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Around the Columns

Wake up and smell the biofuel

Few things are as appealing as a hot cup of coffee in the morning. What's not alluring are the messy, wet grounds remaining in the coffee maker. But don't be so quick to judge.

The leftovers from that cup of pick-me-up could soon fill your gas tank. Coffee is the second largest import to the United States, topped only by crude oil. The 150 million coffee drinkers in the U.S. consume an average of three cups of joe a day, generating three billion pounds of grounds a year. Those spent grounds are almost 14 percent oil, says A. Bulent Koc, assistant professor of agricultural systems management.

Using the oil from coffee grounds for fuel has some real advantages. "Using fuel sources such as soybean oil for biofuel production may limit the availability and price of soybean oil for human consumption," Koc says. "Spent coffee grounds are waste material, and oil extraction and biodiesel production from spent coffee grounds would be a way of utilizing the waste."

A few researchers have begun experiments to extract oil from dry, spent grounds and turn it into a roasty-smelling biofuel. Koc and his team extract the oil from wet coffee grounds using high-intensity ultrasound and solvents. The process doesn't require the time and energy other methods use to dry the grounds before extracting oil. Koc plans to test engine and exhaust emissions from the new biofuel soon.

Currently, Koc says no commercial operation exists that extracts oil from coffee grounds, but a coffee-bean-roasting company has contacted him about doing so. — David Wietlispach

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