

## Extraction device may increase FOG supplies

The biodiesel industry is continually searching for new outlets of fats, oils and grease (FOG) that producers can tap into. To that end, the Fairfield, N.J.-based company, Renewable BioSystems LLC, has recently licensed the North American rights to make and market what it dubs "advanced oil extraction" units with "significant waste-to-energy conversion metrics."

The oil extraction machine was originally developed in England, and three of these units are operating in the U.K. and Germany today, one of which is in use at an existing biodiesel plant. Peter Behrle with Renewable BioSystems told *Biodiesel Magazine* that the key to the oil extraction devices is their maximization of oil release from any number of feedstocks such as livestock offal, food waste, fish residues and other prevalent wastes.

Behrle said these machines do more than just centrifugation though. "It's about particle size reduction, heat and centrifuging," Behrle said, adding that biodiesel producers are more familiar with vertical centrifuges for liquid-liquid separation than horizontal centrifugation, which Renewable BioSystems' machines employ.

The company isn't necessarily suggesting biodiesel producers go out and buy one of these units and start accepting solid food wastes at their plants though. "It's not easy in terms of getting permitting through to begin accepting food waste," Behrle said.

For biodiesel projects under development or for existing producers located next to a slaughterhouse or food processing facility, however, Behrle said, "We stress a co-location strategy for biodiesel producers." By this he means negotiating a deal with the facility to locate one of these oil extraction units on-site, from which the biodiesel facility can arrange a steady supply of feedstock for its operations.

Size of the units varies depending on need, and throughput ranges from 3 to 15 metric tons per hour. Behrle said the price tag ranges from \$1.5 million to \$3 million.

The company stated that 95 percent of any given material's "fat" content is extracted as oil. For reference, Renewable BioSystems said that general food waste typically contains 8 to 26 percent fat/oil content; dough and pie waste, 26 percent; dissolved air flotation sludge, 8 to 30 percent; swine bones, 12 percent; chicken offal, up to 34 percent; swine offal, 24 percent; and lamb offal, 32 percent.

—Ron Kotrba



Renewable BioSystems' oil extraction machines, which employ particle-size reduction, heat and centrifugation, are sized to process between 3 and 15 tons per hour.



Oil totes are filled and sent to their destination, such as a nearby biodiesel plant for further cleaning and processing into fuel.