



Multiple Entities Partner To Divert Food Waste From Landfills

PROBLEM:

Food composting system must breakdown mixed packaged waste for processing

SOLUTION:

Low-speed, High-torque JWC 3-SHRED grinder

San Diego, CA - The statistics surrounding food waste in the United States can only be described as staggering. More than 30 percent of the food produced for human consumption in the United States, valued at \$240 billion annually, isn't eaten. The fact that so much uneaten food is piling up in landfills is a hot topic among those concerned with the reality of feeding the country's growing population. According to the U.S. Environmental Protection Agency (EPA), in 2018, more than 63 million tons of food scraps ended up in landfills and incinerators in the United States. Only four percent of these food scraps were recovered through composting efforts. Yet food scrap composting is believed to be one of the most sustainable ways of achieving two goals: decreasing the amount of commercial solid, organic matter in landfills and creating more nutrient-rich soils in which to grow food for expanding populations.

Getting Ahead of the Curve

Resource recovery efforts specifically targeted at eliminating waste from food scraps are among the innovative solutions

aimed at achieving sustainability for growing populations. Such is the case in California, where the Jacobs & Cushman San Diego Food Bank — the largest hunger relief organization in San Diego County — put itself on the map by acting ahead of a new California law, AB 1826. The new law requires organizations to recycle their organic waste and set a goal of achieving zero landfilled food waste. "Organic waste" is defined as food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. The food bank achieved its goal by partnering with New Jersey-based FOR Solutions, who in turn partnered with California-based JWC Environmental.

Primed for Debris Reduction

Annually, the food bank receives more than 63 million pounds of food and serves, on average, 500,000 people per month in San Diego County. More than five-hundred thousand pounds of what's received cannot be distributed and requires disposal. FOR Solution's patented aerobic in-vessel rotary drum composting system, which includes JWC's Monster Industrial 3-SHRED waste grinder, breaks down food scraps to a size necessary for accelerated composting.

Mixed food waste feedstock can contain a range of items of varied material composition and densities. This can include soft organics, stringy materials as well as tough wood, plastics and stones. The Monster Industrial dual-shafted grinders are ideally suited to breakdown these types of items. The grinders use low-speed, high-torque grinding to cut through the troublesome solids. The two rows of hardened steel cutters grab the solids and crush them with incredibly high

CASE STUDY A SUSTAINABLE CYCLE

forces. The result is small particles — often ½-inch or smaller — that can be easily separated and composted.

This size reduction approach for feedstock has been found to be much more effective than high-speed macerating systems when dealing with the wide variety of solids that can be found in waste streams, including stringy rags, tough stones and other inorganic materials. Systems that utilize high speed cutting blades, cannot deliver the same cutting force as dual-shafted grinders. Macerators tend to become clogged with stringy material or get damaged by hard solids or waste streams with moderate grit.

Breaking New Ground

Composting systems, capable of processing between 2,500 and 40,000 pounds of discarded uneaten food per week, can be found in institutional settings, large commercial kitchens, entertainment facilities and municipal facilities such as wastewater treatment plants. This project was the first time a composting system had been installed at a food bank. The goal of this project was to process the 2,000 pounds of food waste per day and recycle it into nutrient-rich compost used on local San Diego farms. The food bank's improved environmental footprint and substantial savings on hauling and tipping fees are among several additional benefits.

The FOR Solutions equipment for the Jacobs & Cushman San Diego Food Bank was also the first time a JWC grinder had been installed in their

system. The company's co-founder and ecologist Nick Smith-Sebasto was conducting due diligence of shredders online and came across JWC's Muffin Monster grinders. The initial prototype composting system used another manufacturer's grinder, but Smith-Sebasto was intrigued by the Muffin Monster's features and reputation in the market. JWC was able to support the start-up commissioning of the composting system and work through any initial challenges. A careful assessment of the first run indicated that the shredder's tooth pattern wasn't optimal for the wide variety of materials being shredded. JWC engineers provided an alternate tooth pattern and reconfigured the cutters to be more effective.

When dealing with food waste, tailoring grinder systems to address feedstock variations is fairly common. Smith-Sebasto was thrilled with JWC's responsiveness and solution.



JWC Environmental (JWC), a Sulzer Brand, is a world leader in solids reduction, removal systems and product destruction for municipal and industrial applications. JWC Monster Industrial shredders and grinders are uniquely designed to cut through the toughest solids and bring them down to size. Monster Industrial products are working every day, protecting equipment and destroying debris. They are found in applications like recycling, waste-to-energy, commercial facility sewage, food and beverage processing, agriculture, and oil and gas. Founded in 1973, the company has built and shipped more than 40,000 Monster grinders, shredders and screens to customers worldwide. More information on JWC Environmental is available at www.jwce.com

