

[Fuel Found in Old Newspapers](#)

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Here's one way that old-fashioned newsprint beat the Internet: Tulane University scientists have discovered a novel bacterial strain, dubbed "TU-103," that uses paper to produce butanol, a biofuel that serves as a substitute for gasoline. The researchers are currently experimenting with old editions of *The Times-Picayune* newspaper with great success.



Tulane has applied for a patent for a method to produce the biofuel butanol from organic material, a process developed by associate professor David Mullin, right, postdoctoral fellow Harshad Velankar, center, and undergraduate student Hailee Rask. (Photo by Paula Burch-Celentano)

TU-103 is the first bacterial strain from nature that produces butanol directly from cellulose, an organic compound, says [David Mullin](#), associate professor of cell and molecular biology.

"Cellulose is found in all green plants and is the most abundant organic material on earth. Converting it into butanol is the dream of many," says Harshad Velankar, who was a postdoctoral fellow in Mullin's lab. "In the United States alone, at least 323 million tons of cellulosic materials that could be used to produce butanol are thrown

out each year.”

Mullin's lab first identified TU-103 in animal droppings, cultivated it and developed a method for using it to produce butanol. A patent is pending on the [process](#).

“Most important about this discovery is TU-103's ability to produce butanol directly from cellulose,” says Mullin.

He adds that TU-103 is the only known butanol-producing clostridial strain that can grow and produce butanol in the presence of oxygen, which kills other butanol-producing bacteria. Having to produce butanol in an oxygen-free space increases the costs of production.

As a biofuel, butanol is superior to ethanol (commonly produced from corn sugar) because it can readily fuel existing motor vehicles without any modifications to the engine. It also can be transported through existing fuel pipelines, is less corrosive and contains more energy than ethanol, theoretically resulting in improved mileage.

“This discovery could reduce the cost to produce bio-butanol,” says Mullin. “In addition to possible savings on the price per gallon as a fuel, bio-butanol produced from cellulose would dramatically reduce carbon dioxide and smog emissions in comparison to gasoline.” The innovative process also could have a positive impact on landfill waste.