

# U.S. Ethanol Production, Imports and Stocks

Daniel O'Brien and Mike Woolverton, Extension Agricultural Economists  
K-State Research and Extension

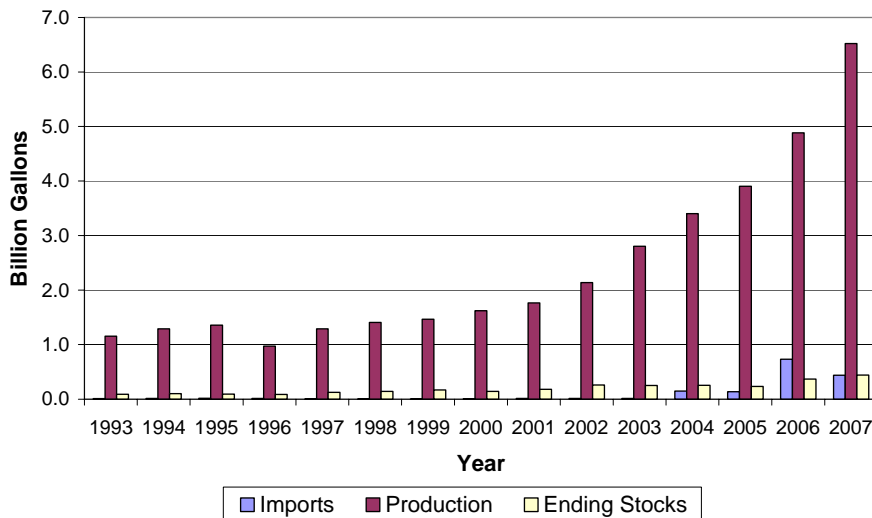
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Trends in production, imports and ending stocks are impacting the prices and subsequent profitability of the fuel ethanol in the United States. This article reviews the history of key fuel ethanol supply and demand factors, providing some perspective and context for those considering this market's future direction and profitability.

## Fuel Ethanol Supply, Use and Ending Stocks

Ethanol production in the United States grew from 973 to 6,521 million gallons (mg) from 1996 through 2007, with the most dramatic growth occurring since 2001 (Source: U.S. Energy Information Administration, [www.eia.doe.gov](http://www.eia.doe.gov)). See the figure titled "U.S. Ethanol Production, Imports, and End Stocks".

**U.S. Ethanol Production, Imports & End Stocks**  
Annually: 1993 through 2007



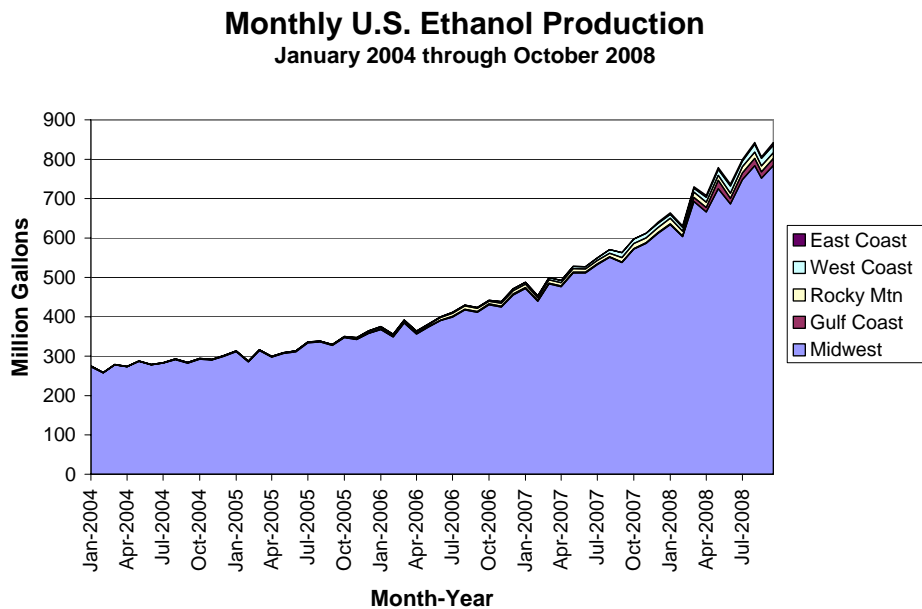
Further increases in U.S. ethanol production are expected for year 2008, but are likely to be inhibited by recent financial problems in the ethanol industry. Imports of fuel ethanol into the U.S. did not exceed 17 mg until 2004. From 2003 to 2004 U.S. ethanol imports increased from 12.3 to 149 mg. Imports in 2005 (136 mg) were little changed from 2004, but were followed by higher levels of imports in 2006 (731 mg) and 2007 (439 mg). Through October of this year, U.S. ethanol imports in 2008 equaled 118% of those in 2007 for the same January through October time period.

Annual U.S. ending stocks of fuel ethanol were consistently below 200 million gallons during the 1993-2001 period. As fuel ethanol production began to sharply increase beginning in year

2002, ending stocks ranged from 234 to 260 million gallons during the 2002-2005 period, and then increased to 368 mg at the end of 2006, and again to 442 million at the end of 2007. Ending stocks of U.S. fuel ethanol in October 2008 were 33% higher than in October of the previous year.

Most of U.S. fuel ethanol production capacity is located in the Midwest region. As defined by the U.S. Energy Information Agency, the Midwest region includes the states of Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin. (See the figure titled “Monthly U.S. Ethanol Production”)

During the January 2004 through October 2008 period, an average of 97% of U.S. ethanol production has originated from the Midwest region of the country.



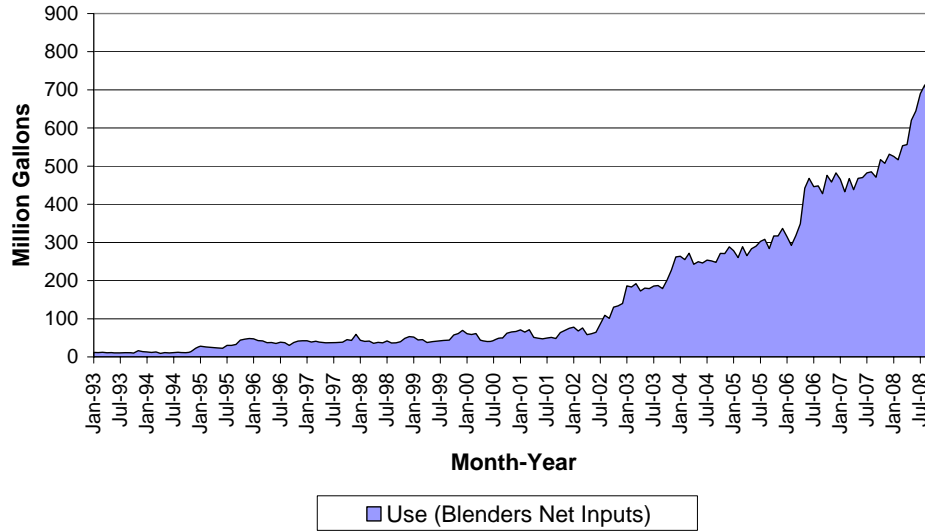
With the primary location of U.S. ethanol production in the Midwest, the relative profitability of importing ethanol will depend at least partially on the cost of transporting the product to other areas of the country. Other factors such as ethanol import tariffs, regional country-to-county trade agreements, ocean transport costs and the dynamics of currency exchange rate will also impact the profitability of importing ethanol into the United States.

The use of fuel ethanol in the United States has closely followed fuel ethanol production trends. Because of fuel ethanol’s use as an energy “input” in gasoline production and blending processes, the U.S. Energy Information Administration designates the use of fuel ethanol as a “blenders net input”. (See the figure titled “U.S. Fuel Ethanol Use (Blenders Net Inputs)”).

The use of fuel ethanol has closely followed trends in production since 1993. The sharply higher growth trend in fuel ethanol use has continued during the January through October, 2008 period, reaching the 620-781 million gallons per month range during the May through October period.

## U.S. Fuel Ethanol Use (Blenders Net Inputs)

Monthly: January 1993 through October 2008

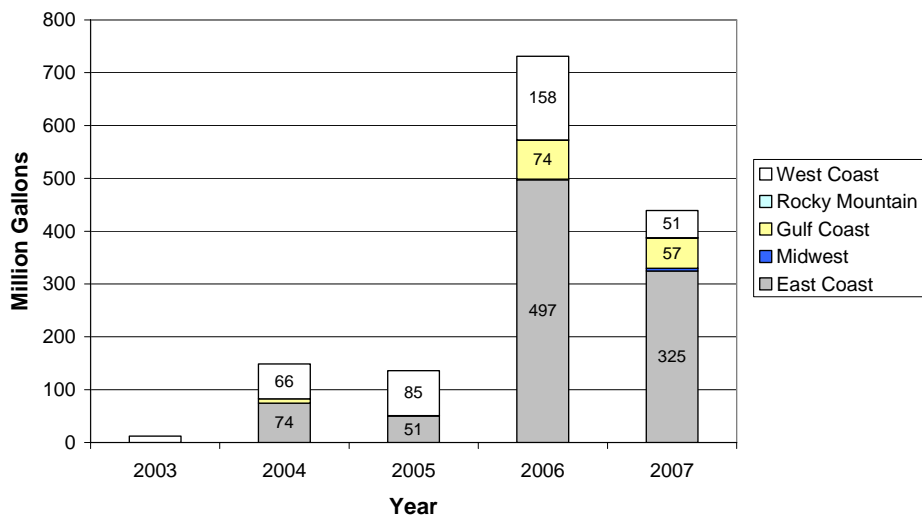


## U.S. Ethanol Imports by Region

The primary entry point for ethanol imports into the United States in during the 2004 through 2007 was the East Coast, followed in quantity terms by the West and Gulf Coasts, respectively. (See the figure titled “Annual U.S. Ethanol Imports by Region”).

## Annual U.S. Ethanol Imports by Region

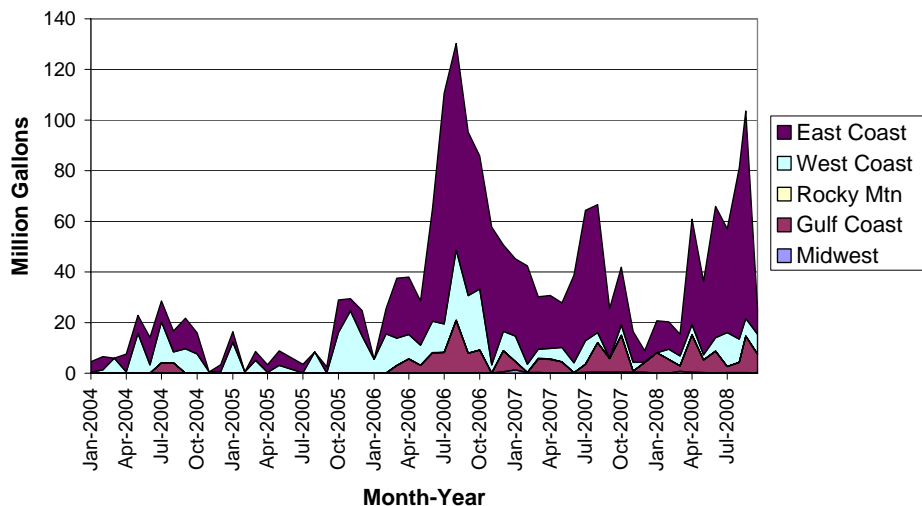
Years 2003 through 2007



In the designation used by the Energy Information Administration data, the East Coast includes the lower Atlantic states of Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia along with the central Atlantic states of New Jersey, New York, Pennsylvania and the New England region. The West Coast region includes Alaska, Arizona, California, Hawaii, Nevada, Oregon, and Washington. States included in the Gulf Coast region include Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas.

East Coast ethanol imports accounted for 68% of the U.S. total in 2006 (497 mg) and 74% in 2007 (325 mg). Ethanol imports to the West Coast made up 22% (158 mg) and 12% (51 mg) of the U.S. total in 2006 and 2007, respectively. The Gulf Coast imported 10% (74 mg) and 13% (57 mg) of ethanol imports in 2006 and 2007, respectively. The leadership position of the East Coast in terms of U.S. fuel ethanol imports has continued if not intensified to date in year 2008. (See the figure titled “Monthly U.S. Ethanol Imports by Region”.)

**Monthly U.S. Ethanol Imports by Region**  
January 2004 through October 2008

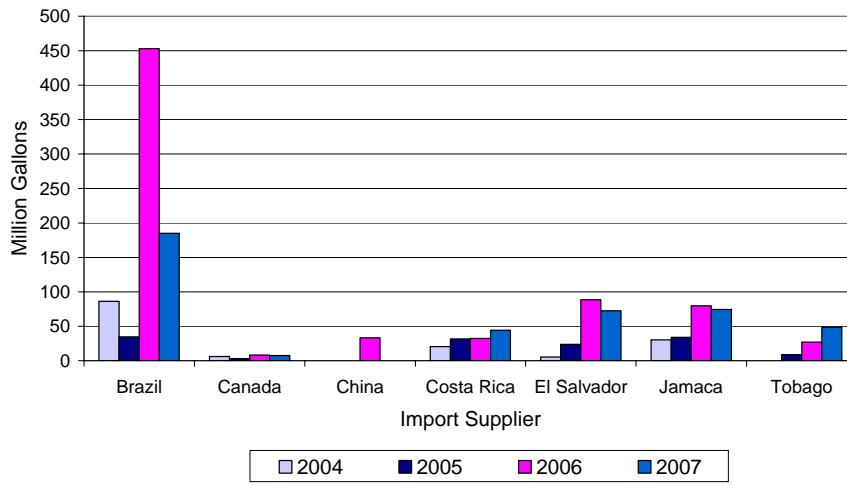


### U.S. Ethanol Imports by Source Country

Brazil has been the primary exporter of fuel ethanol to the United States over the 2004-2007 period. (See the figure titled “U.S. Ethanol Imports by Source Country”) After exporting 453 mg of fuel ethanol to the U.S. in 2006 (42% of U.S. fuel ethanol imports that year), Brazil exported 185 mg to the U.S. (42% of total U.S. ethanol imports) in 2007. Caribbean countries such as Costa Rica, El Salvador Jamaica and Tobago have also been active exporters of fuel ethanol to the U.S. during the 2004-2007 period.

### U.S. Ethanol Imports by Source Country

Annually: 2004 through 2007

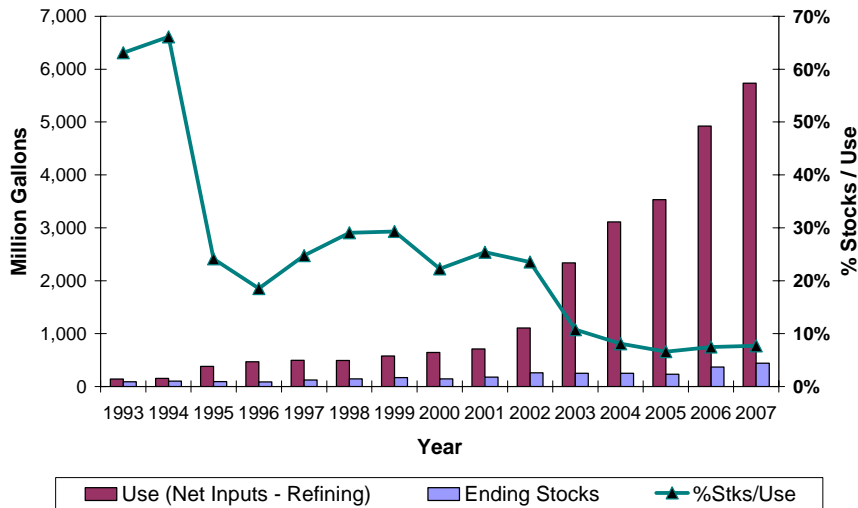


### U.S. Ethanol Stocks and Use

Since 1993, U.S. fuel ethanol stocks as a percentage of usage has declined. (See the figure titled “U.S. Ethanol Stocks and Use”) During its startup or “fledgling” stage in 1993-1994, U.S. ending fuel ethanol stocks averaged over 60% of domestic usage. During the 1995-2002 time period, the proportion of U.S. ending stocks relative to usage was consistently in the 20-30% range. Then during the 2003 through 2007 time period as usage of fuel ethanol began to increase markedly on a year to year basis, the relative amount of ending stocks-to-annual use declined to the 7-8% range.

### U.S. Ethanol Stocks & Use

Annually: 1993 through 2007



During the January through October, 2008 time period, U.S. fuel ethanol stocks have continued to increase. (See the figure titled “Monthly U.S. Ethanol Stocks by Region”) All regions of the U.S. have experienced at least small increases in fuel ethanol stocks on a year-to-year basis for the October period. Fuel ethanol stocks in the East Coast region have increased 101 mg (64%) from October 2007 to October 2008. Fuel ethanol stocks increased in the Midwest by 40 mg (23%), by 9 mg (13%) in the Gulf Coast, by 8 mg (10%) on the West Coast, and are unchanged in the Rocky Mountain region. Increasing stocks on a monthly basis may signal a relatively more abundant supply to use situation for the fuel ethanol industry at the end of 2008 than during the most recent four years (2003-2007).

**Monthly U.S. Ethanol Stocks by Region**  
January 2004 through October 2008

