Ethanol and Biodiesel Market Trends and Profitability Through May 22, 2020

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May 26 2020

A. Ethanol Price and Profitability Trends

Using an **Iowa State University** model and applying price estimates from **Kansas State University**, **ethanol plants in Iowa and other Midwest states** were operating at estimated **losses** on average of ($0.15 /gallon) for May 1-22, 2020. These ethanol plant operating loss estimates have continued since August 2018 - averaging monthly operating losses ranging from of **-$0.02 to -$0.17 per gallon** over the **August - December 2019** time period, **-$0.22-$0.28 per gallon** in **January-April, 2020**.

During the May 1-22, 2020 period, **corn input purchase prices** for Iowa ethanol plants are estimated to have averaged near $2.92 /bu - compared to $2.91 in April, $3.45 in March, $3.76 /bu in February, and $3.81 in January.

Selling prices of **distillers dried grains (DDGS) (10% moisture)** averaged near $147.50 during the May 1-22 period, down from a high of $194.66 per ton in April, but near $147.05 in March 2020, and $143.00 in February.

The selling price of **ethanol via tank car and truck shipment** out of **Iowa ethanol plants** is estimated to have averaged near $1.03 / gallon in May 2020, up sharply from 0.794 /gallon in April, but near $1.07 per gallon in March, while being down from $1.24 per gallon in January-February 2020.

The **cost of production** of a representative ethanol plant in Iowa is estimated to be near $1.16 / gallon during the May 1-22 period, up from $1.01 in April, but down from $1.35 in March, and the range of $1.45 - $1.51 per gallon during the October 2019 through February 2020 period.

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B. Ethanol Production & Stocks Trends

Since the beginning of the “new crop” 2019/20 marketing year (MY) for U.S. corn on September 1, 2019, **U.S. ethanol production** through May 15, 2020, has averaged **0.946 million barrels per day (mb/d)** - with a range of 537 (on April 24th) to 1,095 mb/d (on January 10th) over the 37 week period. At this average pace throughout the remaining 15 weeks of "new crop" MY 2019/20, U.S. ethanol production would reach 14.505 billion barrels in “new crop” MY 2019/20. Further, at a rate of 2.83 gallons of ethanol per bushel of feedgrain used for ethanol production (corn and/or grain sorghum), a total of **5.125 billion bushels (bb)** of **feedgrains** would be used for ethanol production in the current marketing year.

The USDA’s latest **World Agricultural Supply and Demand Estimates (WASDE)** report on May 12, 2020 have a forecast in "new crop" MY 2019/20 of 4.950 bb of U.S. corn would be used for ethanol production, and that 70 million bushels (mb) of U.S. grain sorghum would be used for **Food, Seed, and Industrial (FSI) uses** – which is primarily industrial ethanol production. Estimating 2 mb in other FSI usage for U.S. grain sorghum for non-ethanol uses (i.e., seed & other), total U.S. feedgrain usage for ethanol production in "current" MY 2019/20 would equal 5.018 bb, or 98% of the KSU projection of 5.125 bb.

During the April 3-May 15 period when **COVID-19 mitigation efforts** had such a dire, damaging impact on the U.S. economy, motor fuel use, and the U.S. ethanol market, U.S. ethanol production had fallen to an average of 603,000 barrels per day. The April-Mid May average of 603 mb/d average is 58% of the February through March 20th average of 1,041,000 barrels per day - consistent with ethanol industry reports in recent weeks.

United States' **ethanol stocks** have averaged 23,363,514 barrels per week since the beginning of the "new crop" MY 2019/20k, i.e., in early September 2019 - through May 15, 2020. After reaching highs of 27.1-27.7 million barrels during the 1st three weeks of April, ethanol stocks had declined to 23.6 million barrels by the week ending May 15th.

Note: Following is an editted comment from social media discussion of this info on 5/26/2020. D. O'Brien - KSU *"..... I was surprised that the losses in April were not as great as at least I expected. But I would also would not be surprised that the plants saw much greater losses in their expected margins early on, and then quickly reacted to avoid the situation by shutting down operations, etc. By the time they convulsively reacted en mass, it literally changed the market prices on inputs and outputs, and by the time the whole month of April was considered, sort of "masked" how bad the situation actually was margin wise in their planning early in the month. So, the quick reaction of the ethanol industry literally changed the aggregate market prices for inputs and outputs, and here masks the crisis level of the situation by the time monthly averages for April - May are calculated. There you go, we economists figure (along with other folks of low character), and (like here) the figures....well..."shade the truth". Take care. D. O'Brien KSU"*

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C. Biodiesel Price & Profitability Trends

The estimated profitability of Iowa Biodiesel plants first increased and then declined during the January-May 22, 2020 period.

By **Kansas State University** estimates, during the May 1-22, 2020 period, **soybean oil** input purchase prices for Iowa biodiesel plants averaged $25.37 per cwt - down from $26.97 and $25.97, respectively, in March-April, 2020. This occurred while **biodiesel** selling prices averaged $2.56 /gallon during the May 1-22 period, down from $2.70 /gallon during April, $3.01 in March, $3.10 in February 2020, and the 26 month high of $3.16 /gallon in January.

Also during the May 1-22 period, the **cost of production** at representative **biodiesel** plants in Iowa has also averaged **$2.56 per gallon** - down from $2.61 in April, $2.67 in March, $2.88 in February, and $3.12 in January 2020.

As a result, ***net returns*** of this representative soy biodiesel plant in Iowa during May 1-22, 2020 were estimated to be a small loss of **-$0.01 per gallon produced.** This is comparable to a small profit of $0.03 /g in April, $0.34 in March, $0.21 in February, and $0.04 /g in January 2020.

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Following are some graphics on **U.S. Ethanol and Biodiesel Market** price and profitability trends, which will soon be available on the **KSU AgManager website**: http://www.agmanager.info/

U.S. Ethanol & Biodiesel

Trends in Prices & Profitability

WILL Radio (Illinois) & KSU www.AgManager.info

May 26, 2020

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USDA Daily Ethanol Report
Agricultural Marketing Service
Livestock, Poultry & Grain Market News

Fri. May 22, 2020

US #2 Yellow Corn - dollars/bushel

	Cash Bids		Chg	Basis		Avg:
Iowa-Eastern:	2.9075	3.1375	↓	-27N	to -4N	-17.55
Iowa-Western:	2.7775	3.0575	↓	-40N	to -12N	-25.24
Illinois:	2.9275	3.2275	↓	-25N	to 5N	-6.67
Indiana:	3.0275	3.4575	↑	-15N	to 28N	2.50
Ohio:	3.1775	3.3775	↓	OptN	to 20N	6.17
Michigan:	2.9775	3.2275	↓	-20N	to 5N	-4.25
Kansas:	3.0375	3.3775	↓	-14N	to 20N	1.67
Minnesota:	2.5775	2.9875	↓	-60N	to -19N	-37.17
Nebraska:	2.7975	3.1775	↓	-38N	to OptN	-23.38
Wisconsin:	2.7975	2.9375	↓	-38N	to -24N	-31.20
South Dakota:	2.6775	2.9075	↑	-50N	to -27N	-38.92
Missouri:	3.0475	3.2775	↓	-13N	to 10N	-5.25

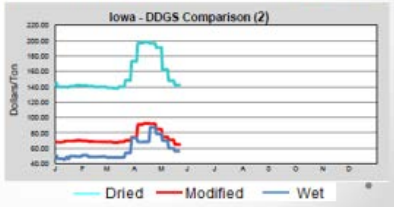
Sorghum - dollars/bushel

	Cash Bids		Chg	Basis		Avg:
Kansas:	3.1775	3.2775	↑	OptN	to 10N	5.00

Distillers Grain - dollars/ton - week ending 05/22/2020

	Dried 10%	Chg	Avg:	Modified 50-55%	Chg	Avg:	Wet 65-70%	Chg	Avg:
Iowa-Eastern:	130.00	↓	130.00	65.00	=	#####	NA	NA	NA
Iowa-Western:	120.00 - 155.00	↓	136.25	60.00 - 70.00	=	64.00	45.00 - 65.00	↓	55.00
Illinois:	140.00 - 165.00	↓	155.00	NA	NA	NA	35.00	↓	35.00
Indiana:	133.00 - 155.00	↓	149.75	NA	NA	NA	NA	NA	NA
Ohio:	145.00 - 150.00	=	148.20	NA	NA	NA	NA	NA	NA
Michigan:	145.00 - 185.00	↑	160.00	55.00	=	55.00	NA	NA	NA
Kansas:	135.00 - 155.00	↓	146.00	NA	NA	NA	44.00 - 60.00	↓	56.00
Minnesota:	130.00 - 150.00	↓	138.33	70.00 - 75.00	↓	72.50	NA	NA	NA
Nebraska:	120.00 - 149.00	↓	136.00	60.00 - 70.00	↓	67.00	42.00 - 50.00	↓	46.33
Wisconsin:	150.00 - 210.00	=	170.00	NA	NA	NA	45.00	=	45.00
South Dakota:	125.00 - 150.00	↓	132.20	68.00 - 70.00	↓	68.67	58.00	↓	58.00
Missouri:	145.00 - 159.00	↓	151.00	73.00	↓	73.00	59.00	↓	59.00

Fri. May 22, 2020



Fri. May 22, 2020

Corn Oil - cents/pound - week ending 05/22/2020

	Range		Chg	Avg:
Iowa:	25.00	30.00	=	26.83
Eastern Cornbelt:	25.00	29.00	↓	27.23
Nebraska:	25.00	28.00	↓	26.50
South Dakota:	25.00	28.00	↓	26.80

Ethanol - dollars/gallon - week ending 05/22/2020

Iowa:	1.02	1.10	↑	1.06
Eastern Cornbelt:	1.13	1.20	↑	1.16
Kansas:	1.03	1.08	↑	1.06
Minnesota:	1.02	1.04	↑	1.03
Nebraska:	1.03	1.11	↑	1.07
Wisconsin:		NA	NA	NA
South Dakota:	1.02	1.02	↑	1.02

Delivered Distillers - dollars/ton - week ending 05/22/2020

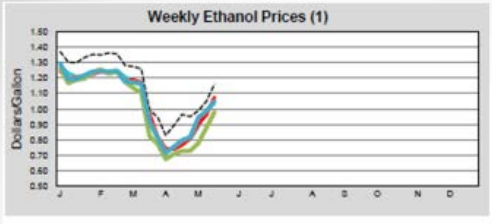
CIF NOLA:	168.00	180.00	↑	
Pacific Northwest:		NA	NA	
California:	185.00	185.00	↓	
Texas border:		NA	NA	
Lethbridge AB:		NA	NA	
Chicago:	150.00	160.00	↓	

B100 - dollars/gallon - week ending 05/22/2020

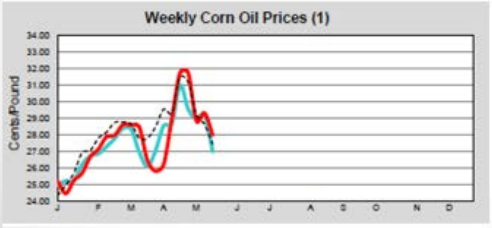
Iowa:	2.64	2.64	↑
IL/IN/OH:	2.75	2.81	↑

Daily Nearby Futures

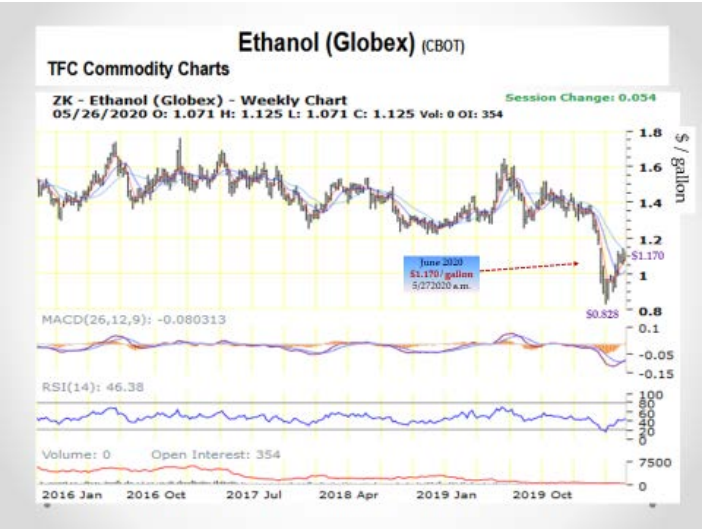
	Today	Yesterday	Last year
CME group			
Corn ($/bu)	3.1625	3.1775	4.0425
Ethanol ($/gal)	1.0580	1.1090	1.3970
NYMEX:			
RBOB Gasoline ($/gal)	1.0149	1.0451	1.9345
Natural Gas (mmBtu)	1.7180	1.7100	2.5980

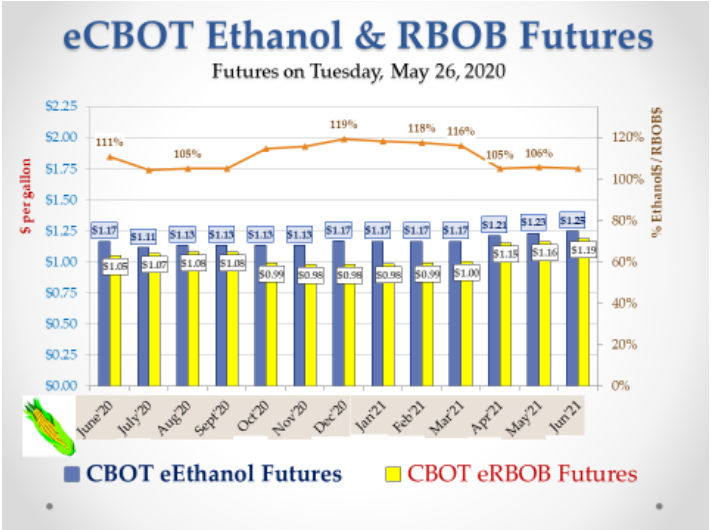


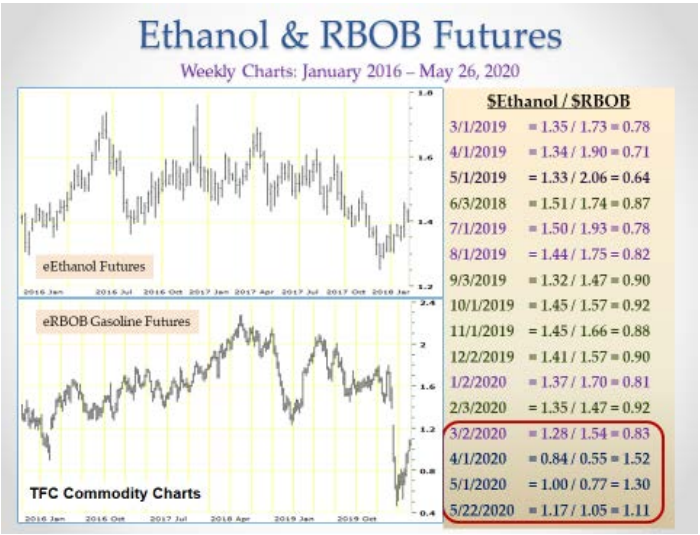
Fri. May 22, 2020

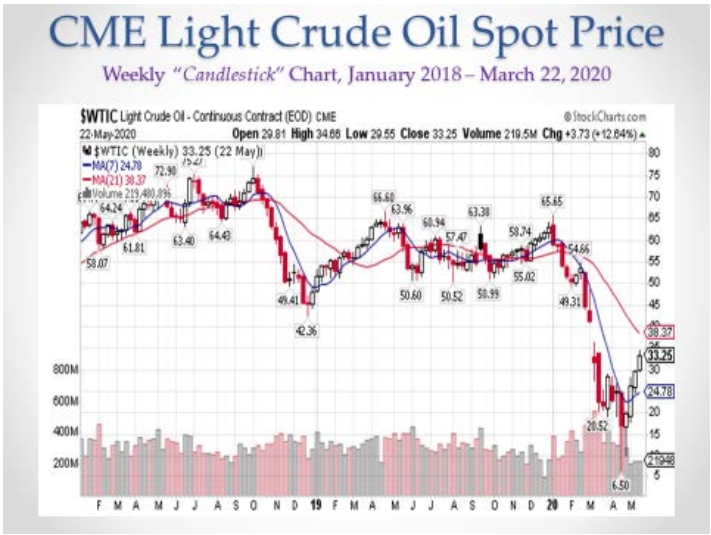


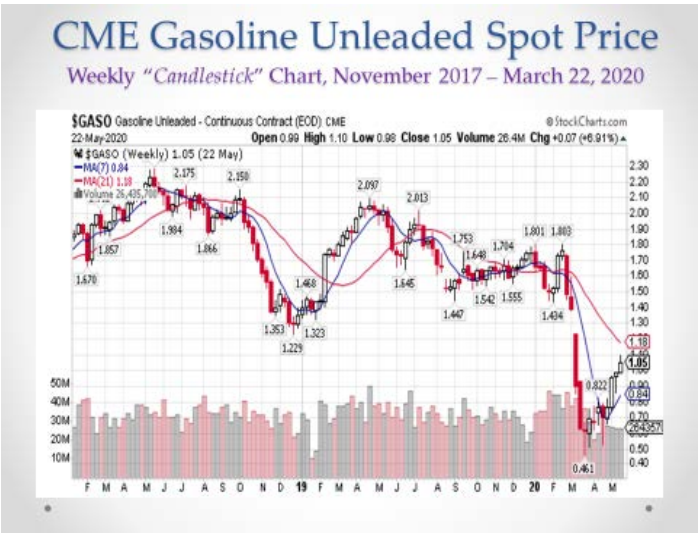
IA NE ECB SD KS

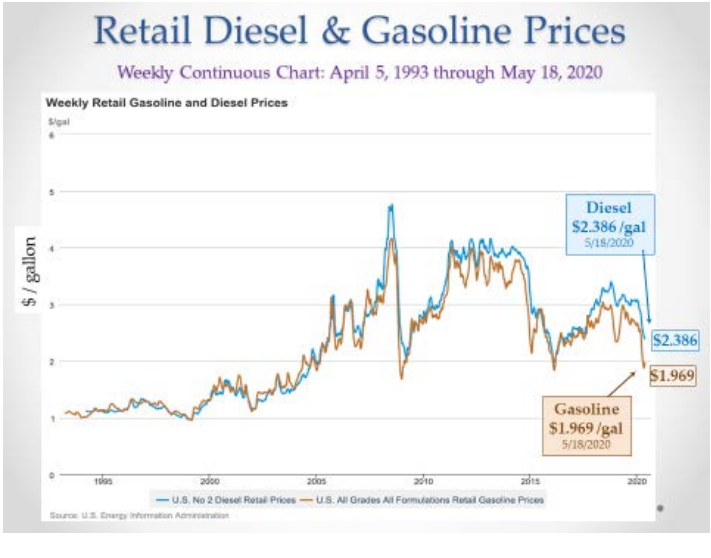

Ethanol (Globex) (CBOT)
TFC Commodity Charts
ZK - Ethanol (Globex) - Weekly Chart
05/26/2020 O: 1.071 H: 1.125 L: 1.071 C: 1.125 Vol: 0 OI: 354
Session Change: 0.054
$ / gallon
June 2020
$1.170 / gallon
5/27/2020 a.m.
$1.170
$0.828
MACD(26,12,9): -0.080313
RSI(14): 46.38
Volume: 0
Open Interest: 354
2016 Jan
2016 Oct
2017 Jul
2018 Apr
2019 Jan
2019 Oct


eCBOT Ethanol & RBOB Futures
Futures on Tuesday, May 26, 2020
$ per gallon
% Ethanol$ / RBOB$
111%
105%
119%
118%
116%
105%
106%
June'20
July'20
Aug'20
Sept'20
Oct'20
Nov'20
Dec'20
Jan'21
Feb'21
Mar'21
Apr'21
May'21
Jun'21
CBOT eEthanol Futures
CBOT eRBOB Futures


Ethanol & RBOB Futures
Weekly Charts: January 2016 – May 26, 2020
eEthanol Futures
eRBOB Gasoline Futures
TFC Commodity Charts
$Ethanol / $RBOB
3/1/2019 = 1.35 / 1.73 = 0.78
4/1/2019 = 1.34 / 1.90 = 0.71
5/1/2019 = 1.33 / 2.06 = 0.64
6/3/2018 = 1.51 / 1.74 = 0.87
7/1/2019 = 1.50 / 1.93 = 0.78
8/1/2019 = 1.44 / 1.75 = 0.82
9/3/2019 = 1.32 / 1.47 = 0.90
10/1/2019 = 1.45 / 1.57 = 0.92
11/1/2019 = 1.45 / 1.66 = 0.88
12/2/2019 = 1.41 / 1.57 = 0.90
1/2/2020 = 1.37 / 1.70 = 0.81
2/3/2020 = 1.35 / 1.47 = 0.92
3/2/2020 = 1.28 / 1.54 = 0.83
4/1/2020 = 0.84 / 0.55 = 1.52
5/1/2020 = 1.00 / 0.77 = 1.30
5/22/2020 = 1.17 / 1.05 = 1.11


CME Light Crude Oil Spot Price
Weekly "Candlestick" Chart, January 2018 – March 22, 2020
$WTIC Light Crude Oil - Continuous Contract (EOD) CME
©StockCharts.com
22-May-2020
Open 29.81 High 34.66 Low 29.55 Close 33.25 Volume 219.5M Chg +3.73 (+12.64%)
$WTIC (Weekly) 33.25 (22 May)
MA(7) 24.78
MA(21) 30.37
Volume 219,480,896
800M
600M
400M
200M
F M A M J J A S O N D 19 F M A M J J A S O N D 20 F M A M


CME Gasoline Unleaded Spot Price
Weekly "Candlestick" Chart, November 2017 – March 22, 2020
$GASO Gasoline Unleaded - Continuous Contract (EOD) CME
©StockCharts.com
22-May-2020
Open 0.99 High 1.10 Low 0.98 Close 1.05 Volume 26.4M Chg +0.07 (+6.91%)
$GASO (Weekly) 1.05 (22 May)
MA(7) 0.84
MA(21) 1.18
Volume 26,435,700
50M
40M
30M
20M
10M
F M A M J J A S O N D 19 F M A M J J A S O N D 20 F M A M


Retail Diesel & Gasoline Prices
Weekly Continuous Chart: April 5, 1993 through May 18, 2020
Weekly Retail Gasoline and Diesel Prices
$/gal
$ / gallon
Diesel
$2.386 /gal
5/18/2020
$2.386
$1.969
Gasoline
$1.969 /gal
5/18/2020
1995
2000
2005
2010
2015
2020
U.S. No 2 Diesel Retail Prices
U.S. All Grades All Formulations Retail Gasoline Prices
Source: U.S. Energy Information Administration

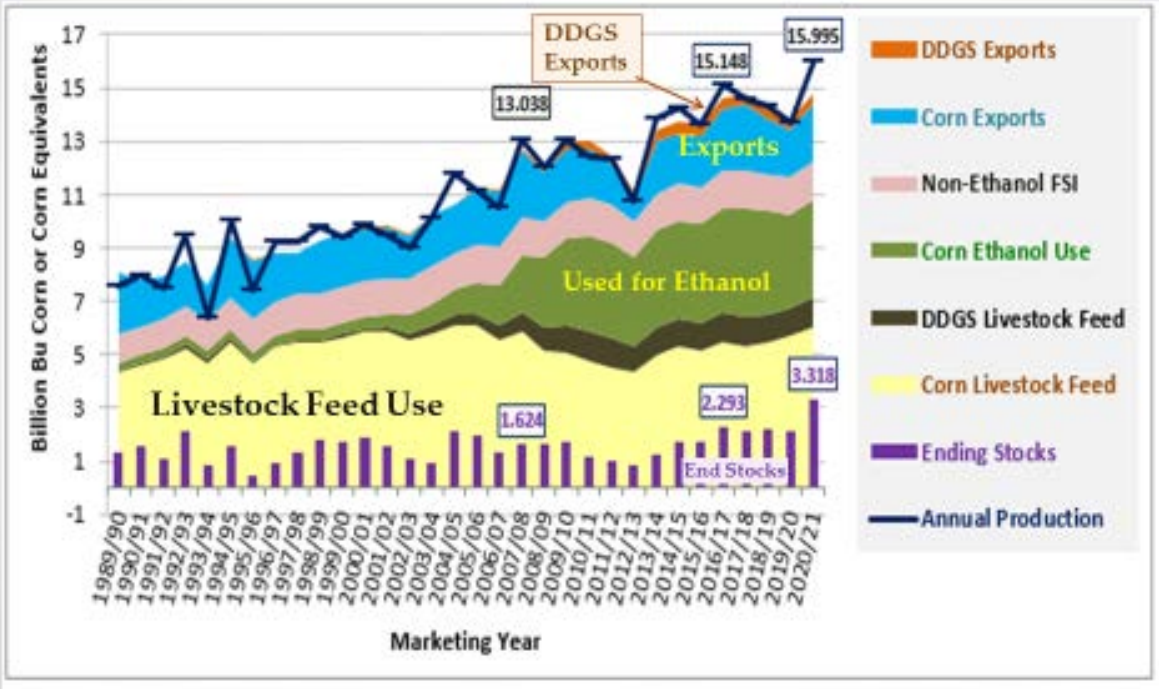
MAY 2020
$3.46/bu
2/27/2020

CBOT Corn Futures

Weekly Continuous Chart: January 2016 – March 26, 2020

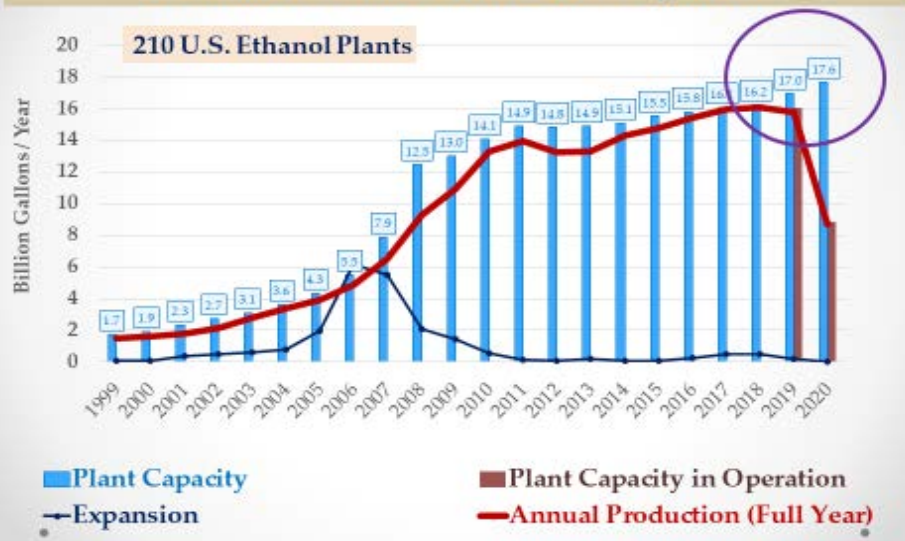
U.S. Corn Use - With est. DDGS #s

May 12, 2020 WASDE & KSU Estimates



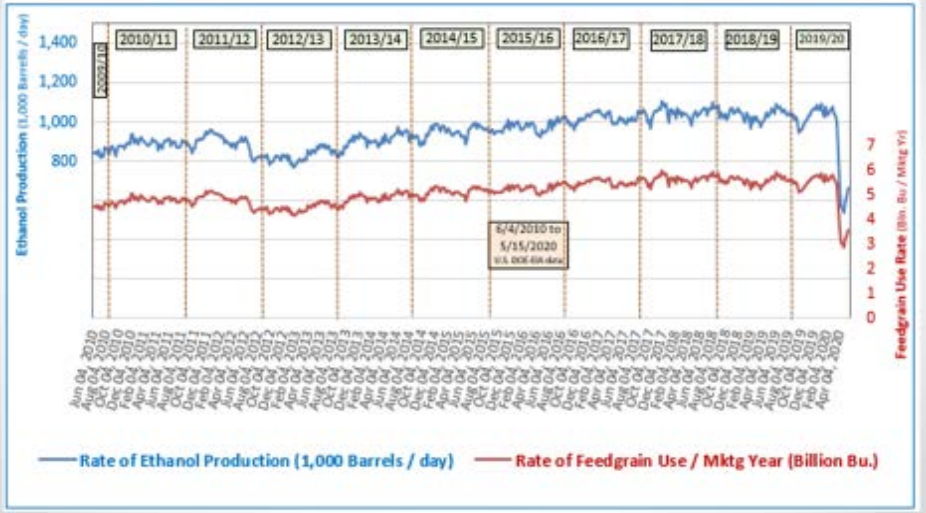
U.S. Ethanol Capacity & Production

Source: Renewable Fuels Association – As of May 26, 2020

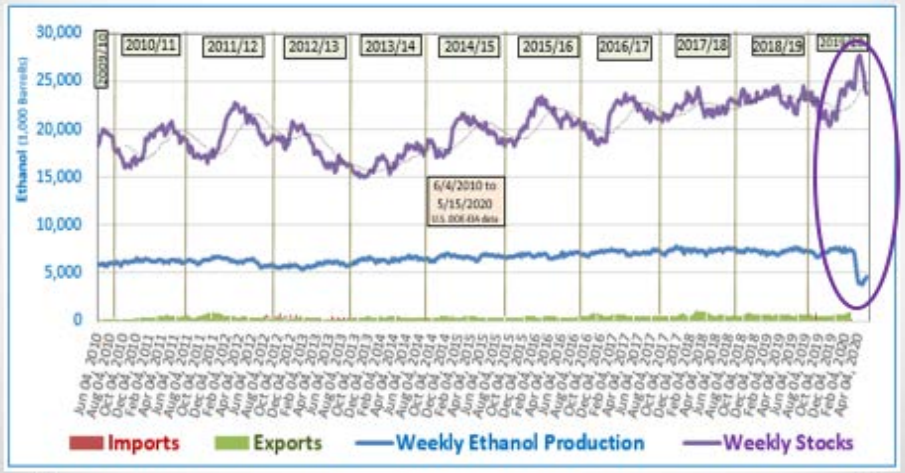


U.S. Ethanol Production & Corn Use

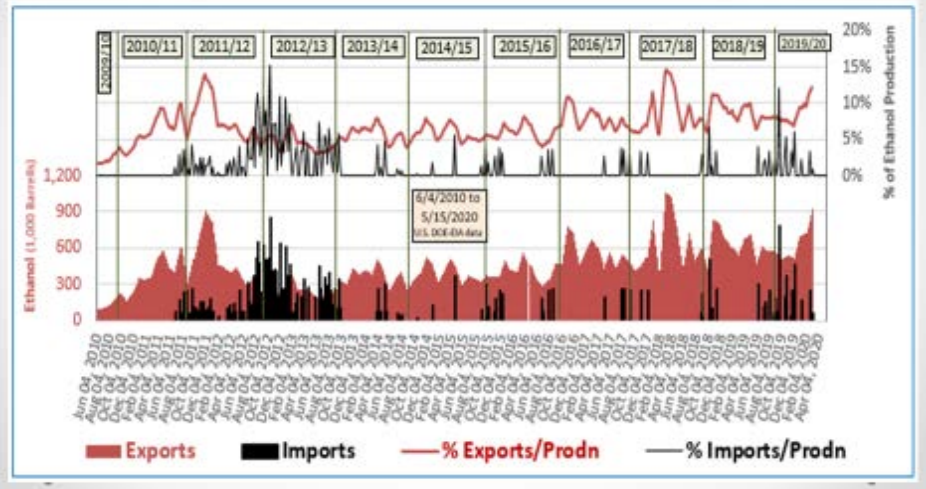
Weekly EIA ethanol data & KSU corn use est's. (6/4/2010 thru 5/15/2020)



Weekly U.S. Ethanol Production, Imports, Exports & Stocks (thru 5/15/2020)

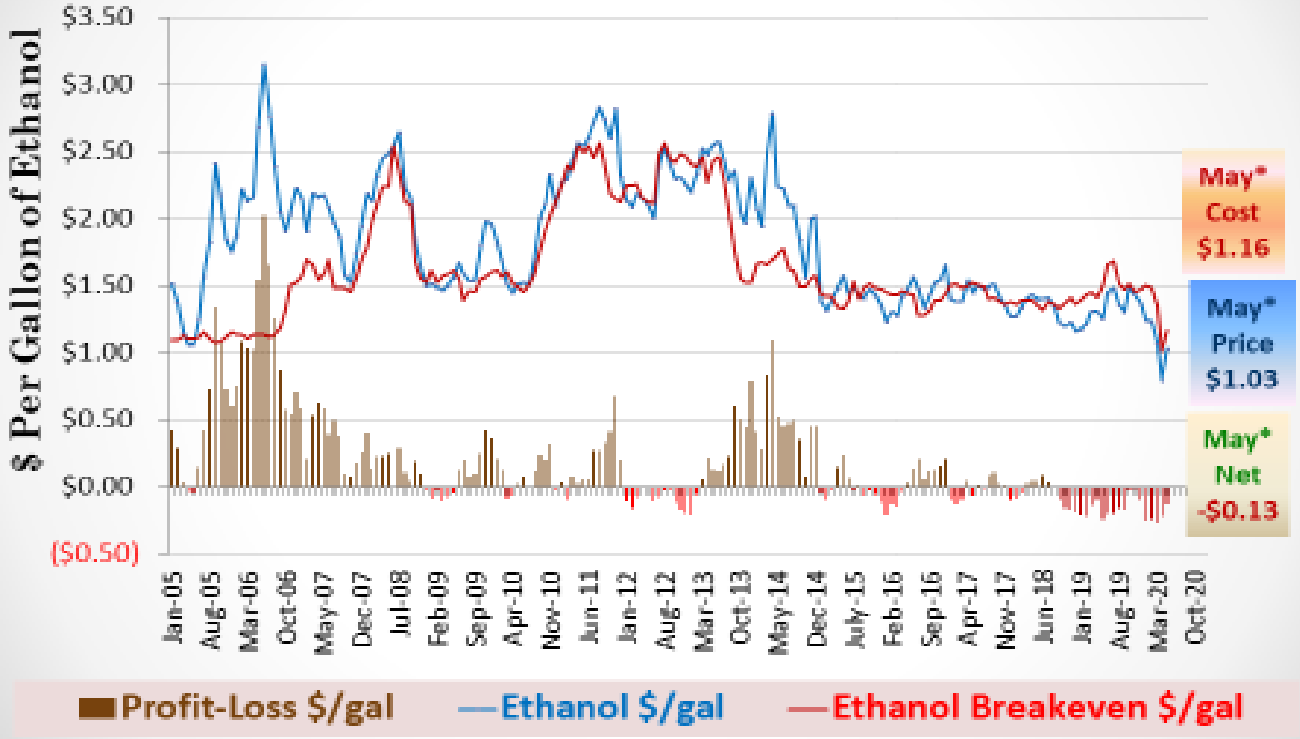


Weekly U.S. Ethanol Imports, Exports & %-of-Stocks (thru 5/15/2020)



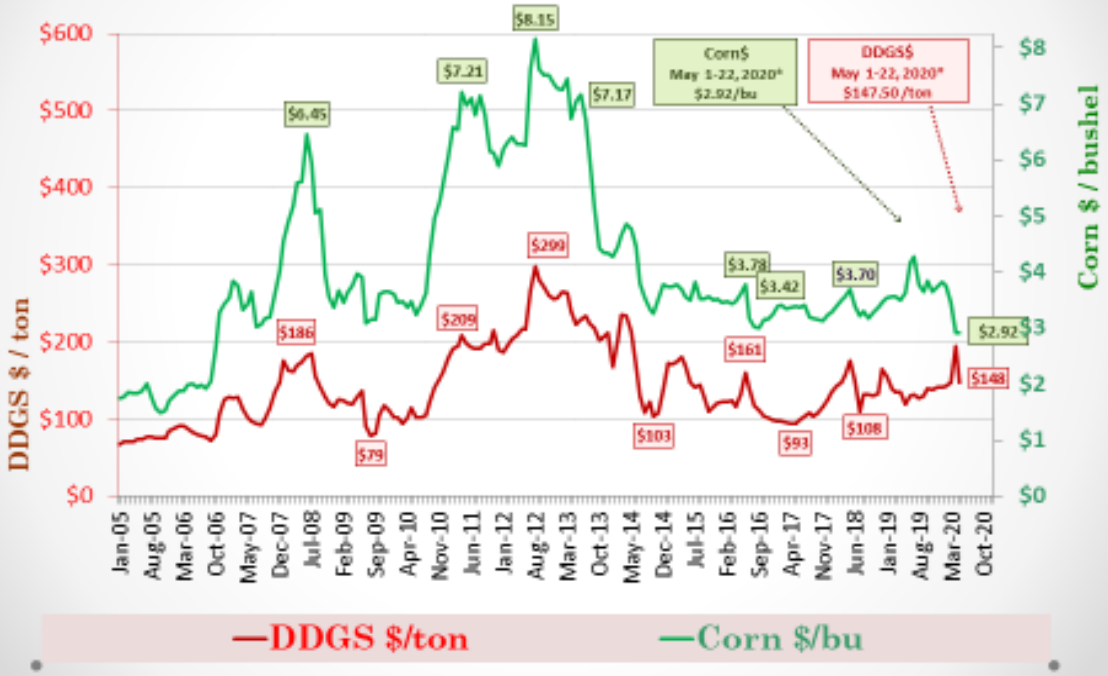
Ethanol Price, Cost & Profits

ISU Ethanol Plant Model (January 2005 – May 22, 2020)



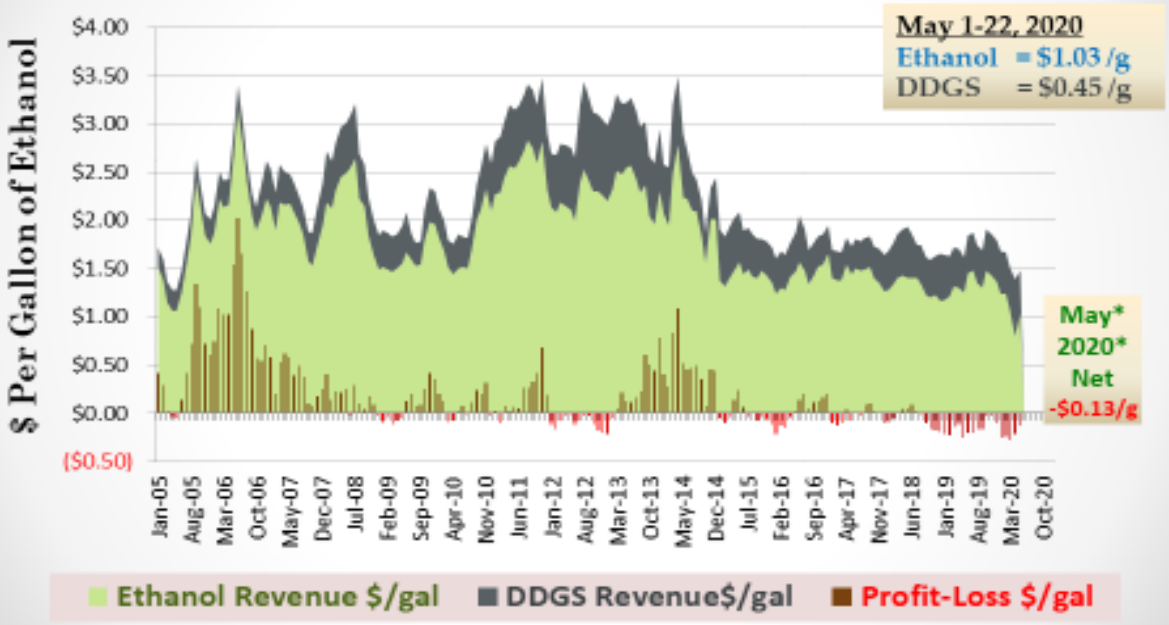
Ethanol DDGS & Corn Input Prices

ISU Ethanol Plant Model (January 2005 – May 26, 2020)



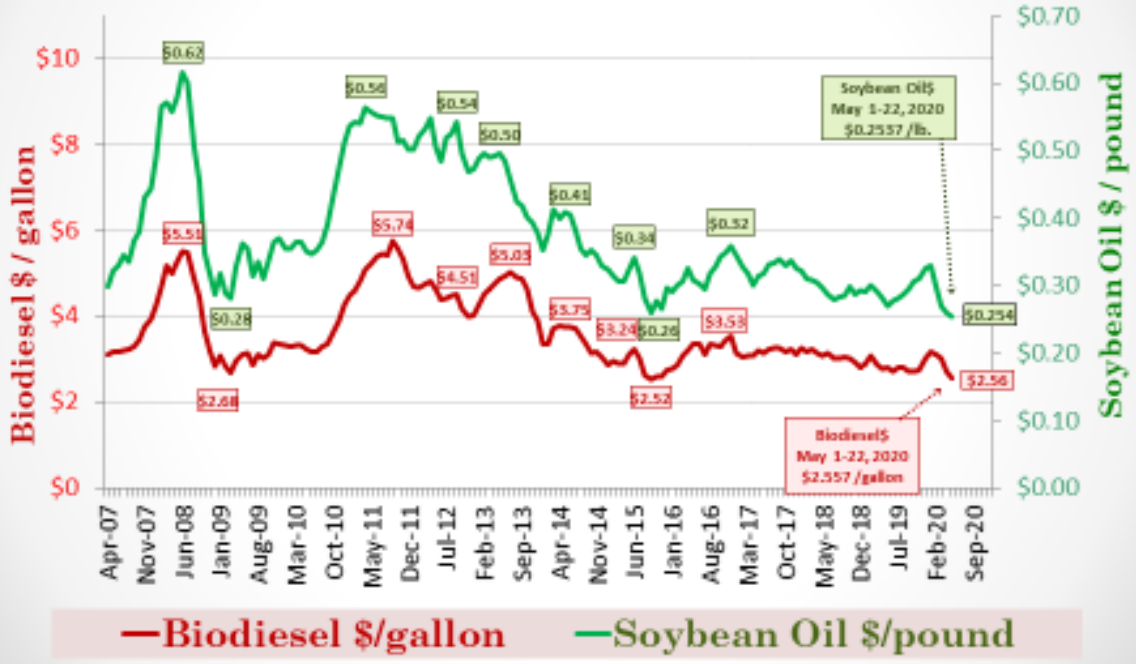
Ethanol Revenues & Net Returns

ISU Ethanol Plant Model (January 2005 – May 22, 2020)



Biodiesel & Soybean Oil Prices

ISU Biodiesel Plant Model (April 2007 – May 22, 2020)



Biodiesel Price, Cost & Profits

ISU Biodiesel Plant Model (April 2007 – May 22, 2020)