

The following questions are based on this article

## **Is Ethanol for the Long Haul?**

By Matthew L Ward

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1. In August 2005, Congress passed an “energy bill” that called for the production of \_\_\_ gallons of ethanol (EtOH) by the year 2012
2. According to the Renewable Fuels Association, EtOH production in 2006 equaled about \_\_\_ gallons while gasoline and diesel consumption was running at about \_\_\_ gallons for this same period.
3. At the present time, commercially sold EtOH comes from the conversion of sugar derived from \_\_\_ into EtOH by the action of \_\_\_ cells.
4. The article contends that EtOH production will not make economic or environmental sense until EtOH can be derived from \_\_\_.
5. One “problem” with EtOH is its lower energy content when compared to gasoline. 42 gallons (one barrel) is the energetic equivalent of \_\_\_ gallons of gasoline.
6. As noted in the article, natural gas plays a significant role in EtOH production. What is the biggest use for natural gas in the production of EtOH in current schemes?
7. There appears to be a problem with the use of pipelines for the shipping of EtOH. What is the difficulty, mentioned in this article, with the use of pipelines for moving EtOH from production facilities of other areas of the country?
8. According to information provided by David Pimentel of Cornell University the complete diversion of the current United States corn crop into EtOH production would yield sufficient EtOH to satisfy about \_\_\_ percent of the current demand for vehicle fuel in the country.
9. You should be able to cite 3 areas where the production of EtOH currently relies on the use of fossil fuels.
10. In this article, attention was paid to a substance known as lignin. What is this material (based on this article and not a detailed biochemical description of it). What type of use could it have in the production of EtOH?

**NOTE: EtOH is simply a short hand way to indicate Ethanol.**