Grain Market Outlook for 2020 - 2021

2020 KSU Virtual Risk & Profit Conference

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Topics to be discussed.....

1) Major Issues / Questions in the 2020 Grain Markets

- Iowa Crop Damage, China flooding, COVID-19 / U.S. Economy

2) Grain Market Analysis & Outlook

- Corn & Grain Sorghum
  - Wheat
    - Soybeans

3) Your Questions & Discussion

I. Grain Futures Closes, Changes & Carry on Wednesday, August 13, 2020

Corn Futures				Soybean Futures				Kansas HRW Wheat Futures			
Month	Close	Change	Carry /mo	Month	Close	Change	Carry /mo	Month	Close	Change	Carry /mo
Sept^{L} 20	**$3.20 ¾**	⇧ $0.0650	---	**Aug^{L} 20**	**$8.94 ¾**	⇧ $0.0425	---	**Sept^{L} 20**	**$4.18 ¼**	⇧ $0.0050	---
Dec^{H} 20	**$3.33 ¾**	⇧ $0.0650	$\$0.04^{333}$	Sept 20	$8.90 ¾	⇧ $0.1025	No Carry	Dec 20	$4.29	No Change	$\$0.03^{583}$
Mar 21	$3.44 ¾	⇧ $0.0650	$\$0.03^{667}$	**Nov^{H} 20**	**$8.93 ½**	⇧ $0.1050	$\$0.01^{375}$	Mar 21	$4.39	⇧ $0.0025	$\$0.03^{333}$
May 21	$3.52 ¼	⇧ $0.0650	$\$0.03^{75}$	Jan 21	$8.98 ¾	⇧ $0.11	$\$0.02^{625}$	May 21	$4.46 ¾	⇧ $0.0025	$\$0.03^{875}$
July 21	$3.57 ¾	⇧ $0.0650	$\$0.03^{375}$	Mar 21	$8.99 ¾	⇧ $0.1050	$\$0.00^{50}$	**July^{H} 21**	**$4.56 ¼**	⇧ $0.0225	$\$0.04^{75}$
Sept 21	$3.59 ¾	⇧ $0.0650	$\$0.02^{75}$	May 21	$9.03	⇧ $0.10	$\$0.01^{625}$	Sept 21	$4.63 ½	No Change	$\$0.03^{625}$
Dec^{H} 21	**$3.65 ¾**	⇧ $0.0650	$0.02	July 21	$9.08 ¾	⇧ $0.0950	$\$0.02^{875}$	Dec 21	$4.75 ¼	⇩ $0.0150	$\$0.03^{917}$
Mar 22	$3.76 ¼	⇧ $0.0650	$\$0.03^{50}$	Aug 21	$9.09 ½	⇧ $0.0875	$\$0.00^{75}$	Mar 22	$4.86 ½	⇩ $0.0025	$\$0.03^{75}$

Futures & Cash Price Ratios on August 13, 2020:

- "Current Crop$^{2019/20}$" ⇨ $SEPT^{2020} Soybeans ÷ $SEPT^{2020} Corn = $ 8.90 ¾ ÷ $3.20 ¾ = 2.78
- "Next Crop$^{2020/21}$" ⇨ $NOV^{2020} Soybeans ÷ $DEC^{2020} Corn = $ 8.93 ½ ÷ $3.33 ¾ = 2.68
- "HRW Wheat/Corn$^{8/6/2020}$" ⇨ Wheat$^{\text{HRW-Garden City, KS}}$ ÷ Corn$^{\text{Garden City, KS}}$ = $ 3.88 ÷ $3.31 = 1.17 ***
- "Sorghum/Corn$^{8/6/2020}$" ⇨ Sorghum$^{\text{Garden City, KS}}$ ÷ Corn$^{\text{Garden City, KS}}$ = $ 3.46 ÷ $3.31 = 1.05 ***

Corn & Sorghum Markets

Kansas State University Department of Agricultural Economics

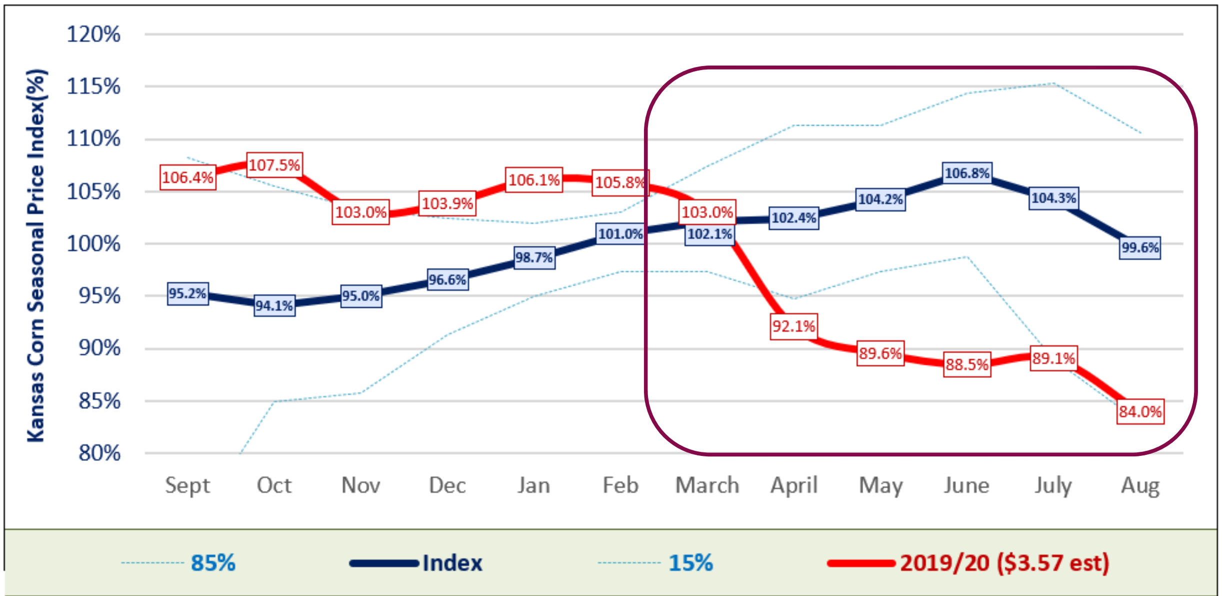
Key Grain Market Issues in 2020-2021

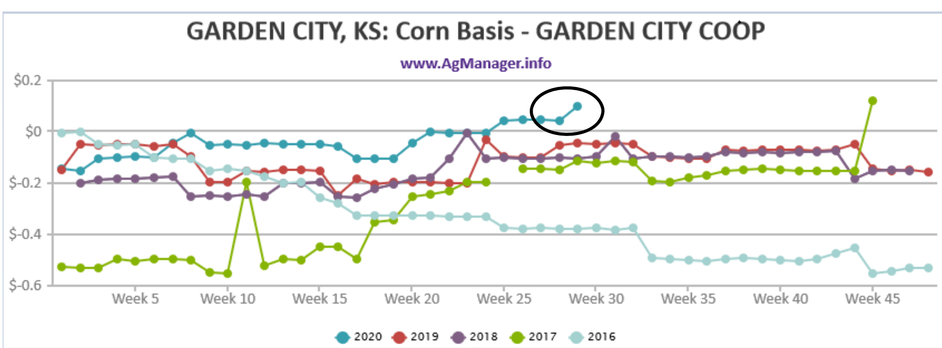
❑ U.S. Corn & Soybean Production Prospects

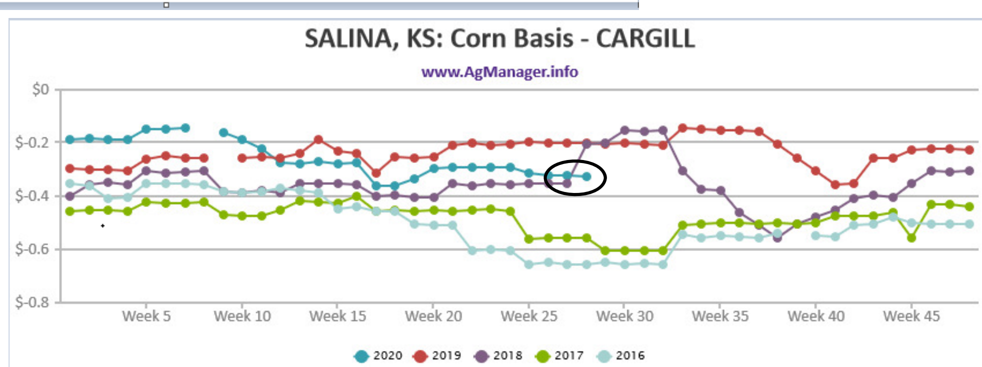
- **Planted & Harvested Acreage?** (Corn*** & Soybeans)
- **Crop Yields?**
  - o Generally Good Conditions ⇨ Dry in Iowa, Indiana, Ohio
  - o ***"Derecho"* Windstorm** damage in Iowa on August 10th
    - ▪ Estimates of at least 100-300 million bushels – still doing "the math" for how blown down corn in August will yield
- **Strong U.S. Grain Sorghum Exports to China**

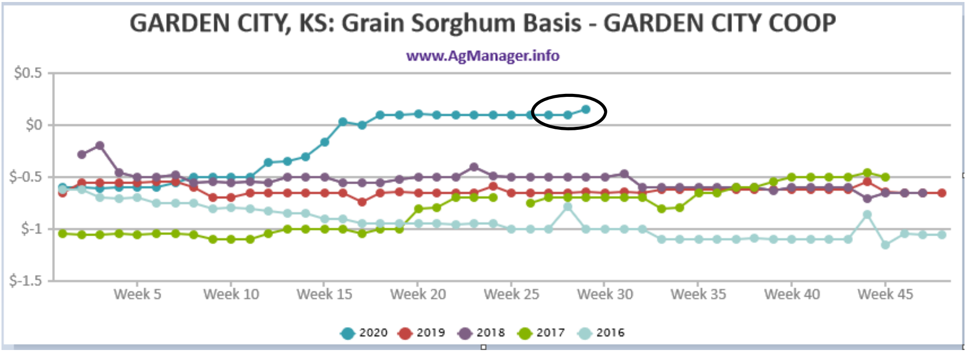
CME DEC 2020 Corn Futures

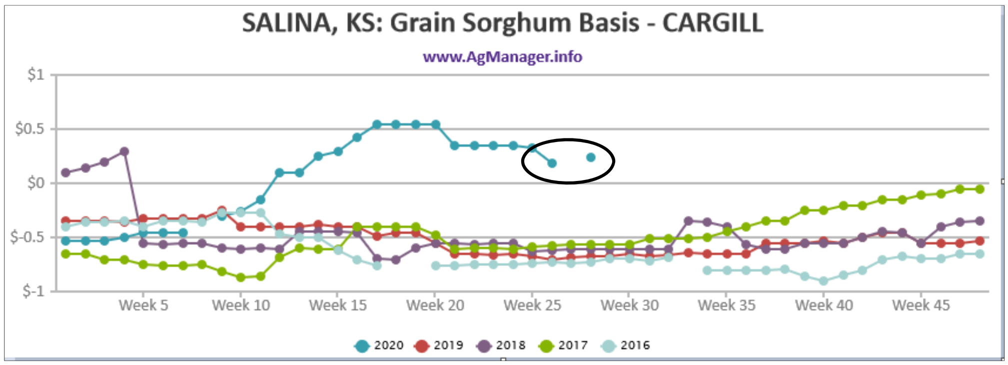
Kansas Corn Seasonal Price Index (MY 1999/00 – MY 2018/19) plus "Current Crop" MY 2019/20 as of August 12, 2020











U.S. Corn Supply and Demand

Item	2019/2020 Estimate	2019/2020 Change from July 10	2020/2021 Forecast	2020/2021 Change from July 10	2020/2021 Change from 2019/2020
Planted area (million acres)	89.7	--	92.0	--	2.3
Harvested area (million acres)	81.3	--	84.0	--	2.7
Yield (bushels per acre)	167.4	--	181.8	3.3	14.4
		------------ *Million bushels* ------------			
Beginning stocks	2,221	--	2,228	-20	7
Production	13,617	--	15,278	278	1,661
Imports	45	--	25	--	-20
Total supply	15,883	--	17,531	258	1,648
Feed and residual	5,600	--	5,925	75	325
Food, seed, and industrial	6,260	--	6,625	--	365
Ethanol	4,850	--	5,200	--	350
Domestic use	11,860	--	12,550	75	690
Exports	1,795	20	2,225	75	430
Total use	13,655	20	14,775	150	1,120
Ending stocks	2,228	-20	2,756	108	528
		---------------- *Percent* ----------------			
Stocks to use ratio	16.3	-0.2	18.7	0.5	2.3
		------------ *Dollars per bushel* ------------			
Average market price	3.60	--	3.10	-0.25	-0.50

-- No change.

August 12, 2020

U.S. Sorghum Supply-Demand

August 12, 2020 WASDE Report

SORGHUM	2018/19	2019/20 Est.	2020/21 Proj. Jul	2020/21 Proj. Aug
		Million Bushels		
Area Planted (mil. acres)	5.7	5.3	5.6 *	5.6
Area Harvested (mil. acres)	5.1	4.7	4.8 *	4.8
Yield (bushels/acre)	72.1	73.0	67.5 *	76.6
Beginning Stocks	35	64	30	30
Production	365	341	327	371
Imports	0	0	0	0
Supply, Total	400	405	357	401
Feed and Residual	138	90	70	70
Food, Seed & Industrial	106	75	45	45
Total Domestic	244	165	115	115
Exports	93	210	220	260
Use, Total	336	375	335	375
Ending Stocks	64	30	22	26
Avg. Farm Price ($/bu) 2/	3.26	3.25	3.35	3.10

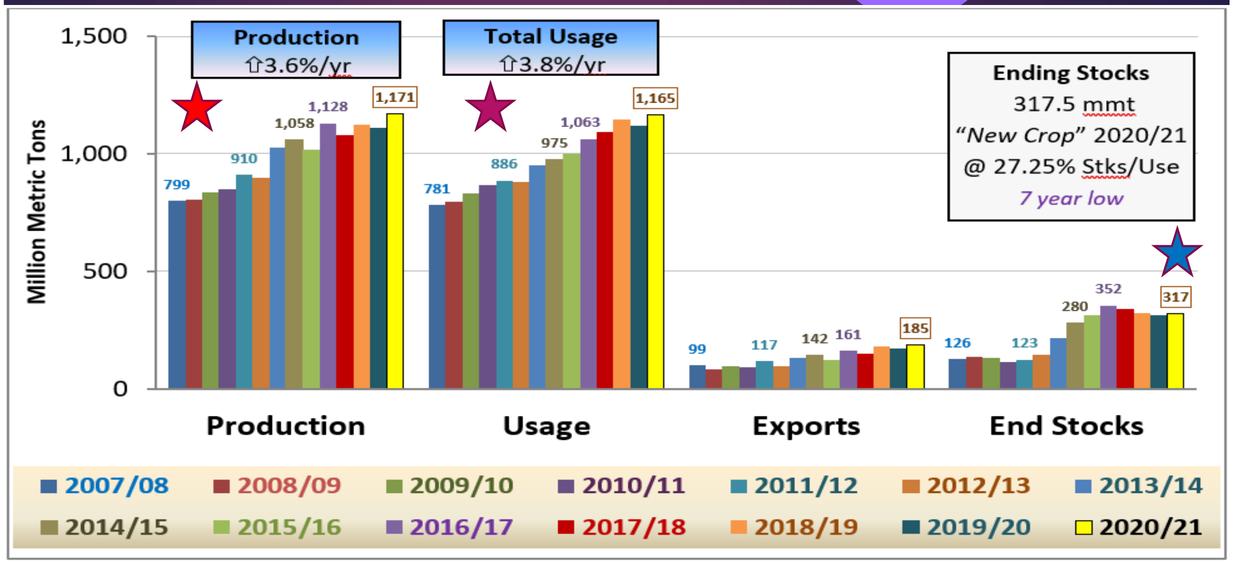
World Corn Production

Country or Region	2019/2020 estimate	2020/2021 forecast	Change from July 10	Change from 2019/2020
		---------------- *Million Tons* ----------------		
World	1,112.4	1,171.0	7.8	58.6
United States	345.9	388.1	7.1	42.2
Foreign	766.5	782.9	0.8	16.4
Argentina	50.0	50.0	--	--
Brazil	101.0	107.0	--	6.0
Mexico	25.0	28.0	--	3.0
Canada	13.4	14.3	-0.3	0.9
European Union	66.7	67.8	-0.5	1.1
Serbia	7.7	7.2	0.2	-0.5
FSU-12	55.8	60.4	0.4	4.7
Ukraine	35.9	39.5	0.5	3.6
Russia	14.3	15.3	--	1.0
South Africa	16.3	14.0	--	-2.3
China	260.8	260.0	--	-0.8
India	28.9	27.5	--	-1.4

-- No change.

August 12, 2020

World Corn Supply, Use & Stocks



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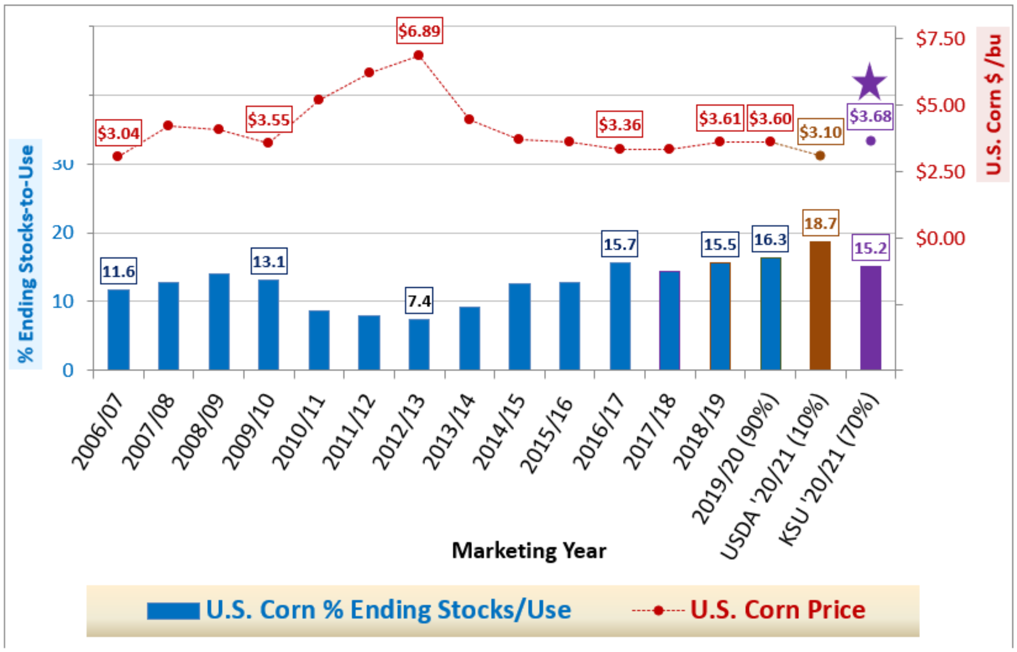
U.S. Corn Supply-Demand Balance Sheet: "Current" MY 2019/20 & Projected "Next Crop" MY 2020/21 as of the August 12, 2020 USDA WASDE report with Alternative KSU Marketing Year Scenarios

Item	USDA 2019/20 8/12/2020 WASDE	USDA 2020/21 8/12/2020 WASDE	KSU Scenario #2 MY 2020/21 90.75 mln Planted Acres + Iowa Storm Damage	KSU Scenario #3 MY 2020/21 2.350 bb Exports + Iowa Crop Damage	KSU Scenario #4 MY 2020/21 @ 175.0 bu/ac U.S. Corn Yield	KSU Scenario #5 MY 2020/21 @ 175.0 bu/ac Yield + 2.350 bb Exports
*% Probability of Occurring **(KSU)***	*90%* KSUest	*10%* KSUest	*35%* KSUest	*35%* KSUest	*10%* KSUest	*10%* KSUest
Planted Area (million acres)	**89.700**	**92.006**	**90.750**	**90.750**	**90.750**	**90.750**
Harvested Area (million acres)	81.332	84.023	82.855	82.855	82.855	82.855
% Harvested/Planted Area	90.7%	91.3%	91.3%	91.3%	91.3%	91.3%
Yield / harvested acre (bu/ac)	167.4	181.8	178.5	178.5	175.0	175.0
	Million Bushels					
Beginning Stocks (million bushels)	**2,221**	**2,228**	**2,228**	**2,228**	**2,228**	**2,228**
Production (million bu.)	**13,617**	**15,278**	**14,790**	**14,790**	**14,500**	**14,500**
Imports (million bu.)	45.0	25.0	25.0	25.0	25.0	25.0
Total Supply (million bu.)	**15,883**	**17,511**	**17,043**	**17,043**	**16,753**	**16,753**
Ethanol for fuel Use (million bu.)	4,850	5,200	5,200	5,200	5,200	5,200
Food & Industrial Use (mln bu.)	1,378	1,393	1,393	1,393	1,393	1,393
Seed Use (million bu.)	31.8	31.8	31.8	31.8	31.8	31.8
Exports (million bu.)	1,795	2,225	2,225	2,350	2,225	2,350
Feed & Residual Use (million bu.)	5,600	5,925	5,925	5,925	5,925	5,925
Total Use (million bu.)	**13,655**	**14,775**	**14,775**	**14,825**	**14,775**	**14,900**
Ending Stocks (million bu.)	2,228	2,756	2,268	2,218	1,968	1,853
% Ending Stocks-to-Use	**16.32%**	**18.65%**	**15.35%**	**14.96%**	**13.32%**	**12.44%**
Days of Supply (% S/U x 365 days)	*59.6 days*	*68.1 days*	*56.0 days*	*54.6 days*	*48.6 days*	*45.4 days*
U.S. Corn Average Farm Price ($/bushel)	**$3.60**	**$3.10**	**$3.65**	**$3.70**	**$3.85**	**$4.00**

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 August 12, 2020 USDA WASDE report



Wheat Markets

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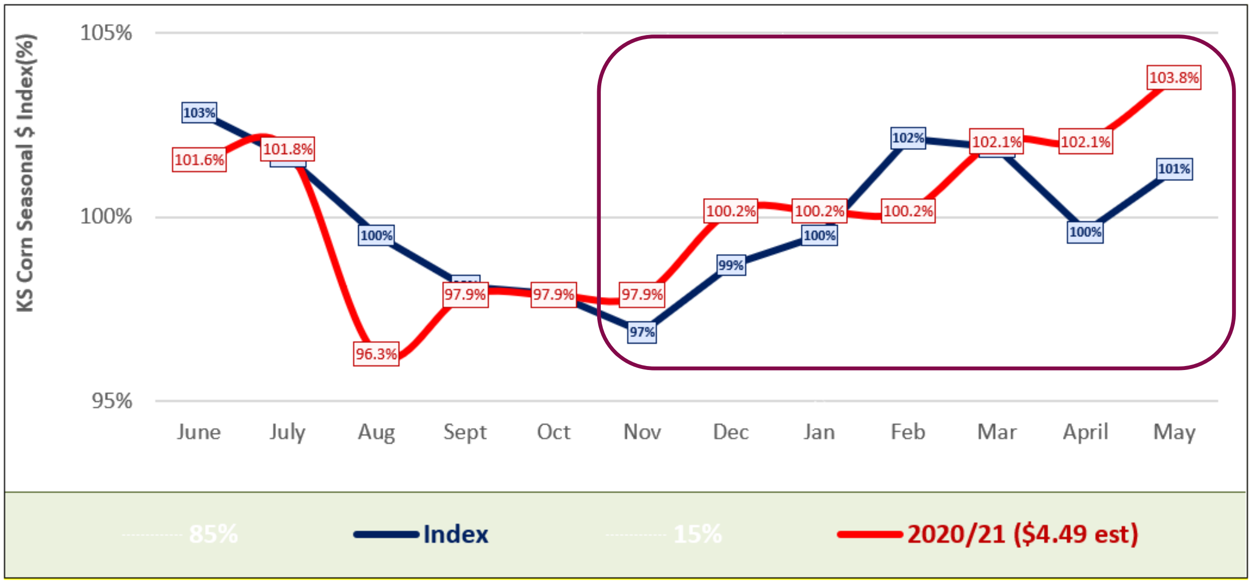
Key Grain Market Issues in 2020-2021

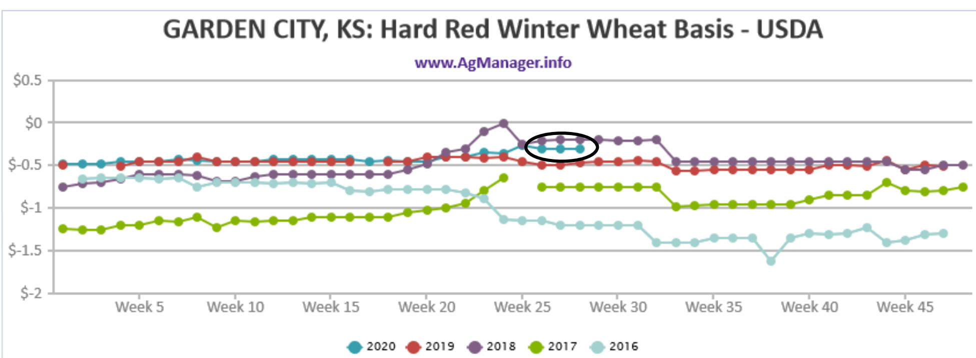
❑ World Wheat Production & Export Prospects

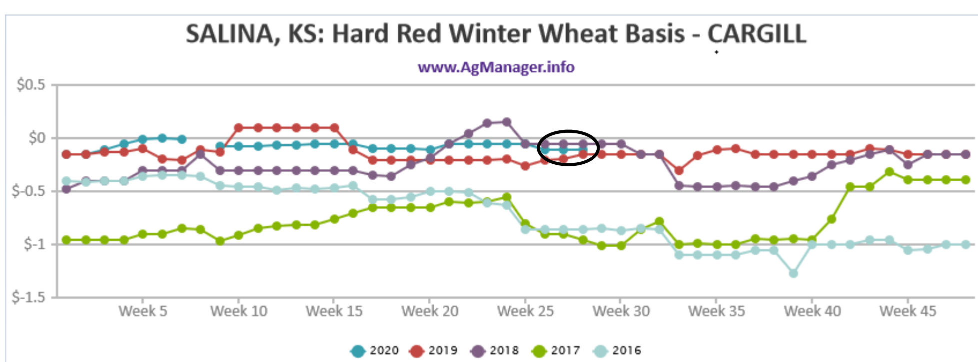
- **Foreign Production Prospects?** (Lower U.S., EU & Russia Production vs Expectations, but still large World wheat supply-demand balances)
- **Lower U.S. Dollar** ➲ Supporting U.S. wheat exports
    - o Generally Good Conditions ⇨ Dry in Iowa, Indiana, Ohio
        - Impact of China flooding & other countries wheat crop uncertainty still unknown

CME DEC 2020 Kansas HRW Wheat Futures

Kansas Wheat Seasonal Price Index (MY 1999/00 – 2018/19) + "New Crop" MY 2019/20 Estimates through August 12, 2020 (www.AgManager.info & USDA NASS)







U.S. Wheat Supply and Demand

Item	2019/2020 estimate	2020/2021 forecast	Change from July 10	Change from 2019/2020
Planted area (million acres)	45.2	44.3	--	-0.9
Harvested area (million acres)	37.2	36.7	--	-0.5
Yield (bushels per acre)	51.7	50.1	0.4	-1.6
		------------ *Million bushels* ------------		
Beginning stocks	1,080	1,044	--	-36
Production	1,920	1,838	14	-83
Imports	105	130	-10	25
Total supply	3,105	3,011	4	-93
Food use	962	960	-4	-2
Seed	61	61	--	**
Feed and residual	73	90	--	17
Domestic use	1,096	1,111	-4	15
Exports	965	975	25	10
Total use	2,061	2,086	21	25
Ending stocks	1,044	925	-17	-118
		----------------- *Percent* -----------------		
Stocks to use ratio	50.6	44.4	-1.3	-6.3
		------------ *Dollars per bushel* ------------		
Average market price	4.58	4.50	-0.10	-0.08

-- No change. ** Rounds to zero.

August 12, 2020

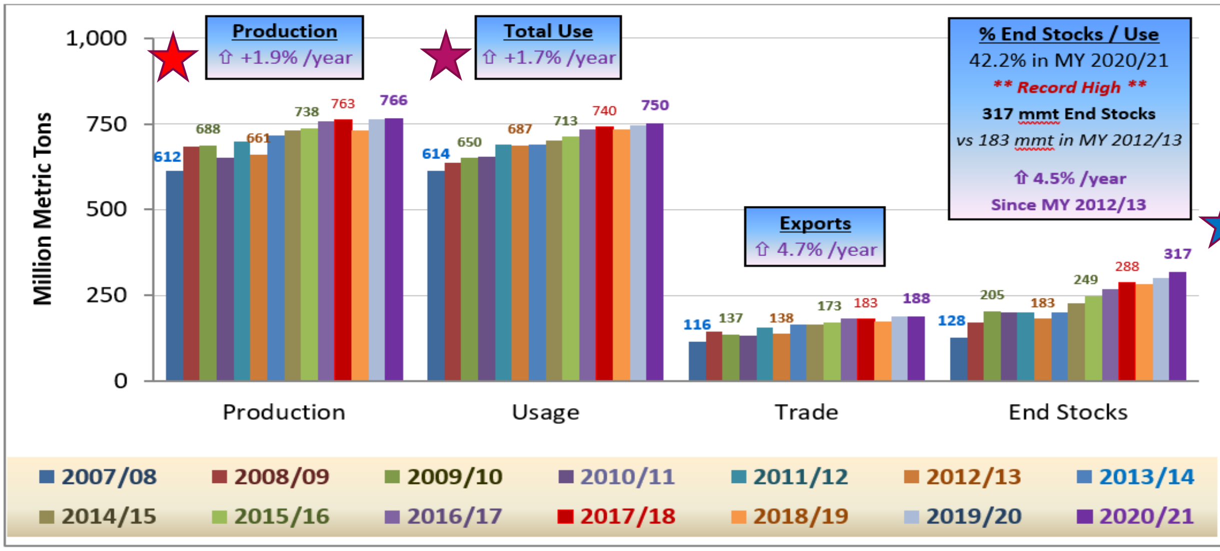
World Wheat Production

Country or Region	2019/2020 estimate	2020/2021 forecast	Change from July 10	Change from 2019/2020
		---------------- *Million Tons* ----------------		
World	764.1	766.0	-3.3	1.9
United States	52.3	50.0	0.4	-2.2
Foreign	711.9	716.0	-3.7	4.2
Argentina	19.7	20.5	-0.5	0.8
Canada	32.3	34.0	--	1.7
Australia	15.2	26.0	--	10.8
European Union	154.9	135.5	-4.0	-19.4
Turkey	17.5	18.5	-1.0	1.0
Russia	73.6	78.0	1.5	4.4
Ukraine	29.2	27.0	0.5	-2.2
Kazakhstan	11.5	12.5	-1.0	1.0
China	133.6	136.0	--	2.4
India	103.6	107.2	--	3.6
Northwest Africa	9.4	7.7	--	-1.8

-- No change.

August 12, 2020

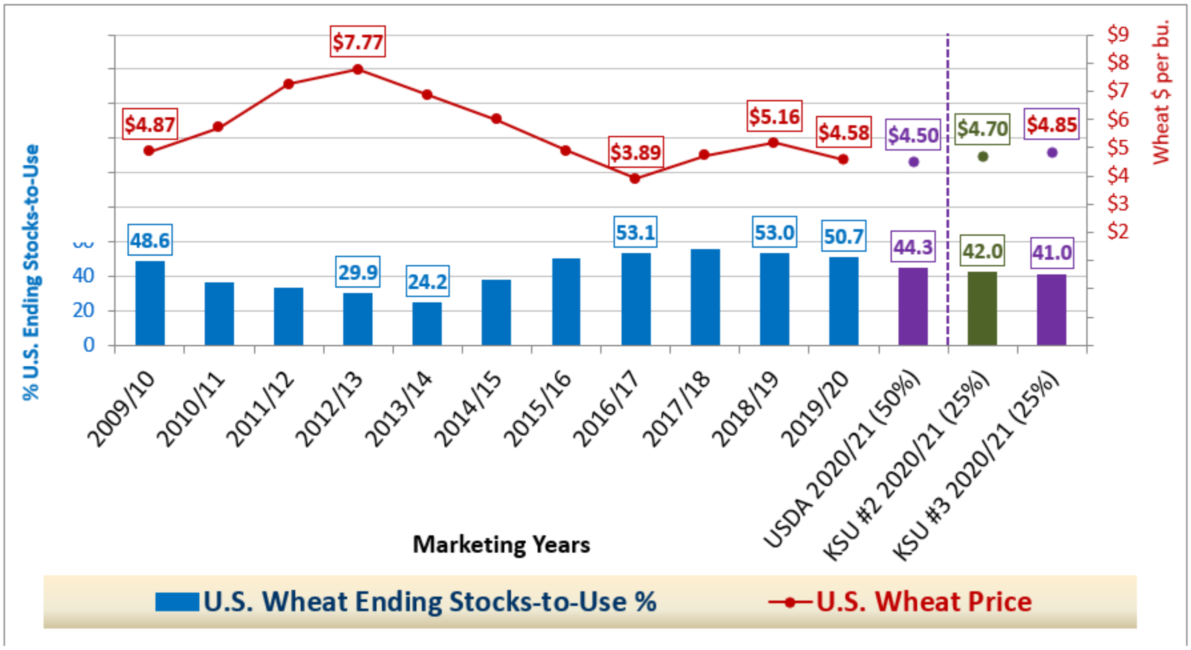
World Wheat Supply, Use & Stocks



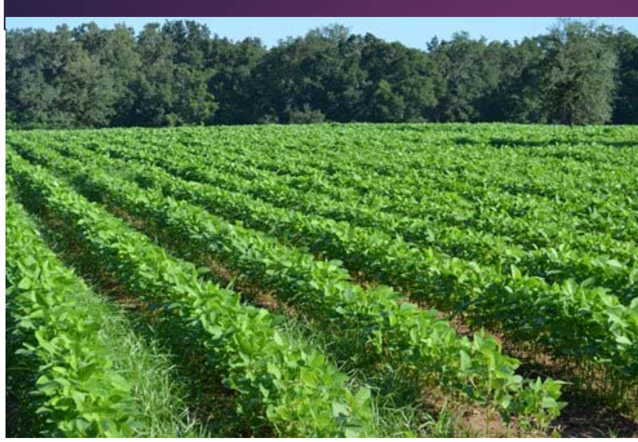
U.S. Wheat Supply-Demand Balance Sheet: *"New Crop"* MY 2019/20 as of the August 12, 2020 USDA WASDE report with KSU Adjustments

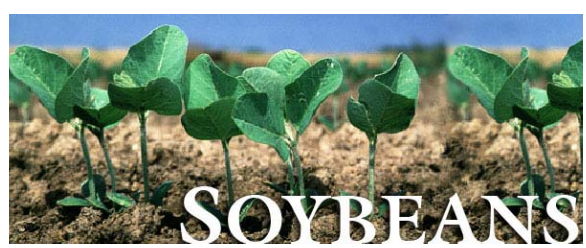
Item	USDA 2020/21	KSU Scenario #2 MY 2020/21 *Lower 2020 Production*	KSU Scenario #3 MY 2020/21 *Higher U.S. Exports*
% Probability of Occurring (KSU est.)	*50% prob.*	*25% prob.*	*25% prob.*
Planted Area (million acres)	44.250	44.250	44.250
Harvested Area (million acres)	36.678	36.678	36.678
% Harvested/Planted Area	82.89%	82.89%	82.89%
Yield / harvested acre (bu/ac)	50.1	48.75	50.1
	Million Bushels		
Beginning Stocks (million bushels)	1,044	1,044	1,044
Production (million bu.)	1,838	1,788	1,838
Imports (million bu.)	130	130	130
Total Supply (million bu.)	3,011	2,961	3,011
Food Use	960	960	960
Seed Use	61	61	61
Exports	975	975	1,025
Feed & Residual Use	90	90	90
Total Use	2,086	2,086	2,136
Ending Stocks (million bu.)	925	875	875
% Ending Stocks-to-Use	44.34%	41.95%	40.96%
Days of Supply *(% S/U x 365 days)*	162 days	153 days	149 days
U.S. Wheat Avg. Farm Price ($/bushel)	$4.50	$4.70	$4.90

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



Soybean Markets





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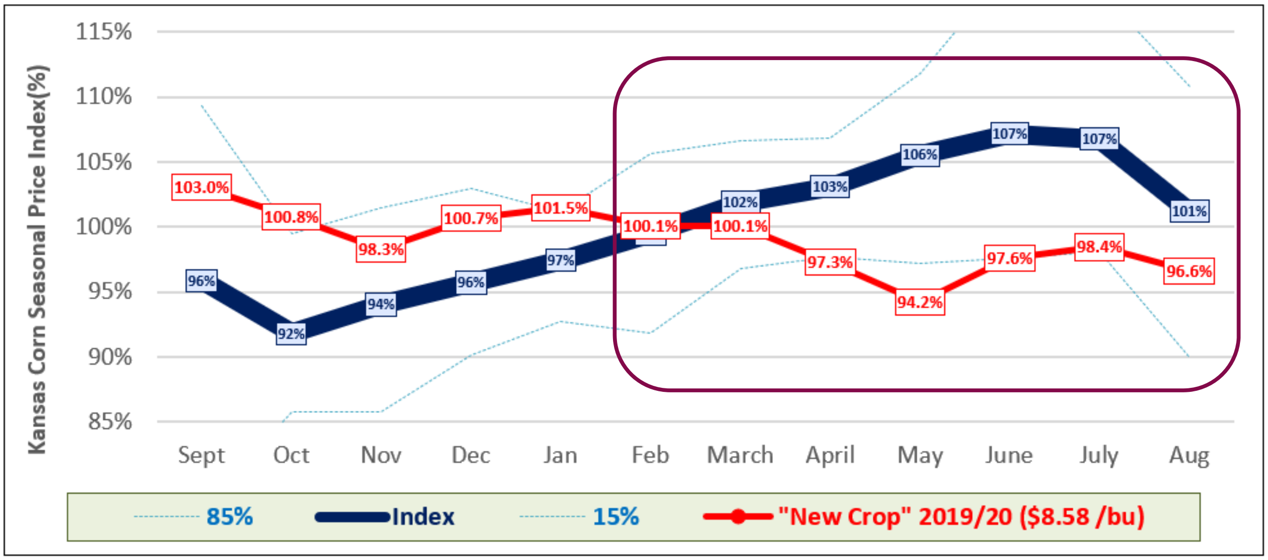
Key Grain Market Issues in 2020-2021

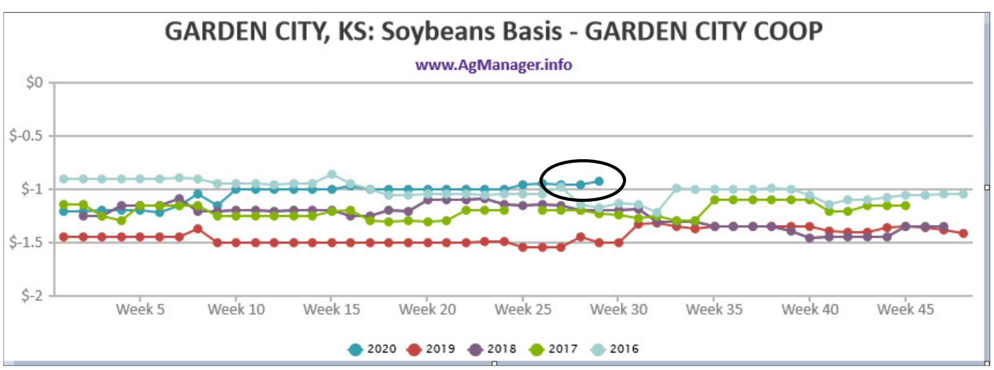
❑ World Soybean Demand & Export Prospects

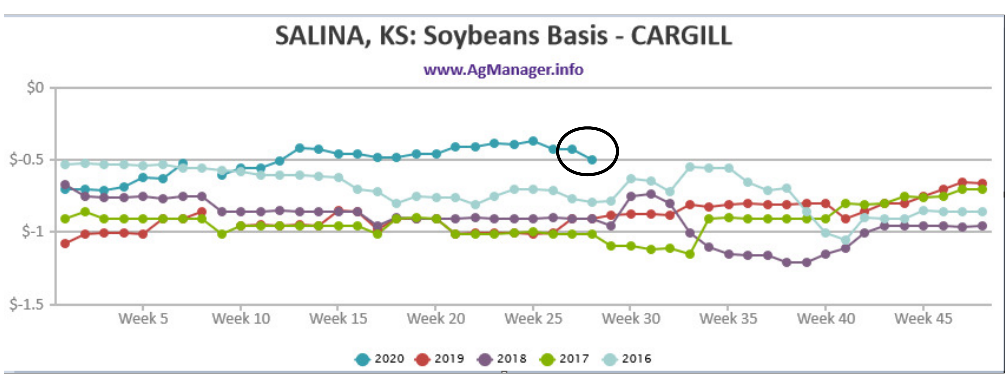
- **China Flood Impact of Soybean Trade?**
  - o Potential for China to be forced to VERY aggressive buyers
- **Likely large 2020 U.S. Crop** ➲ "However"
  - o Generally Good Conditions ⇨ Dry in Iowa, Indiana, Ohio
    - ▪ Likely to be more Iowa crop damage for Corn than Soybeans – but still presents uncertainty

CME NOV 2020 Soybean Futures

Kansas Soybean Seasonal Price Index (MY 1999/00 – MY 2018/19) plus "Current" MY 2019/20 Estimates as of August 12, 2020 (KSU www.AgManager.info & USDA https://www.quickstats.nass.usda.gov/)







U.S. Soybeans Supply and Demand

Item	2019/2020 estimate	2020/2021 forecast	Change from July 10	Change from 2019/2020
Planted area (million acres)	76.1	83.8	--	7.7
Harvested area (million acres)	75.0	83.0	--	8.1
Yield (bushels per acre)	47.4	53.3	3.5	5.9
		----------- *Million bushels* -----------		
Beginning stocks	909	615	-5	-294
Production	3,552	4,425	290	873
Imports	15	15	--	0
Total supply	4,476	5,055	285	578
Crush	2,160	2,180	20	20
Seed and Residual	52	140	5	88
Domestic use	2,212	2,320	25	108
Exports	1,650	2,125	75	475
Total use	3,862	4,445	100	583
Ending stocks	615	610	185	-5
		---------------- *Percent* ----------------		
Stocks to use ratio	15.9	13.7	3.9	-2.2
		----------- *Dollars per bushel* -----------		
Average market price	8.55	8.35	-0.15	-0.20

-- No change.

August 12, 2020

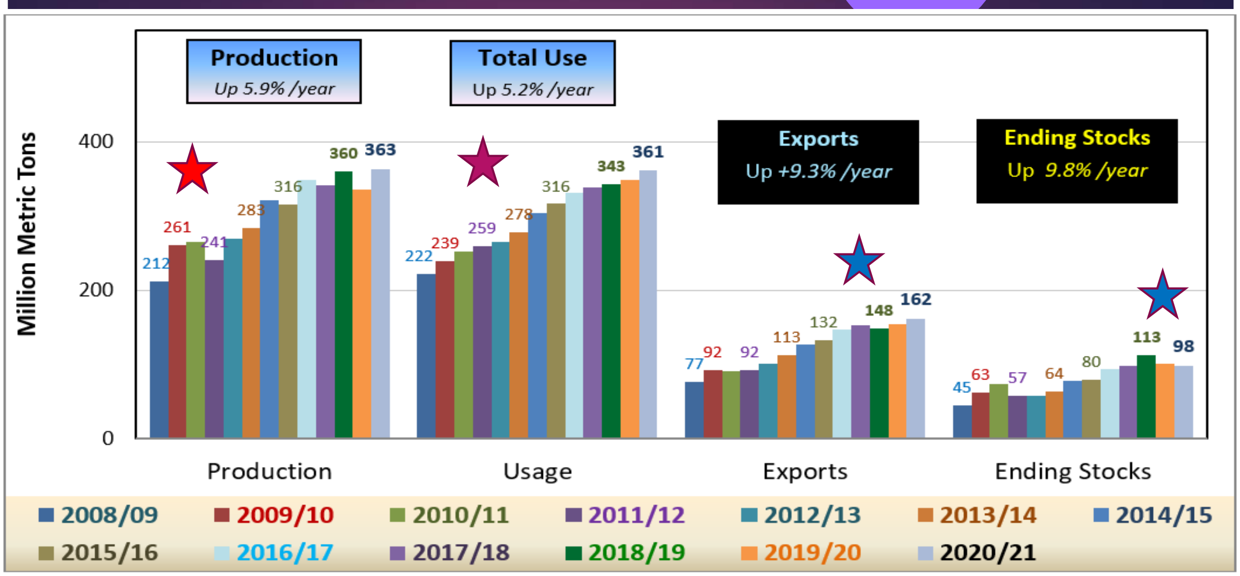
World Soybean Production

Country or Region	2019/2020 estimate	2020/2021 forecast	Change from July 10	Change from 2019/2020
		---------------- *Million Tons* ----------------		
World	337.3	370.4	7.9	33.1
United States	96.7	120.4	7.9	23.7
Foreign	240.6	250.0	**	9.4
Argentina	49.7	53.5	--	3.8
Brazil	126.0	131.0	--	5.0
Paraguay	9.9	10.2	--	0.4
Canada	6.0	5.8	--	-0.2
India	9.3	10.8	0.2	1.5
China	18.1	17.5	--	-0.6

World Soybean Supply and Use

Item	2019/2020 Estimate	2019/2020 Change from July 10	2020/2021 Forecast	2020/2021 Change from July 10	2020/2021 Change from 2019/2020
	---------------- *Million Tons* ----------------				
Beginning stocks	112.9	0.1	95.9	-3.8	-17.0
Production	337.3	0.1	370.4	7.9	33.1
Total Supply	450.1	0.3	466.2	4.1	16.1
Crush	308.0	3.8	320.1	4.5	12.1
Total use	351.9	3.5	367.9	4.3	16.0
Trade	164.6	5.2	165.5	3.9	0.9
Ending Stocks	95.9	-3.8	95.4	0.3	-0.5
Addendum					
Beginning stocks					
Argentina plus Brazil	61.6	0.3	44.8	-4.0	-16.8
Imports*					
China	98.0	2.0	99.0	3.0	1.0

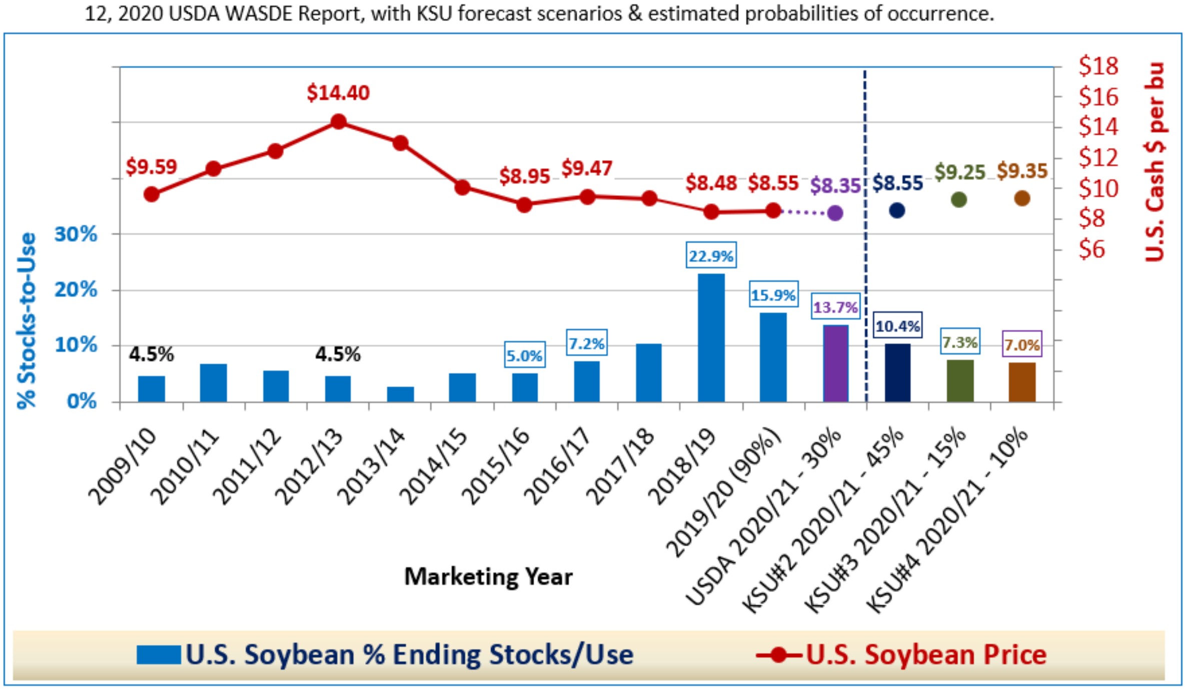
World Soybean Supply, Use & Stocks



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

Item	2019/20	USDA 2020/21	KSU Scenario #2 *Lower Planted Acres + Some Yield Damage* 2020/21	KSU Scenario #3 *Lower Planted Acres + Some Yield Damage + More Exports* 2020/21	KSU Scenario #4 *Lower Planted Acres + More Yield Damage* 2020/21
*% Probability of Occurring **(KSU)***	*90%KSUest*	*30%KSUest*	*45%KSUest*	*15%KSUest*	*10%KSUest*
Planted Area (million acres)	76.100	83.825	83.325	83.325	83.325
Harvested Area (million acres)	74.951	83.020	82.525	82.525	82.525
% Harvested/Planted Area	98.49%	99.04%	99.04%	99.04%	99.04%
Yield / harvested acre (bu/ac)	47.4	53.3	51.8	51.8	50.0
Beginning Stocks (million bushels)	909	615	615	615	615
Production (million bu.)	3,552	4,425	4,275	4,275	4,126
Imports (million bu.)	15	15	15	15	15
Total Supply (million bu.)	4,476	5,055	4,905	4,905	4,756
Domestic Crushings	2,160	2,180	2,180	2,180	2,180
Exports	1,650	2,125	2,125	2,250	2,125
Seed	97	100	100	100	100
Residual	-46	40	40	40	40
Total Use	3,862	4,445	4,445	4,570	4,445
Ending Stocks	615	610	460	335	311
% Ending Stocks-to-Use	15.92%	13.72%	10.35%	7.33%	7.00%
Days of Supply *(% S/U x 365 days)*	58.1 days	50.1 days	37.8 days	26.8 days	25.5 days
U.S. Avg. Farm Price ($/bu)	$8.55	$8.35	$8.55	$9.25	$9.35

U.S. Soybean Ending Stocks vs U.S. Avg. Cash Prices: MY 2006/07 – "New Crop" MY 2019/20 as of the August 12, 2020 USDA WASDE Report, with KSU forecast scenarios & estimated probabilities of occurrence.



Questions?

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