

AGRICULTURE: Natural fertilizer startup aims to reduce global warming and holiday leftovers

(Tuesday, December 23, 2008)

Sara Goodman, E&E reporter

Some people trash their leftover fruitcake. Some regift it. One Web site even advocates blowtorching the stuff.

Ed Gildea wants to help save the climate with it.

Gildea is CEO of Massachusetts-based Converted Organics, which takes food waste and converts it into an all-natural fertilizer, using the basic idea of composting, but speeding up the process by months. Converting leftovers, he argues, not only reduces waste but also eliminates harmful chemicals and helps mitigate climate change by reducing emissions. "We help nature do something that is its natural tendency," Gildea said. "We set up the ideal environment."

The U.S. Department of Agriculture estimates that about 25.9 million tons of the nation's food goes in the garbage every year. Most of it ends up rotting in landfills.

The problem is particularly challenging to areas with large urban centers, which face diminished landfill capacity and difficulty siting and operating incinerators. Organic waste alone accounts for 10 to 15 percent of the national solid waste stream.

Researchers and entrepreneurs have been trying to figure out how to take that waste and convert it into something useful. For example, researchers at Clemson University have discovered a method of turning rotten peaches into a biofuel (ClimateWire, Aug. 14).

From fruitcake to fertilizer in a week

But Converted Organics is the first to run a commercial-scale food waste conversion facility, Gildea said.

The process starts when food waste that would go to a landfill is directed instead to the company's plant in California. All big pieces of inorganic materials are taken out, and the remaining waste is poured into a large device called a hydro-pulper. There, the waste is pulverized and liquid is added, and then the mixture is sent to another device called a macerator in which it is agitated.

The remaining inorganic materials are then separated out, with the lighter-weight material floating to the top and heavier inorganic material dropping to the bottom.

Once the remaining inorganic materials are removed, the waste is pumped to a final device called a digester, in which air and naturally occurring bacteria are added. The air activates the bacteria, which eat the waste. When the bacteria are finished, the air is turned off, and the resulting material, called cake, is processed into two forms of fertilizer: liquid and solid.

It takes between six and nine days from the time waste is delivered to the facility until it is a bag of fertilizer. In com-

parison, composting takes anywhere from six to 12 months, Gildea said.

By recycling the waste instead of sending it to landfills, he noted, the process reduces emissions, because decaying waste releases methane into the air, while recycling it eliminates that gas. Greenhouse gases are also reduced because the process involves the use of fewer chemical products that produce emissions in the manufacturing stage.

So far, the biggest market for the company is in California with farmers, who use the fertilizer because it increases their yield. The makeup improves the microbial activity of the soil, which results in a healthier plant that's better able to fight disease, Gildea said.

Interest growing from consumers, industry

The company is looking to expand into retail sometime next year because of the growing interest individual consumers have in using non-chemical products to ensure that small children and pets don't ingest toxins, he said.

The fertilizers generally sell for about \$710 a ton on average, Gildea said, adding that some markets have higher and others have lower prices.

Being the first with a new technology presents challenges for the company as it tries to convince investors that the product works and is profitable, Gildea said.

"The biggest challenge is no one's done it," he said. "We're the first ones to build a commercial-scale food waste recycling facility. With a start-up business, you have to convince people you can do it. Those challenges are magnified if you're also the first doing it."

But so far, people seem to be interested. The company has its main facility in California and another in New Jersey, and is developing a third in Rhode Island. The California plant has about 40 purchasers of the product. In addition, the company sells to retail outlets such as Home Depot and to golf courses.

And while people's motives for wanting an all-natural fertilizer differ, Gildea is banking on his product offering something for everyone.

"Consumers are very much more attuned to issue of using sustainable practices and how waste is disposed, and those in the turf industry are also more sensitive," Gildea said. "In the agriculture industry, they're typically attracted to what we do because we help them increase their yield and make more money."