Ethanol, Octane, and Drought: A Doomsday Machine for the U.S. Livestock Industry?

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Monthly Production of Conventional Motor Gasoline (84 octane) Blended with Fuel Ethanol and Fuel Ethanol Production, January 2005-April 2102

Conventional Gasoline (left axis)
Ethanol (left axis)

Source: EIA
A Simplified Model of Ethanol Demand Conditional on the Price of Gasoline (RBOB), 2012/13

Ethanol Price ($/gal.)

Ethanol Quantity (bil. gal.)

5 bil. gal. = minimum demand as MTBE replacement

13.3 bil. gal. = 10% blend wall maximum

RBOB = $2.89

Ethanol = $2.51
A Simplified Model of Ethanol Demand Conditional on Alternative Gasoline (RBOB) Prices, 2012/13

Ethanol Price ($/gal.)

5 bil. gal. = minimum demand as MTBE replacement

13.3 bil. gal. = 10% blend wall maximum

RBOB = $3.19

RBOB = $2.89

RBOB = $2.59

Ethanol = $2.51

Demand

Ethanol Quantity (bil. gal.)
A Simplified Model of Ethanol Demand Conditional on the Price of Gasoline (RBOB) with Limited Substitution, 2012/13

Ethanol = $2.51

RBOB = $2.89
A Simplified Model of Ethanol Demand Conditional on the Price of Gasoline (RBOB) and Ethanol Supply, 2012/13

Ethanol Price ($/gal.)

Ethanol = $2.51
RBOB = $2.89

Demand

Supply with Higher Corn Price

Supply
A Simplified Model of Ethanol Demand Conditional on the Price of Gasoline (RBOB) and Ethanol Supply under the RFS Mandate, 2012/13

- Ethanol Price ($/gal.):
  - RBOB = $2.89
  - Ethanol = $2.51

- Ethanol Quantity (bil. gal.):
  - Mandate with RINS Usage (11 bil. gal.)
  - Mandate without RINS Usage (13.6 bil. gal.)

The graph shows the relationship between ethanol price and quantity demanded and supplied under different conditions.
A Simplified Model of Ethanol Demand Conditional on the Price of Gasoline (RBOB) and Ethanol Supply under the RFS Mandate, 2012/13

Ethanol Price ($/gal.)

RBOB = $2.89

Ethanol = $2.51

Mandate with RINS Usage (11 bil. gal.)

Mandate without RINS Usage (13.6 bil. gal.)

Supply

Demand
Maximum Bid Price for Corn in Relation to the Price of Ethanol at a Representative Iowa Ethanol Plant

Variable Costs Only

Variable and Fixed Costs

$2.60

$8.55

$7.70

Corn Price ($/gal.)

Ethanol Price ($/gal.)
Difference between Wholesale RBOB and Ethanol at Chicago, 01/27/07 - 08/10/2012