

# Ethanol: The Next Wonder Fuel?

*We do not err because truth is difficult to see. It is visible at a glance. We err because this is more comfortable.*  
 – Alexander Solzhenitsyn

At first glance, corn-based ethanol may seem like the next “wonder fuel.” It has strong support from politicians on both sides of the Republican/Democratic divide, particularly in states with a large agricultural base. The present administration would also have us believe that ethanol is the answer to our dependency on oil, particularly foreign oil. After all, it is made from a homegrown, plentiful, renewable resource – corn – right? But even while politicians are extolling its virtues, industry analysts and scientists are drawing more sobering conclusions. Setting aside the ethical considerations of using a much-needed and relatively inexpensive food source to power gas-guzzling vehicles, allowing us to forestall making major lifestyle changes in support of a healthier planet, ethanol has some other serious drawbacks, not the least of which is its definition as clean, renewable and sustainable.

In an article in the January 2007 issue of *Scientific American*, Matthew Wald, a *New York Times* reporter who has been covering energy issues since 1979, writes that “there is less to ethanol than meets the eye.” It turns out that it takes “copious amounts of natural gas” (or, shudder, coal) to produce ethanol, and much of this natural gas would have to come from outside the U.S. When one actually considers the amount of energy that goes into producing ethanol and the amount of energy that ethanol provides, there seems to be little, if any, net energy value accrued. The article also notes that even if 100 percent of all the corn grown in the U.S. today (leaving none for food or feed) was somehow converted into ethanol, it would only provide “a small fraction of

the fuel” (about 7 percent) needed by us to power our vehicles. Some experts say that it will take growing an additional 80 million acres of corn to meet even the modest goal set by the administration of replacing just 15 percent of the gasoline used in vehicles today with ethanol. This is just not feasible – not to mention unsustainable – due to the energy demands of fertilizing, producing, and transporting corn-based ethanol from field to pump. In terms of global warming and greenhouse gas production, ethanol appears to provide dubious benefit, depending on how it is made. Ethanol made with natural gas may be “marginally better” than gasoline, but ethanol produced with coal is worse.

So, if corn-based ethanol is not the answer to our growing energy and environmental crisis, what is? First and foremost, a reduction in total energy consumption. Period. We all know that, whether we want to accept it or not. Secondly, while continuing to reduce energy usage, investing in the discovery and implementation of truly renewable energy sources. One possibility: ethanol produced not from corn but from agricultural waste (for example, corn stalks), perennial prairie grasses (which grow quickly and require little water or fertilizer), or other cellulose-rich sources. According to Wald, producing ethanol from cellulose could provide a double benefit as a relatively plentiful source of fuel that also produces a usable by-product (lignin) that can be utilized to create electricity in the process.



Currently, the technology is not yet available to produce ethanol from cellulose on a wide scale, and there could be unintended and, at this time unknown, consequences related to ethanol production from any source. Optimists believe, though, that one day scientists will so perfect the process that even the conversion of “lower-value” cellulose, such as that found in paper, including recycled newspapers and magazines, could potentially provide additional sources for ethanol production that do not involve converting food to fuel – but nobody knows for sure.

The lesson here may simply be that there is no one quick fix to our situation today, no “wonder fuel” that is going to magically solve all our energy and environmental problems and allow us to continue to live the way we are living now without some sacrifice. Acknowledging the truth of the situation, while uncomfortable, may ultimately prove to be the biggest, most important step we have to take toward true energy independence and a clean, stable environment.

**Linda Maree is a freelance writer with a passion for the environment. Please write to [etainwrites@aol.com](mailto:etainwrites@aol.com).**



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