

Rice in your gas tank: Boosting biofuel production from rice straw

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Scientists report the production of biofuels from rice straw (above), which is a leftover from harvesting the grain. Credit: Courtesy of Wikimedia Commons

Researchers in China are reporting a discovery that could turn rice straw into an inexpensive new renewable source of biofuel. Their new study, scheduled for the July 16 issue of ACS' bimonthly journal *Energy & Fuels*, describes a way to boost production of biofuel from rice straw by almost 65 percent.

In the new study, Xiujin Li and colleagues point out that China is the world's largest rice producer, a crop that leaves behind about 230 million



tons of rice straw each year. Rice straw is the stem and leaves left behind after harvesting the grains.

Scientists, however, have not tapped rice straw for production of biogas because bacteria cannot easily break down its cellulose due to the complex physical and chemical structures of lignocellulosic biomass.

The researchers treated rice straw with sodium hydroxide before allowing bacteria to ferment it into a biogas. That so-called pretreatment increased biogas production by making more cellulose and other compositions in straw available for digestion by the bacteria. Three prototype facilities have been built in China using this technology.

Article: "Physiochemical Characterization of Rice Straw Pretreated with Sodium Hydroxide in the Solid State for Enhancing Biogas Production" <u>dx.doi.org/10.1021/ef8000967</u>

Source: ACS

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