

CLEARING THE FOG

OIL EXTRACTION EXPANDS FEEDSTOCK PROCESSING OPTIONS



Organic wastes are fed into the extraction system's macerator (above), which forms a slurry. A centrifuge separates the slurry into oil, wastewater and solids (right).



Technology developed for tanneries is being utilized to extract oil from organic waste streams to improve compost process efficiencies and create biofuels revenue streams.

Diane Greer

FOR the past 10 years, Bio Waste Solutions Ltd. (BWS) has operated a composting facility at its 4,000-acre farm in Bonby, North Lincolnshire in the United Kingdom (U.K.). The facility originally employed windrows to compost green wastes but switched to in-vessel composting after receiving odor complaints from its neighbors.

Problems with the in-vessel composting system started shortly after the facility began taking in food wastes containing fats, oil and grease (FOG). FOG floating to the tops of the composting containers accumulated into oil slicks. "Bacteria could not operate in the oily product causing problems in achieving the required temperatures and ultimately a poor end product for spreading to land," explains Lew Dodd, BWS co-owner.

The aerobic process was also considerably slowed by the presence of oil in the raw material, adds Richard Thornhill of Agritec Systems Ltd. (ASL), inventor of the oil extraction technology: "This forced the operators to avoid processing wastes containing oil. Since these waste streams commanded the highest tipping fee this was a considerable financial burden."

FOG is imminently compostable and actually good in certain proportions but you can have too much of it, says Robert Spencer, an environmental planner specializing in compost facility development and operation. "The problem is the compost gets too wet," he explains. "With any composting technology you have optimum moisture content."

FOG can cause operational problems at composting facilities, Spencer adds. "It can be a real mess," he says, clogging pipes, pumps and screening equipment and getting on conveyors. There also are safety hazards, as FOG can make tipping floors slippery, interfering with equipment operation and causing workers to fall. "There are odor issues too, depending on how rancid the grease is," he notes.

"DEGREASING" STEP

BWS found a solution to its oil problems at nearby Cranswick Fine Foods, a pork processing facility in Hull, U.K. The composter noticed that the waste from Cranswick did not cause oil problems when processed. Further investigation revealed that Cranswick was using technology developed by ASL to extract oil from its waste before shipping the material to BWS.

ASL partnered with BWS to install a 3 metric tons/hour oil extraction system at the compost operation. For the past two

