

Grain Market Situation & Outlook

in mid-May 2020

Daniel O'Brien

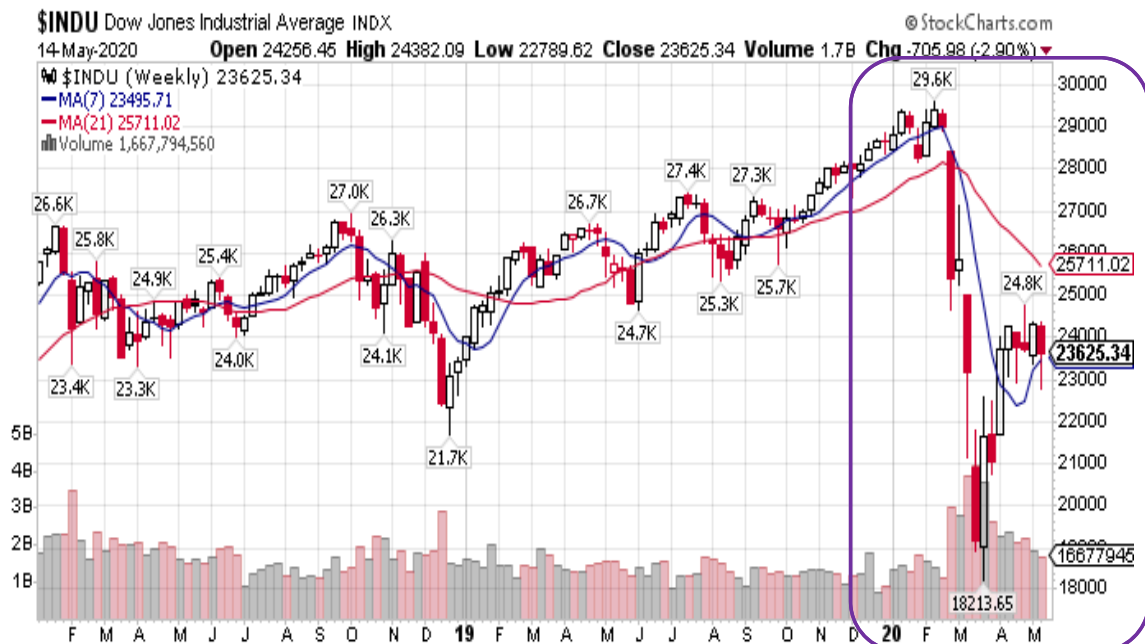
Extension Agricultural Economist

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Dow Jones Industrial Index

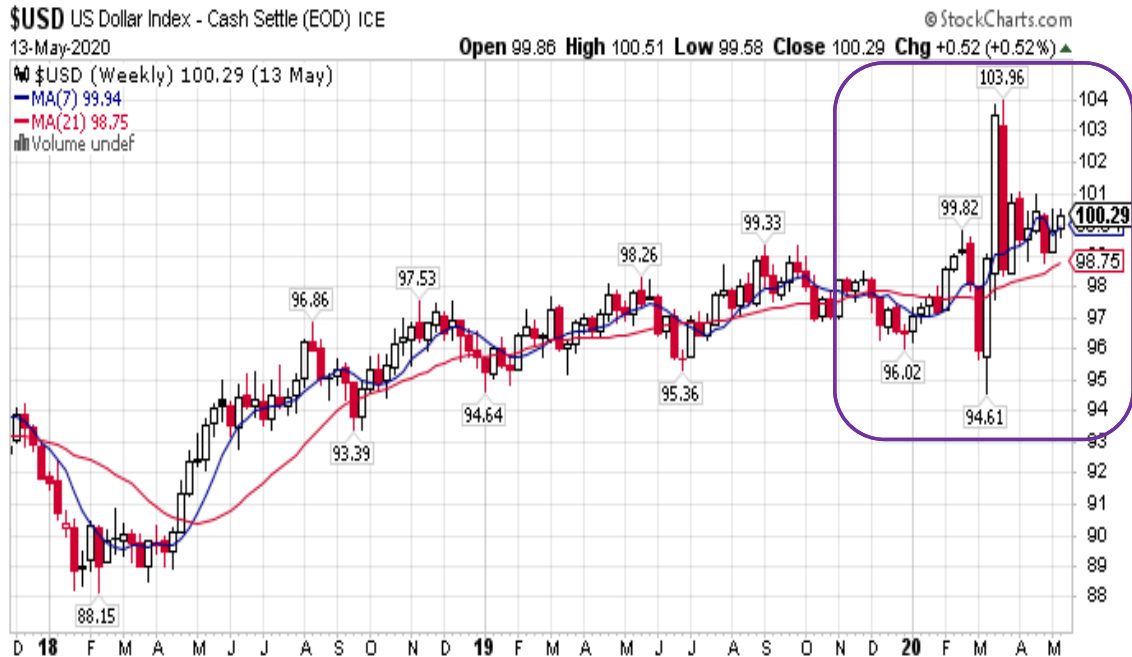
Source: StockCharts.com, 5/14/2020



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U.S. Dollar Index – Weekly (Dec. 2017 – Current)

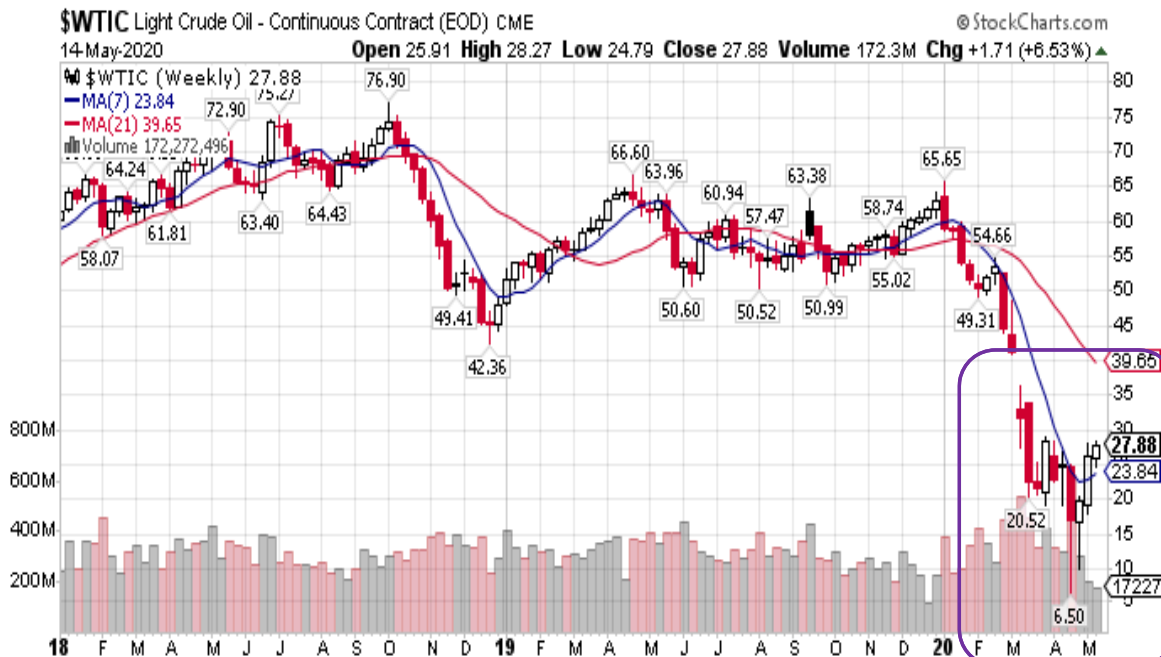
Source: StockCharts.com, 5/14/2020



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U.S. Oil Futures – Weekly (Jan. 2018 – Current)

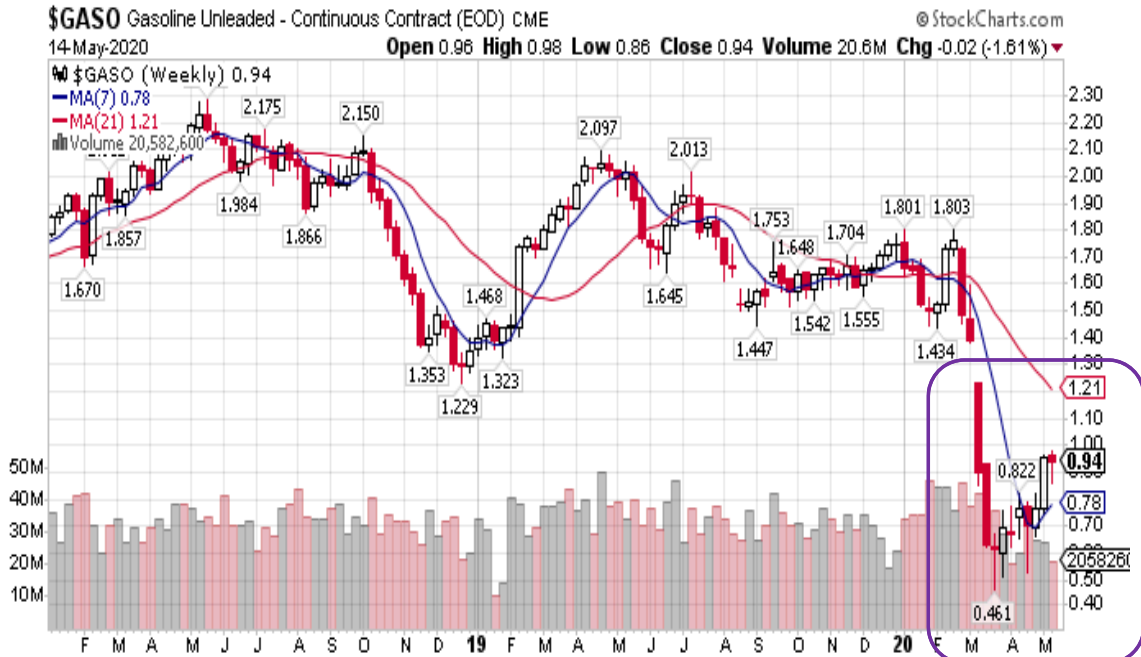
Source: StockCharts.com, 5/14/2020



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U.S. Gasoline Futures – Weekly (Jan. 2018 – Current)

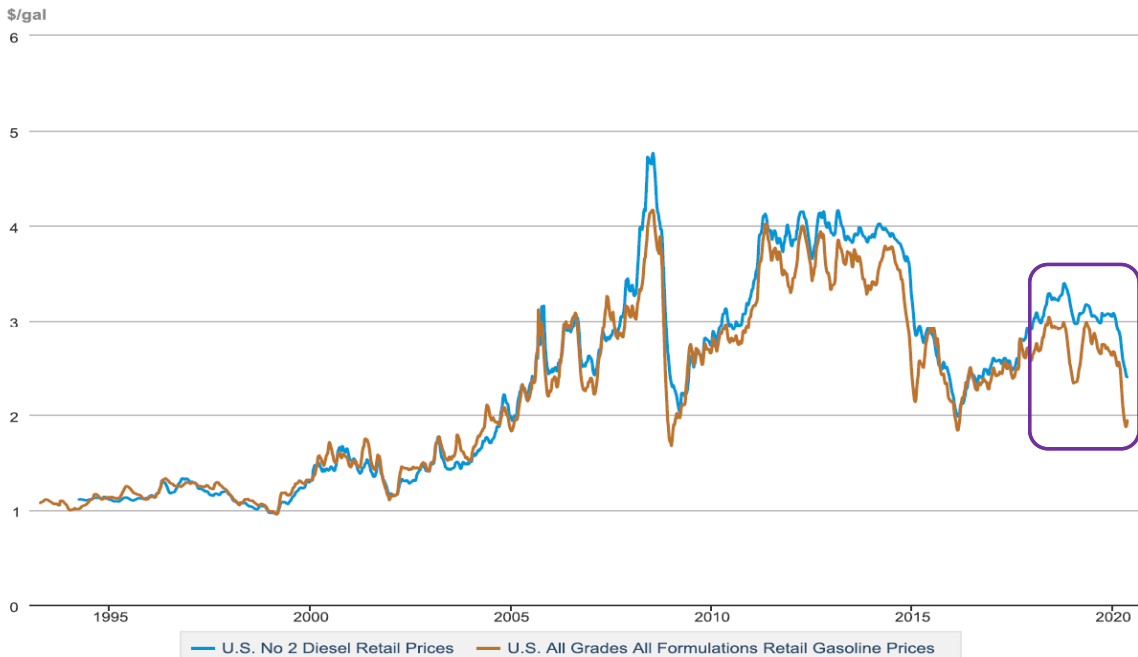
Source: StockCharts.com, 5/14/2020



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U.S. Gasoline & Diesel Prices – Since early 1990s

Weekly Retail Gasoline and Diesel Prices



Source: U.S. Energy Information Administration

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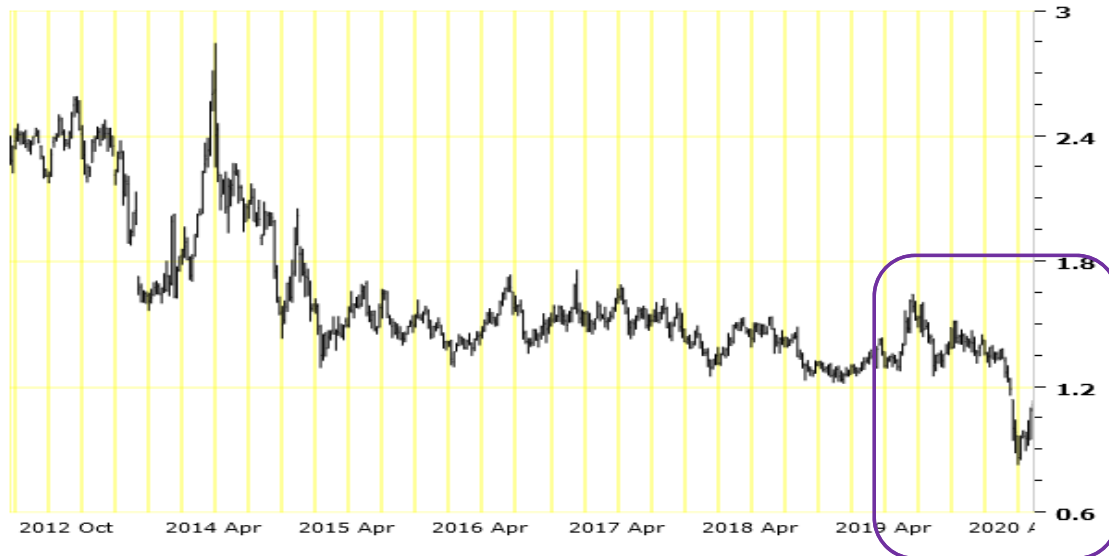
Source: EIA, 5/14/2020

U.S. Gasoline Futures – Weekly (Fall 2012 – Current)

Source: TFC Commodity Charts, 5/14/2020

ZK - Ethanol (Globex) - Weekly Chart
05/14/2020 O: 1.115 H: 1.138 L: 1.086 C: 1.138 Vol: 24 OI: 433

Session Change: 0.023



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2020 Corn & Sorghum Markets



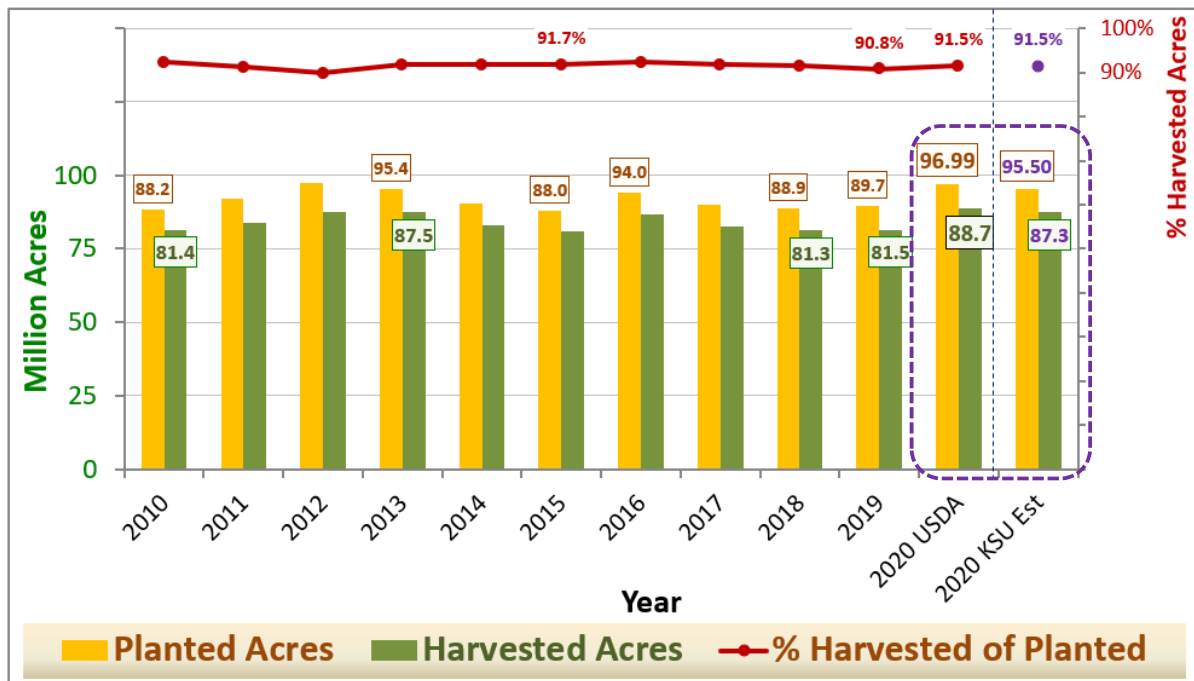
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Key Points re: U.S. Corn Markets

- **Ethanol Corn Use @ Risk**
 - Damaged U.S. Economy (↓ fuel demand) & Oil Price War
 - Loss of 400-450 mb+ U.S. Corn use from closed ethanol plants
 - Offset “some” by less DDGS ⇔ more corn feeding
- **2020 U.S. Corn Planting Prospects**
 - USDA 2020 Prospective Plantings – 97.0 million ac. Planted***
 - Post-report market expectations: 93-95 million ac. (*97 ma* USDA ***)
- **Est. 2020/21 Production & End Stocks** (IF a large crop)
 - 2020 U.S. Corn Production^{Est.}: 15.250^{Plus} billion bushels
 - Ending Stocks^{USDA}: 3.3 bb - with > 22% Stocks/Use
 - U.S. Season Avg. Corn \$: \$3.20^{USDA} /bu

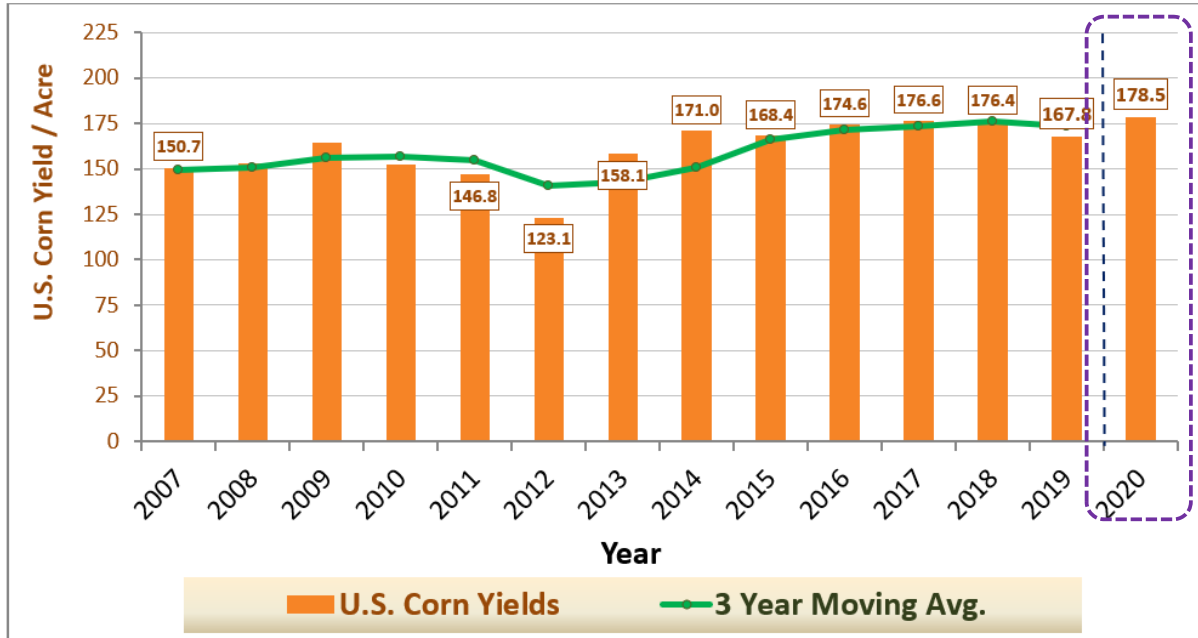
U.S. Corn Planted Acres

Figure. U.S. Corn Acreage for 2010-2020 as of May 12, 2020 USDA WASDE Report



U.S. Corn Yields

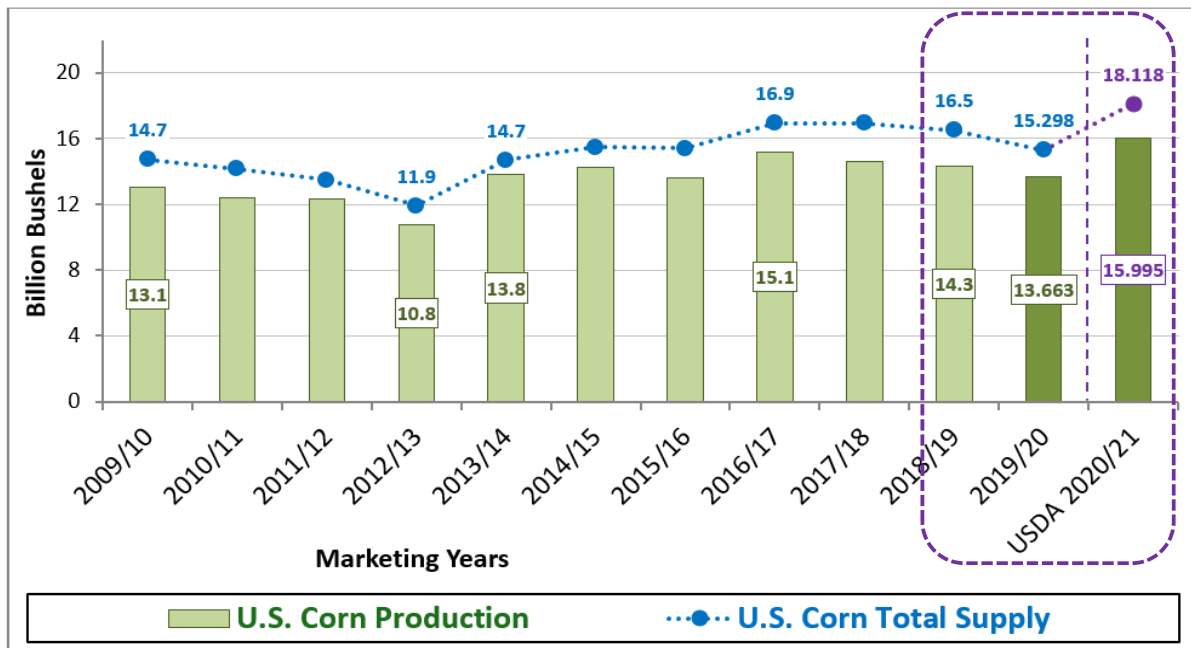
Figure. U.S. Corn Yield Trend for 2005-2020 as of May 12, 2020 USDA WASDE Report



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U.S. Corn Production & Supply

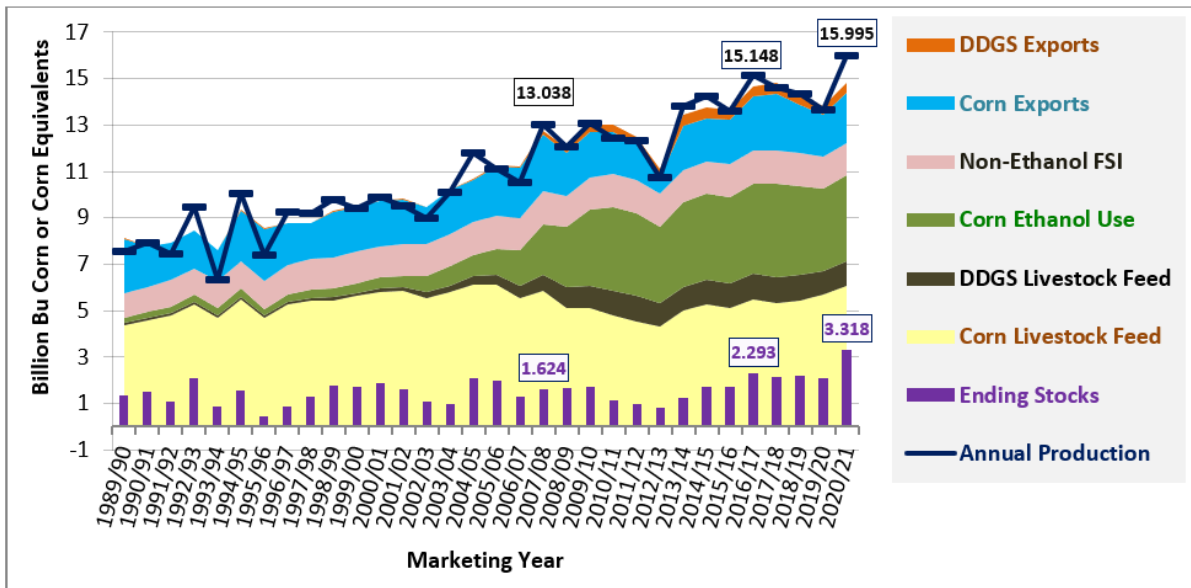
Figure. U.S. Corn Production & Total Supplies: MY 2009/10 thru Projected "Next Crop" MY 2020/21 as of the May 12, 2020 USDA WASDE report



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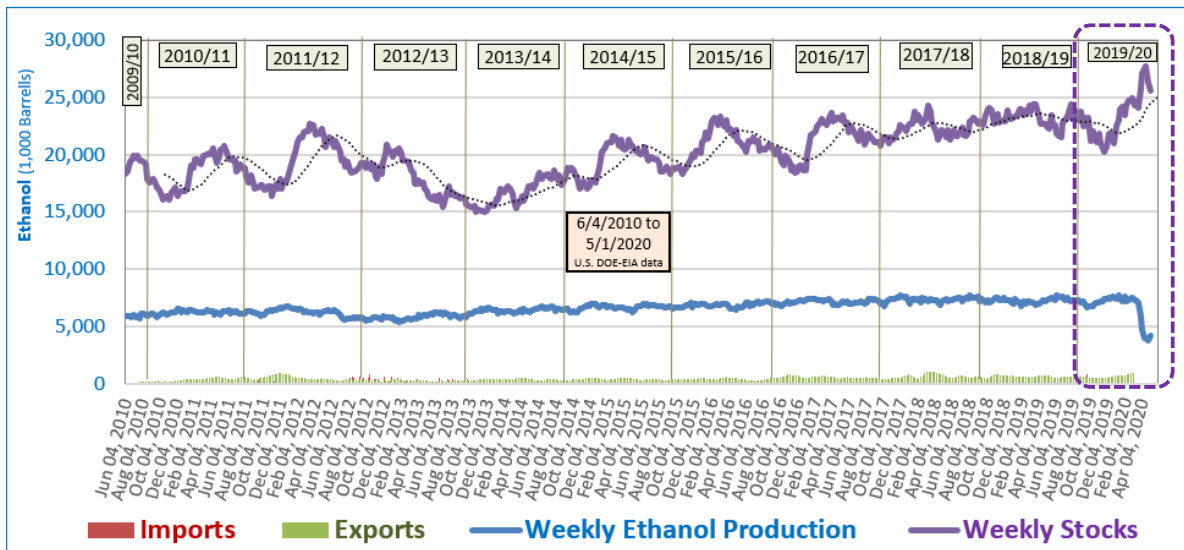
U.S. Corn Usage

Figure. U.S. Corn Supply-Demand with DDGS Adjustments as of the May 12, 2020 USDA WASDE report



U.S. Corn Usage

Figure. Weekly U.S. Ethanol Production, Use, Imports, Exports & Stocks based on U.S. Department of Energy – Energy Information Agency data on U.S. Ethanol Industry Trends

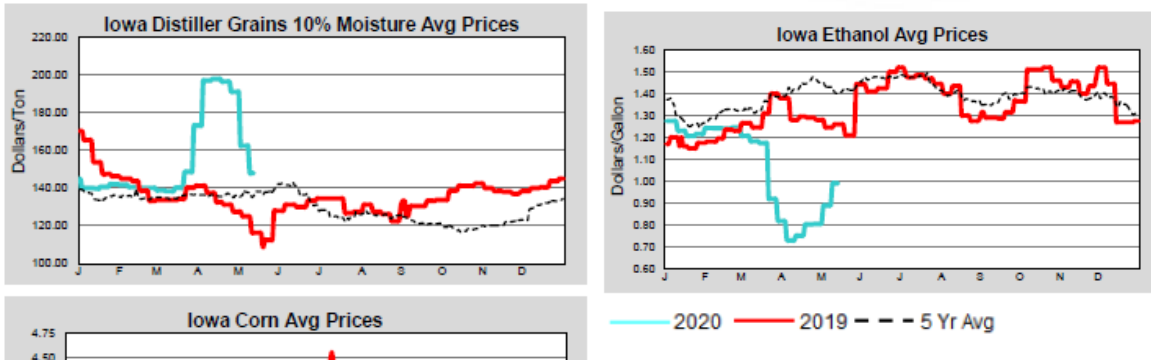


U.S. Ethanol Markets

US #2 Yellow Corn - dollars/bushel					Distillers Grain - dollars/ton - week ending 05/08/2020								
	Cash Bids	Chg	Basis	Avg:	Dried 10%	Chg	Avg:	Modified 50-55%	Chg	Avg:	Wet 65-70%	Chg	Avg:
Iowa-Eastern:	2.8825 - 3.1625	↑	-30N to -2N	-18.67	NA	NA	NA	80.00	↓	#####	NA	NA	NA
Iowa-Western:	2.7325 - 3.0525	↓	-45N to -13N	-29.38	131.00 - 165.00	↓	150.11	60.00 - 80.00	↓	71.00	40.00 - 70.00	↓	60.00
Illinois:	2.9325 - 3.2325	↓	-25N to 5N	-6.67	150.00 - 165.00	↓	158.33	NA	NA	NA	56.00	↓	56.00
Indiana:	2.8925 - 3.2625	↓	-29N to 8N	-10.13	160.00	↓	160.00	NA	NA	NA	NA	NA	NA
Ohio:	3.0325 - 3.2425	↓	-15N to 6N	-3.17	155.00 - 160.00	↓	158.75	NA	NA	NA	NA	NA	NA
Michigan:	2.9825 - 3.2825	↑	-20N to 10N	-5.00	150.00 - 195.00	↓	171.67	55.00	↓	55.00	NA	NA	NA
Kansas:	3.0425 - 3.2825	↓	-14N to 10N	1.00	140.00 - 185.00	↓	162.50	NA	NA	NA	48.00 - 62.00	↓	58.80
Minnesota:	2.5825 - 2.9625	↓	-60N to -22N	-40.00	143.00 - 160.00	↓	153.60	80.00	↓	80.00	68.00	↓	68.00
Nebraska:	2.7625 - 3.1825	↓	-42N to OptN	-26.54	140.00 - 195.00	↓	165.00	60.00 - 93.00	↓	79.25	45.00 - 65.00	↑	51.88
Wisconsin:	2.5625 - 2.9025	↓	-64K to -28N	-42.20	160.00 - 210.00	↓	176.67	NA	NA	NA	48.00	↓	48.00
South Dakota:	2.6325 - 2.8425	↓	-55N to -34N	-46.00	150.00 - 165.00	↓	157.33	76.00 - 78.00	↓	76.67	60.00 - 70.00	↓	65.00
Missouri:	2.9825 - 3.2825	↓	-20N to 10N	-8.25	160.00 - 189.00	↓	169.75	80.00	↓	80.00	63.00 - 70.00	↓	67.67

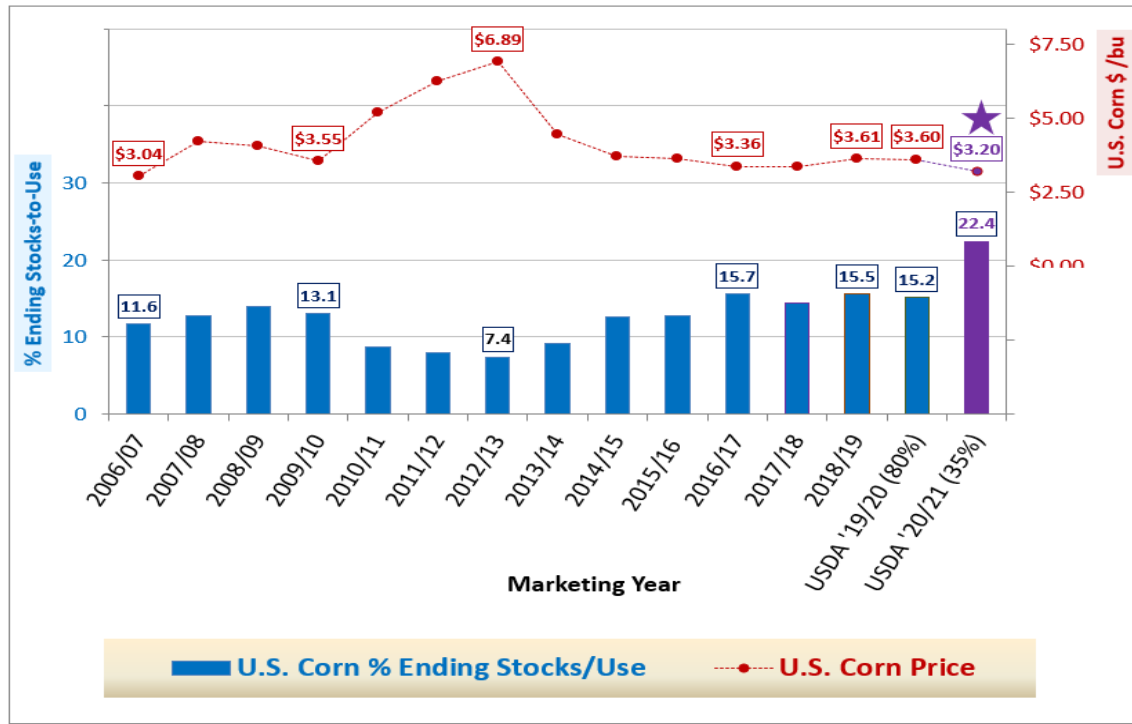
Sorghum - dollars/bushel				Ethanol - dollars/gallon - week ending 05/08/2020			
	Cash Bids	Chg	Basis	Avg:			
Kansas:	3.2025	↓	OptK to OptK		Iowa:	0.95 - 1.03	↑ 0.99
					Eastern Cornbelt:	1.04 - 1.06	↑ 1.05
					Kansas:	0.95 - 1.02	↑ 0.99
					Minnesota:	0.95 - 0.95	↑ 0.95
					Nebraska:	0.89 - 1.02	↑ 0.96
					Wisconsin:	0.99 - 0.99	NA 0.99

U.S. Ethanol Markets



U.S. Corn Market Outlook: %S/U vs \$

Figure. U.S. Corn Percent Ending Stocks vs U.S. Average Cash Corn Prices, MY 2006/07 – projected “New Crop” MY 2020/21; as of the May 12, 2020 USDA WASDE report



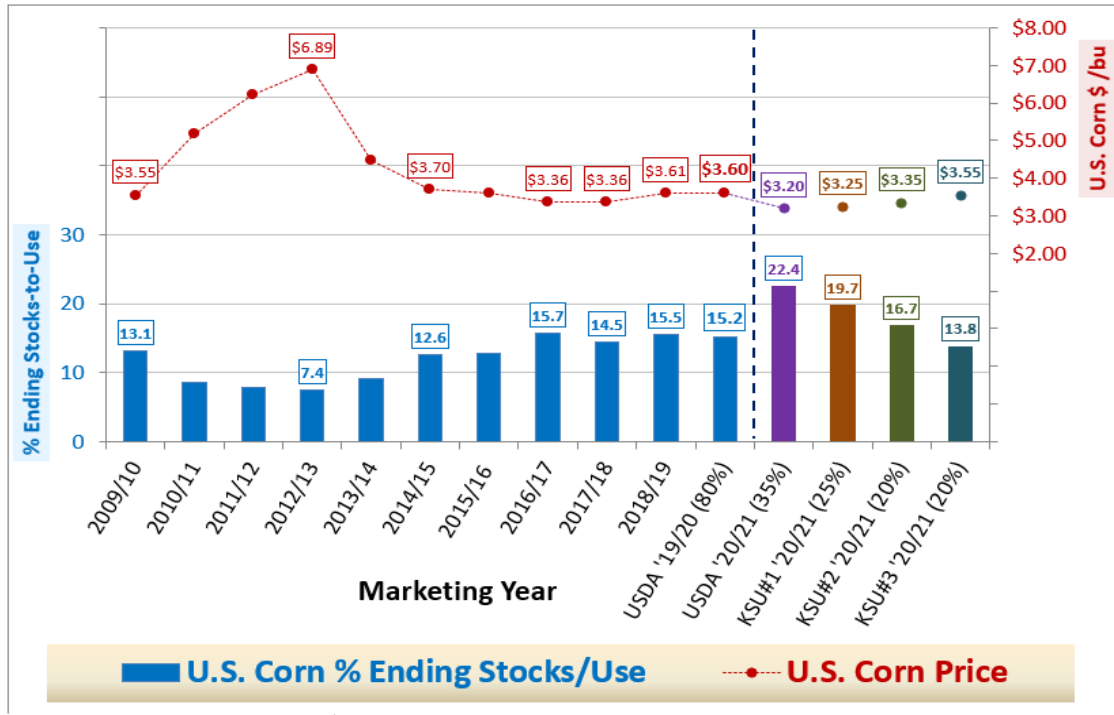
KSU Corn Market Outlook Scenarios

Table. U.S. Corn Supply-Demand Balance Sheet: “Current” MY 2019/20 & Projected “Next Crop” MY 2020/21 as of the May 12, 2020 USDA WASDE report with Alternative KSU Marketing Year Scenarios

Item	USDA 2019/20 5/12/2020 WASDE	USDA Scenario #1 MY 2020/21 May 12, 2020 USDA WASDE Report	Scenario #2 MY 2020/21 95,500 mln Planted Acres @ 178.5 bu/ac Yield	Scenario #3 MY 2020/21 95,500 mln Planted Acres @ 173.5 bu/ac Yield	Scenario #3 MY 2020/21 95,500 mln Planted Acres @ 168.5 bu/ac Yield
% Probability of Occurring (KSU)	80% ^{KSUest}	35% ^{KSUest}	25% ^{KSUest}	20% ^{KSUest}	20% ^{KSUest}
Planted Area (million acres)	89,700	+7,290 ma 96,990	+5,800 ma 95,500	+5,800 ma 95,500	+5,800 ma 95,500
Harvested Area (million acres)	81,482	+7,182 ma 88,664	+5,901 ma 87,383	+5,901 ma 87,383	+5,901 ma 87,383
% Harvested/Planted Area	91.5%	91.5%	91.5%	91.5%	91.5%
Yield / harvested acre (bu/ac)	168.0	+10.5 bu/ac 178.5	+10.5 bu/ac 178.5	+5.5 bu/ac 173.5	168.5
Million Bushels					
Beginning Stocks (million bushels)	2,221	-0.123 bb 2,098	-0.123 bb 2,092	-0.123 bb 2,092	-0.123 bb 2,092
Production (million bu.)	13,663	+2,332 bb 15,995	+1,935 bb 15,598	+1,498 bb 15,161	+1,061 bb 14,724
Imports (million bu.)	45.0	-20 mln bu 25	-20 mln bu 25	-20 mln bu 25	-20 mln bu 25
Total Supply (million bu.)	15,928	+2,190 bb 18,118	+1,787 bb 17,715	+1,350 bb 17,278	+913 bb 16,841
Ethanol for fuel Use (million bu.)	4,950	+0.250 bb 5,200	5,200	5,200	5,200
Food & Industrial Use (mln bu.)	1,373	-3 mln bu 1,370	1,370	1,370	1,370
Seed Use (million bu.)	31.8	30	30	30	30
Exports (million bu.)	1,775	+0.375 bb 2,150	2,150	2,150	2,150
Feed & Residual Use (million bu.)	5,700	+0.350 bb 6,050	6,050	6,050	6,050
Total Use (million bu.)	13,830	+0.930 bb 14,800	14,800	14,800	14,800
Ending Stocks (million bu.)	2,098	+1,220 bb 3,318	2,915	2,478	2,041
% Ending Stocks-to-Use	15.17%	22.42%	19.70%	16.74%	13.79%
Days of Supply (% S/U x 365 days)	55.4 days	81.8 days	71.9 days	61.1 days	50.33 days
U.S. Corn Average Farm Price (\$/bushel)	\$3.60	\$3.20 ***	\$3.25 U.S. Corn Loan Rate = \$2.20	\$3.35 U.S. Corn Loan Rate = \$2.20	\$3.60 U.S. Corn Loan Rate = \$2.20

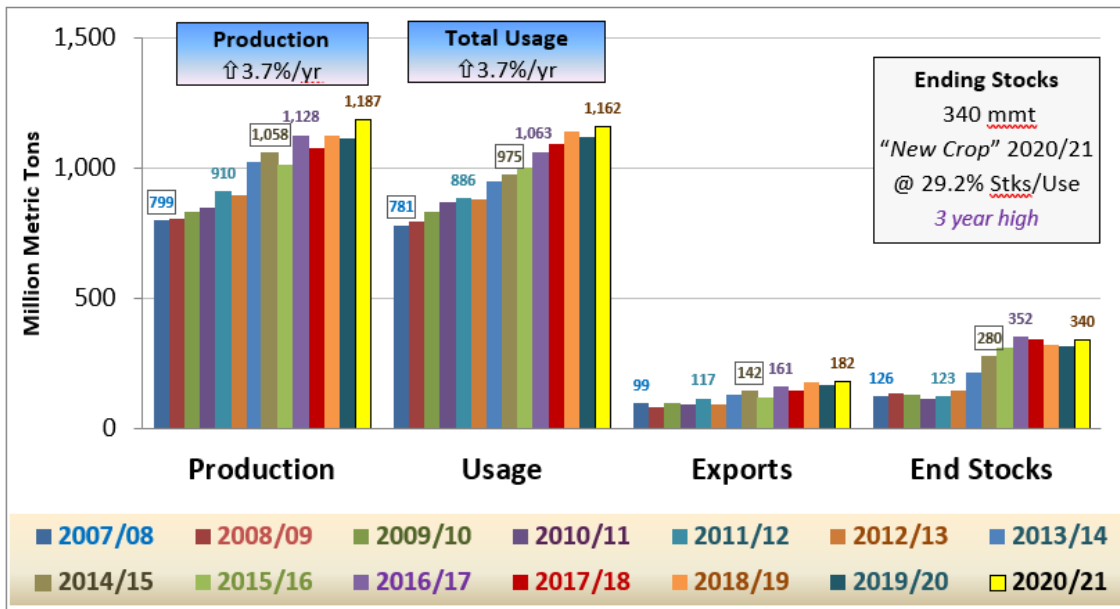
KSU Corn Market Outlook Scenarios

Figure. U.S. Corn Percent Ending Stocks vs U.S. Average Cash Corn Prices, MY 2006/07 – projected “New Crop” MY 2019/20; as of the May 12, 2020 USDA WASDE report



World Corn Markets

Figure. World Corn Supply-Demand, MY 2007/08 through “New Crop” MY 2020/21; as of the May 12, 2020 USDA WASDE report.



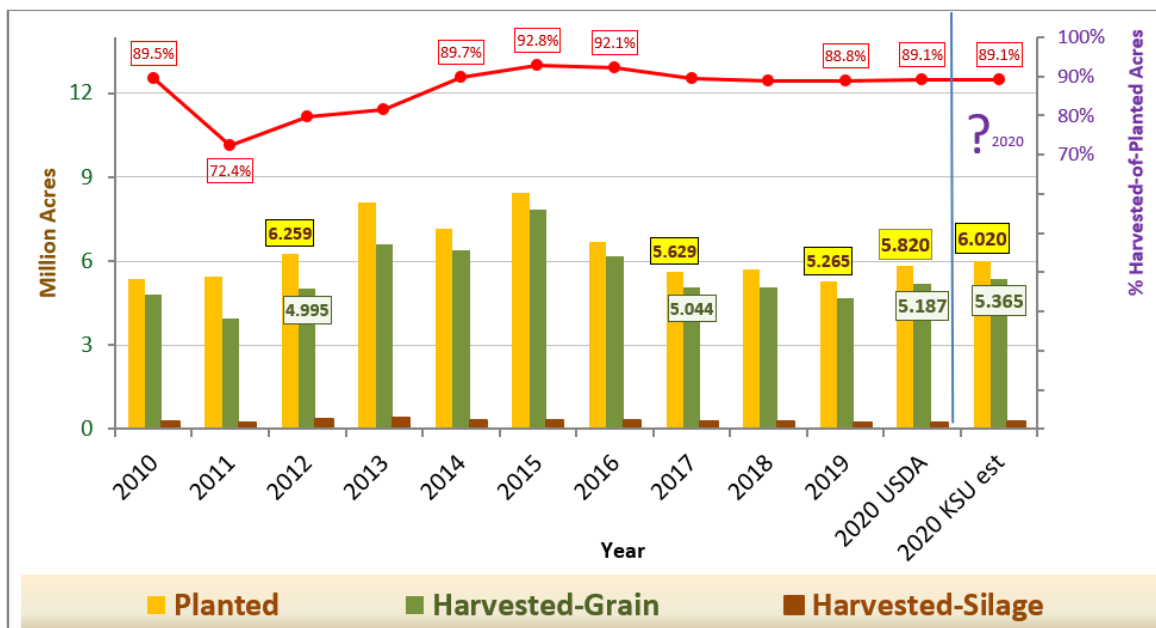
2020 Sorghum Markets



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U.S. Sorghum Acres

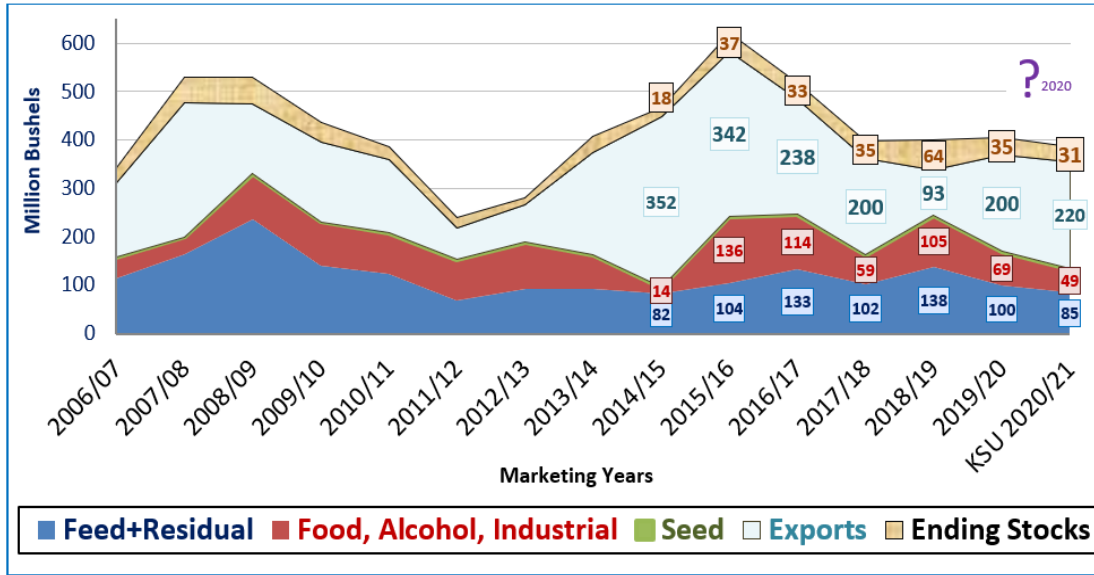
Figure. U.S. Grain Sorghum Planted & Harvested Acreage (2010 – 2020) as of April 17, 2020, source: USDA NASS Prospective Plantings Report on 3/31/2020 and KSU Projections for Year 2020.



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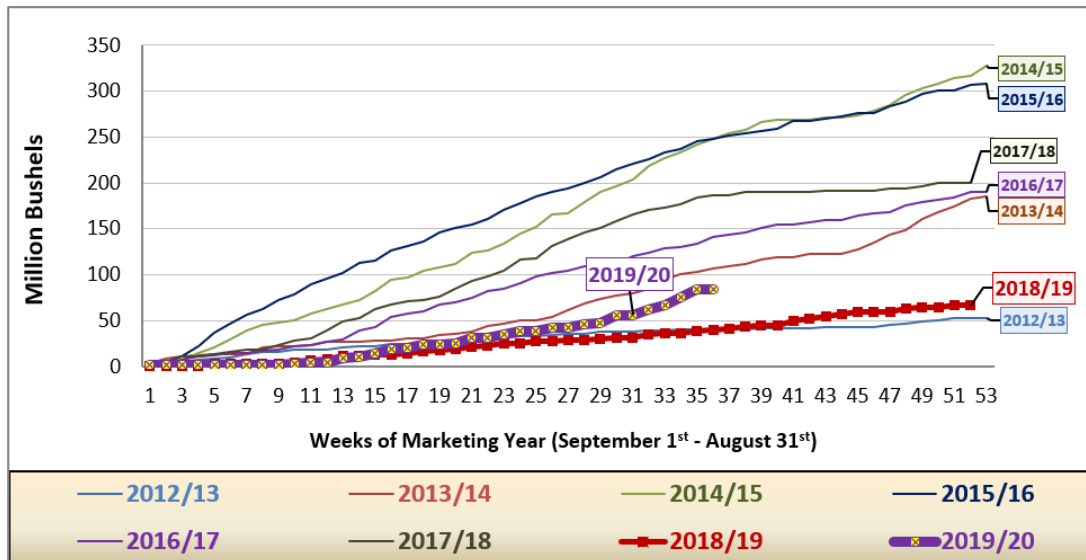
U.S. Sorghum Acres

Figure. Trends in U.S. Grain Sorghum Use & Ending Stocks: MY 2006/07 - "New Crop" MY 2020/21 as of the May 12, 2020 USDA Crop Production & WASDE reports



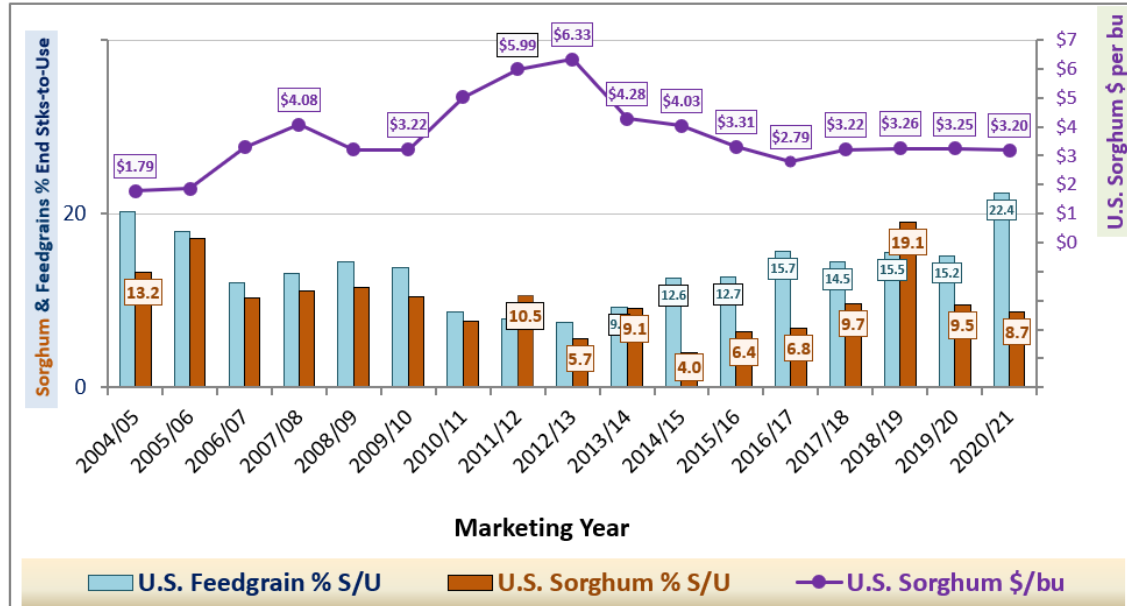
U.S. Sorghum Exports

Figure. U.S. Grain Sorghum Exports for MY 2012/13 through "Current Crop" MY 2019/20 as of the May 7, 2020 - via a combination of USDA FAS Weekly Export reports



U.S. Sorghum %S/U & Price

Figure. U.S. Grain Sorghum Ending Stocks-to-Use vs U.S. Average Cash Prices: MY 2004/05 - "New Crop" MY 2020/21 as of the May 12, 2020 WASDE Report



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KSU Sorghum Market Scenarios

Table. U.S. Grain Sorghum Supply-Demand Balance Sheet: Projected "Next Crop" MY 2020/21 as of the May 12, 2020 USDA WASDE report

Item	USDA 2020/21 May 12, 2020 WASDE	KSU Scenario #1 MY 2020/21 KSU Adj. Planted Acres +250,000 acres	KSU Scenario #2 MY 2020/21 KSU Adj. +250,000 acres & 250 mb exports	KSU Scenario #3 MY 2020/21 KSU Adj. +450,000 acres & 250 mb exports
<i>% Probability of Occurring (KSU)</i>	20% ^{KSUest}	20% ^{KSUest}	35% ^{KSUest}	25% ^{KSUest}
Planted Area (million acres)	5.825	6.075	6.075	6.275
Harvested Area (million acres)	5.219	5.443	5.443	5.622
% Harvested/Planted Area	89.6%	89.6%	89.6%	89.6%
Yield / harvested acre (bu/ac)	67.5	70.5	70.5	70.5
Million Bushels				
Beginning Stocks (million bushels)	35	35	35	35
Production (million bu.)	351	384	384	396
Imports (million bu.)	0.00	0.00	0.00	0.00
Total Supply (million bu.)	386	419	419	431
Food & Industrial Use (mln bu.)	49	49	49	49
Seed Use (million bu.)	1	0.63	0.63	0.63
Exports (million bu.)	220	220	250	250
Feed & Residual Use (million bu.)	85	85	85	85
Total Use (million bu.)	355	355	385	385
Ending Stocks (million bu.)	31	64	34	46
% Ending Stocks-to-Use	8.73%	18.03%	8.83%	11.95%
Days of Supply (% S/U x 365 days)	31.8 days	65.8 days	32.2 days	43.6 days
U.S. Sorghum & Corn Average Farm Prices (\$/bushel)	\$3.20	\$3.10	\$3.45	\$3.35
	U.S. Corn\$ = **\$3.20/bu	U.S. Corn\$ = **\$3.20/bu	U.S. Corn\$ = **\$3.20/bu	U.S. Corn\$ = **\$3.20/bu

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2020 Soybean Markets



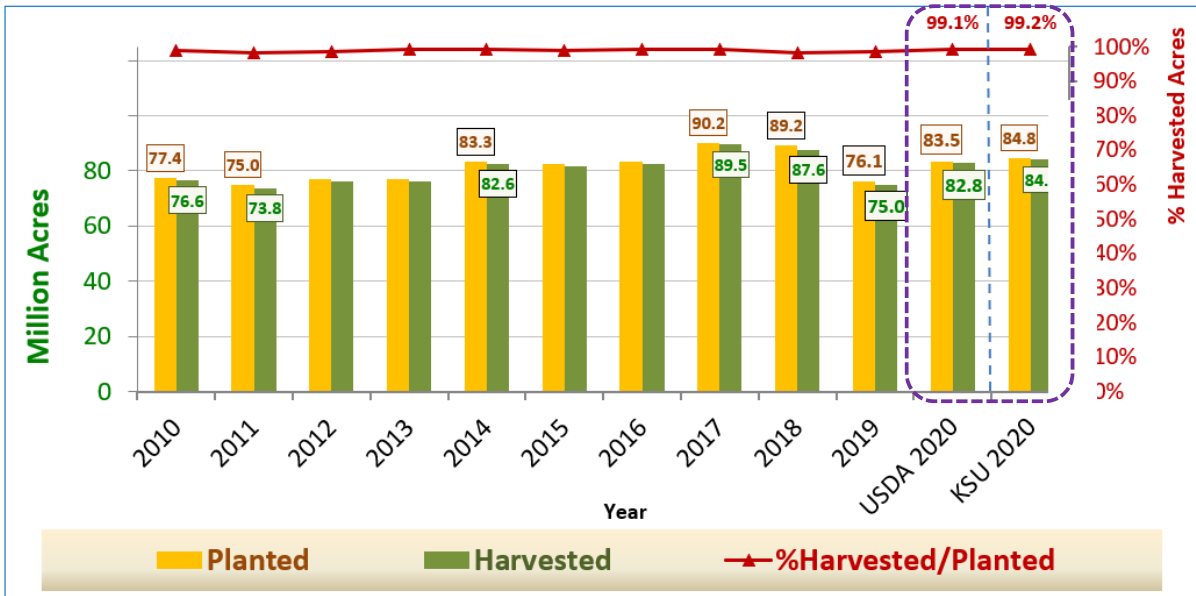
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Key Points re: U.S. Soybean Markets

- **Strong U.S. Soybean Meal Markets**
 - COVID-19 & Government Tax Trade Disruptions in Argentina
 - *Some* reduction in 2020 Brazil crop size from late season dry
- **2020 U.S. Soybean Planting Prospects**
 - USDA 2020 Prospective Plantings – 83.5 million ac. Planted***
 - Adjusted post-report expectations: 84 to 87 million acres ???
- **Est. 2020 Production & End Stocks** (IF a large crop)
 - 2020 U.S. Soybean Production^{USDA}: 4.125 billion bushels
 - Ending Stocks^{Est.}: 405 mb - with 9.4% Stocks/Use
 - U.S. Season Avg. Soybeans \$: \$8.20^{USDA} /bu
 - A “*caveat*” – that South America avoids major COVID-19 disruptions!?!

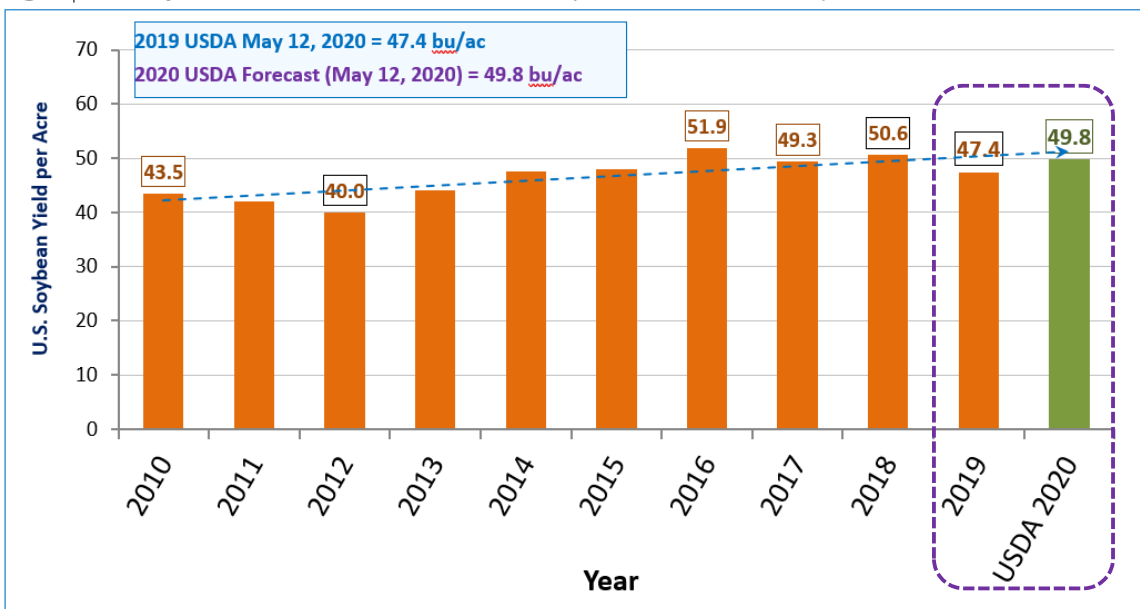
U.S. Soybean Planted Acres

Figure | U.S. Soybean Planted & Harvested Acreage: 2007-2020 as of the May 12, 2020 USDA Outlook Forum



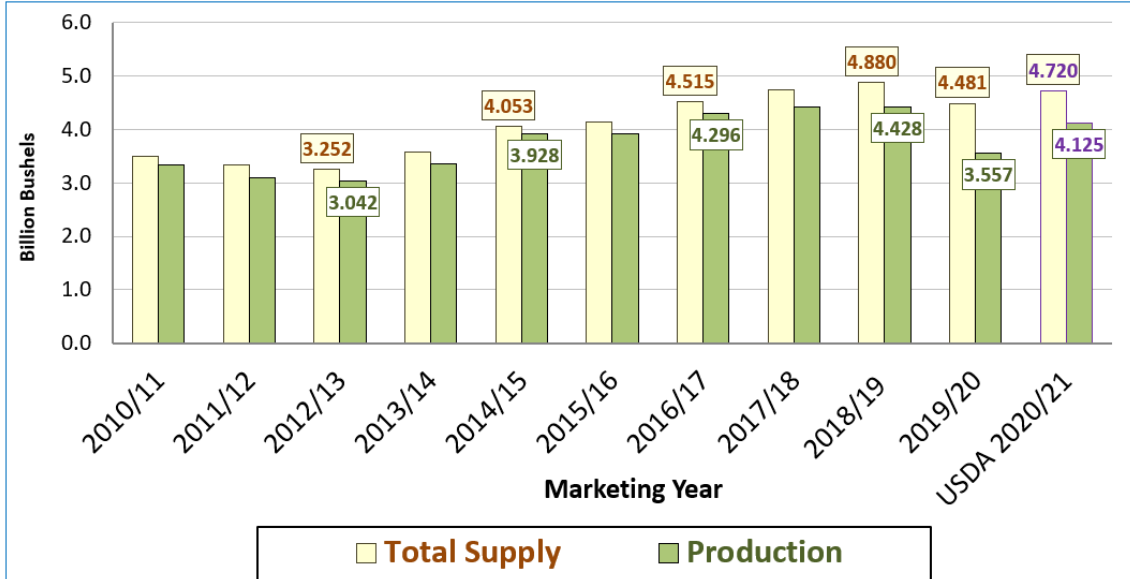
U.S. Soybean Yields

Figure | U.S. Soybean Yields: 2010-2020^{Est} as of the May 12, 2020 USDA WASDE Report



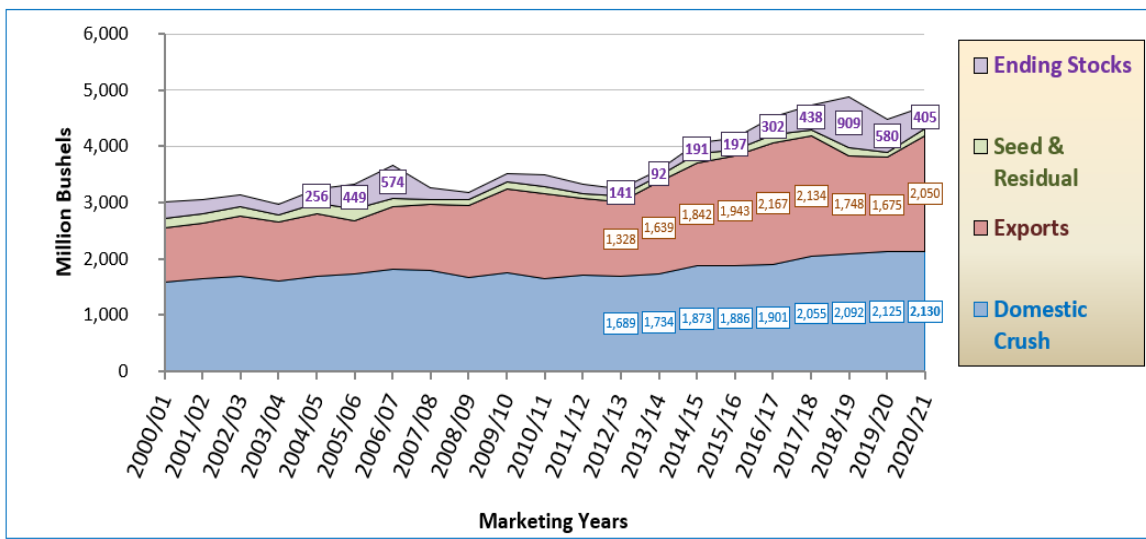
U.S. Soybean Production & Supply

Figure. U.S. Soybean Production & Total Supplies: MY 2010/11 thru Projected "Next Crop" MY 2019/20 as of the May 12, 2020 USDA WASDE Report



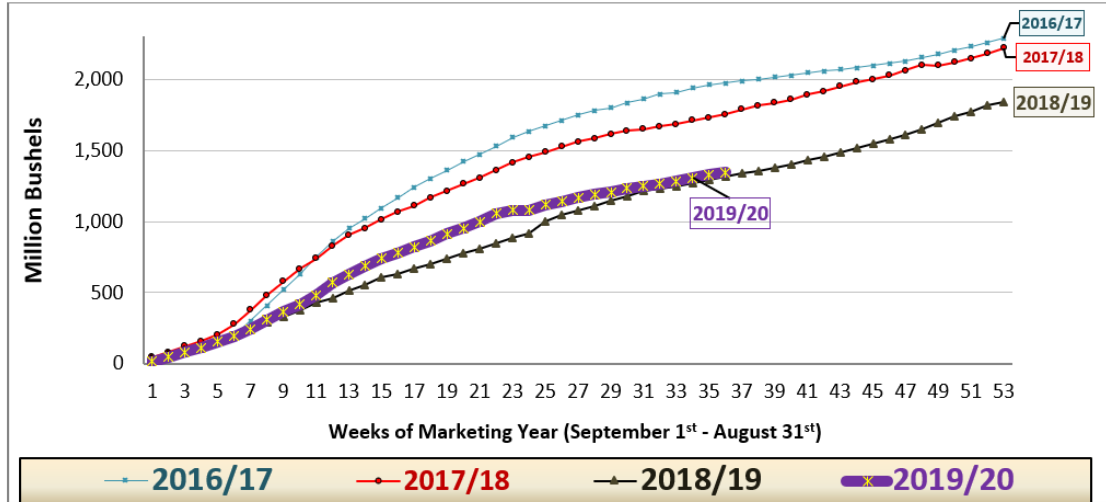
U.S. Soybean Usage

Figure. U.S. Soybean Use & Ending Stocks: MY 2000/01 – "New Crop" MY 2020/21 as of the May 12, 2020 USDA WASDE



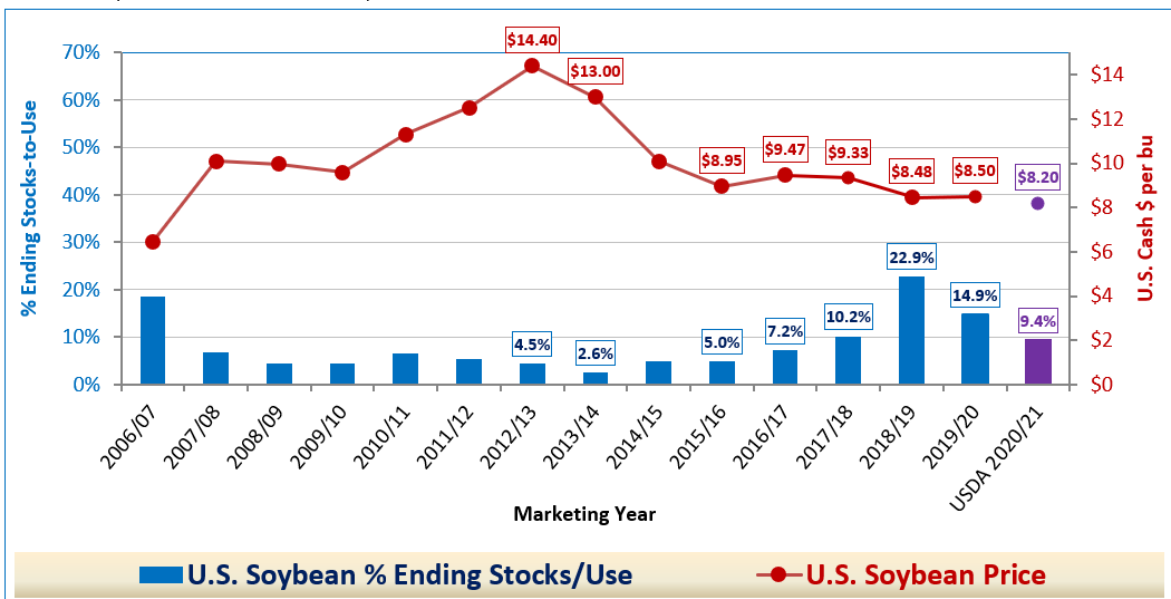
U.S. Soybean Exports

Figure. U.S. Soybean Exports for MY 2016/16 through “New Crop” MY 2019/20 as of recent USDA FAS Weekly Export reports through the week of April 30, 2020



U.S. Soybean Market Outlook: %S/U vs \$

Figure. U.S. Soybean Ending Stocks vs U.S. Avg. Cash Prices: MY 2006/07 – “New Crop” MY 2020/21 as of the May 12, 2020 USDA WASDE Report



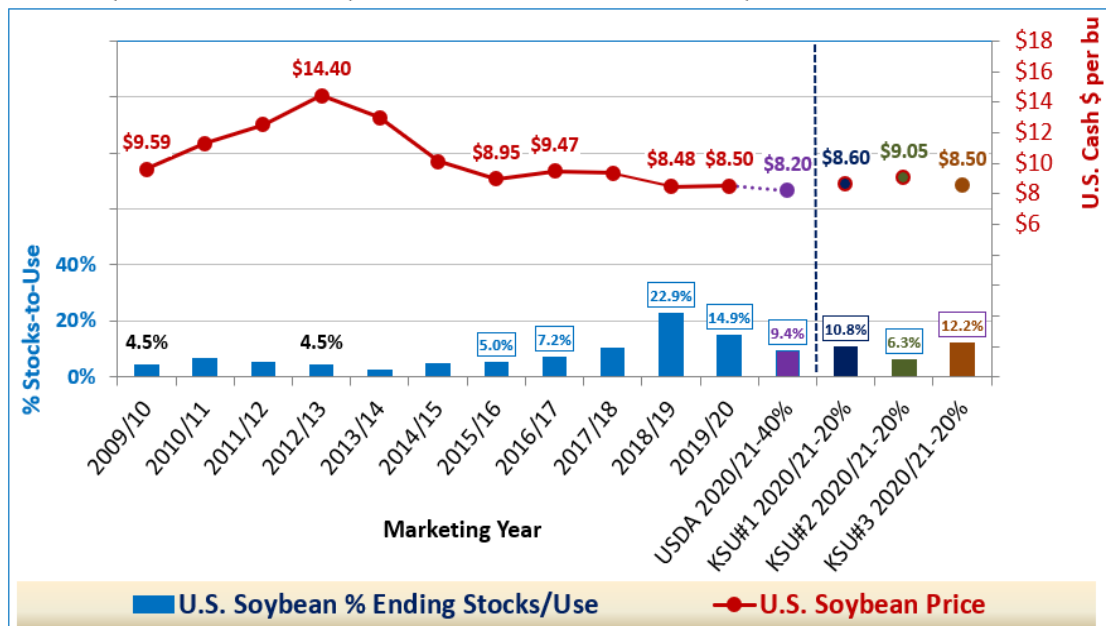
KSU Soybean Market Scenarios

Table. U.S. Soybean Supply-Demand Balance Sheet: "Current" MY 2019/20 and "New Crop" MY 2020/21 as of the May 12, 2020 USDA WASDE reports, with Alternative KSU Soybean Market Scenarios

Item	2019/20	USDA 2020/21	KSU Scenario #2 1.25 million more 2020 U.S. Planted Acres 2020/21	KSU Scenario #2 + 1.25 m/a acres Lower Yield: 47.5 bu/ac 2020/21	KSU Scenario #3 + 2.50 million more 2020 U.S. Planted Acres 2020/21
% Probability of Occurring (KSU)	80%^{KSUest}	40%^{KSUest}	20%^{KSUest}	20%^{KSUest}	20%^{KSUest}
Planted Area (million acres)	76.100	83.510	+8.660 ma 84.760	+8.660 ma 84.760	+9.910 ma 86.010
Harvested Area (million acres)	75.001	82.800	+9.039 ma 84.040	+9.039 ma 84.040	+9.039 ma 85.279
% Harvested/Planted Area	98.56%	99.15%	+0.59% 99.15%	+0.59% 99.15%	+0.59% 99.15%
Yield / harvested acre (bu/ac)	47.4	49.8	49.8	47.5	49.8
Million Bushels					
Beginning Stocks (million bushels)	909	580	580	580	580
Production (million bu.)	3,557	4,125	+628 mb 4,185	+435 mb 3,992	+690 mb 4,247
Imports (million bu.)	15	15	15	15	15
Total Supply (million bu.)	4,481	4,720	+299 mb 4,780	+106 mb 4,587	+361 mb 4,842
Domestic <u>Crushings</u>	2,125	2,130	2,130	2,130	2,130
Exports	1,675	2,050	2,050	2,050	2,050
Seed	97	100	100	100	100
Residual	4	35	35	35	35
Total Use	3,901	4,315	4,315	4,315	4,315
Ending Stocks	580	405	465	272	527
% Ending Stocks-to-Use	14.87%	9.39%	10.78%	6.30%	12.21%
Days of Supply (% S/U x 365 days)	54.3 days	34.3 days	39.3 days	23.0 days	44.57 days
U.S. Avg. Farm Price (\$/bu)	\$8.50	\$8.20 KSU Est. \$8.50-\$8.80	KSU Est. \$8.45-\$8.75	KSU Est. \$8.90-\$9.20	KSU Est. \$8.35-\$8.65

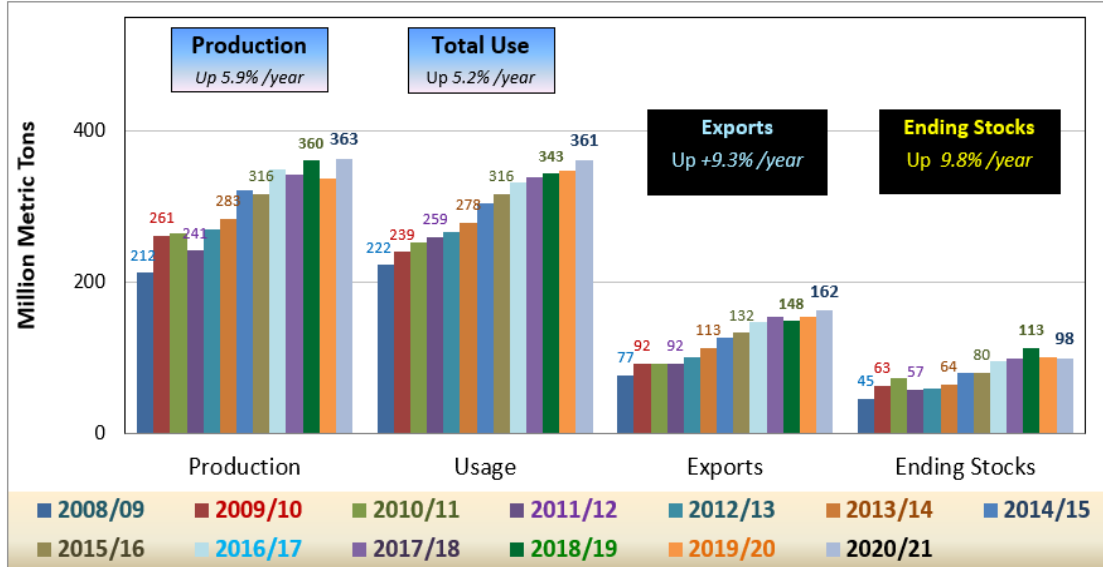
KSU Soybean Market Scenarios

Figure. U.S. Soybean Ending Stocks vs U.S. Avg. Cash Prices: MY 2009/10 – "New Crop" MY 2020/21 as of the May 12, 2020 USDA WASDE Report, with KSU forecast scenarios & estimated probabilities of occurrence.



World Soybean Markets

Figure. World Soybean Usage & Ending Stocks: MY 2008/09 through "New Crop" MY 2020/21 as of the May 10, 2020 WASDE Report



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2020 HRW Wheat Markets



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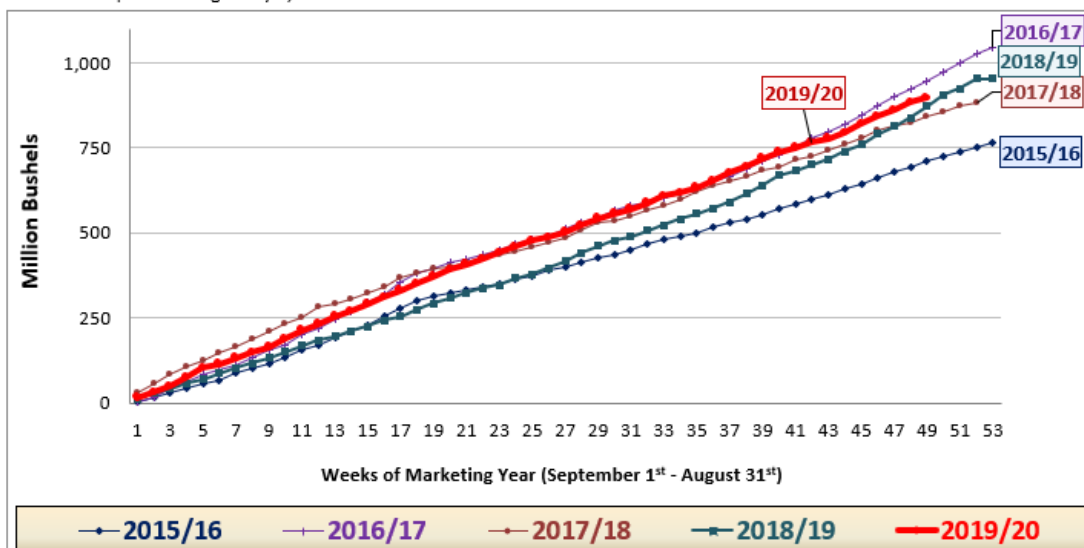
Key Points re: U.S. Wheat Markets

- **Strong Domestic Milling Demand for U.S. Wheat**
 - U.S. consumer's risk averse response to COVID-19
 - *As pandemic continues – likely that strong domestic use will also*
- **Est. 2020 Production & End Stocks (IF “good” yields)**
 - 2020 U.S. Wheat Production^{USDA}: 1.866 billion bushels
 - Ending Stocks^{Est.}: 909^{USDA} mb - with 44% Stocks/Use
 - U.S. Season Avg. Wheat \$: \$4.60^{USDA} /bu

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U.S. Wheat Exports

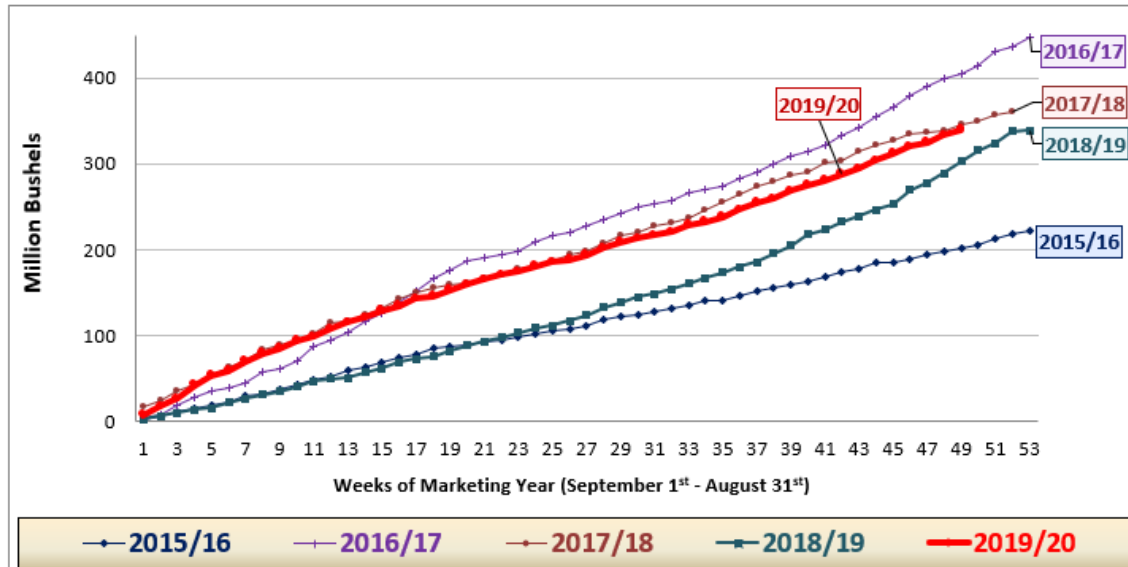
Figure. U.S. All Wheat Exports for MY 2015/16 thru “Current Crop” MY 2019/20 as of USDA FAS Weekly Export reports through May 7, 2020



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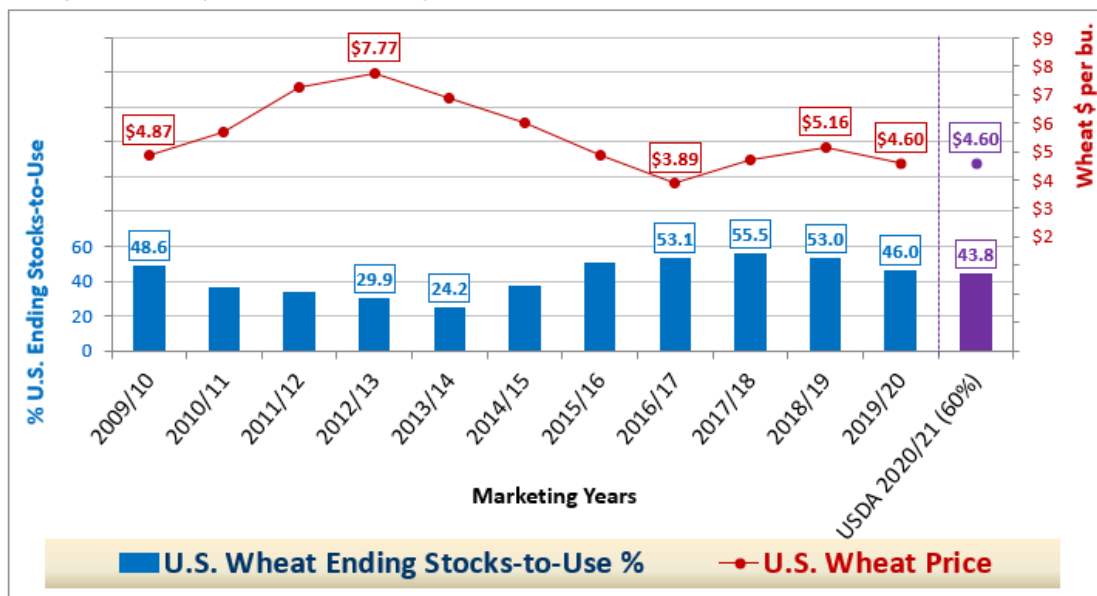
U.S. HRW Wheat Exports

Figure 1. U.S. Hard Red Winter Wheat Exports for MY 2015/16 thru "Current Crop" MY 2019/20 as of USDA FAS Weekly Export reports through May 7, 2020



U.S. Wheat Market Outlook

Figure 2. U.S. Wheat Ending Stocks vs U.S. Cash Prices: MY 2009/10 thru "New Crop" MY 2020/21 as of the May 12, 2020 USDA Crop Production & WASDE Reports



KSU Wheat Market Scenarios

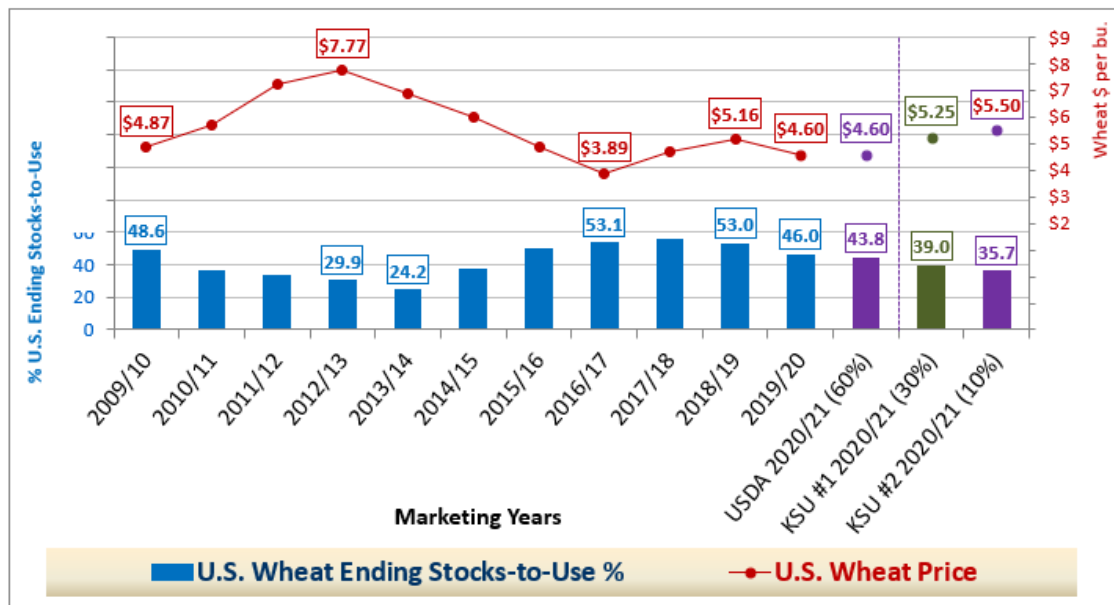
Table. U.S. Wheat Supply-Demand Balance Sheet: "New Crop" MY 2019/20 as of the May 12, 2020 USDA WASDE report with KSU Scenarios

Item	USDA 2020/21	KSU Scenario #1 2020/21 <i>U.S. "Short Winter Wheat Crop"</i> <small>Lower U.S. Wheat Production (2020 U.S. HRW Wheat down 100 mb, i.e., (86.36% x 733 mb))</small>		KSU Scenario #2 2019/20 <i>U.S. "Short Winter Wheat Crop"</i> <small>Plus Stronger U.S. Wheat Exports (+50 million bushels)</small>	
		60% prob.		30% prob.	
Planted Area (million acres)	44.655	44.655	44.655	44.655	44.655
Harvested Area (million acres)	37.700	37.700	37.700	37.700	37.700
% Harvested/Planted Area	84.43%	84.43%	84.43%	84.43%	84.43%
Yield / harvested acre (bu/ac)	49.5	-2.7 bu/ac	46.8	-2.7 bu/ac	46.8
Million Bushels					
Beginning Stocks (million bushels)	978	978	978	978	978
Production (million bu.)	1,866	-100 mb	1,766	-100 mb	1,766
Imports (million bu.)	140	140	140	140	140
Total Supply (million bu.)	2,984	-100 mb	2,884	-100 mb	2,884
Food Use	964	964	964	964	964
Seed Use	61	61	61	61	61
Exports	950	950	950	+50 mb	1,000
Feed & Residual Use	100	100	100	100	100
Total Use	2,075	2,075	2,075	+50 mb	2,125
Ending Stocks (million bu.)	909	-100 mb	809	-150 mb	759
% Ending Stocks-to-Use	43.81%	38.99%	38.99%	35.71%	35.71%
Days of Supply <small>(% S/U x 365 days)</small>	159 days	142 days	142 days	130 days	130 days
U.S. Wheat Avg. Farm Price (\$/bushel)	\$4.60	\$4.70 <small>(via U.S. Stocks/Use)</small>	\$4.70	\$4.70 <small>(via U.S. Stocks/Use)</small>	\$4.70

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KSU Wheat Market Scenarios

Figure. U.S. Wheat Ending Stocks vs U.S. Cash Prices: MY 2009/10 thru "New Crop" MY 2020/21 as of the May 12, 2020 USDA Crop Production & WASDE Reports with KSU #s



World Wheat Markets

Figure 1. World Wheat Usage & Ending Stocks: MY 2007/08 through “New Crop” MY 2020/21 as of the May 12, 2020 USDA WASDE Report

