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## *In defense of corn ethanol*

**By: Kirk Leonard**

The first car Ferdinand Porsche built was electric. The first car Henry Ford built ran on ethanol. The first engine Rudolf Diesel built ran on peanut oil. With a century of petroleum experience behind us, we are getting back to basics. Electric cars and biofuels are coming back, thank goodness.

Biofuels provide a bridge and are a necessary piece of the energy transition we must do to sustain ourselves and our planet. Our agricultural and transportation systems depend on liquid fuels today. Smart land use decisions and good farming practices can provide both biofuels and sufficient food for all. Organic wastes will also become a significant biofuel feedstock.

Biofuels have been subject to more world media sustainability scrutiny than any “new” technology I am aware of, historically, which is both a good thing and unfortunate at the same time. A lot of good experience, data and direction have been gained and a lot of misinformation has been spread about biofuels.

Corn ethanol has been a particular target of naysayers. It has net negative greenhouse gas value! It causes deforestation, food shortages and price increase! It is net energy negative and causes engine problems! This is claptrap created by big businesses – big oil and big food in particular. Its purpose is to confuse people, and to support unsustainable, proprietary products and markets.

When has indirect land use change, a greenhouse gas (GHG) measure now being applied to biofuels, ever been considered in the development of an industry, for example? Has it ever been a consideration of leap-frog style urban expansion and its dramatic greenhouse gas effects – the loss of farm lands and carbon sequestration value, and increases in fossil fuel use? What about land despoiled by oil extraction, or lumber clear cuts? Is it fair, or even rational, to attribute all future land use changes to biofuels?

On GHG benefits, corn ethanol has shown impressive improvements since first being produced in volumes in the 1980’s, and it has never been negative. A recent life-cycle analysis done for the International Energy Agency determined corn ethanol presents a substantial benefit, reducing GHGs, from “well to wheel” by 40% compared to gasoline, an appreciable amount, verifiable using current data and projected to increase to 55% by 2015.

On land use changes resulting from corn ethanol, there is no evidence of new US ag lands being used for corn cultivation, and there is no evidence of international land use changes, let alone deforestation, caused by corn ethanol. Normal farm crop decisions based on market factors have resulted in more US corn acreage, but other staple crops like soy and wheat are, like corn, in adequate supply and surplus. Another recent report concludes there is not likely to be any land use change associated with corn ethanol up to the maximum legislated amount of 15 billion gallons per year, set by Congress in 2007.

The ability to pay for or profit from food and weather remain the continuing primary sources of food access problems in the world. Corn ethanol and other biofuels have nothing to do with that. Food riots about rice costs have nothing to do with biofuels. Rice is not used for biofuel, and rice lands are not wisely used for other biofuel crops.

Rational economic analyses of the impact of corn ethanol suggest a tiny effect -- .2-.3% of a family's food bill. A 2007 study concluded: "variations in the corn price 'explain' only 4% of the variations in the food CPI (Consumer Price Index). Thus, the corn price would be considered a statistically insignificant variable in determining what drives the food CPI." In light of normal inflation, continuing adequate supply and record surpluses, the food cost argument against ethanol is simply not valid.

One of the least rational but oft-cited issues with ethanol is engine problems. Since 1980, all engines sold in the US have been required to be ethanol compatible, so if you have experienced engine problems with ethanol blend fuels, something else is wrong. It isn't the ethanol.

All this is not to say corn ethanol is good. It is not a good, long term biofuel solution, but in the US, it has paved the way. It is the principal oxygenate in gasoline today throughout the country. We have gained a great deal of experience in its development, and all of the facilities we have built will be equally useful with cellulosic ethanol, the next generation of bioethanol worldwide.

No less an authority than the US government has determined that biofuels made from food crops must be limited. They have put a limit on corn ethanol. The biofuels industry is similarly oriented, seeking a future not based on food crops and sensitive to the displacement of food resources and lands.

Biofuels are an essential piece of our energy future, as are greatly increased energy conservation and efficiency measures. Developed well, using wastes and non-food crops, focused on marginal or damaged lands, employing organic, low-input and no-till cropping practices, they can provide tremendous energy and environmental benefits.

### **References and Further Information:**

A recent IEA LCA-GHG study on corn ethanol:

<http://www.task39.org/LinkClick.aspx?fileticket=nRr183p3VKo%3d&tabid=1806&mid=6196&language=en-US>

A 2008 presentation on food v. fuel and corn economics by an ag economist:

[http://cwcleancities.org/pdfs/conf\\_june\\_08/food\\_price\\_factors.pdf](http://cwcleancities.org/pdfs/conf_june_08/food_price_factors.pdf)

A recent publication on biofuel agricultural and environmental effects and opportunities:

<http://cip.cornell.edu/biofuels/>

A recent report on land use effects of corn ethanol:

[http://www.ethanolrfa.org/objects/documents/2191/land\\_use\\_effects\\_of\\_us\\_corn-based\\_ethanol.pdf?utm\\_medium=email&utm\\_source=Email+marketing+software&utm\\_content=326173627&utm\\_campaign=Release%3a+Land+Use+Report+ +dhkiur&utm\\_term=Download+the+report+in+PDF](http://www.ethanolrfa.org/objects/documents/2191/land_use_effects_of_us_corn-based_ethanol.pdf?utm_medium=email&utm_source=Email+marketing+software&utm_content=326173627&utm_campaign=Release%3a+Land+Use+Report+ +dhkiur&utm_term=Download+the+report+in+PDF)