

Cellulosic Ethanol Fact Sheet

What is cellulosic ethanol?

Cellulosic ethanol is a renewable liquid fuel produced from readily available biomass feedstock sources. Cellulose is the most abundant organic compound on earth and is found in virtually all forms of biomass. Vercipia's cellulosic ethanol production process uses technology based on advanced, proprietary enzyme science that reduces the cost of production and enables the use of a wide variety of biomass feedstocks relative to first generation ethanol production.

How does cellulosic ethanol differ from first-generation ethanol?

Unlike "first-generation" ethanol made from traditional feedstocks such as corn, cellulosic ethanol is made from biomass such as energy grasses, canes, woodchips, corn stover and rice straw. Cellulosic biomass yields are substantially higher per acre of cultivated land than traditional, food-based feedstocks. Moreover, biomass feedstocks have significantly lower environmental impact; their greenhouse gas emissions are significantly lower than those related to fossil fuel or first generation biofuels. Energy cane, a dedicated biomass crop will constitute the principal feedstock for Vercipia's first commercial facility.

Among the key advantages of cellulosic biomass feedstock are: (1) use of dedicated energy crops, (2) comparatively low and stable cost (3) suitability to use of underutilized or fallow lands, (4) beneficial net energy balance, (5) reduced need for fertilizer and water, per gallon of fuel produced, relative to other crops, and (6) reduced emission of green house gases.

Virtually all molecules of ethanol are identical, however, they are not created equal in terms of environmental impact. According to a report by Argonne National Laboratory, corn ethanol reduces GHG emissions by 18% to 29% per vehicle mile travelled as compared to gasoline, while cellulosic ethanol reduces them by more than 60% per vehicle mile travelled. Cellulosic ethanol production may generate valuable carbon credits as carbon pricing policies take effect given its substantially improved carbon emission profile.

How much cellulosic ethanol does America need?

Advanced biofuels are expected to play a major role in reducing America's reliance on gasoline, while sharply reducing net carbon emissions that contribute to global warming. The Energy Independence and Security Act of 2007 mandates the use of at least 16 billion gallons of cellulosic ethanol in our nation's automotive fuel supply by 2022 – about 10% of current consumption. Today most US cars can run on blends of up to 10% ethanol; motor vehicle manufacturers already produce vehicles designed to run on much higher ethanol blends.

How does Vercipia differ from others in the ethanol industry?

As a joint venture between energy leaders BP and Verenum, Vercipia encompasses a fully integrated approach to advanced biofuels; the company is mastering the full cellulosic ethanol production process and has expertise and capabilities across the biofuels value chain including growing energy crops, developing enzymes, processing biomass into fuel and, ultimately, selling ethanol into the transportation fuels marketplace. With its broad range of expertise and resources, and the dedicated commitment of Verenum and BP, Vercipia is poised for success.