



## Harney & Sons' Commitment to Sustainability & Composting Excellence

There is a distinct satisfaction and comfort in a cup of hot cinnamon spice tea, classic Earl Grey, or matcha from [Harney & Sons Fine Teas](#). Behind the sipping experience, many of the teas produced by Harney & Sons are [Fair Trade Certified](#), meaning they adhere to thorough environmental, social, and economic standards. As you learn more about the company's sustainability initiatives and developing composting operation, you'll find there is even more to appreciate.

### On-Site Composting Plans

Harney & Sons is preparing to compost all of the organic (relating to or derived from living matter) byproducts from its tea bottling and manufacturing operations, right at its headquarters. This ambitious goal, which will divert organic material from disposal and return nutrients to local soils, has been propelled by the dedication of the Harney & Sons' team and collaboration with experts on composting and wasted food solutions.

Harney & Sons' headquarters is tucked away in the picturesque village of Millerton, New York on over 20 acres of land. The headquarters include a production facility where Harney & Sons grows ingredients for, processes, and packages its tea products. The company's tea bottling facility is located just north of its headquarters, in Hudson.

When tea is bottled for sale, it results in spent leaves. Think of your soaked tea bag, but on an industrial scale. Through the production of bagged and loose-leaf tea, a certain amount of product is inevitably lost due to being off-specification or becoming expired. Harney & Sons has its sights set on recovering all of this lost organic material for its inherent natural value. As experts in tea and not organics recycling (yet), this is not an endeavor that Harney & Sons could best tackle alone.

### Collaboration with CET

The Center for EcoTechnology (CET) supports businesses in implementing initiatives that divert food scraps and other organic residuals from disposal. CET provides assistance in New York State through funding from the USDA and the [Rethink Food Waste New York](#) program, which is funded by NYS DEC.



In July 2022, CET staff assessed the waste operations at Harney & Sons and provided recommendations on how to capture the organic material discarded from the bottling and manufacturing processes. CET provided guidance on options for on-site organic waste processing, including in-vessel, aerated static pile, and windrow composting systems (for definitions of these systems, [click here](#)). CET also helped estimate the required capacity of the system based on the expected organic inputs.

Harney & Sons is no stranger to sustainable materials management. When visiting Harney & Sons' headquarters, CET observed numerous recycling best practices, such as all cardboard being source separated and compacted. Additionally, Harney's tea tins are composed of highly recyclable metal. Most off-specification (but still perfectly good) tea bags are donated or given to staff. Further, the company has plans to use 50% post-consumer recycled resin for its bulk tea packaging.



## Composting Technical Expertise

Following CET's assessment, Harney & Sons decided to move forward with an on-site composting system, for which they would utilize the available space at their headquarters. It was during this stage that James McSweeney stepped in to provide technical expertise. McSweeney, who runs [Compost Technical Services](#) and [The 131° School of Composting](#), is contracted by CET to assist compost sites that process food scraps.

McSweeney analyzed the primary feedstock (the tea from the bottling plant), to assess recipe and other management practices to optimize the composting process. This analysis indicated that the tea feedstock exhibited a high moisture content and an extremely low pH (acidic) value. Acidic feedstocks, when added to protein (nitrogenous) feedstocks, can lead to odor issues from the compost piles. This outcome can be prevented by neutralizing the acids using a high-carbon pre-composting process. Interestingly, this approach was developed in partnership with a former CET client who composts cranberries in Massachusetts ([see report here](#)). To address the issue of high moisture content in their tea feedstock, Harney & Sons is constructing a screw press designed to separate moisture from the tea leaves.



McSweeney designed the layout for a windrow (long, batched piles) composting system that delineated locations for storing feedstocks, pre-composting the wet tea, blending materials, and a pad for the formation and turning of the compost windrows. The design also proposed designated areas to finish, cure, and store the compost product. Further, McSweeney provided guidance on grading, surface preparation, and native plantings that could treat any nutrient-heavy runoff from the compost piles.

In addition to feedstock analysis, McSweeney designed the layout for a

As a result of this technical expertise, Harney & Sons is equipped with a composting blueprint that suits their needs. On a 10,000-square-foot composting pad, Harney & Sons will process a healthy mix of organic materials: spent tea from their bottling plant (representing the greatest percentage of feedstock), a smaller percentage of off-specification and expired tea from their production facility, and food scraps sourced from various locations, such as their employee break room, Millerton-based café, and a local diner. This operation is expected to redirect over one ton (2,000 lbs.) of organic material per week from disposal, instead transforming it into a nutrient-dense soil amendment. For reference, one ton of organic material is equal to 32 tons of [CO<sub>2</sub>-equivalent](#) emissions, or the corresponding amount of carbon dioxide that would be released into the atmosphere ([EPA Waste Reduction Model](#)).



## Navigating Challenges & Reaping Rewards

The challenges faced by Harney & Sons due to their unique organic inputs have caused them to develop innovative solutions. This project has required steadfast commitment from the Harney & Sons team – each hurdle they have encountered along the way is bringing them closer to a fruitful and worthwhile composting operation.

By managing their own compost site, Harney & Sons will reduce their company's carbon footprint and enjoy the overall [environmental benefits](#) that arise from the composting process. Since they will be landfilling less material, Harney & Sons can reduce either the size of their dumpster or the pick-up frequency of their waste collection service, both of which can result in reduced disposal costs. Additionally, they will create a valuable compost product that can enhance soil health and quality. This finished compost will be used to nourish their on-site hemp fields.

Having learned all of these lessons prior to the composting operation launch, this has already been an instructive journey for Harney & Sons. As they continue moving forward, they will be a valuable model for fellow tea and food producers by showing how to create circularity within one's own supply chain.

[The Center for EcoTechnology](#) provides no-cost assistance to businesses and institutions in New York State that are looking for solutions to wasted food. To take the next step in rethinking your operation's food waste, contact us at **866-306-0911** or [RethinkFoodWasteNY@cetonline.org](mailto:RethinkFoodWasteNY@cetonline.org).

