

consumption, thanks in part to Coskata's "next generation ethanol" process based on OSU research and technology. Independent research conducted by the U.S. Department of Energy showed Coskata's process compared to conventional gasoline can reduce carbon dioxide emissions by as much as 84 percent.

Biodiesel Benefits

Each year, U.S. livestock slaughter facilities alone produce about 2.5 million tons of tallow from cattle and about 0.5 million tons of lard from hogs. Biodiesel can be processed from animal fats and plant oils. It has a very positive net energy gain. Current OSU research is focusing on oil seed production, oil conversion and which fats, oils and greases are most beneficial to supporting a sustainable biodiesel industry. Much of the research is being conducted through DASNR's Robert M. Kerr Food and Agricultural Products Center.

Down on the Farm

Sorghum-related biofuels research is taking a localized approach with the aim of making possible the effective production of ethanol in the farmer's own field. Sweet sorghum provides high biomass yield with low irrigation and fertilizer requirements. The OSU Biofuels Team is working to determine the maximum possible harvest window for sweet sorghum in Oklahoma as well as environmental parameters that may affect the feasibility of on-farm fermentation.



Thermo Tolerant Yeast

OSU scientists are working to enhance enzymatic conversion of cellulosic materials, the major combustible component of non-food energy crops. Researchers currently are investigating the best conditions for use of the



Kluyveromyces marxianus IMB4 yeast strain in maximizing ethanol production from various cellulosic feedstocks. The thermo tolerant yeast strain is allowing researchers to "crank up the heat" and increase biomass-to-ethanol conversion efficiency.

Fast Facts about OSU Biofuels

OSU, the University of Oklahoma and the Samuel Roberts Noble Foundation form a three-way partnership that is the foundation of the \$40 million Oklahoma Bioenergy Center established by Gov. Brad Henry in 2007.

DASNR is utilizing \$10 million in special legislative appropriations toward the development of Institute for Agricultural Biosciences in Ardmore, part of the Division's statewide Oklahoma Agricultural Experiment Station system.

OSU is the South Central Regional Center for the national Sun Grant Initiative, established to create new solutions for America's energy needs and revitalize rural communities. The South-Central Region provides funding to scientists and engineers at land-grant universities in Oklahoma, Texas, Louisiana, Arkansas, Missouri, Kansas, Colorado and New Mexico.

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Biofuels Research at OSU



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