The U.S. Ethanol Industry

Trends in Prices & Profitability

Part 1 of Information for the U.S. Grains Council

March 10, 2021

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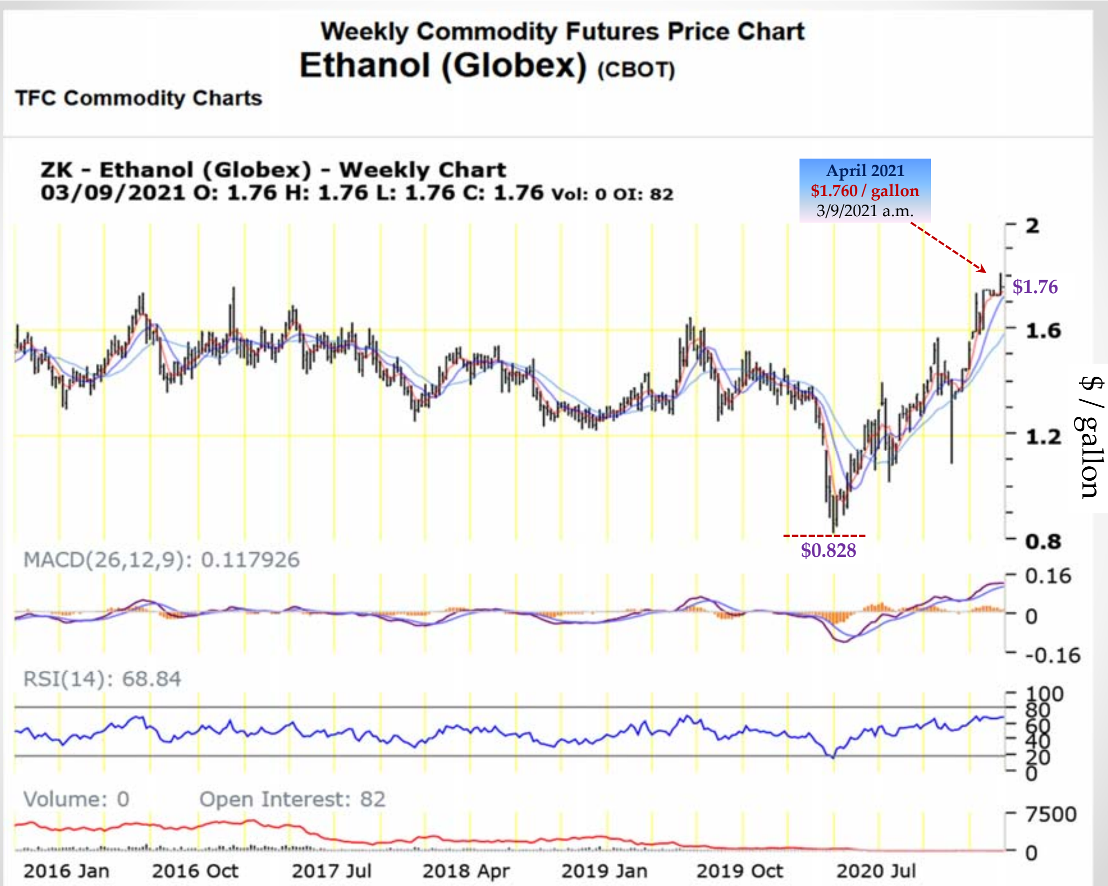


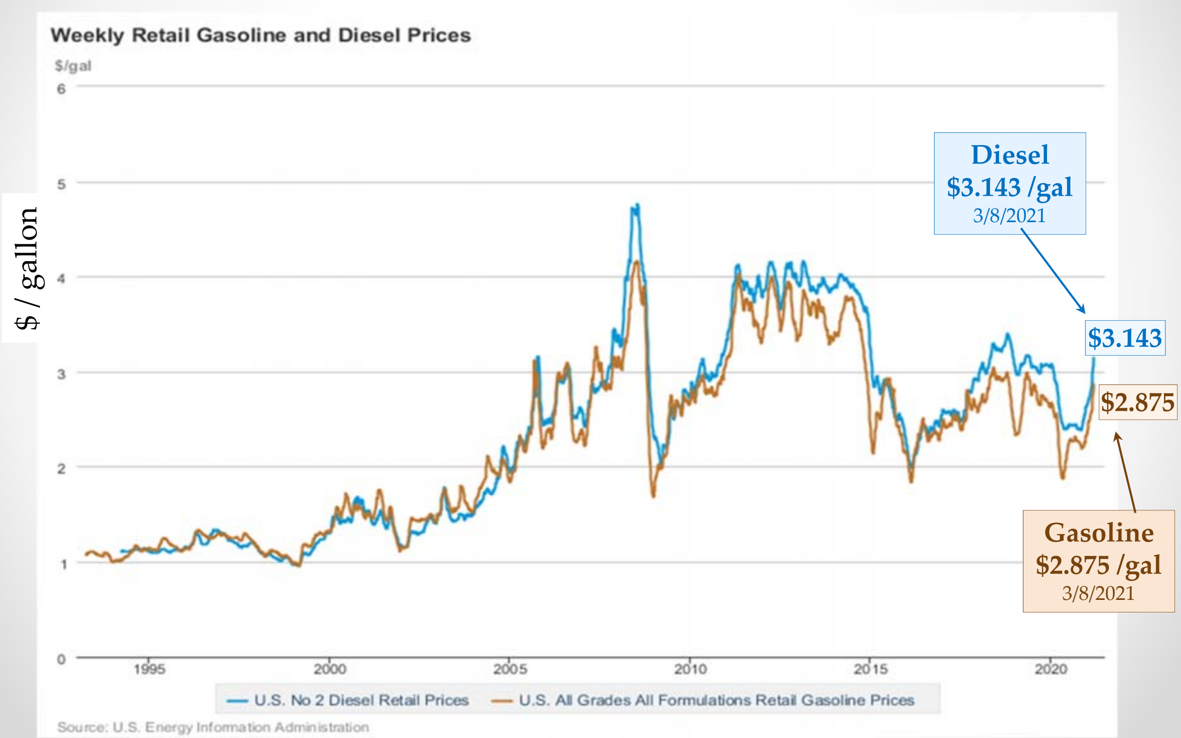
Ethanol & RBOB Futures

Weekly Charts: January 2016 – March 9, 2021

$Ethanol / $RBOB	
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*
6/1/2020	= 1.15 / 1.07 = 1.07
7/1/2020	= 1.25 / 1.22 = 1.03
8/3/2020	= 1.11 / 1.21 = 0.92
9/1/2020	= 1.31 / 1.22 = 1.07
10/1/2020	= 1.36 / 1.15 = 1.18
11/2/2020	= 1.39 / 1.05 = 1.32
12/1/2020	= 1.49 / 1.22 = 1.22
1/4/2021	= 1.50 / 1.37 = 1.09
2/1/2021	= 1.71 / 1.59 = 1.08
3/1/2021	= 1.73 / 1.94 = 0.89
3/9/2021	= 2.05 / 1.76 = 1.16*

Retail Diesel & Gasoline Prices

Weekly Continuous Chart: April 5, 1993 through March 8, 2021

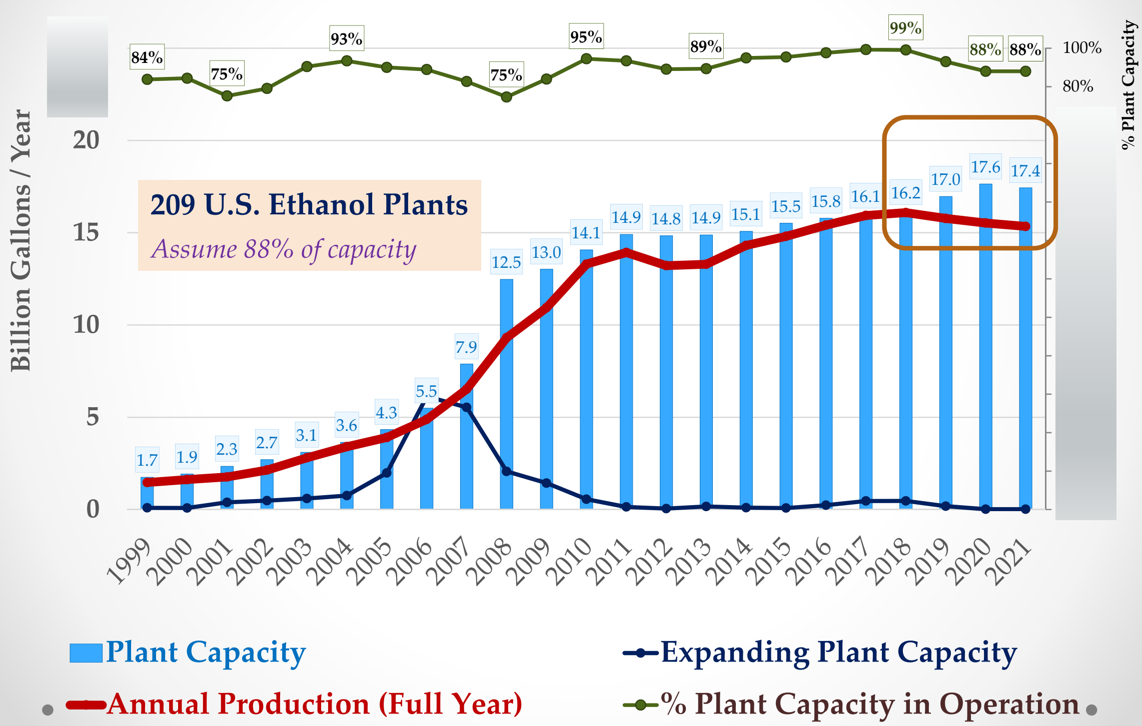


CBOT Corn Futures

Weekly Continuous Chart: January 2016 – March 9, 2021 a.m.

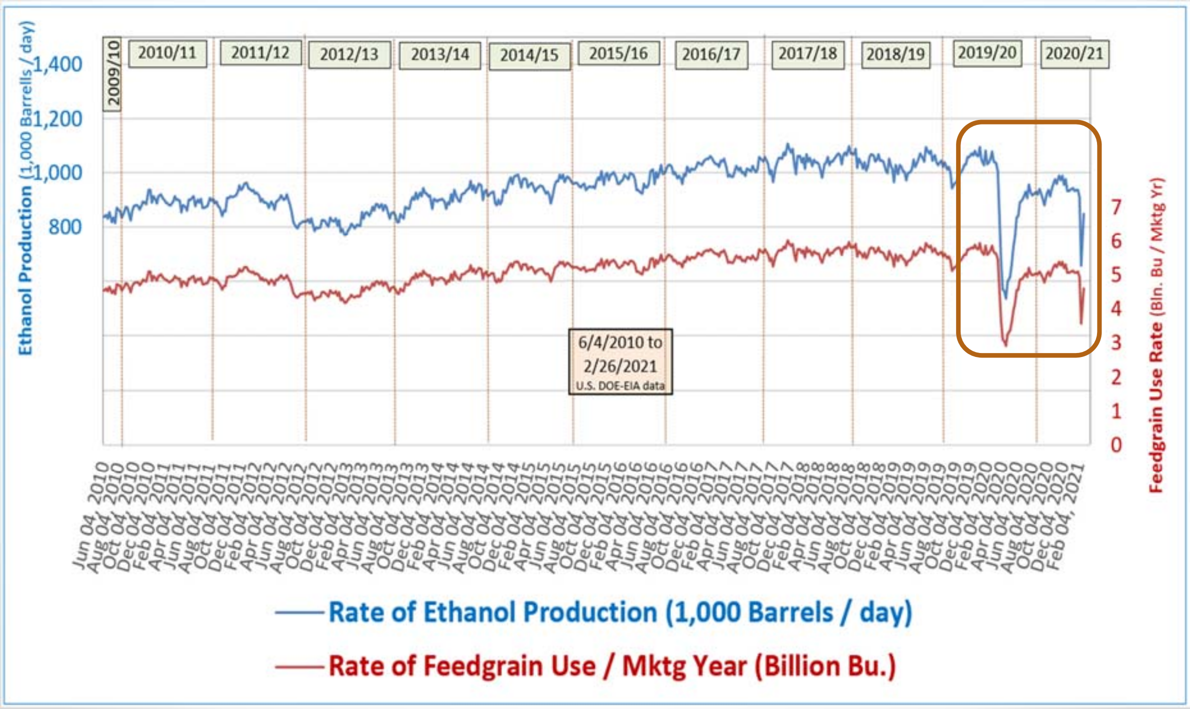
U.S. Ethanol Capacity & Production

Source: Renewable Fuels Association – As of March 9, 2021

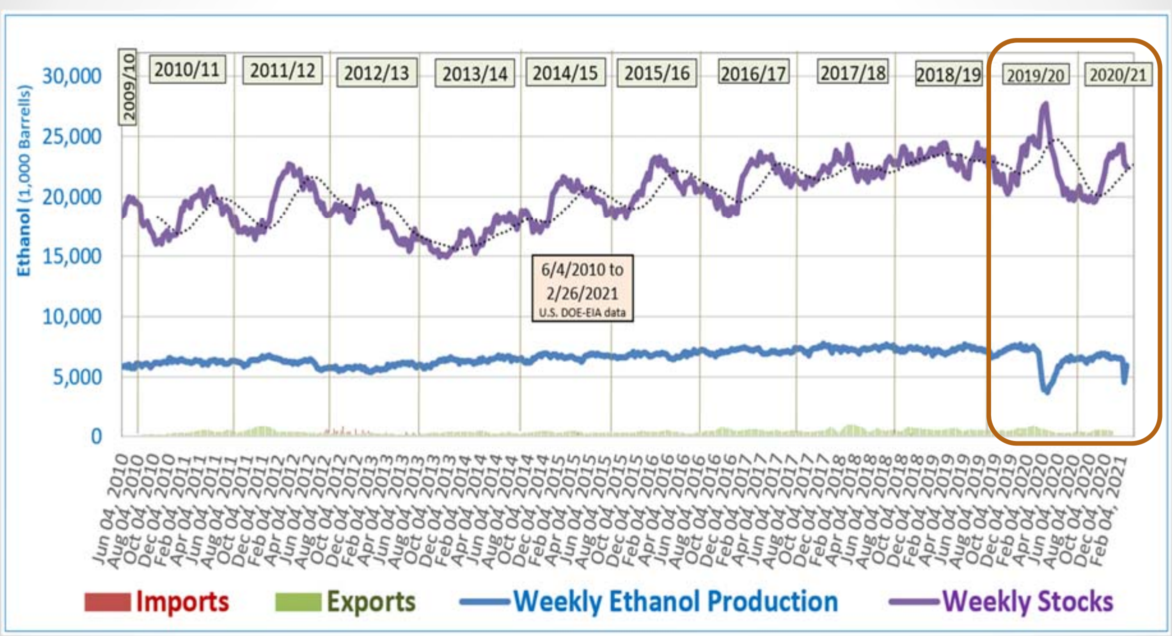


U.S. Ethanol Production & Corn Use

Weekly EIA ethanol data & KSU corn use est's. (6/4/2010 thru 2/26/2021)

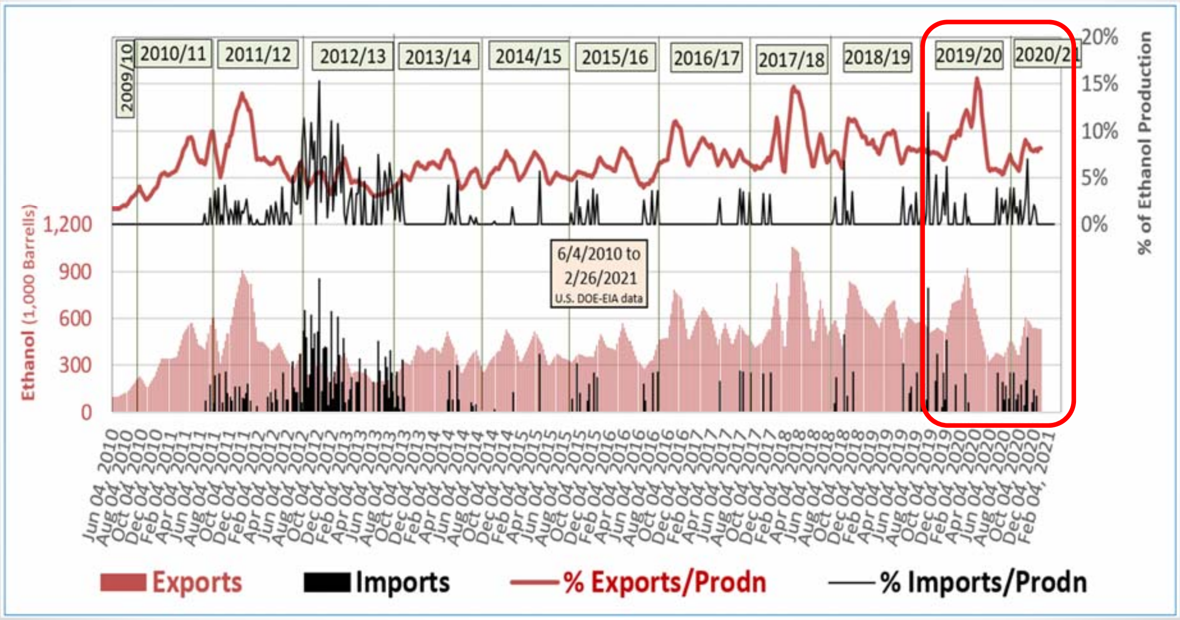


Weekly U.S. Ethanol Production, Imports, Exports & Stocks (thru 2/26/2021)



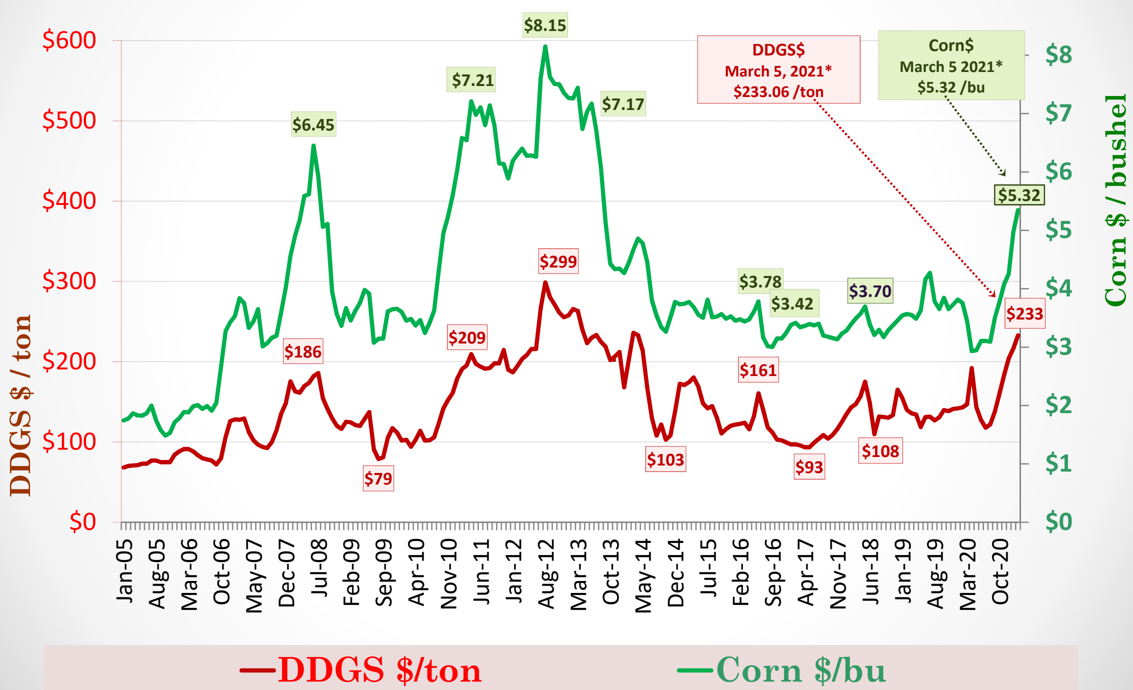
U.S. Ethanol

Weekly Imports, Monthly Exports & their %-of-Stocks (thru 2/26/2021)



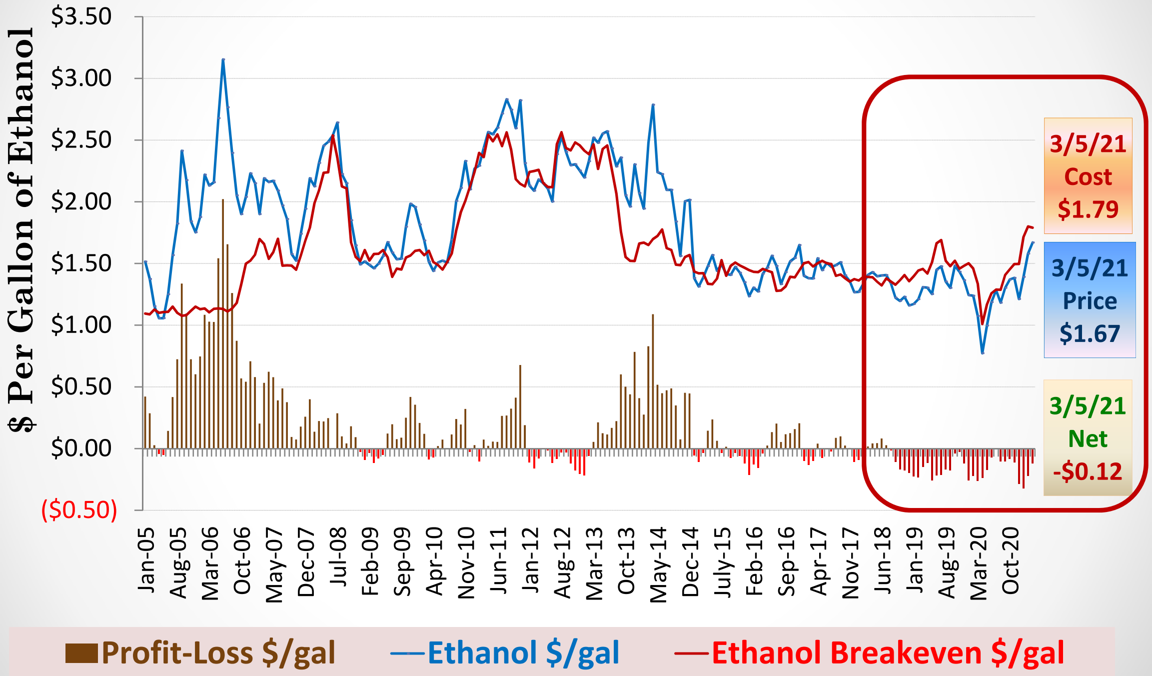
Ethanol DDGS & Corn Input Prices

ISU Ethanol Plant Model (January 2005 – March 5, 2021)



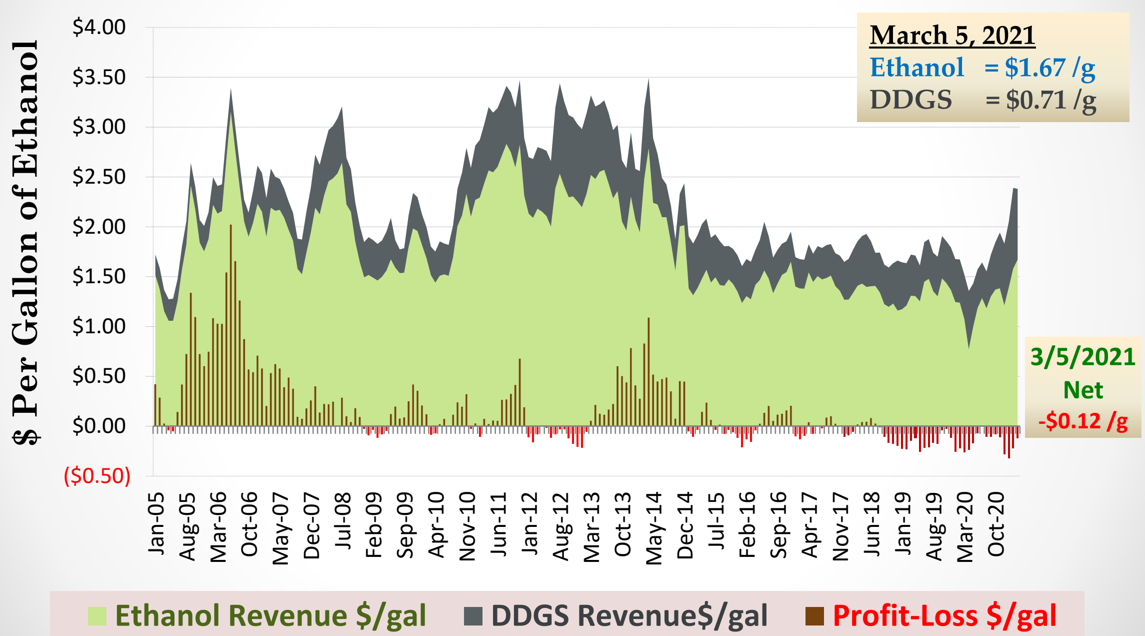
Ethanol Price, Cost & Profits

ISU Ethanol Plant Model (January 2005 – March 5, 2021)



Ethanol Revenues & Net Returns

ISU Ethanol Plant Model (January 2005 – March 5, 2021)



U.S. Corn & Soybeans

Spring 2021 Planting Prospects

Part 2 of Information for the U.S. Grains Council

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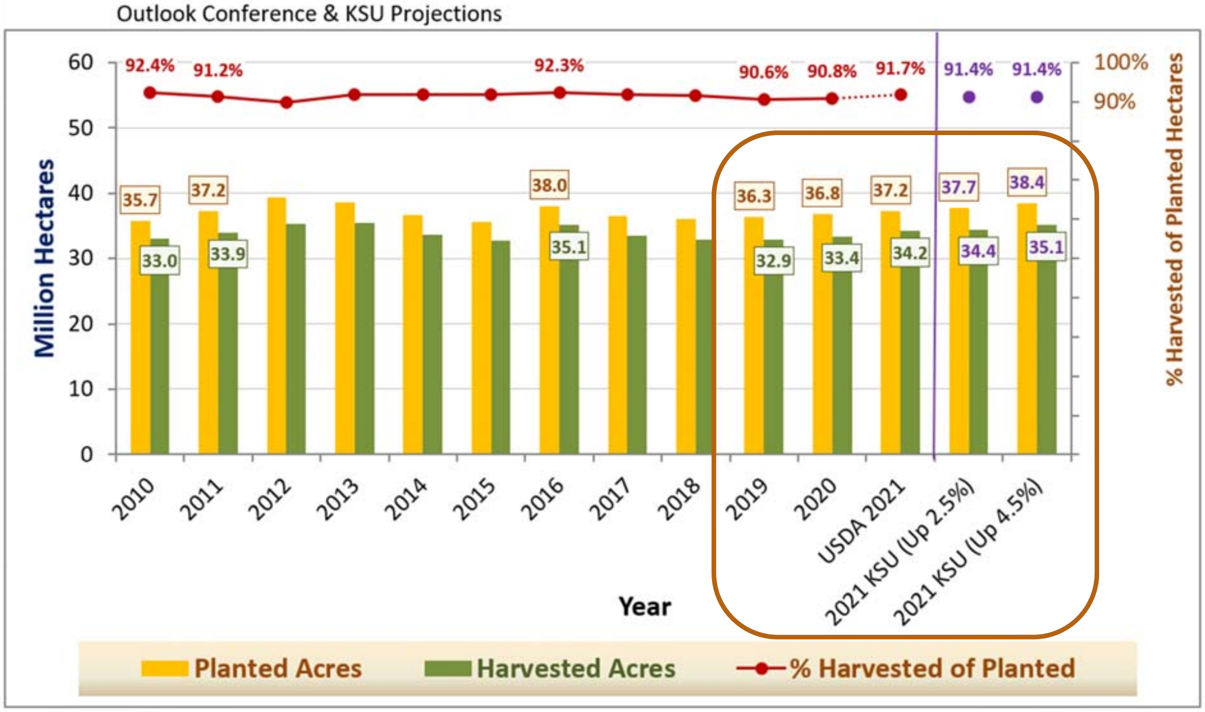
What U.S. Farming Expects in 2021…..

- **2021 U.S. Spring Plantings** ⇨ *U.S. Farmers Expectations?*
  - **1st determine South American crop success in Spring 2021**
    - o ***Argentina's*** *dryness problems &* ***Brazil's*** *soybean / 2nd crop corn delays*
  - **Soybeans** U.S 2021 ***Up 2%-7%*** ➲ ⇧⇩ ≈ ***U.S.-China Trade & So. America***
  - **Corn** U.S. 2021 ***Up 1%-4%+*** ➲ ⇧⇩ ≈ ***Effect on U.S. Ethanol, Feed Use***
  - **Sorghum** U.S. 2021 ***Up 20%*** ➲ ⇧ ≈ ***IF China Imports Continue***
  - ***HRS Wheat ???*** ➲ ***Dry & competing crops in Northern U.S.***

Corn Markets

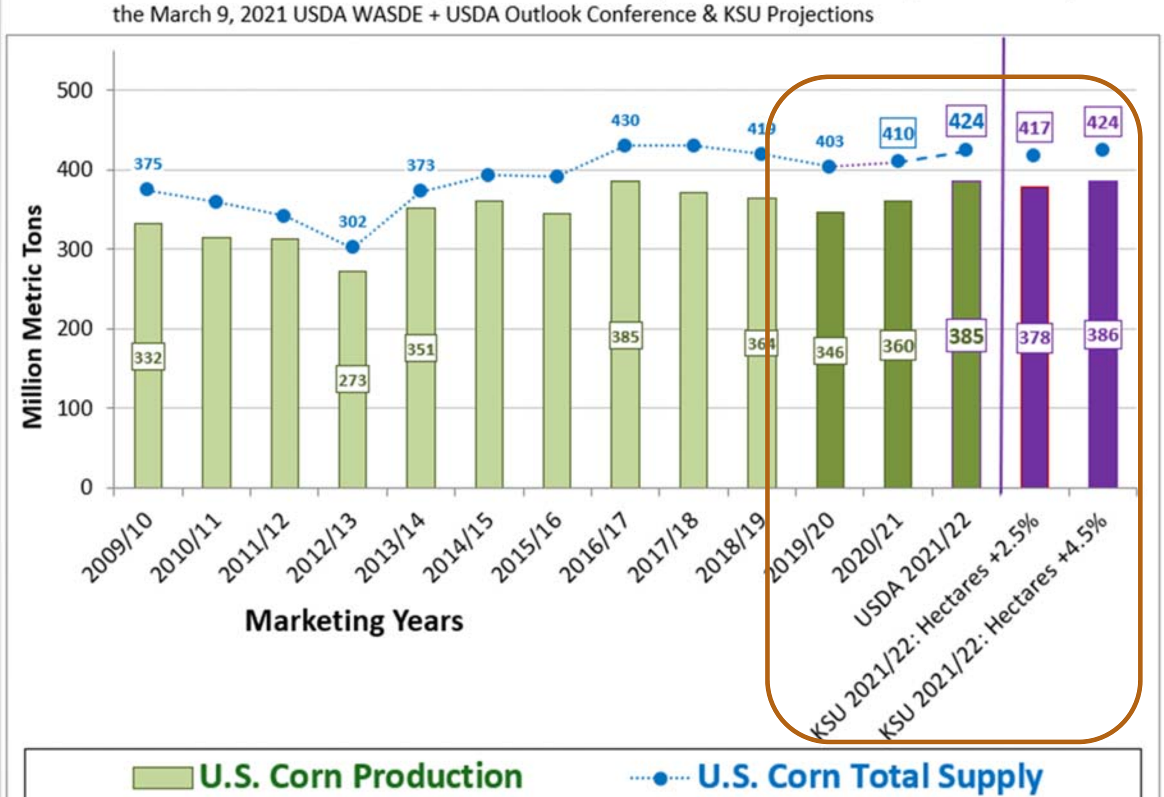
Kansas State University Department of Agricultural Economics

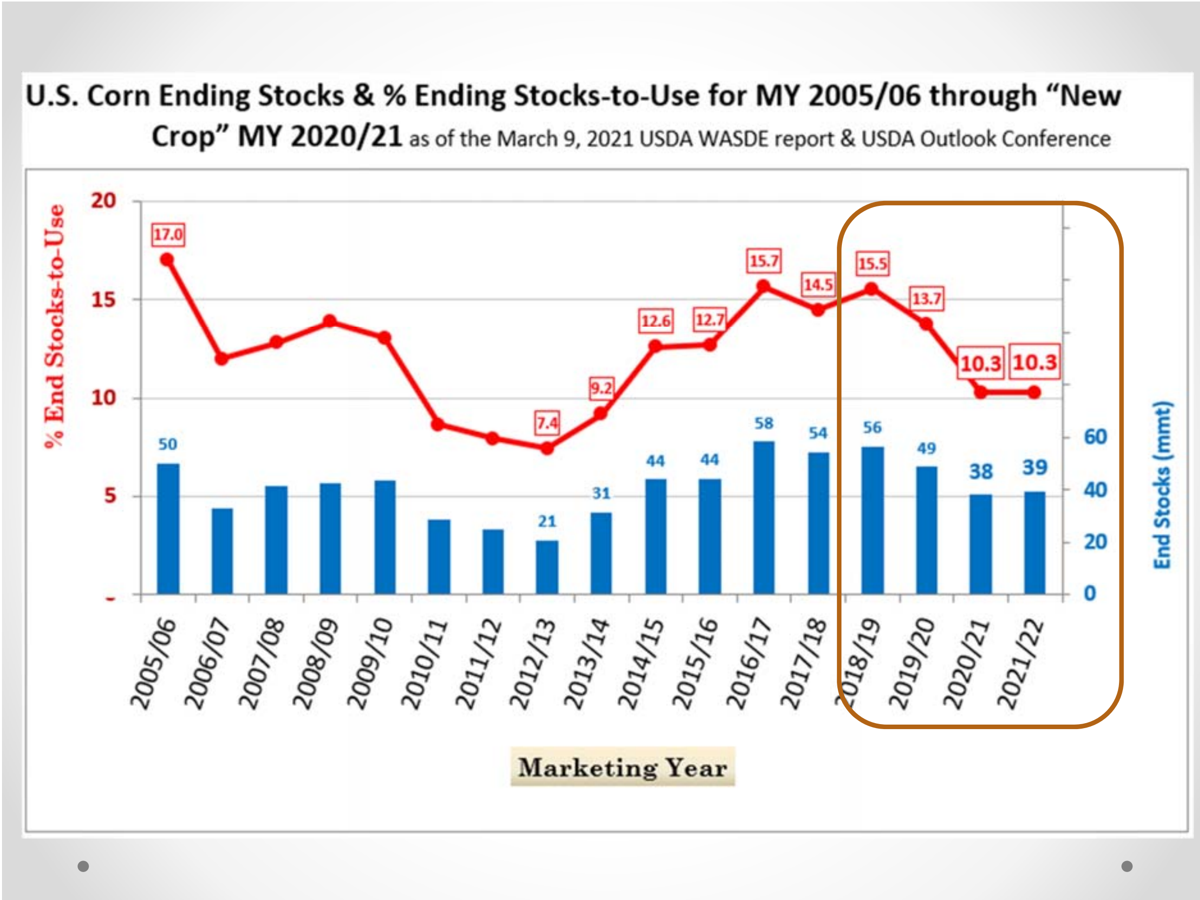
U.S. Corn Hectares for Years 2010 Through 2021 as of the March 9, 2021 USDA Reports + USDA Outlook Conference & KSU Projections

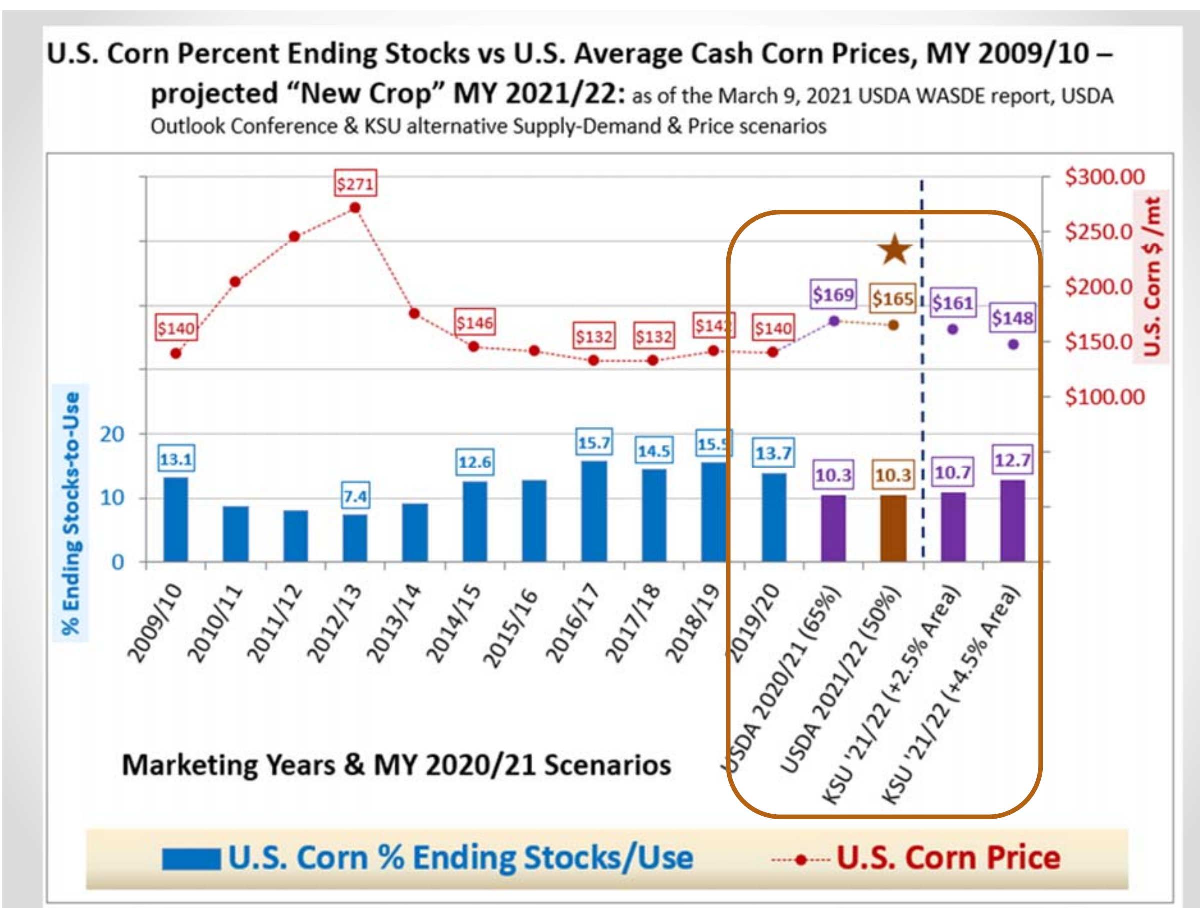


U.S. Corn Yield Trend for Years 2007-2021 as of the March 9, 2021 USDA Reports + USDA Outlook Conference & KSU Projections

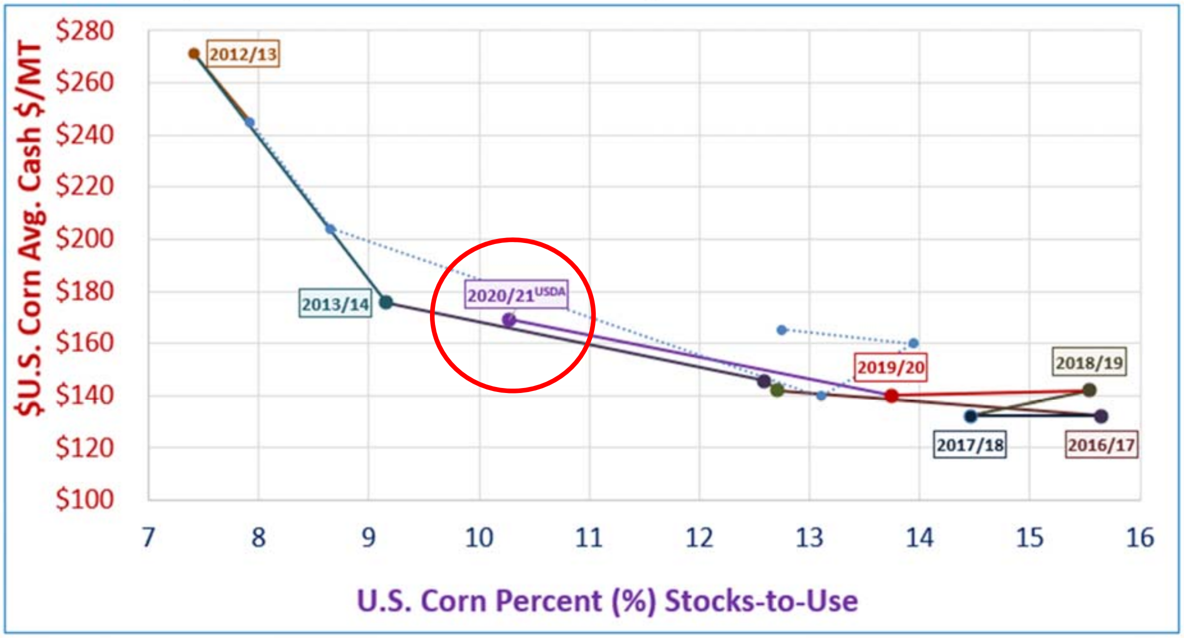
U.S. Corn Production & Total Supplies: MY 2009/10 thru "New Crop" MY 2021/22 as of the March 9, 2021 USDA WASDE + USDA Outlook Conference & KSU Projections




U.S. Corn Ending Stocks & % Ending Stocks-to-Use for MY 2005/06 through "New Crop" MY 2020/21 as of the March 9, 2021 USDA WASDE report & USDA Outlook Conference
% End Stocks-to-Use
End Stocks (mmt)
17.0
7.4
9.2
12.6
12.7
15.7
14.5
15.5
13.7
10.3
10.3
50
21
31
44
44
58
54
56
49
38
39
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
Marketing Year


U.S. Corn Percent Ending Stocks vs U.S. Average Cash Corn Prices, MY 2009/10 – projected "New Crop" MY 2021/22: as of the March 9, 2021 USDA WASDE report, USDA Outlook Conference & KSU alternative Supply-Demand & Price scenarios
% Ending Stocks-to-Use
U.S. Corn $ /mt
$140
$271
$146
$132
$132
$142
$140
$169
$165
$161
$148
13.1
7.4
12.6
15.7
14.5
15.5
13.7
10.3
10.3
10.7
12.7
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
USDA 2020/21 (65%)
USDA 2021/22 (50%)
KSU '21/22 (+2.5% Area)
KSU '21/22 (+4.5% Area)
Marketing Years & MY 2020/21 Scenarios
U.S. Corn % Ending Stocks/Use
U.S. Corn Price

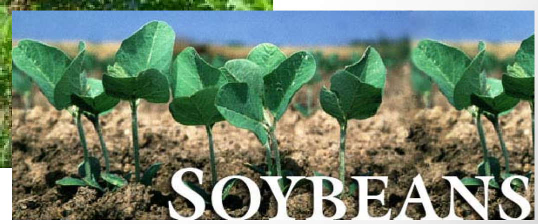
U.S. Corn Price vs U.S. % Stocks-to-Use, MY 2007/08 through "New Crop" MY 2020/21: as of the March 9, 2021 USDA WASDE report



U.S. Corn Supply-Demand Balance Sheet: Projected "Current Crop" MY 2020/21 & "New Crop" MY 2021/22 as of the March 9, 2021 USDA WASDE report & 2021 USDA Outlook Conference, with Alternative KSU Marketing Year Scenarios

Item	USDA MY 2020/21 "Old Crop" Scenario #1 March WASDE	KSU MY 2020/21 "Old Crop" Scenario #2 More Exports & Less Ethanol/Feed	USDA MY 2021/22 "New Crop" Scenario #3 2021 USDA Outlook Conference	KSU MY 2020/21 "New Crop" Scenario #4 +2.5% Planted Area 11.77 MT/HA	KSU MY 2020/21 "New Crop" Scenario #5 +4.5% Planted Area 11.77 MT/HA
% Probability of Occurring (KSU)	*65%* KSUest	*35%* KSUest	*50%* KSUest	*30%* KSUest	*20%* KSUest
Planted Area (million hectares)	36.75	36.75	37.23	37.67	38.41
Harvested Area (million hectares)	33.40	33.37	34.16	34.43	35.10
% Harvested/Planted Area	90.9%	90.8%	91.7%	91.4%	91.4%
Yield / harvested acre (MT/ha)	11.57	11.57	12.07	11.77	11.77
Beginning Stocks (MMT)	52	52	41	41	41
Production (MMT)	386	386	412	405	413
Imports (MMT)	1	1	1	1	1
Total Supply (MMT)	439	439	454	447	455
Ethanol for Fuel	135	133	142	136	136
Food & Industrial Use	38	38	38	38	38
Seed Use	1	1	1	1	1
Exports	71	75	72	72	72
Feed & Residual Use	154	154	159	156	156
Total Use	398	400	412	403	403
Ending Stocks	41	39	42	43	51
% Ending Stocks-to-Use	10.27%	9.71%	10.26%	10.74%	12.69%
Days of Supply / year	37.5 days	35.4 days	37.4 days	39.2 days	46.3 days
U.S. Avg. Farm Price ($/bu)	$4.30	$4.45	$4.20	$4.10	$3.75

Soybean Markets



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U.S. Soybean Planted & Harvested Acreage: 2010-2021 as of the March 9, 2021 USDA WASDE reports, USDA Outlook Conference & KSU Projections for 2021

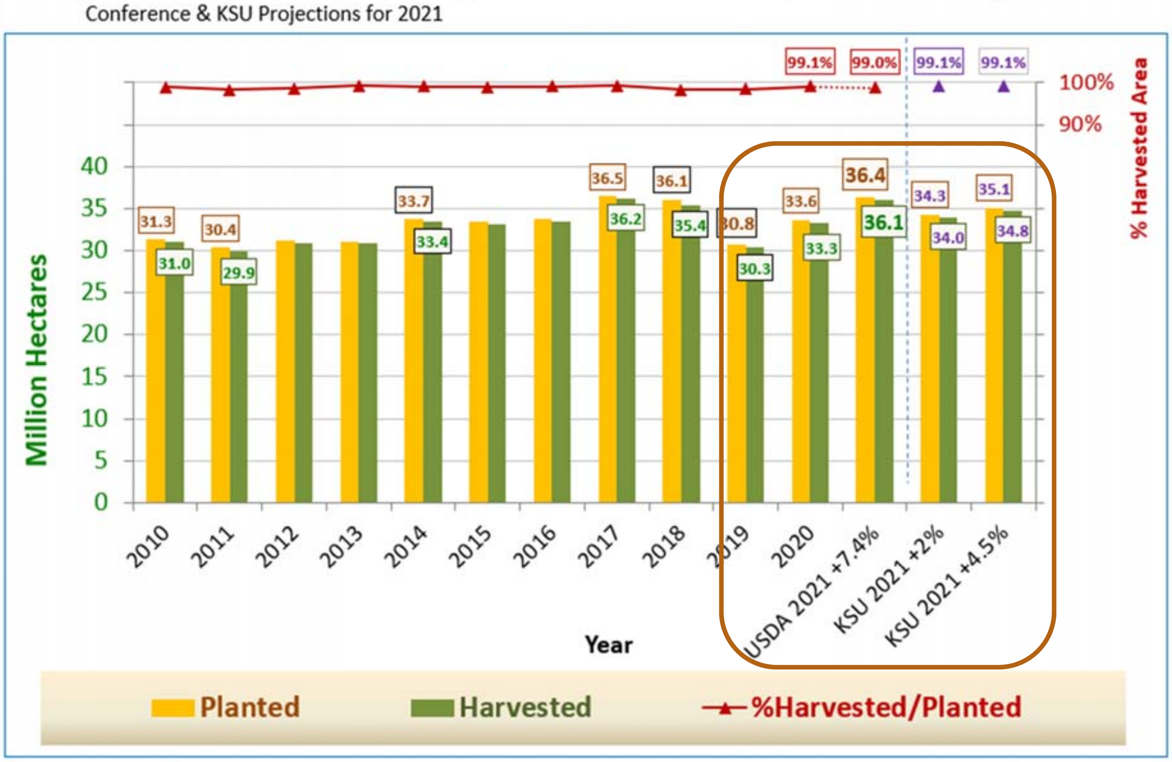
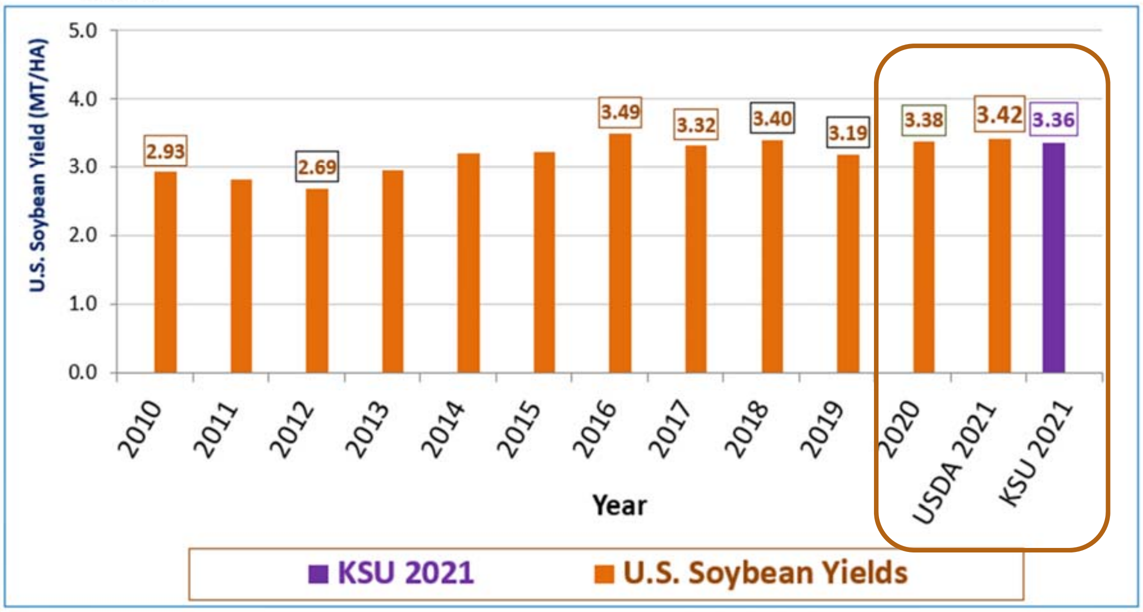
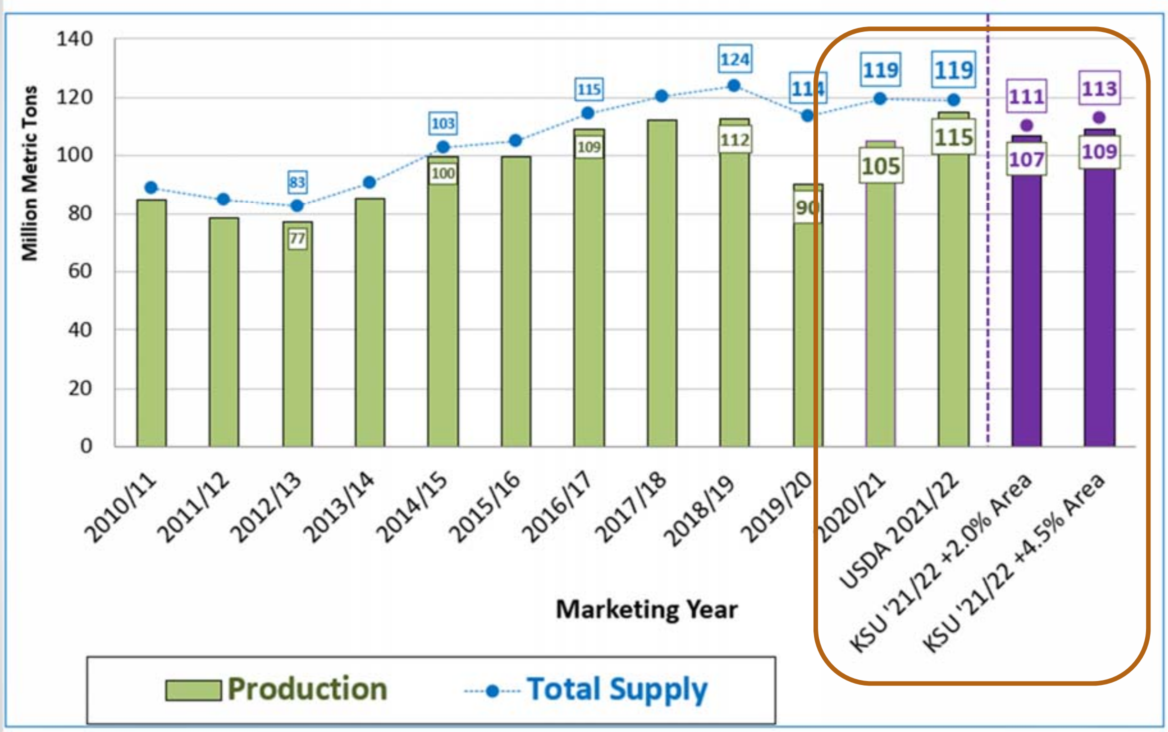
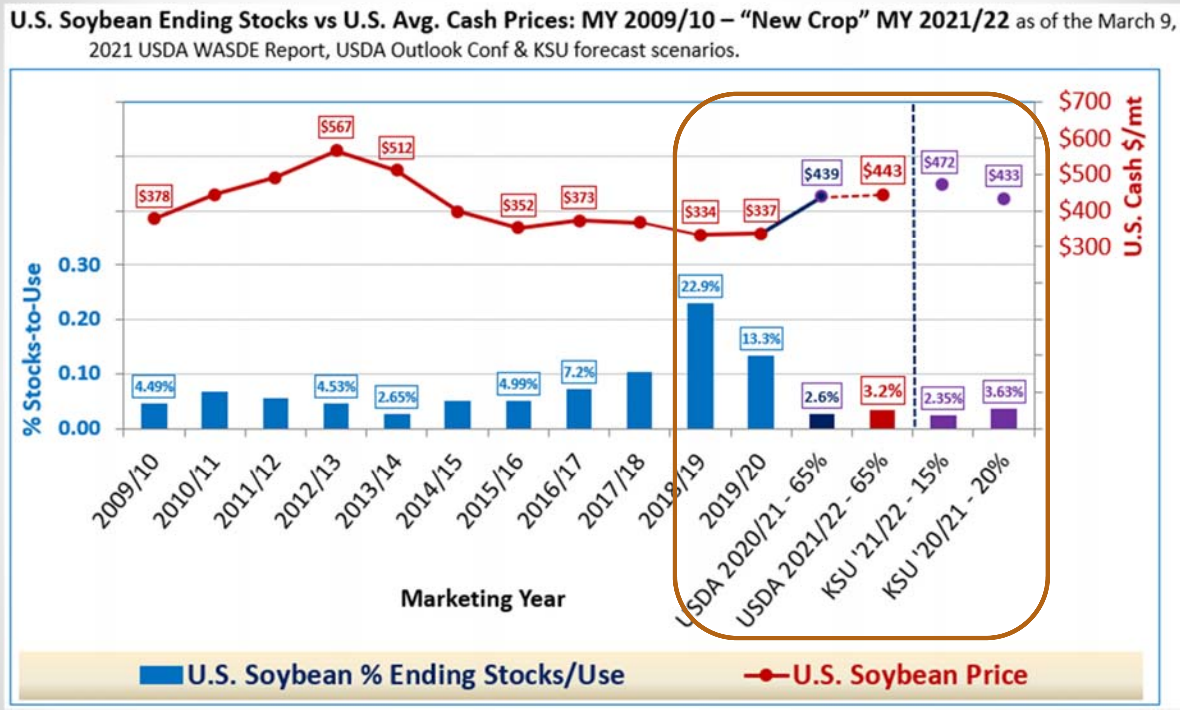


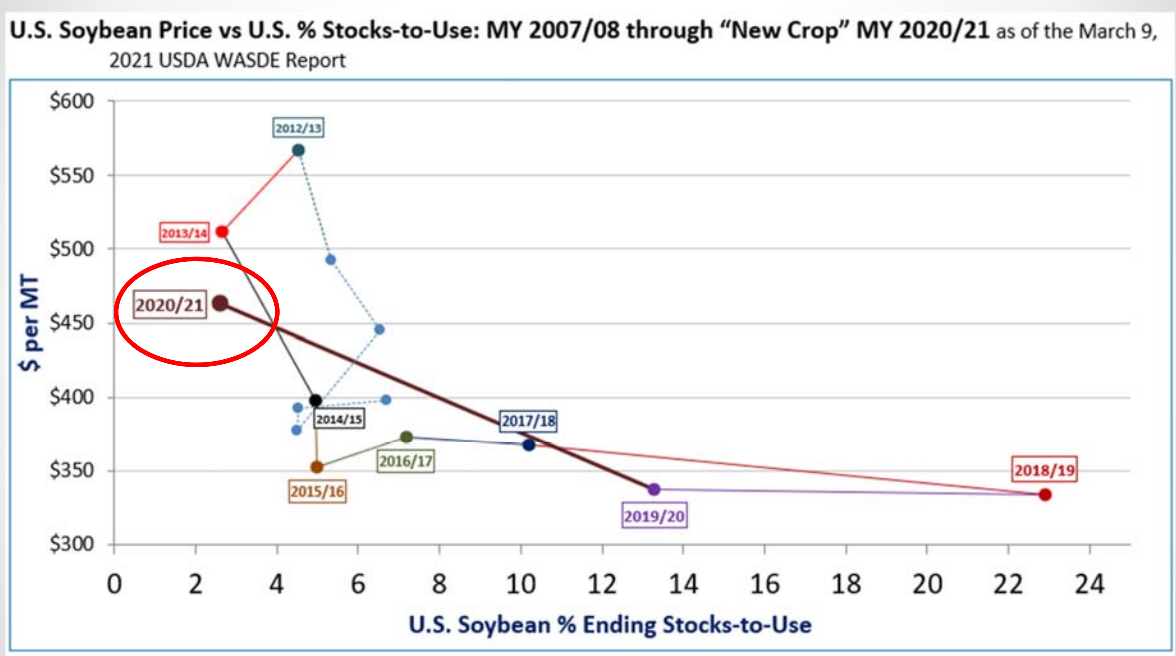
Figure 6. U.S. Soybean Yields: 2010-2021^Est as of the March 9, 2021 USDA WASDE Report, USDA Outlook Conference & KSU Projection



U.S. Soybean Production & Total Supplies: MY 2010/11 thru Projected "Next Crop" MY 2021/22 as of the March 9, 2021 USDA WASDE Report, USDA Outlook Conference & KSU Projections




U.S. Soybean Ending Stocks vs U.S. Avg. Cash Prices: MY 2009/10 – "New Crop" MY 2021/22 as of the March 9, 2021 USDA WASDE Report, USDA Outlook Conf & KSU forecast scenarios.
$378
$567
$512
$352
$373
$334
$337
$439
$443
$472
$433
4.49%
4.53%
2.65%
4.99%
7.2%
22.9%
13.3%
2.6%
3.2%
2.35%
3.63%
% Stocks-to-Use
U.S. Cash $/mt
Marketing Year
U.S. Soybean % Ending Stocks/Use
U.S. Soybean Price


U.S. Soybean Price vs U.S. % Stocks-to-Use: MY 2007/08 through "New Crop" MY 2020/21 as of the March 9, 2021 USDA WASDE Report
2012/13
2013/14
2020/21
2014/15
2017/18
2016/17
2015/16
2019/20
2018/19
$ per MT
U.S. Soybean % Ending Stocks-to-Use

U.S. Soybean Supply-Demand Balance Sheet: "Old Crop" MY 2019/20 and "New Crop" MY 2020/21 as of the March 9, 2021 USDA WASDE reports, with USDA Outlook Conference & KSU Soybean Market Scenarios

Item	USDA MY 2020/21 "Old Crop"-Scenario #1 March WASDE	KSU MY 2020/21 "Old Crop"-Scenario #2 +20 mb Exports	USDA MY 2021/22 "New Crop"-Scenario #3 March WASDE +7.4% Planted Acres	KSU MY 2020/21 "New Crop"-Scenario #4 +2% Planted Acres	KSU MY 2020/21 "New Crop"-Scenario #5 +4.5% Planted Acres
% Probability of Occurring (KSU)	*65% KSUest*	*35% KSUest*	*65% KSUest*	*15% KSUest*	*20% KSUest*
Planted Area (million hectares)	33.62	33.62	36.42	34.30	35.14
Harvested Area (million hectares)	33.31	33.31	36.06	33.98	34.82
% Harvested/Planted Area	99.08%	99.08%	99.00%	99.08%	99.08%
Yield / harvested acre (MT/ha)	3.38	3.38	3.42	3.36	3.36
Beginning Stocks (MMT)	14.29	14.29	3.27	3.27	3.27
Production (MMT)	112.54	112.54	123.15	114.25	117.08
Imports (MMT)	0.95	0.95	0.95	0.95	0.95
Total Supply (MMT)	127.78	127.78	127.37	118.47	121.30
Domestic Crushings	59.87	59.87	60.15	56.34	57.70
Exports	61.24	61.78	59.87	56.34	57.70
Seed	2.80	2.80	2.72	2.72	2.72
Residual	0.60	0.60	0.54	0.35	0.46
Total Use	124.51	125.06	123.40	115.75	118.58
Ending Stocks	3.27	2.72	3.95	2.72	2.72
% Ending Stocks-to-Use	2.62%	2.18%	3.20%	2.35%	3.63%
Days of Supply / year	9.6 days	7.9 days	11.68 days	8.58 days	13.27 days
U.S. Avg. Farm Price ($/bu)	$11.15	$12.15	$11.25	$12.00	$11.00


Questions?

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