What's Growing In Kansas?

Renewable Fuels

Part seven of a seven-part series on Kansas Agriculture

Every American is concerned with the price they are paying at the pump. With the steady increase in fuel prices, we are looking for more efficient automobiles, untapped crude oil resources and alternative fuel sources.

Kansas ranks 8th in the U.S. for oil production but production has experienced a steady, natural decline as it becomes increasingly difficult to extract oil over time. Today, the U.S. imports more than half of its oil and overall consumption continues to increase.

Many countries, including the United States, are producing ethanol and biodiesel. These renewable fuels are made from crops such as soybeans, corn, grain sorghum and wheat. These alternative fuels will help us reduce our reliance on foreign oil, burn cleaner, improve our energy security, create American jobs and will increase the demand and price for farmer's crops.

E-10 and E-85

Ethanol is sold nationwide as a high-octane fuel that delivers improved vehicle performance while reducing emissions and improving air quality. At its most basic, ethanol is grain alcohol, produced from crops such as corn and grain sorghum. Pure, 100% ethanol is not used as a motor fuel; instead, a percentage of ethanol is combined with unleaded gasoline. The two blends sold in the U.S. are:

E10 - 10% ethanol and 90% unleaded gasoline

E10 is approved for use in any make or model of vehicle sold in the U.S. In 2004, about one-third of America's gasoline was blended with ethanol, most in this 10% variety.

E85 - 85% ethanol and 15% unleaded gasoline

E85 is an alternative fuel for use in flexible fuel vehicles (FFVs). There are currently more than 6 million FFVs on America's roads today, and automakers are rolling out more each year. When E85 is not available, these FFVs can operate on straight gasoline or any ethanol blend up to 85%.

There are seven Kansas ethanol plants located in Campus, Atchison, Garden City, Colwich, Leoti, Garnett and Russell. These plants use 65 million bushels of Kansas corn and grain sorghum and have the capacity to make 170 million gallons of ethanol per year. An additional ethanol plant with a 40 million gallon capacity will be opening soon near Phillipsburg and other plants are being planned.

In the production of ethanol, the kernel is not wasted - 1/3 goes to ethanol; 1/3 goes to distillers grains (a high-nutrient livestock feed) and 1/3 goes to carbon dioxide (used for making soda and frozen foods).

Biodiesel

Biodiesel is made from vegetable oil, most commonly soybean oil. It contains no petroleum, but it can be blended at any level with petroleum diesel to create a biodiesel blend. It can be used in diesel engines with no major modifications. Biodiesel is simple to use, biodegradable, nontoxic, and essentially free of sulfur and aromatics.

Biodiesel is one of the most thoroughly tested alternative fuels on the market. Although biodiesel can be blended at any level, the most common ratios are:

B2 – 2% biodiesel and 98% petroleum diesel

A common blend offered by fuel retailers and distributors.

B20 – 20% biodiesel and 80% petroleum diesel

Offers significant clean air benefits. Used by government, utility company and school-bus fleets.

B100 – 100% biodiesel

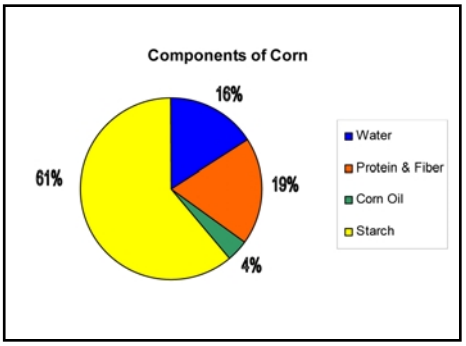
Completely replaces petroleum diesel – very clean burning. Europe uses B100, but it is not commonly used in the United States

Biodiesel is currently sold at over 170 off-road and 35 on-road retailers in Kansas. Although there aren't any biodiesel plants in Kansas, there are currently six entities looking at the possibilities of building biodiesel plants in Kansas.

Activities

1. The text above states the names of seven Kansas towns that have Ethanol plants. Locate all of these towns on a map.
2. Write a short essay describing how you think life in the United States would change if we all used E85 and B100 fuels?
3. Ethanol is made from the starch in corn. If a bushel of corn weighs 56 pounds, how many pounds could be used to produce ethanol? (Use the adjacent pie chart to help figure the answer.)
4. One bushel of soybeans (60 pounds) produces one and a half gallons of biodiesel. If you wanted 8 gallons of biodiesel, how many bushels of soybeans would you need? How many pounds?

(3.) 34.16 (4.) 5.33 bushels; 319.98 lbs



Sources: Renewable Fuels Association (www.ethanolrfa.org), National Ethanol Vehicle Coalition (http://www.E85Fuel.com), American Coalition for Ethanol (www.ethanol.org), Kansas Corn Growers and Kansas Grain Sorghum Producers Association (www.ksgrains.com), Kansas Soybean Commission (www.kansassoybeans.com) and The National Biodiesel Board (www.biodiesel.org)

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