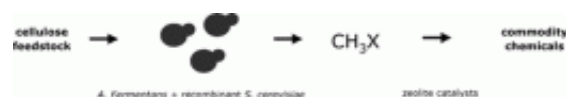


Advance toward producing biofuels without stressing global food supply

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Researchers have located genes in plants, fungi and bacteria that could aid production of biofuels. Credit: The American Chemical Society

Scientists in California are reporting use of a first-of-its-kind approach to craft genetically engineered microbes with the much-sought ability to transform switchgrass, corn cobs, and other organic materials into methyl halides — the raw material for making gasoline and a host of other commercially important products.

The new bioprocess could help pave the way for producing biofuels from agricultural waste, easing concerns about stress on the global food supply from using corn and other [food crops](#). Their study is scheduled for the May 20 issue of the *Journal of the American Chemical Society*, a weekly publication.

Christopher Voigt and colleagues note in the new study that using crop waste to produce methyl halides is one of the most attractive ways of transforming biomass into liquid fuels and chemical raw materials now derived from petroleum. Plants and microbes produce methyl halides naturally, but in amounts too small for commercial use.

Using a database of 89 genes from plants, fungi, and bacteria known to produce methyl halides, the researchers identified genes that were the most likely to produce the highest levels of these substances. The scientists then spliced these genes into Brewer's yeast — used to make beer and wine — so that the [yeast cells](#) churned out methyl halides instead of alcohol. In laboratory studies, the two engineered microbes helped boost methyl halide production from switchgrass, corn cob husks, sugar cane waste, and poplar wood to levels with commercial potential.

More information: “Synthesis of Methyl Halides from Biomass Using Engineered Microbes”, [Journal of the American Chemical Society](#)

Provided by American Chemical Society ([news](#) : [web](#))

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