

Scottish startup looking to turn whisky dregs into biobutanol

June 20 2013, by Bob Yirka



(Phys.org) —Scottish-based company Celtic Renewables is looking to use waste materials from the whiskey production process to make biobutanol, which can be used to power engines. The process, called acetone-butanol-ethanol (ABE), is based on using the bacteria *Clostridium acetobutylicum* to break down materials in the waste.

Making whiskey is not an efficient process, as just 10 percent of the liquids that flow out are drinkable product—the rest is draff and pot ale. Industry records show that Scotland whiskey makers produce over a billion and half liters of such waste annually—currently it's disposed of,

costing the Scottish whiskey industry millions of dollars. Celtic Renewables wants to take that waste and use it to make biobutanol. Eager to reduce their costs, whiskey distilleries are open to the idea. One of them, Tullibardine, is currently supplying both pot ale and draff to the startup for use in its [pilot project](#).

Biobutanol is similar in many respects to ethanol: it's made via fermentation. The process of making it was first developed by Chaim Weizmann, who famously eventually became the first president of Israel. Back then, the idea was to create acetone for making munitions. Later uses for the process were overtaken by petroleum-based products and thus it laid unused for generations. Now, researchers at Celtic [Renewables](#) are using it to ferment whiskey waste into biobutanol, which is believed to have 25 percent more energy by volume than ethanol. It can be used alone as a [motor fuel](#) or mixed with either gasoline or [diesel fuel](#). Another plus, the company has said that it doesn't require new crops or land for its production—it will be made entirely from waste products. Currently, that means waste from whiskey making, but reps from the company say they are hoping to expand to converting waste from wine and beer making, wood processing, and commercial food preparation waste as well.

The company is now at the halfway point in its [pilot program](#), so it's not yet known if the process is cost-effective. In addition to producing 10,000 liters of biobutanol, the company will also produce bioacetone, and solid waste that can be processed and sold as animal feed.

More information: via [National Geographic](#)

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