



The Energy Resources Center at the University of Illinois at Chicago has conducted a survey of energy, technology, and water use at dry mill corn ethanol plants. The survey was administered by the Survey Research Laboratory located at the University of Illinois at Urbana-Champaign.

In total, 90 out of 150 dry mill plants operating during 2008 responded to the survey. This represents 6.1 billion gallons of 9.27 billion gallons of operating capacity or a 66% response rate.

The last comprehensive survey of energy consumption at corn ethanol plants dates back to 2001. The 2001 survey was conducted by BBI International and it was commissioned by the Office of Energy Policy and New Uses, US Department of Agriculture. The 2001 survey found that, on average, dry mill plants used 36,000 Btu per gallon and 1.09 kWh per gallon of ethanol and produced 2.64 gallons of ethanol per bushel.

Compared to the 2001 survey we find that dry mill corn ethanol produced in 2008 requires 28% less thermal energy and 32.1% less electricity but produces 5.3% more ethanol (2.78 gallons per bushel). A statistical comparison of plants surveyed in 2001 and same vintage plants surveyed in 2008 suggests that older dry mill ethanol plants installed energy efficiency retrofits.

The study report is available at www.ilcorn.org or by contacting Steffen Mueller at (312) 355-3982.

The study results are published in *Biotechnology Letters* under reference DOI: 10.1007/s10529-010-0296-7 and can be accessed at: <http://springerlink.com/content/x97356t2878619p1/fulltext.pdf>

Web-Based Survey Instrument – Screen Shot

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Ethanol Plant Energy Survey, 11/17/09

In what ZIP code is your plant located?

What is the ethanol capacity of your ethanol plant? (MMbbl/yr)

What is the plant's immediate capacity for anhydrous ethanol production?

 submit survey

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On average, a dry-mill corn ethanol plant in 2008

- utilizes 25,859 Btu/gallon (LHV, anhydrous ethanol) of thermal energy and 0.74 kWh of electricity per anhydrous gallon of ethanol,
- produces 2.78 gallons of anhydrous ethanol per bushel,
- co-produces at once 5.3 lbs of DDGS and 2.15 lbs of WDG as well as 0.006 gallons of corn oil,
- consumes 2.72 gallons of water per anhydrous gallon of ethanol produced and discharges 0.46 gallons of water per anhydrous gallon of ethanol,
- sources corn for ethanol production within a 47.1 mile radius from the plant.
- trends towards further co-product diversification and installation of efficient water use technologies.