

Machine Breaks Down Organic Waste

October 12, 2009

In less than a dozen words, BioHitech America chief executive officer Frank E. Celli manages to wrap up his company's product description, operation manual and sales pitch: "You throw anything in the machine that you could digest yourself."

The machine is the Eco-Safe Digester high-volume organic waste decomposition system, an anaerobic digestion chamber that processes food waste and, within 24 hours, spits it out as water that meets the standards for discharge through ordinary drainage systems. And with nearly three dozen of them in place at hotels, restaurants, supermarkets and universities across the country, Allendale, N.J.-based BioHitech is thinking bigger.

"We can potentially change the way producers of organic waste do business on a daily basis," Celli said. "And certainly, we can have a positive environmental impact."

Eco-Safe Digester machines come in three sizes, capable of processing between 400 and 1,200 pounds of organic material a day, and the largest carries a \$49,900.00 price tag. By way of example, however, BioHitech estimates that a company throwing out 1,080 pounds of food waste daily and paying an \$80.00 per ton disposal rate and a \$200.00 haul charge per pickup could find the BioHitech system paying for itself in just under two and a half years.

And in some cases, that waste reduction and its associated fuel usage can count toward U.S. Green Building Council's Leadership in Energy and Environmental Design certification credits. Wood chips serve as the habitat for the microbial mix, which BioHitech recharges four times a year. The wood and any undigested or inorganic material are cleaned out every six months, though the solid waste leftovers are barely a pinch of what went into the machine in the first place.

The effluent discharged from the Eco-Safe Digester is typically about 100 gallons for every 1,200 pounds of food broken down.

Celli -- co-founder and former head of Interstate Waste Services Inc. -- joined the Allendale, N.J.-based company as a partner in summer 2008.

BioHitech's 2006 origins lie in an overseas partnership: South Korean scientist Chun Il Koh, who created the Eco-Safe Digester and the "microbial cocktail" responsible for the decomposition, was seeking an American company to bring the product to the U.S.

"My partners here at BioHitech had a very large food waste collection business in New York City," Celli recalled. "They were a logical choice [for a partner] in that they already had an extensive customer base."

Despite the company's potential, BioHitech wrestled with start-up issues ranging from trouble-prone prototypes to lack of a technical support infrastructure. By the end of 2008, though, it had found its footing and launched pilot programs that offered its machines for trial runs. In November of that year, BioHitech earned the Innovations in Green Technology award at the International Hotel/Motel & Restaurant Show in New York and had more than a dozen of its digesters in operation.

The GOHBio systems are manufactured overseas by BioHitech Korea.

Celli estimates that by the close of 2009, between 40 and 45 Eco-Safe Digesters will be in use across the country, representing a 150% jump from last year. And of the 35 currently in operation, only two are part of the pilot program.

No pilot program participants have opted not to buy, rent or lease the system after giving it a try, Celli said.

The 7,800-student University of San Diego installed an Eco-Safe Digester this year in its LEED-certified Student Life Pavilion.

"We're processing roughly 700 to 800 pounds of items a day," said Andre Mallie, the university's executive director of auxiliary services.

Mallie said the machine has significantly reduced solid waste disposal and associated costs like trash liners, and it has garnered positive attention from customers and local businesses.

"We've been getting quite a few people looking at it," he said. "Quite often, we get the question, 'What do you do with the leftovers?' Now we have an education piece hanging outside the dishroom explaining it."

Though Celli declined to specify BioHitech's estimated revenue for the year, he backed off his projection of \$7 million to \$10 million published in a story earlier this year in The Record, a newspaper based in Bergen, N.J.

"We won't do that," he said. "That's more a reasonable target for 2010. The economy has been a bit of a struggle. We offer a green product that saves money, but we only touch a very small purchasing area of some of the larger companies."

BioHitech has six owners, of whom Celli is the largest shareholder, and nine full-time employees.

While working to raise the product's profile, BioHitech also is looking to improve its service offerings through the development of services like a software package by which a multimachine customer such as a grocery chain could remotely access all of its Eco-Safe Digesters.