



RIN Stock Update: Implications of the 2012 Drought

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December 14, 2012

farmdoc daily (2):242

Recommended citation format: Paulson, N. "RIN Stock Update: Implications of the 2012 Drought." *farmdoc daily* (2):242, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, December 14, 2012.

Permalink: <http://farmdocdaily.illinois.edu/2012/12/rin-stock-update.html>

Today's post provides an update on U.S. ethanol production and imports through August, and projections for 2012 ending Renewable Identification Number (RIN) stocks. Prior analyses of the available stock of RINs accumulated over the past three years through the RFS2's banking provision are available [here](#) and [here](#). These previous estimates indicated an ending stock level for 2011 of approximately 2.64 billion gallon RINs which could be used for mandate compliance in 2012 as an alternative to physical blending, providing up to 960 million bushels of flexibility in revealed demand for corn-for-ethanol if ethanol blending margins declined. Ethanol production and exports through the first quarter of 2012, and the expectation for a slowing in ethanol production due to the drought's impact on corn prices, suggested the likely use of a portion of available RIN stocks for mandate compliance in 2012 and a lower carry in to 2013.

Table 1 below provides an update of current RIN stock estimates using ethanol production and export data available from the Energy Information Administration (EIA). The data indicates that 9,057 million gallons of ethanol were produced through August with ethanol exports totaling 542 million gallons. Weekly ethanol production estimates from EIA suggest that domestic ethanol production has averaged 1.035 billion gallons per month since August. Ethanol exports in August and September declined to 50 million gallons per month.

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Table 1. Conventional Ethanol RIN Stock Estimates, 2007-2012P

Year	Conventional Ethanol RIN Stocks (Million Gallons)				Ending RIN Stocks	Banking Cap (20% of Mandate)	Banked RINs
	Beginning RIN Stocks	= Production	- Exports	- Mandate =			
2007	0	6,521	-	4,700	1,821	1,800	1,800
2008	1,800	9,309	-	9,000	2,109	2,100	2,100
2009	2,100	10,938	-	10,500	2,538	2,400	2,400
2010	2,400	13,298	398	12,000	3,300	2,520	2,520
2011	2,520	13,948	1,195	12,600	2,673	2,640	2,640
2012 1Q ^a	2,640	9,057	542				
2012P ^b	2,640	13,197	742	13,200	1,895	2,760	1,895

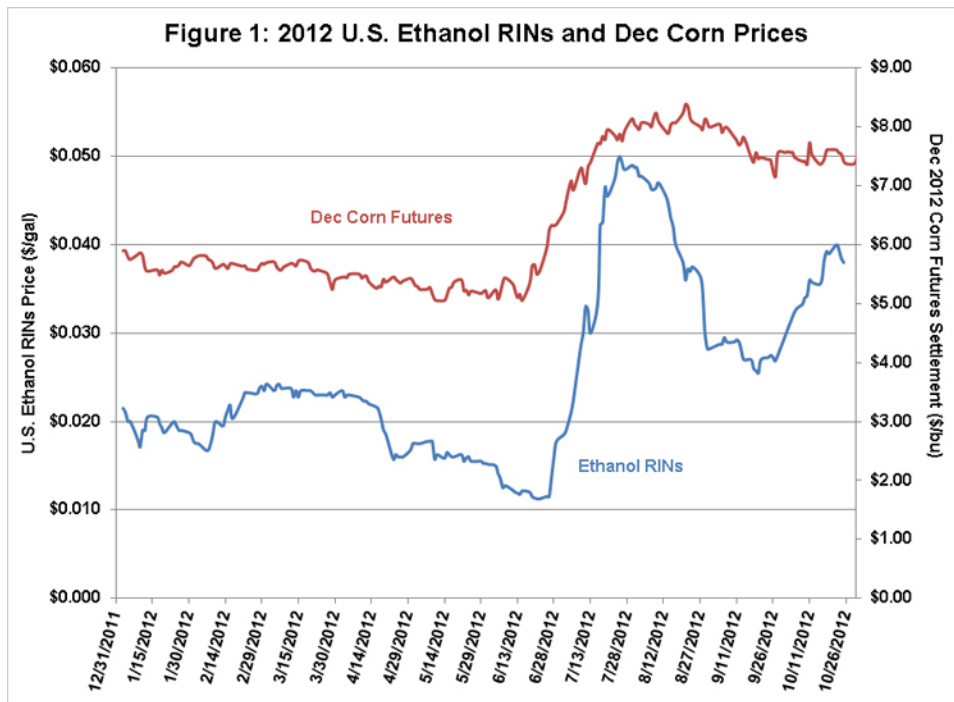
Sources: Production and Exports from the Energy Information Administration, Mandate levels from EPA, RIN Stock levels based on author's calculations.

^aBased on data available through August 2012 as of June 27, 2012.

^bProjection assumes monthly production and exports of 1.035 billion gallons and 50 million gallons, respectively, from September through December

Assuming monthly production of 1.035 billion gallons and monthly exports of 50 million gallons from September through the end of the year implies a domestic production level of just under 13.2 billion gallons and exports of 742 million gallons for 2012. This results in net ethanol RIN generation for the year of just under 12.5 billion gallons. Given the 13.2 billion gallon renewable ethanol mandate in 2012, this will require RIN stocks to be drawn down somewhere below the 2 billion gallon level. The implication for 2013 is continued flexibility in the demand for corn-for-ethanol of approximately 700 million bushels relative to total demand implied by the 2013 non-advanced mandate of 13.8 billion gallons (more than 5 billion bushels of corn).

Furthermore, the small 2012 corn crop and resulting potential for binding mandate conditions continue to be reflected in the ethanol RINs market. Daily settlement prices for the December 2012 corn futures contract are provided in Figure 1 (red series, values on the right axis). The harvest futures declined steadily throughout the spring as good weather and an early planting season resulted in expectations for a record corn crop. Ethanol RIN values also steadily declined through the first six months of the year, reaching a low of \$0.01/gallon in mid-June. With drought conditions taking hold in mid-June, there was a significant increase in corn prices as production expectations declined. December corn prices peaked at over \$8.00/bushel in August, and have traded in the \$7 to \$7.70 range over the past two months. Similarly, 2012 RIN prices increased significantly throughout July, reaching a high price of \$0.0465/gallon, and have continued to trade above early season levels through October.



Summary

The 2012 drought led to significant increases in corn prices and a slowing in domestic ethanol production and exports. For the first time since the RIN system was established, it is estimated that 2012 net RIN generation will not exceed the non-advanced ethanol mandate, and RIN stocks carried over from previous years will be used for mandate compliance. This was reflected in 2012 ethanol RIN prices, and illustrates how the design of the system can be used by obligated parties to respond to variability in the economics of ethanol blending. Current estimates indicate continued flexibility for corn-for-ethanol demand to meet the 2013 non-advanced mandate, but at lower levels than in previous years due to estimated stock use in meeting the 2012 mandate.