 2017, the Foodservice Packaging Institute helped fund a study conducted by BioCycle to identify residential curbside organics collection programs across the United States. The study found 148 programs in communities both large and small, which can be seen in the map to the right. These programs are rapidly expanding as evidenced by an 87 percent increase in these programs over the previous 3-year period. Of these food waste programs, over 77 percent accept at least one type of foodservice packaging.

COMPOSTER ACCEPTANCE OF FOODSERVICE PACKAGING

In addition to researching residential food waste collection programs, FPI also conducted a survey of North American composting facilities that are willing and able to accept food scraps and compostable packaging materials in 2017. The most commonly accepted compostable packaging types were compostable plastic bags, uncoated food-soiled paper and paper bags.

What types of facilities accept foodservice packaging?

In the recent composter study, FPI found that approximately half of food waste composters which accept food waste are operating windrow facilities, with nearly a quarter operating aerated static pile systems. For facilities that accept at least some types of foodservice packaging, a slightly higher proportion use windrow composting and 20 percent operate in-vessel systems.
Foodservice Packaging & Composting: Information for Composters

PROCESSING COMPOSTABLE FOODSERVICE ITEMS
Composters may wonder how compostable foodservice items might compost in their facilities relative to other organic materials they currently process. To determine that, and to identify best practices to ensure that more compostable foodservice items are successfully composted, FPI sponsored a study in 2018, which was conducted by the Compost Manufacturing Alliance. The research has found that composting piles with high proportions of foodservice packaging as part of their incoming feedstock performed very similarly to piles consisting exclusively of food and yard waste feedstocks in terms of composting performance and quality.

ANSWERS TO YOUR FREQUENTLY ASKED QUESTIONS

Why should a composter accept foodservice packaging?
Compostable foodservice packaging in its many forms offers a variety of benefits, including a valuable source of carbon for a composter. Since compostable packaging enables waste generators to more easily collect and transport the food waste they generate, the composter that processes these materials will open the door to more sources of nitrogen-rich food scraps.

Are special permits required for composters to accept foodservice packaging?
Special permits are not required to accept foodservice packaging items. However, composters in some regions may need additional permitting in their state to accept food scraps or specific types of food waste as a feedstock as regulations vary. Information about state-specific permitting and state compost regulations can be found at:

https://www.compostingcouncil.org/page/StateRegulations
Which composters are best suited to accept foodservice packaging?
A variety of technologies are successfully processing compostable foodservice packaging. Based on FPI’s survey of composters in 2017, roughly half of composters that accept these items operate windrows, while a quarter use aerated static piles; other popular technologies that are processing compostable packaging items include other in-vessel technologies and mass bed systems. Facilities of all sizes, from small operators accepting less than 100 tons of incoming material annually to industrial scale facilities exceeding 300,000 tons, are successfully processing compostable packaging.

Composters who may not be best suited to accept foodservice packaging include those that are manufacturing a “certified organic” product in the U.S., as compostable plastics are not an allowable feedstock (this would also apply to paper items that have a compostable coating), based on USDA National Organic Program guidelines.

How much foodservice packaging can composters expect to receive?
In the 2017 FPI survey, composters reported that the amount of compostable packaging that they receive is very small, generally less than 2 percent of total incoming material. The graphic below illustrates proportionally how composters that accept foodservice packaging quantify compostable packaging as a fraction of total incoming material. For a summary of the research findings and more information about composting foodservice packaging, visit the Composting and Anaerobic Digestion section on RecycleFSP.org.

What can a composter do to ensure success with compostable foodservice packaging?
A number of factors will contribute to successful composting of these items. Generally speaking, a starting carbon-to-nitrogen recipe of 30:1, size reduction if needed, longer residence times (compostable packaging is typically designed to meet the ASTM specification of 84 days for disintegration), achieving and sustaining thermophilic temperatures in the range of 50°-60°C, and maintenance of optimal operating conditions such as sufficient aeration, moisture, and pile porosity increase the ability of a facility to process compostable packaging.