



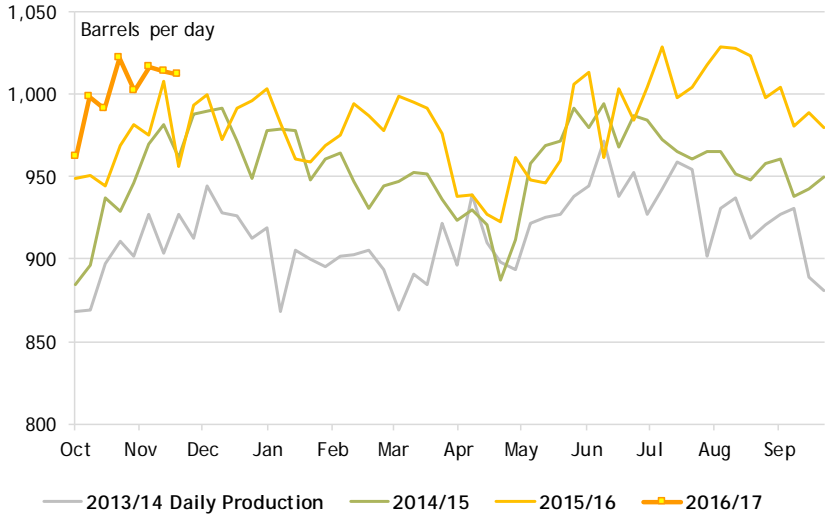
# Biofuels Overview

December 2016

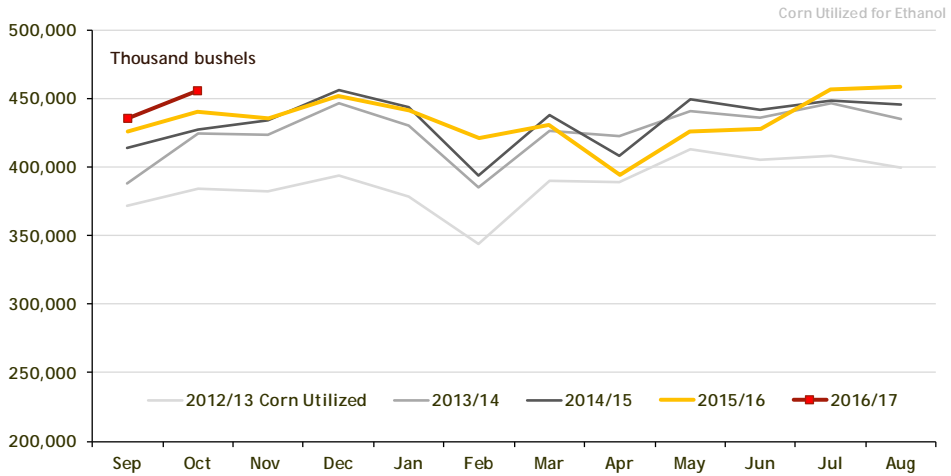


# Ethanol

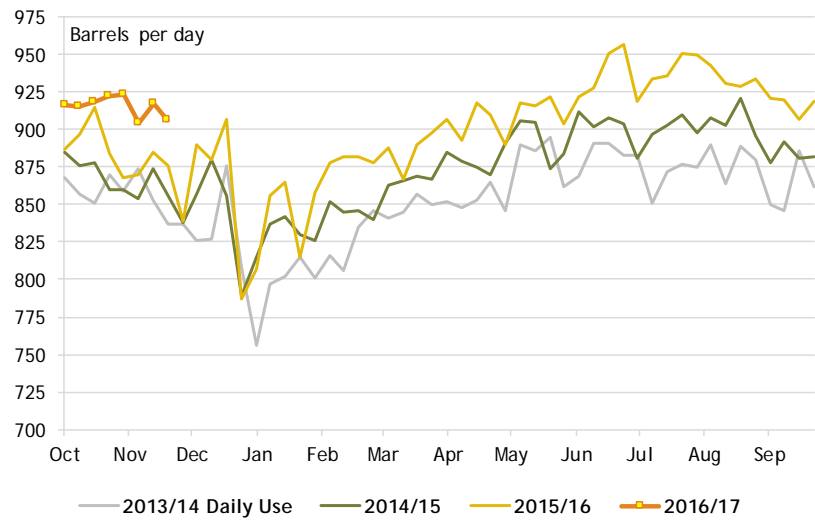
**U.S. Average Daily Production, by week**  
November production held very steady



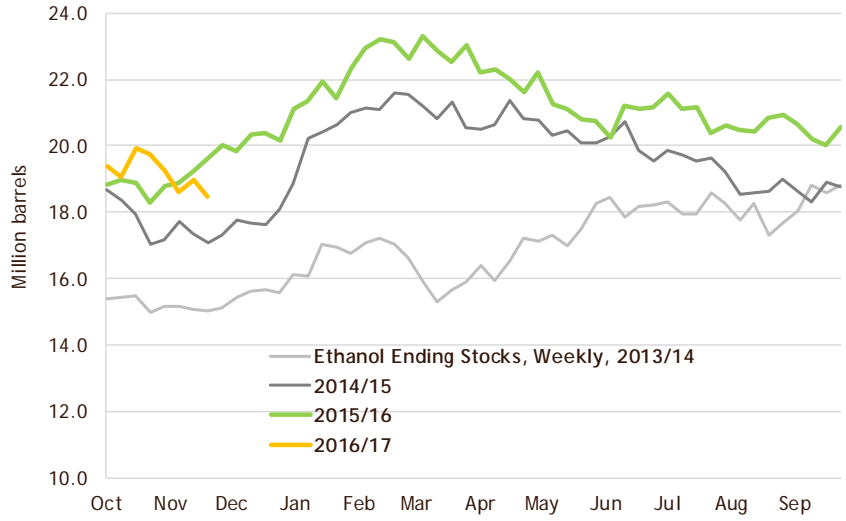
**Corn Consumed in Fuel Ethanol Production**  
October 2016 corn use was a record for the month



**U.S. Average Daily Blender/Refiner Use, by week**  
Seasonal decline starting but use remains elevated



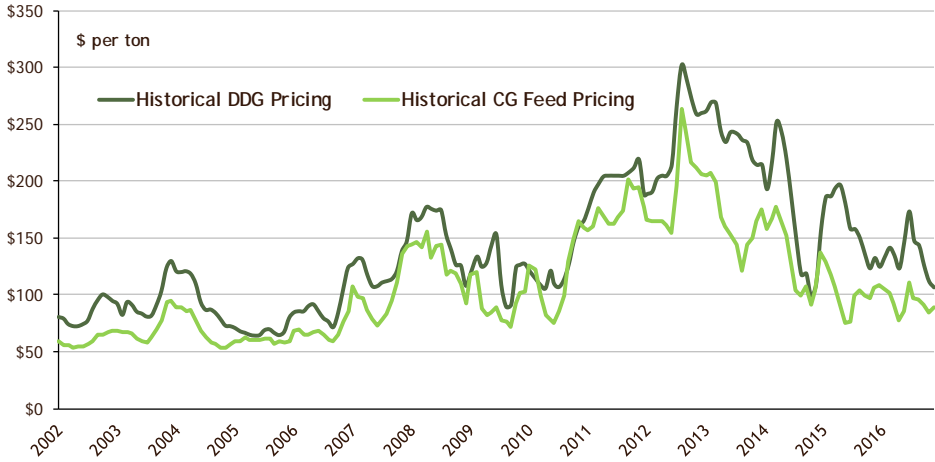
**Weekly Ending Stocks**  
Stocks building delayed by strong demand



# Ethanol Profitability

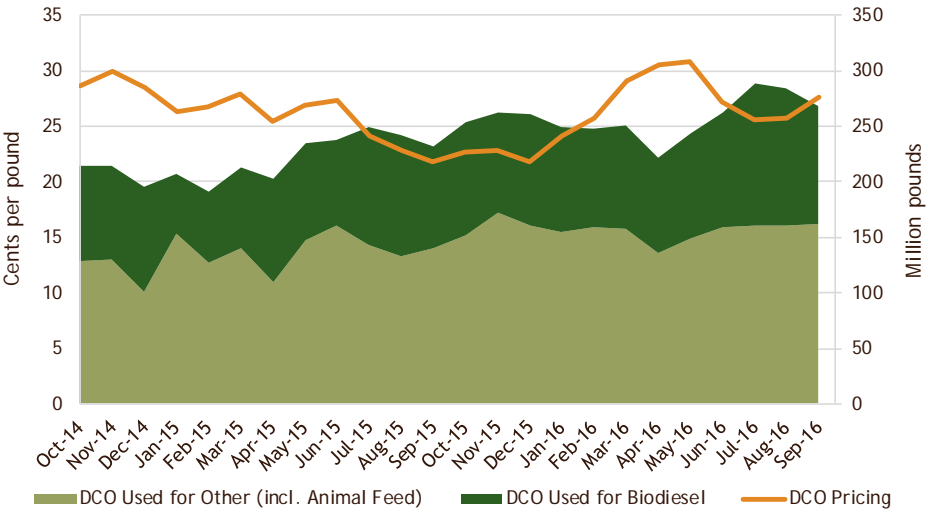
## Distillers Grains vs. Corn Gluten Feed

Low CGF pricing pressuring value of DG as dry mill coproduct



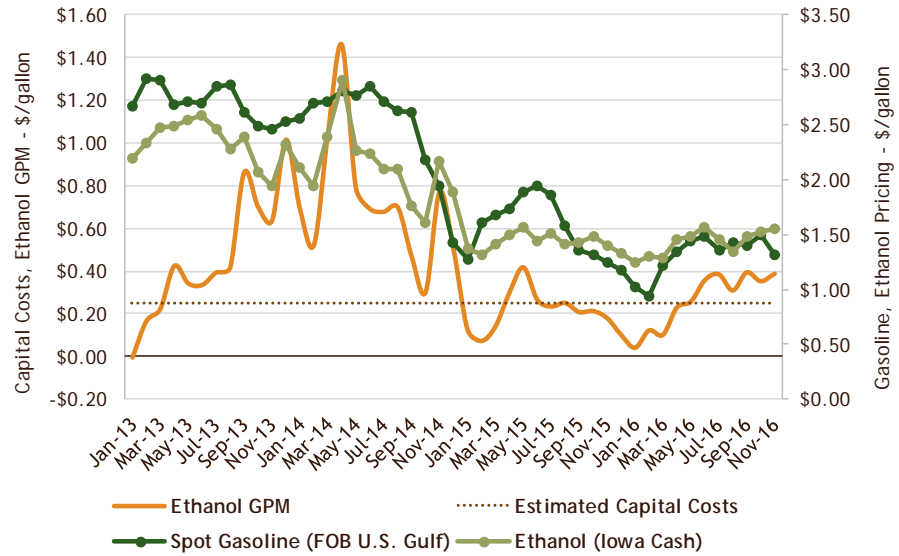
## Distillers Corn Oil

DCO use for biodiesel fell 14% in September while price increased 8%



## Ethanol Gross Profitability

Ethanol pricing supported GPM through the fall; gas prices might drag on ethanol



## Ethanol Market Pricing

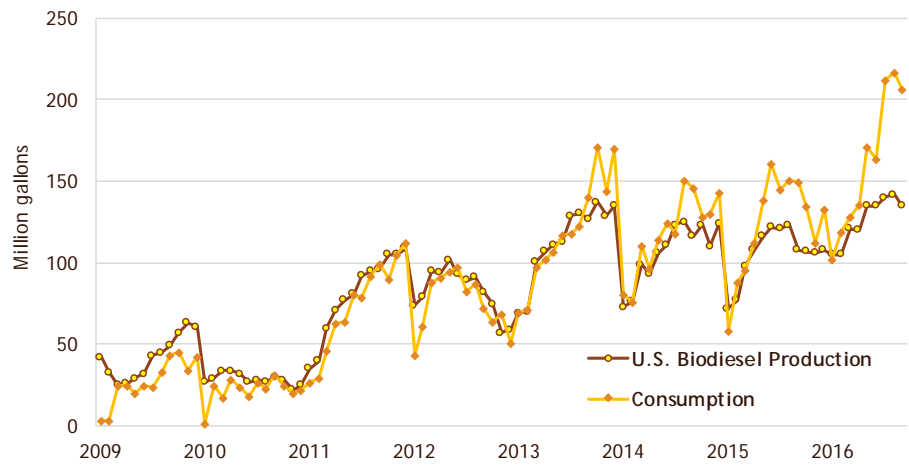
	Nov-16	Oct-16	Nov-15
Nearby Ethanol Futures (\$/gal)	\$1.572	\$1.584	\$1.496
Iowa Ethanol Spot (\$/gal)	\$1.552	\$1.528	\$1.403
Distillers Grains, Iowa (\$/ton)	\$99	\$103	\$115
Cash Corn, Iowa (\$/bu)	\$3.285	\$3.265	\$3.810
Gross Profit Margin*, Dry Mill (\$/gal)	\$0.389	\$0.354	\$0.181

\* Iowa dry mill. This rough industry GPM is determined by subtracting the cash corn price from the total product (ethanol and DG) price. It accounts for some operating costs (labor, energy, enzymes). Iowa State University estimates capital costs at \$0.25 per gallon, so GPM below that level may indicate negative net profit.

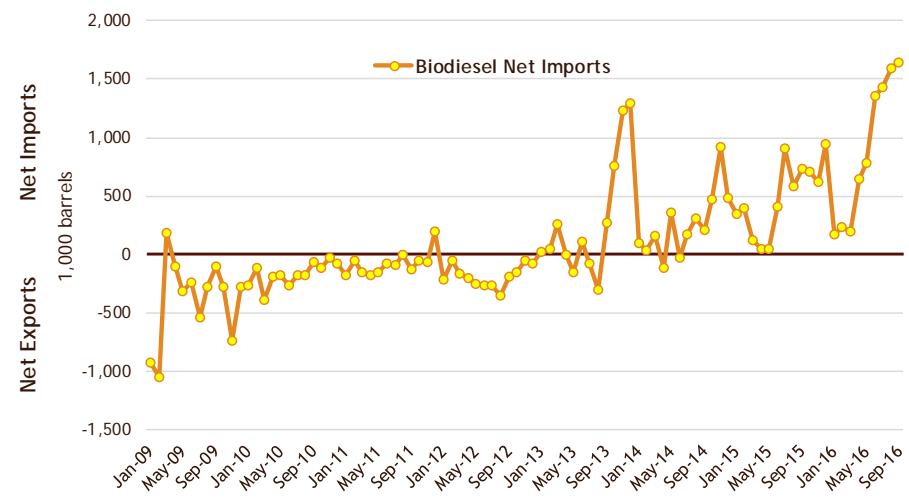
Source: DTN, USDA, Jacobsen

# Biodiesel

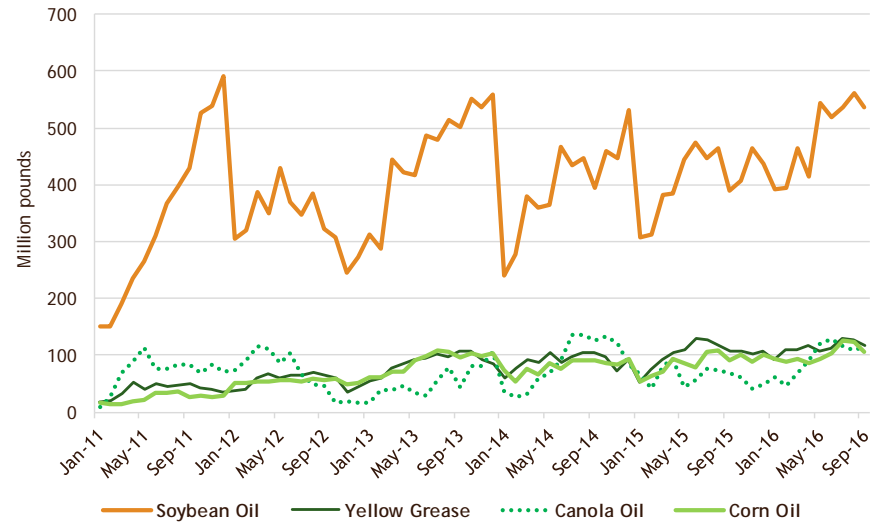
**U.S. Monthly Production & Consumption**  
 Jan-Sep 2016 production up 20% from 2015, estimated use up over 30%



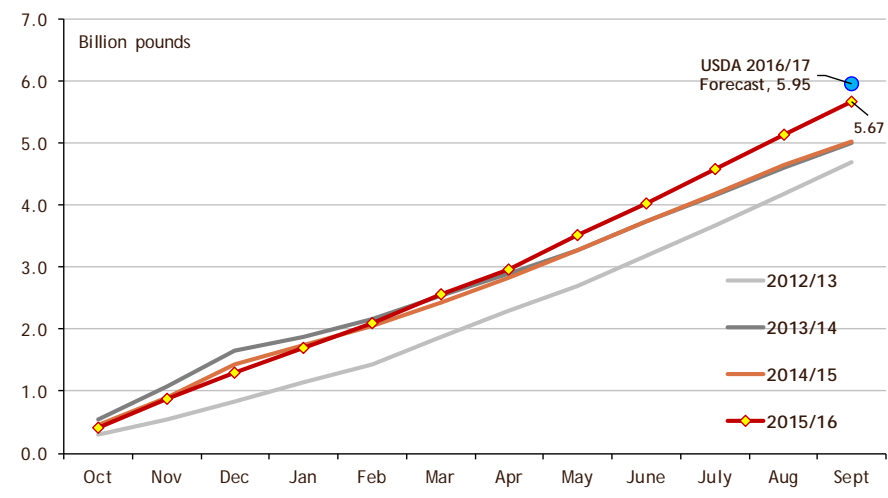
**U.S. Biodiesel Imports/Exports**  
 U.S. biodiesel imports fell 2% in September while exports fell 36%



**Monthly Use of Top Feedstocks**  
 2015/16 soybean oil use increased 13%, accounted for 54% of feedstock use



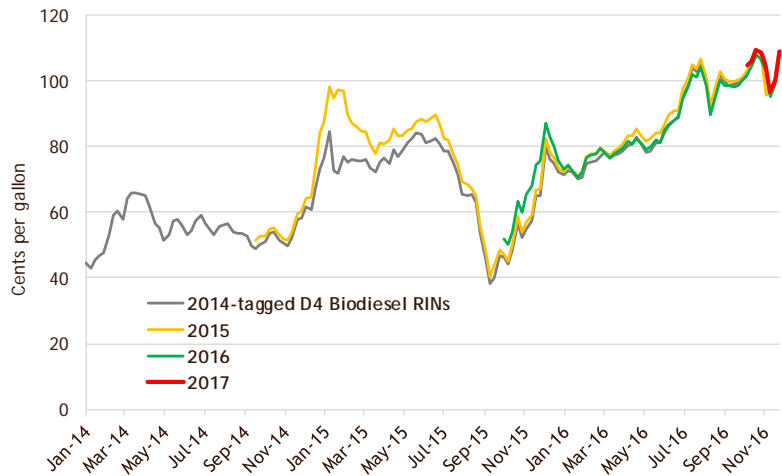
**Cumulative Soybean Oil Use**  
 USDA's forecast is in line with EPA's increase to category in 2017



# Biodiesel Profitability

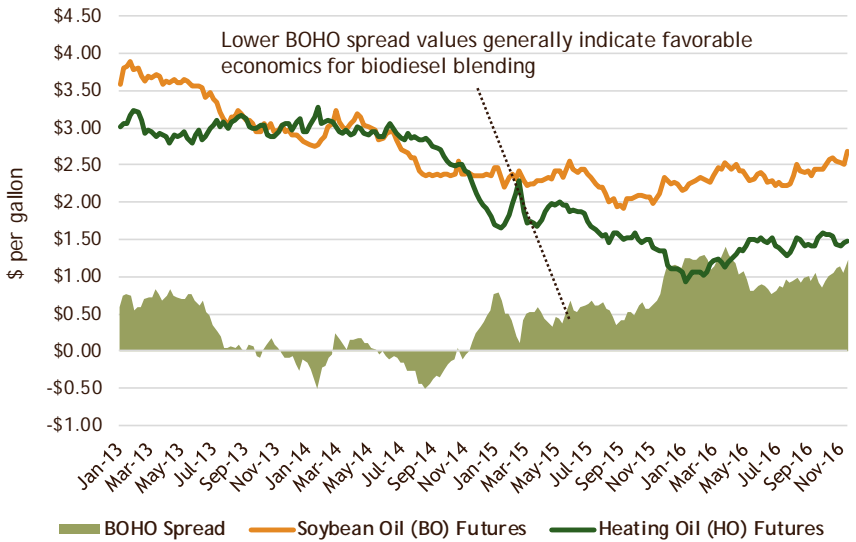
## Biodiesel RIN Market

Average RIN value in November down 4.5% from October



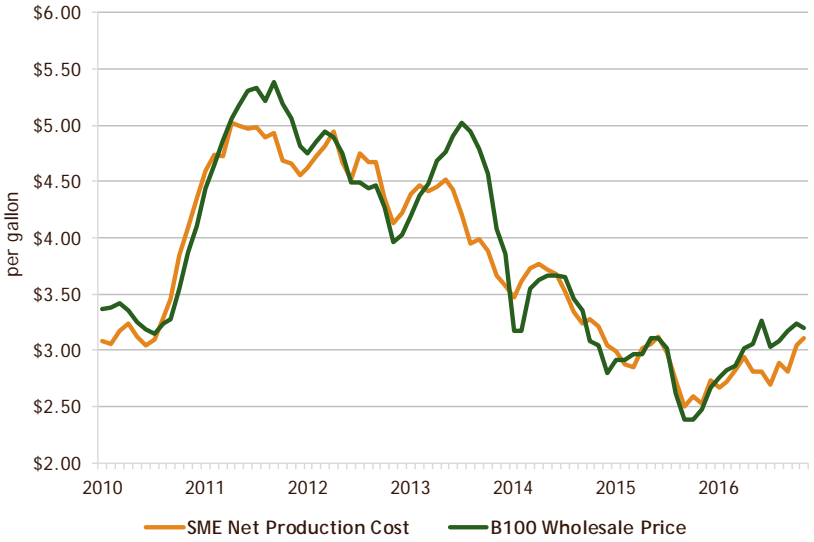
## Soybean Oil-Heating Oil Spread

Heating oil oversupply is expected to persist over the next quarter



## Soybean Oil-based Biodiesel

Production cost increased again in November, up 23 percent from a year ago



## Biodiesel Market Pricing

	<u>Nov-16</u>	<u>Oct-16</u>	<u>Nov-15</u>
Nearby Soybean Oil Futures (\$/lb)	\$0.350	\$0.343	\$0.279
Nearby Heating Oil Futures (\$/gal)	\$1.466	\$1.568	\$1.425
RBD Soybean Oil, Illinois (\$/lb)	\$0.368	\$0.361	\$0.291
B100 Wholesale (\$/gal)	\$3.203	\$3.231	\$2.478
SME Net Production Cost (\$/gal)	\$3.101	\$3.048	\$2.524

Source: DTN, Jacobsen, Iowa State University