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## Corn Used for Ethanol Production

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In the monthly WASDE report released on November 8, the USDA's World Agricultural Outlook Board estimated that 4.648 billion bushels of corn were used to produce ethanol and co-products during the 2012-13 marketing year. That estimate is 371 million bushels less than the estimate for the 2010-11 marketing year and 352 million less than estimated use during the 2011-12 marketing year. Domestic ethanol production declined from an estimated 13.796 billion gallons during the 2011-12 corn marketing year to an estimated 12.899 billion gallons last year.

On the surface, the reasons for the year over-year decline in ethanol production and corn use in the 2012-13 marketing year are not obvious. Based on estimates from the U.S. Energy Information Administration (EIA), domestic ethanol consumption (including small quantities of denaturant) was nearly identical in the two years, totaling 12.933 billion gallons during the 2011-12 corn marketing year and 12.991 billion gallons last year. The decline in ethanol production, then, was not associated with a decline in domestic consumption. The decline reflected a year-over-year change in the ethanol trade balance and a change in ethanol inventories. During the 2011-12 marketing year, imports were a modest 293 million gallons and exports were quite large at 1.095 billion gallons. The large positive trade of ethanol reflected, in part, reduced Brazilian ethanol production and exports stemming from smaller supplies and higher prices of sugar. During the 2012-13 marketing year, U.S. ethanol trade was balanced. Estimated imports totaled 558 million gallons and estimated exports totaled 567 million gallons. The difference of 793 million gallons in the trade balance between the two years represents about 285 million bushels of corn.

Estimated ethanol stocks at the end of the 2011-12 corn marketing year were 62 million gallons larger than stocks at the beginning of the year. An estimated 22 million bushels of corn, then, were used as a result of the build-up in inventories. In contrast, ethanol stocks at the end of the 2012-13 marketing year were 101 million gallons smaller than stocks at the beginning of the year. The draw down in stocks replaced about 37 million bushels of corn to produce ethanol. The difference in ethanol stock changes during the two marketing years represented about 59 million bushels of corn. When added to the difference of 285 million bushels of corn represented by the change in the ethanol trade balance, the total is very close to the 352 million bushel decline in the USDA estimate of corn use for the two years.

Much has been made of the recent surge in domestic ethanol production and the re-opening of some ethanol plants. Based on weekly estimates from the EIA, ethanol production in the first two months of the 2013-14 corn marketing year of 2.226 billion gallons was about 7.5 percent larger than production during the first two months of the 2012-13 marketing year. The increase, however, may not imply any substantial increase in domestic ethanol consumption, but instead may reflect changes in net trade and stock levels. Imports totaled only 23.5 million gallons in September and were zero in October. Export estimates for those two months are not yet available, but would have totaled about 100 million gallons if the August pace was maintained. Stocks of ethanol were about 75 million gallons less at the end of October than at the end of August. Domestic consumption in the two months may have totaled about 2.225 billion gallons, a year-over-year increase of about 2 percent. Estimates of domestic consumption for September will be available with EIA estimates of production, trade, and stocks to be released in the last

week of November. Importantly, estimated ethanol production during the first two months of the 2013-14 marketing year was 3.2 percent less than during the first two months of the 2011-12 marketing year.

For the current marketing year, the USDA projects corn used for ethanol and co-product production at 4.9 billion bushels. Actual consumption of corn could be somewhat different than that projection, depending on domestic consumption of ethanol, net ethanol trade, and the change in ethanol stock levels. Domestic ethanol consumption will be influenced by biofuels policy and by ethanol prices. Ethanol prices will in turn be influenced by corn prices. It is generally assumed that domestic ethanol consumption will be at least as large as in the past three years, near the 10 percent blend wall of 13 billion gallons. However, if the EPA reduces the total and renewable biofuels mandates for 2014, as has been rumored, domestic consumption could be less than 13 billion gallons if obligated parties choose to use more of the RINs stocks to meet the renewable mandate. That choice would likely be influenced by an assessment of the risk of EPA rulemaking being overturned by the courts. On the other hand, maintaining the renewable mandates at higher levels and/or low corn and ethanol prices could stimulate E85 consumption and push domestic ethanol production above the 10 percent blend wall. Ethanol trade will also be influenced by biofuels policy as the size of the reduction in the advanced biofuels mandate for 2014 could influence the demand for imported ethanol. Under blend wall constraints, ethanol imports substitute for domestic ethanol production.

A better indication of which ethanol and corn scenario will unfold will be available when EPA releases preliminary rule making for 2014. For the corn market, the implications may be more important for future marketing years than for the current year since it will influence the magnitude of needed corn production.

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