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July 29, 2010 1:37 PM PDT

# Possible new fuel sources: Urine, bad butter

by Matt Hickey

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Ioannis Ieropoulos of the Bristol Robotics Laboratory thinks pee could power your car one day.

(Credit: University of the West of England)

Add urine and old butter to the list of waste products that could be used to make fuel in the future.

Researchers at the U.K.'s Bristol Robotics Laboratory, a collaborative University of

Bristol/University of the West of England facility, have been working on [yet another project](#) that could convert human urine into power.

The [project](#) was set up to experiment with bacteria in hopes of finding "food" for autonomous robots ([like this pooping bot](#)) using [microbial fuel cells](#), which rely on a biotic mix of specially bred bacteria to create electricity. The microbes are washed with a fuel "food"--in this case, urine--which they "eat." The waste materials from this process are hydrogen ions, carbon dioxide, and electrons. The electrons are channeled down an anode and captured as electricity.



"Look! I'm making old-timey fuel of tomorrow!"

(Credit: [Colonial Williamsburg Official History Site](#))

Now the team "hopes to work toward producing a prototype portable urinal that would use urine to create power from fuel cells. We envisage that this could be used, for example, at music festivals and other outdoor events."

That means all the beers we drink at music fests and baseball games could be converted into usable, relatively clean electricity. There was enough beer "relieved" last weekend at Seattle's Capitol Hill Block Party festival that

it probably could have powered a small South American country.

The scientists have tried other types of "food sources" for the fuel, including grass clippings, prawn shells, flies, and discarded rotten fruit, but urine's unique properties, such as its abundance of nitrogen and other chemicals, make it a good candidate, they say.

Of course, this isn't the only experiment focused on turning organic waste into power. Research going on at HP Labs suggests it might be feasible to take methane captured from cow manure to [power data centers](#), sort of a server farm on the dairy farm approach.

But what about butter? The Journal of Agricultural and Food Chemistry (yes, it exists) has [published a study](#) that says that spoiled, surplus, or non-food grade butter is a good candidate as a "food source" for biodiesel, a fuel that's expected to have a rising global demand in the near future.

Scientists at the USDA's Agricultural Research Service took a quarter-ton of butter and converted it to a rough version of biodiesel. It wasn't perfect, but when fortified with other types of biodiesel fuel or purified further, they say, waste butter would make a suitable source of fuel in the future.

Right now, I'm beta-testing a scooter that runs on grape jelly, but the people behind it say the tech won't be ready for another 10 years, so butter it is.



With more than 15 years experience testing hardware (and being obsessed with it), Crave freelance writer Matt Hickey can tell the good gadgets from the great. He also has a keen eye for future technology trends. Matt has blogged for publications including TechCrunch, CrunchGear, and most recently, Gizmodo. [E-mail Matt](#).

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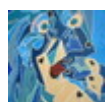
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