

Grain Market Outlook for 2022-23

2022 Risk & Profit Conference

Manhattan, Kansas

August 16-17, 2022

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Market Perspective

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Grain Market Outlook ²⁰²²⁻²⁰²³ in Kansas, the U.S. & Globally

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1) “Tight!!!!” Global Grain & Oilseed Stocks in 2022-2023

- *The importance of South America’s 2023 soybean & corn crops*
- “*Little – No*” margin for 2023 shortfalls among global wheat producers

2) Corn Production damage in the Western-Central Plains in 2022

- *Western Kansas / OK / TX / NE – Corn Basis strength* ^{Historic++}
- Uncertain **2022 U.S. Corn Production** – ≥ 14.359 billion bu???

Grain Market Outlook ²⁰²²⁻²⁰²³

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3) Continuance of dry La Nina Weather Pattern in 2022-2023???

- “*Chances for La Nina are expected to gradually decrease from 86% to 60% during Dec-Feb 2022-2023*” *Reuters* ^{August 11, 2022}
- “A rare 3-peat La Nina is expected this winter.” Weather Science ^{8/12/2022}

4) Continued high 2023 Fertilizer & other Crop Input Costs?

- *High natural gas & logistics costs, w. supply-chain challenges*
- May continue to limit **2023 U.S. Corn Acres** – $\approx 89 - 90$ million???

5) U.S. HRW Winter Wheat Seedings ^{Fall 2022} for Harvest ²⁰²³

- Key: Soil Moisture prospects in the Central-Southern Plains ^{Sep-Oct 2022}
- Likely: Strong Crop Revenue Insurance Planning Prices, + other factors

6) Impact of Ongoing & Possible Geopolitical Conflicts 2022-2023

- *Ukraine-Russia War???: Prospects for de-escalation & grain trade?*
- **China-Taiwan???** - If this occurs, would impact global economy & U.S. grain trade (*U.S. soybeans, grain sorghum, likely all ag commodities*)

7) U.S./Foreign Ag response in 2023 to current grain prices?

- Crop Acres? Normally, ↑ prices → ↑ crop acres, BUT ALL \$'s are ↑
- Crop Costs? IF high fertilizer & other crop costs, limits Corn Acres²⁰²³
- Rationing Grain Use: Evidence of this in the August WASDE #s
- Cropland Markets & Cash Rents: High crop prices being reflected

8) Reasons for High Grain Prices in Spring 2022?

- *#1: Ukraine-Russia War; #2: Delayed plantings in the Northern Plains*

7) Overall Prospects for 2023 Grain Markets???

- Grain Prices supported @ High Levels – *until* grain markets are confident of larger crops & likely rebuilding of stocks
 - Both “2022/23 Old Crop Cash \$’s” & “2023/24 New Crop Forward Bids” vulnerable to declines in late Spring – Summer²⁰²³ into 2023 Fall harvest
- Ukraine-Russia War: Continued impact on World grain markets
- Impact of South America Crop Development: Brazil & Argentina crop prospects to drive U.S. price volatility during Jan-August 2023

What to anticipate: Fall 2022 – Year 2023

□ South America Planting Influences ⇒ “*Bid for Acres*”

• Brazil & Argentina Corn & Soybean Crop Calendar

○ Brazil

- | | |
|---|----------------------------------|
| ▪ <u>Corn</u> : 1 st crop <i>Planting</i> – October-December | ⇒ <u>Harvest</u> : February-June |
| ▪ <u>Soybeans</u> : <i>Planting</i> – October-December | ⇒ <u>Harvest</u> : March-June |
| ▪ <u>Corn</u> : 2 nd crop <i>Planting</i> – January-February | ⇒ <u>Harvest</u> : March-June |

○ Argentina

- | | |
|--|---|
| ▪ <u>Corn</u> : <i>Planting</i> – mid September-December | ⇒ <u>Harvest</u> : mid March-early June |
| ▪ <u>Soybeans</u> : 1 st crop <i>Planting</i> – November-December | ⇒ <u>Harvest</u> : Late March-early May |
| ▪ <u>Soybeans</u> : 2 nd crop <i>Planting</i> – December-early Jan. | ⇒ <u>Harvest</u> : mid April – mid June |

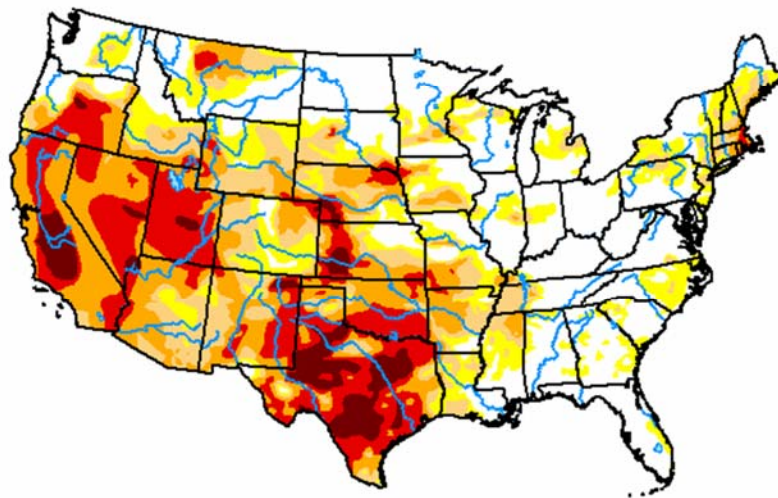
U.S. Drought Monitor

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August 9, 2022

(Released Thursday, Aug. 11, 2022)

Valid 8 a.m. EDT



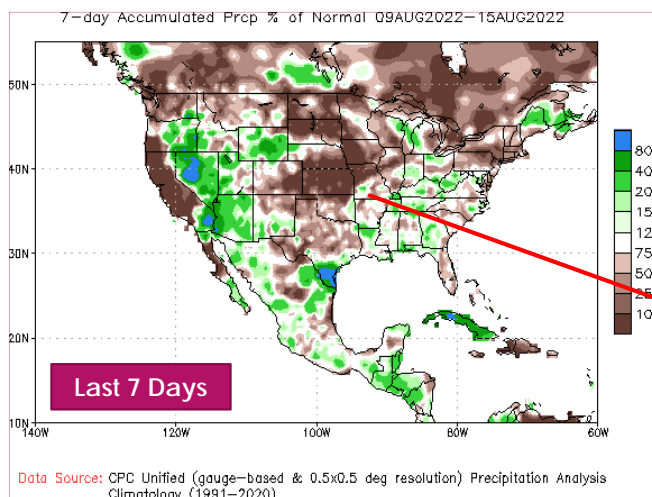
Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	34.41	65.59	50.11	36.24	18.62	4.31
Last Week 08-02-2022	33.52	66.48	51.39	37.03	18.96	4.47
3 Months Ago 05-10-2022	38.78	61.22	53.02	39.76	19.97	4.27

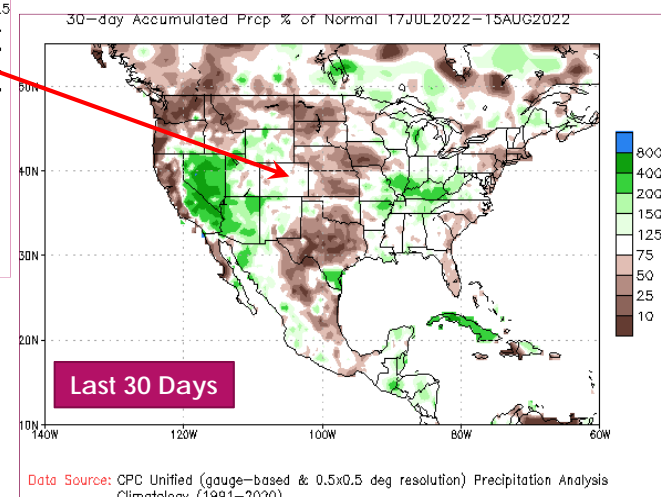
Intensity

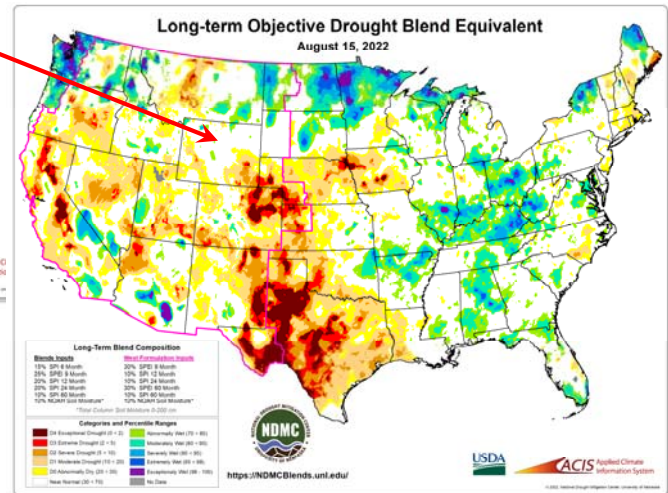
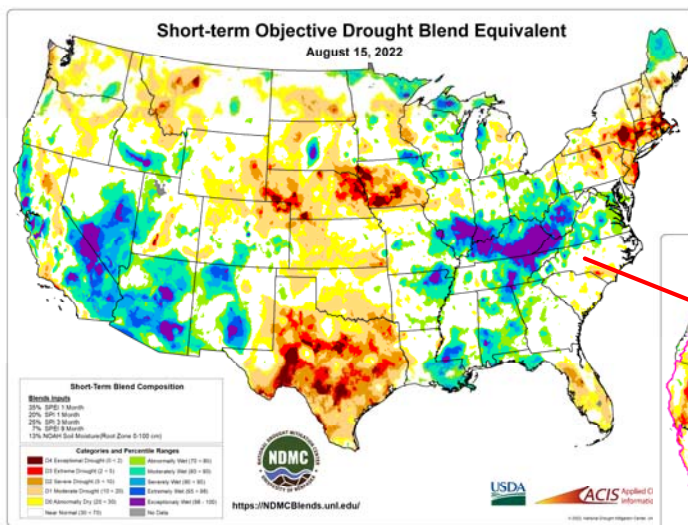
None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

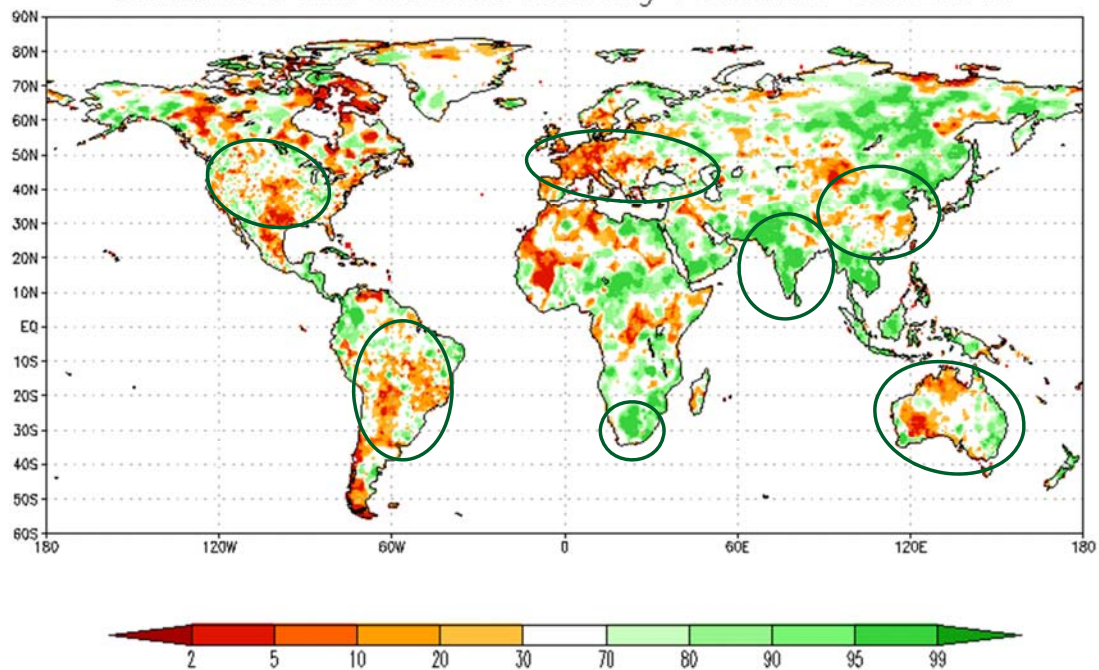


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Calculated Soil Moisture Ranking Percentile 20220815



Wheat Markets

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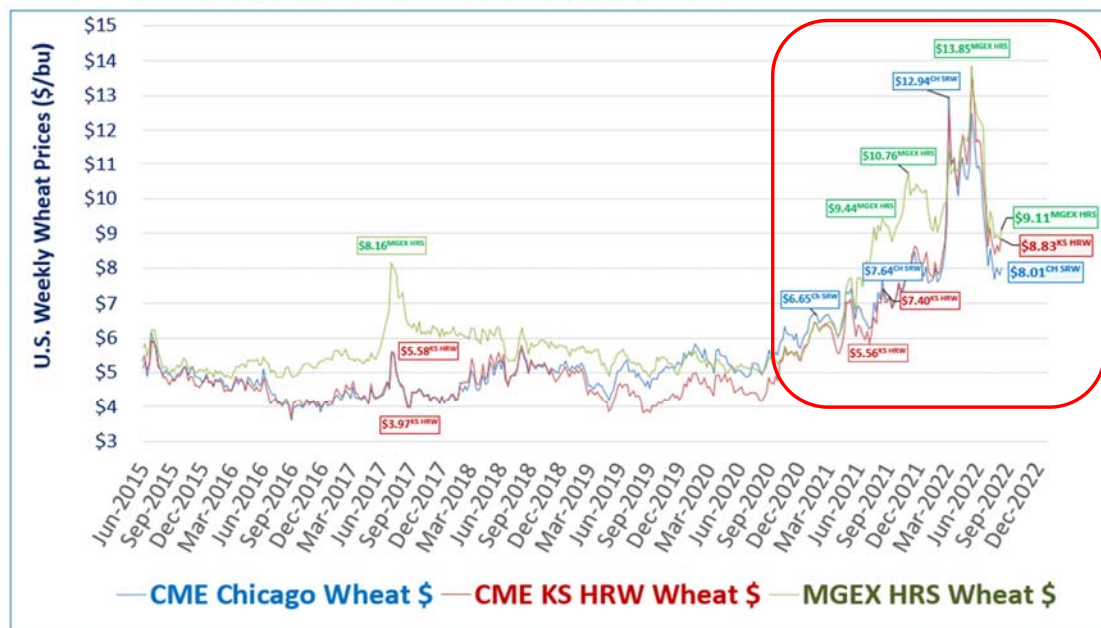
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Continuous Weekly Wheat Futures Prices - CME Chicago & KC HRW Wheat

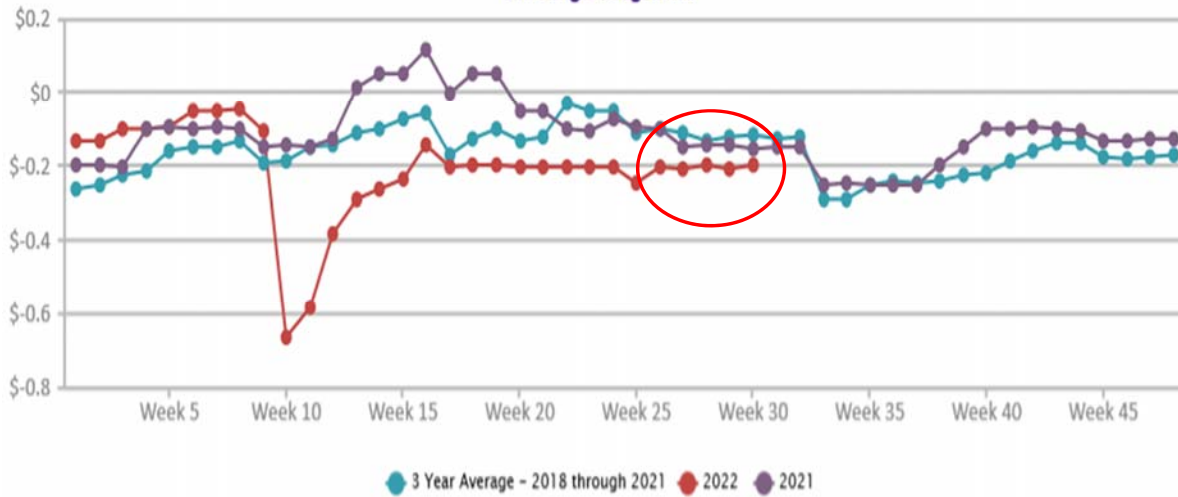
14

Futures \$'s + MGEX HRW Wheat Futures: June 2015 through August 15, 2022



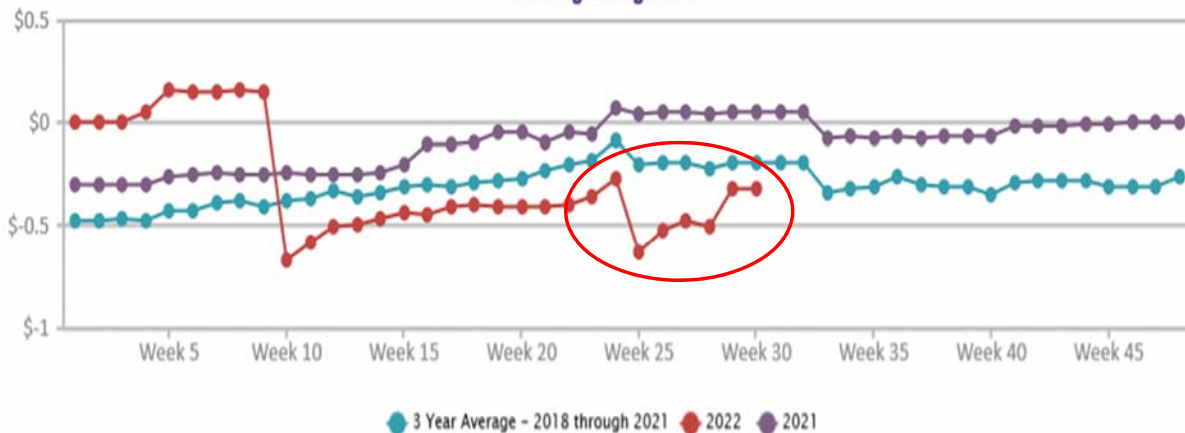
SALINA, KS: Hard Red Winter Wheat Basis - SCOLAR GRAIN CO

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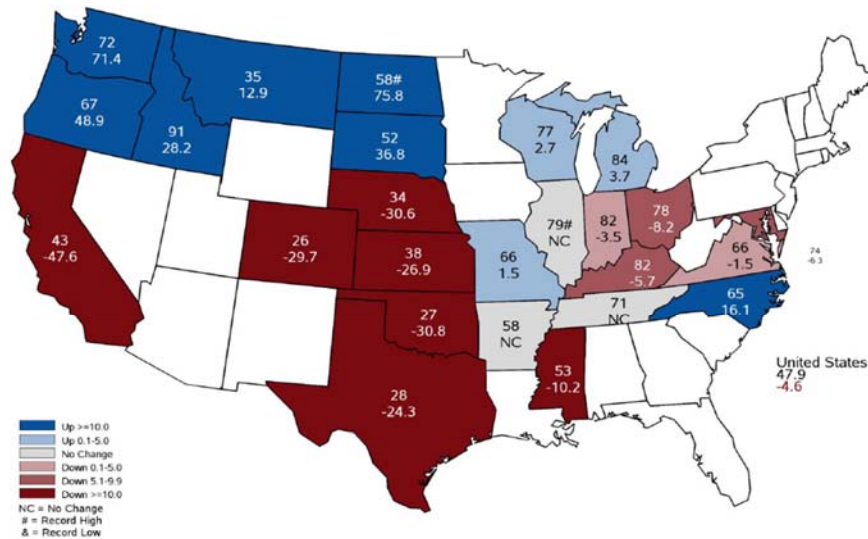
HUGOTON, KS: Hard Red Winter Wheat Basis - PERRYTON EQUITY EXCHANGE - PRAIRIEOLA

www.AgManager.info



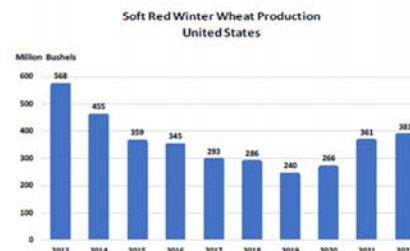
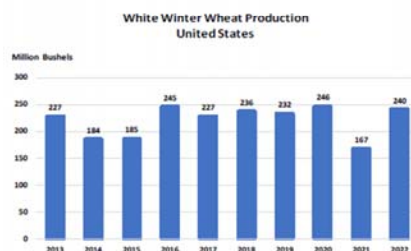
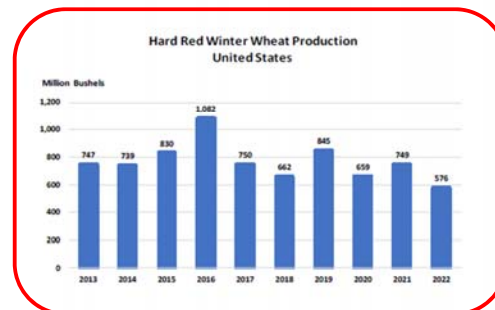


August 2022 Winter Wheat Yield Bushels and Percent Change from Previous Year



August 2022 Winter Wheat Production United States by Class

	Production (1,000 Units)	Unit
Hard Red Winter Wheat	576,173	Bu
% Change from Previous Estimate	↓ 1.5	
% Change from Previous Season	↓ 23.1	
Soft Red Winter Wheat	381,326	Bu
% Change from Previous Estimate	↑ 1.5	
% Change from Previous Season	↑ 5.7	
White Winter Wheat	240,151	Bu
% Change from Previous Estimate	↑ 0.1	
% Change from Previous Season	↑ 43.6	



□ Impact on HRW Wheat of 2022 WCB Drought

• U.S. HRW Wheat Production 2022 - August USDA Crop Production

○ Production = 576 million bu.²⁰²² ⇒ ↓ 23% from 749 mb²⁰²¹

■ Colorado HRW Wheat	– 43 mb ²⁰²²	vs	70 mb ²⁰²¹
■ Kansas HRW Wheat	– 260 mb ²⁰²²	vs	364 mb ²⁰²¹
■ Nebraska HRW Wheat	– 29 mb ²⁰²²	vs	41 mb ²⁰²¹
■ Oklahoma HRW Wheat	– 73 mb ²⁰²²	vs	115 mb ²⁰²¹
■ Texas HRW Wheat	– 36 mb ²⁰²²	vs	74 mb ²⁰²¹

• HRW Wheat Protein levels raised due to dryness

➤ HRW Wheat 2022 ⇒ 12.9% protein, 60.6 lb test wt., 1.8% defects

Vs 5 year avg ⇒ 11.8% protein, 60.8 lb. test wt., 1.4% defects

August 2022

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WASDE - 627 - 11

U.S. Wheat Supply and Use 1/

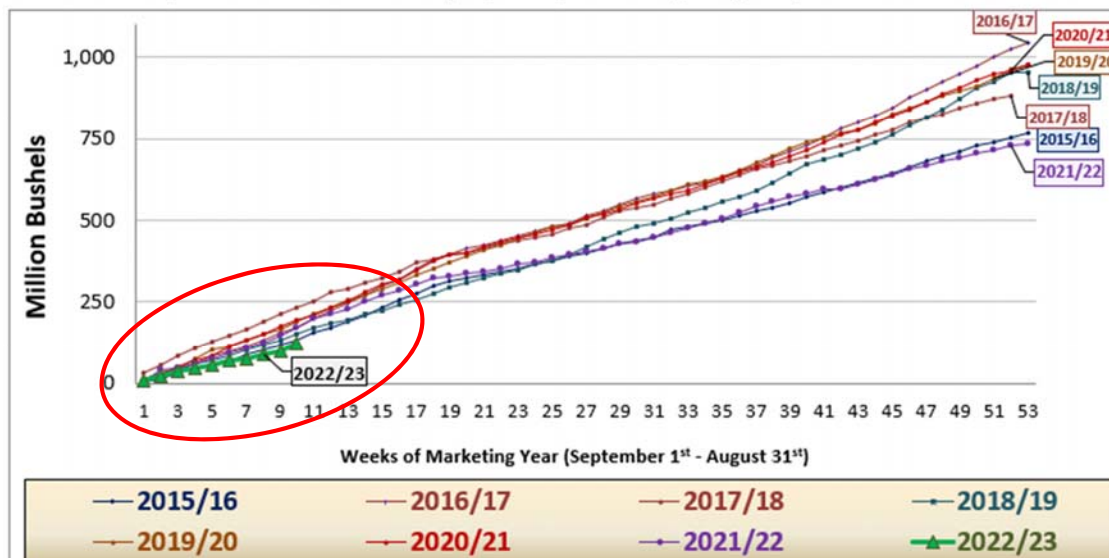
U.S. Wheat by Class: Supply and Use

Year beginning June 1		Hard Red Winter	Hard Red Spring	Soft Red Winter	White	Durum	Total
				<i>Million</i>	<i>Bushels</i>		
2021/22 (Est.)	Beginning Stocks	428	235	85	70	27	845
	Production	749	297	361	201	37	1,646
	Supply, Total 3/	1,181	575	449	276	104	2,586
	Domestic Use	511	226	243	77	69	1,126
	Exports	317	209	112	148	14	800
	Use, Total	829	435	355	224	83	1,926
	Ending Stocks, Total	353	140	94	52	21	660
2022/23 (Proj.)	Beginning Stocks	353	140	94	52	21	660
	Production	576	463	381	289	74	1,783
	Supply, Total 3/	934	653	480	346	140	2,553
	Domestic Use	433	291	220	91	83	1,118
	Exports	245	235	135	180	30	825
	Use, Total	678	526	355	271	113	1,943
	Ending Stocks, Total	256	127	125	75	27	610
		Aug					
		Jul					
		265	126	136	82	30	639

Note: Totals may not add due to rounding. 1/ Marketing year beginning June 1. 2/ Marketing-year weighted average price received by farmers. 3/ Includes imports.

U.S. All Wheat Exports: MY 2015/16 thru "New Crop" MY

2021/22 as of USDA FAS Weekly Export reports through August 4, 2022



U.S. Wheat Supply-Demand Balance Sheet: "New Crop" MY

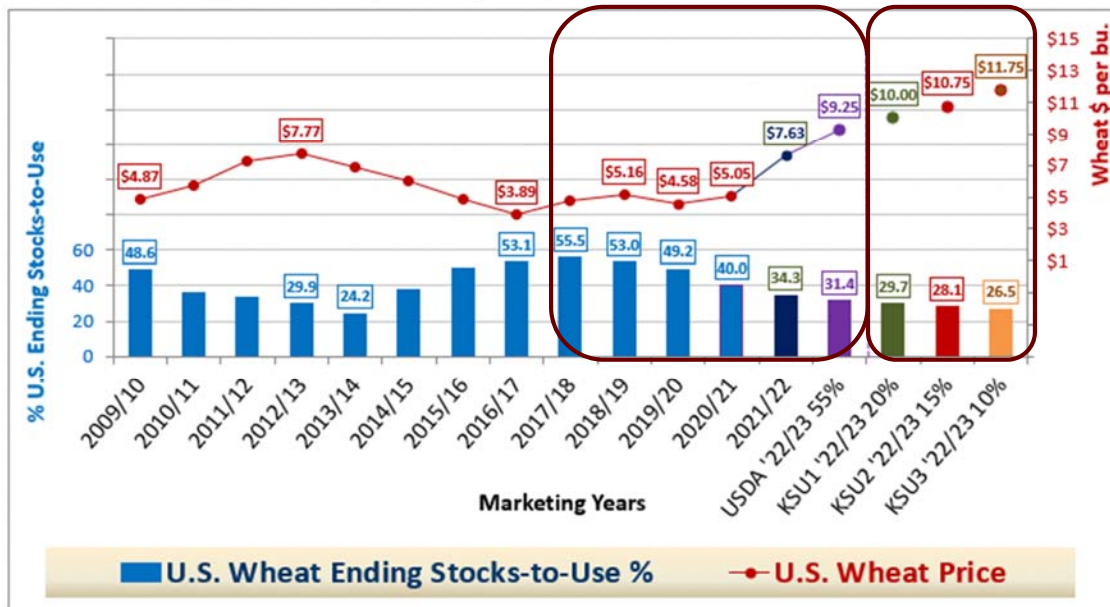
2022/23 as of the August 12, 2022 USDA WASDE & KSU scenarios

Item	USDA "New Crop" MY 2022/23 8/12/2022 USDA WASDE	KSU Scenario #1 "New Crop" 2022/23 ± 25 mb U.S. Exports: 850 mb	KSU Scenario #2 "New Crop" 2022/23 ± 50 mb U.S. Exports: 875 mb	KSU Scenario #3 "New Crop" 2022/23 ± 75 mb U.S. Exports: 900 mb
% Probability of Happening <small>KSU est.</small>	55% prob	20% prob.	15% prob	10% prob.
Planted Area (million acres)	46,992	46,992	46,992	46,992
Harvested Area (million acres)	37,527	37,527	37,527	37,527
% Harvested/Planted Area	79.89%	79.89%	79.89%	79.89%
Yield / harvested acre (bu/ac)	47.5	47.5	47.5	47.5
Million				
Beginning Stocks	660	660	660	660
Production	1,783	1,783	1,783	1,783
Imports	110	110	110	110
Total Supply (million bushels)	2,553	2,553	2,553	2,553
Food Use	970	970	970	970
Seed Use	68	68	68	68
Exports	825	850	875	900
Feed & Residual Use	80	80	80	80
Total Use (million bushels)	1,943	1,968	1,993	2,018
Ending Stocks (million bushels)	610	585	560	535
% Ending Stocks-to-Use	31.39%	29.73%	28.10%	26.51%
Days of Supply (% S/U x 365 days)	115 days	108 days	103 days	97 days
U.S. Wheat Avg. Farm Price (\$/bushel)	\$9.25 <small>Vs \$8.52 /bu. KSU Futures-based forecast.</small>	\$10.00 <small>Vs \$8.52 /bu. KSU Futures-based forecast.</small>	\$10.75 <small>Vs \$8.52 /bu. KSU Futures-based forecast.</small>	\$11.75 <small>Vs \$8.52 /bu. KSU Futures-based forecast.</small>

U.S. Wheat Ending Stocks vs U.S. Cash \$'s: MY 2009/10 thru

23

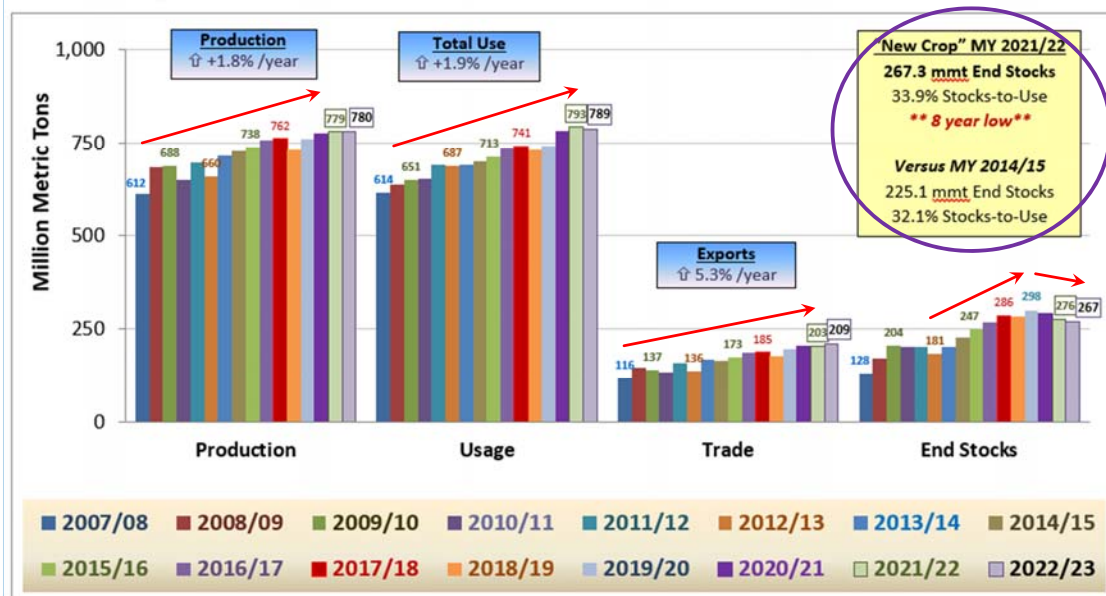
"New Crop" MY 2022/23 – August 12, 2022 USDA WASDE with KSU Projections



World Wheat Usage & Ending Stocks: MY 2007/08 - "New Crop" 2022/23

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as of the August 12, 2022 USDA WASDE Report



Corn Markets

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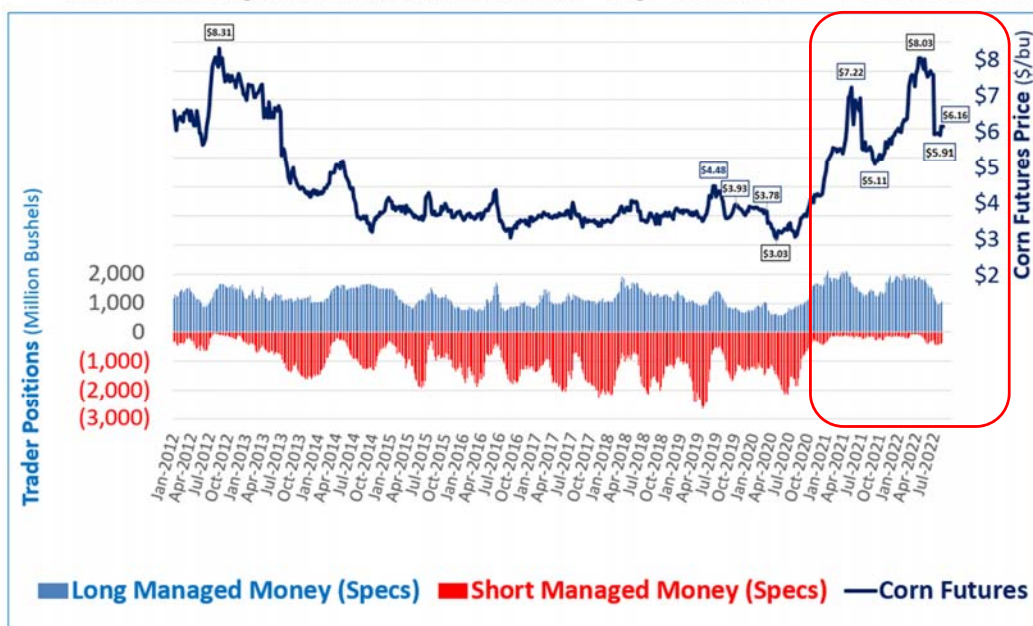


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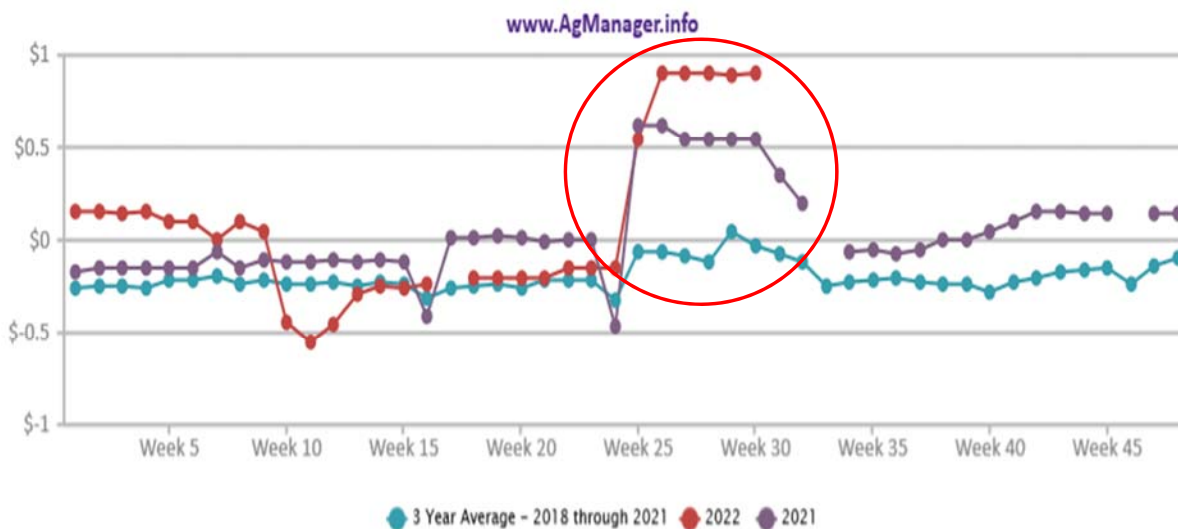
Managed Money Traders (Specs) Long & Short Positions for CME CORN:

June 2006 thru August 9, 2022 (Weekly CFTC Position of Trader Data) + Aug. 16, 2022 SEPT²⁰²² Corn Futures Closes

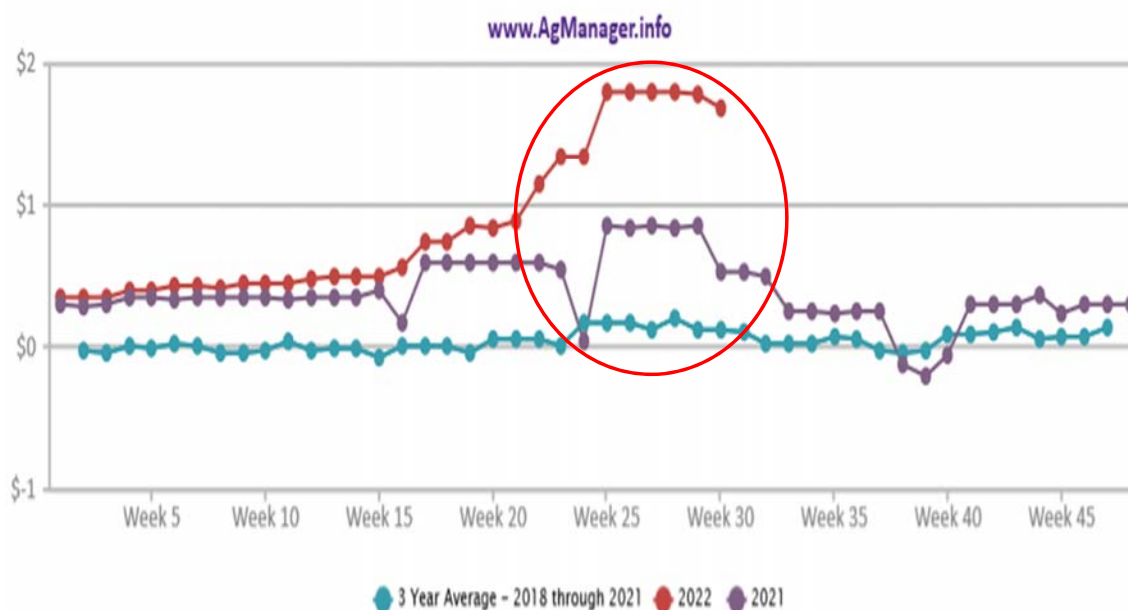


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SALINA, KS: Corn Basis - CARGILL

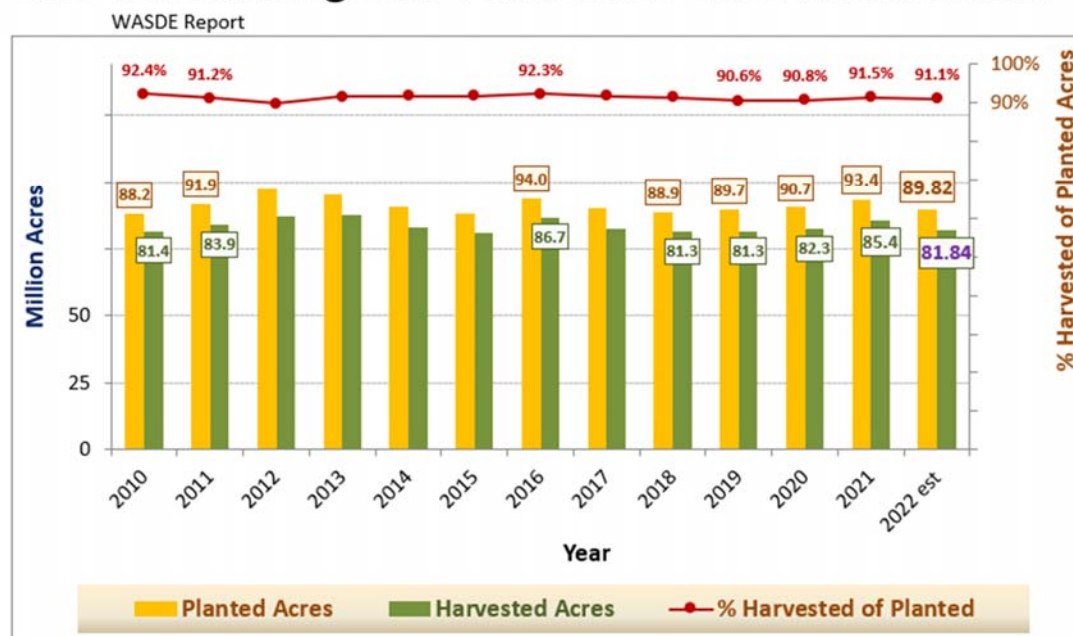


GARDEN CITY, KS: Corn Basis - GARDEN CITY COOP



U.S. Corn Acreage for Years 2010-2022 as of the July 12, 2022 USDA

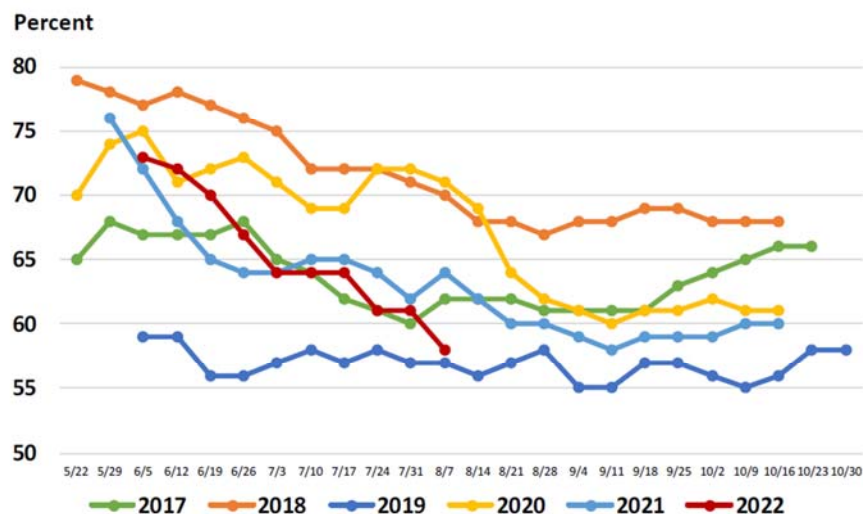
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United States Corn Condition Percent Rated Good to Excellent



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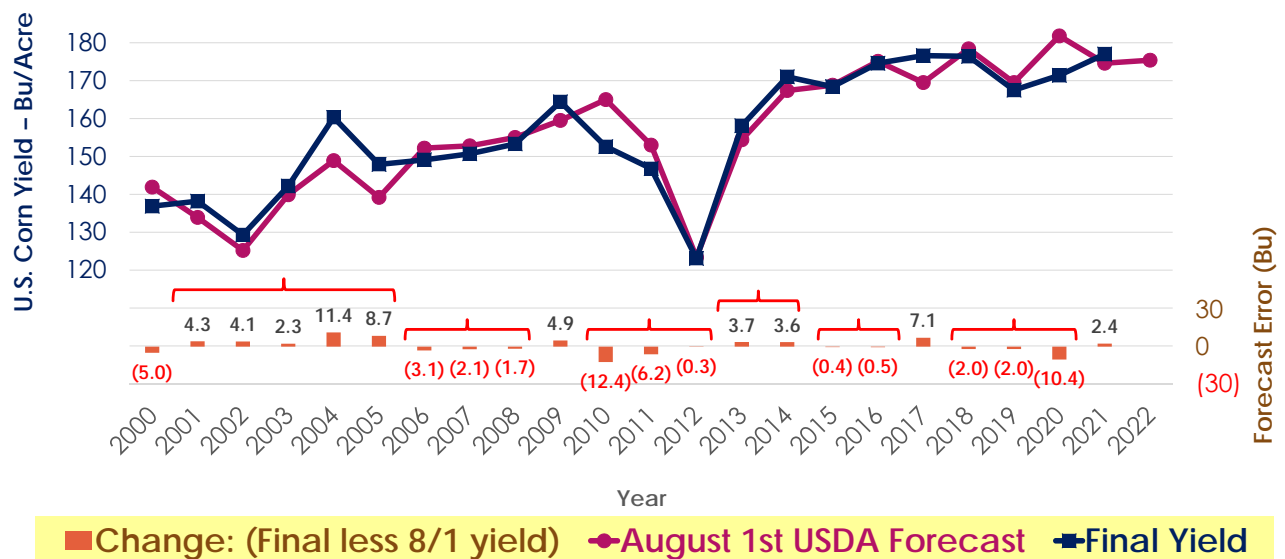
U.S. Corn Yields for 2007-2022 as of the August 12, 2022 USDA

World Agricultural Supply and Demand Estimates Report



U.S. Corn Yields: 2000-2022

Final Accuracy of August 1st USDA Forecasts

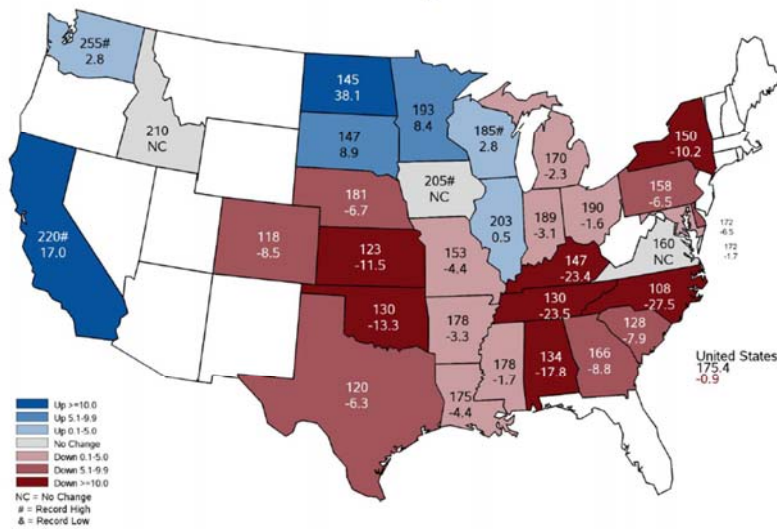




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August 2022 Corn Yield

Bushels and Percent Change from Previous Year

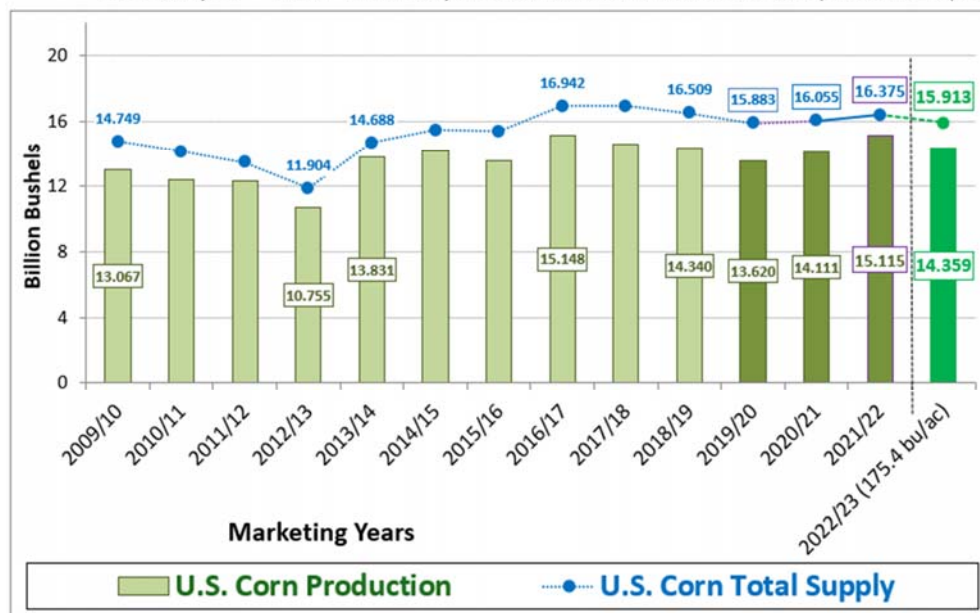


United States Department of Agriculture
National Agricultural Statistics Service

August 12, 2022

U.S. Corn Production & Total Supplies:

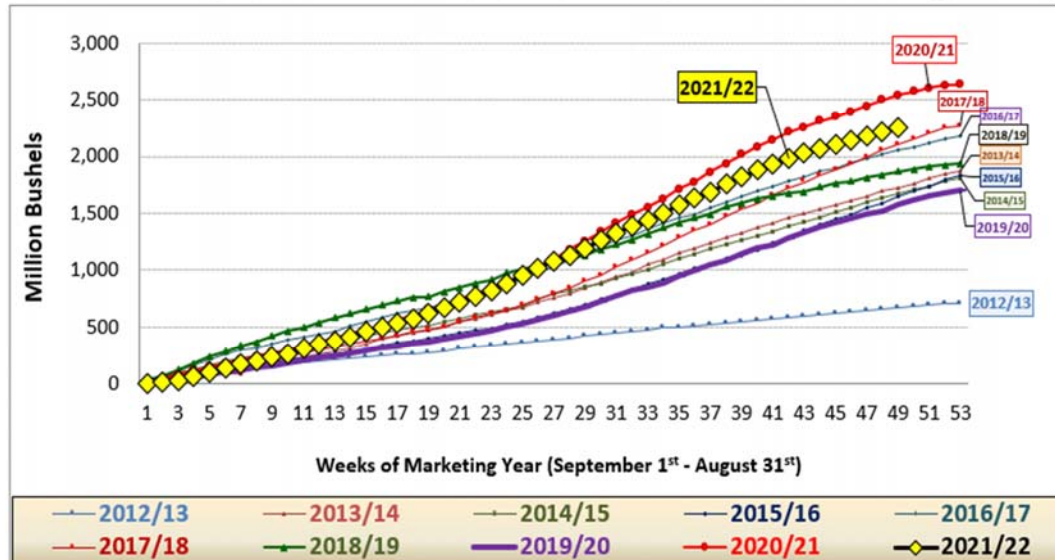
MY 2009/10 - "New" MY 2022/23 as of the 8/12/2022 USDA WASDE & Crop Production Reports



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U.S. Corn Exports: MY 2012/13 through "Current" MY 2021/22 based

on USDA Foreign Agricultural Service Weekly Export reports through 8/4/2022 (Start of marketing year on 9/1)



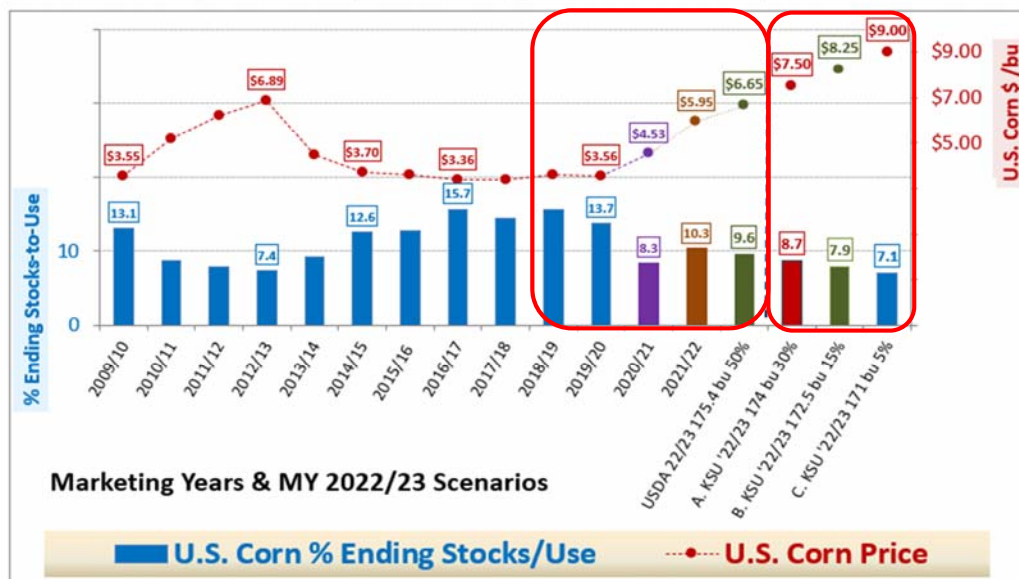
U.S. Corn Supply-Demand Balance Sheet: Projected "New Crop" MY

2022/23 as of the August 12, 2022 USDA WASDE report, with Alternative KSU "New Crop" 2022/23 Marketing Year Scenarios

Item	USDA 2022/23 8/12/2022 WASDE 175.4 bu/ac 14,359 bb crop	A. KSU "New Crop" MY 2022/23 Scenario #1 "Lower Yields" = 174 bu/ac 14,240 bb crop	B. KSU "New Crop" MY 2022/23 Scenario #2 "Much Lower Yields" = 172.5 bu/ac 14,117 bb crop	C. KSU "New Crop" MY 2022/23 Scenario #3 "Major Drought Yields" = 171.0 bu/ac 13,995 bb crop
% Probability of Occurring (KSU)	50% ^{Q1} est	30% ^{Q1} est	15% ^{Q1} est	5% ^{Q1} est
Planted Area (million acres)	89,821	89,821	89,821	89,821
Harvested Area (million acres)	81,840	81,840	81,840	81,840
% Harvested/Planted Area	91.11%	91.11%	91.11%	91.11%
Yield / harvested acre (bu/ac)	175.4	174.0	172.5	171.0
Million Bushels				
Beginning Stocks (million bushels)	1,530	1,530	1,530	1,530
Production (million bu.)	14,359	14,240	14,117	13,995
Imports (million bu.)	25.0	25	25	25
Total Supply (million bu.)	15,913	15,795	15,672	15,550
Ethanol for fuel Use (million bu.)	5,375	5,375	5,375	5,375
Food & Industrial Use (million bu.)	1,419.4	1,419.4	1,419.4	1,419.4
Seed Use (million bu.)	30.6	30.6	30.6	30.6
Exports (million bu.)	2,375	2,375	2,375	2,375
Feed & Residual Use (million bu.)	5,325	5,325	5,325	5,325
Total Use (million bu.)	14,525	14,525	14,525	14,525
Ending Stocks (million bu.)	1,388	1,270	1,147	1,025
% Ending Stocks-to-Use	9.56%	8.74%	7.90%	7.06%
Days of Supply (% S/U x 365 days)	34.9 days	31.9 days	28.8 days	25.76 days
U.S. Corn Average Farm Price (\$/bushel)	\$6.65 /bu vs \$6.32 KSU Futures	\$7.50 /bu vs \$6.32 KSU Futures	\$8.25 /bu vs \$6.32 KSU Futures	\$9.00 /bu vs \$6.32 KSU Futures

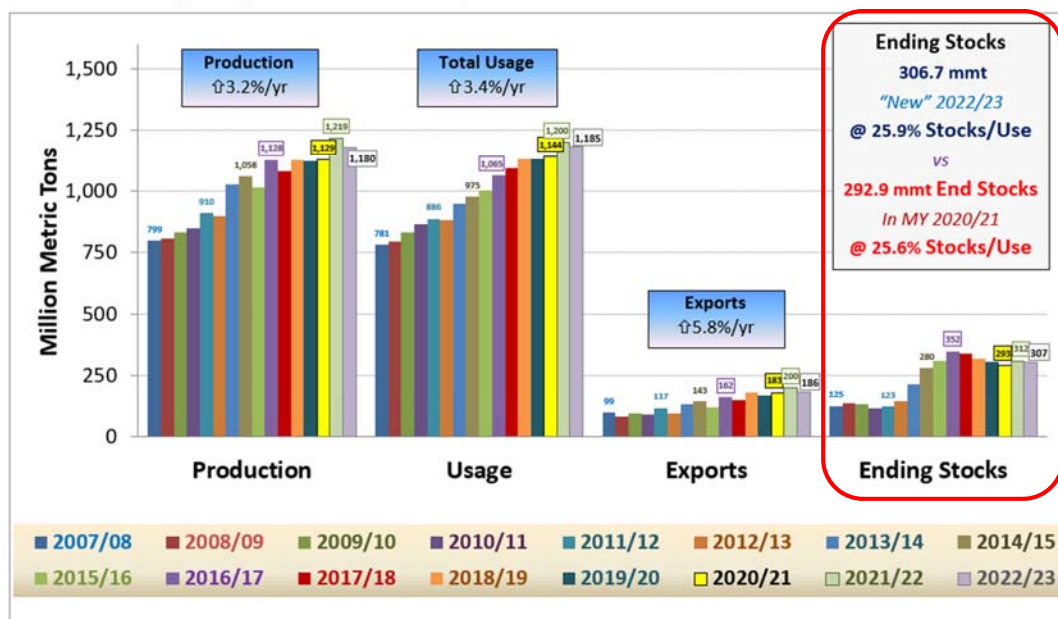
U.S. Corn % End Stocks vs U.S. Corn \$'s: MY 2009/10 –

"New Crop" MY 2022/23 as of the August 12, 2022 USDA WASDE report + KSU Scenarios



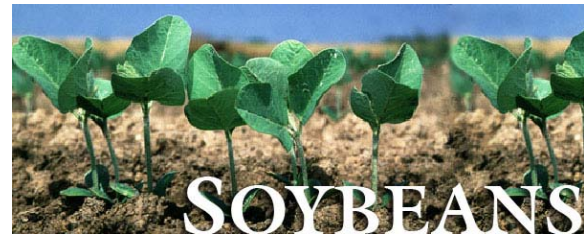
World Corn Supply-Demand: MY 2007/08 – "New Crop" MY 2022/23

as of the August 12, 2022 USDA WASDE Report



Soybean Markets

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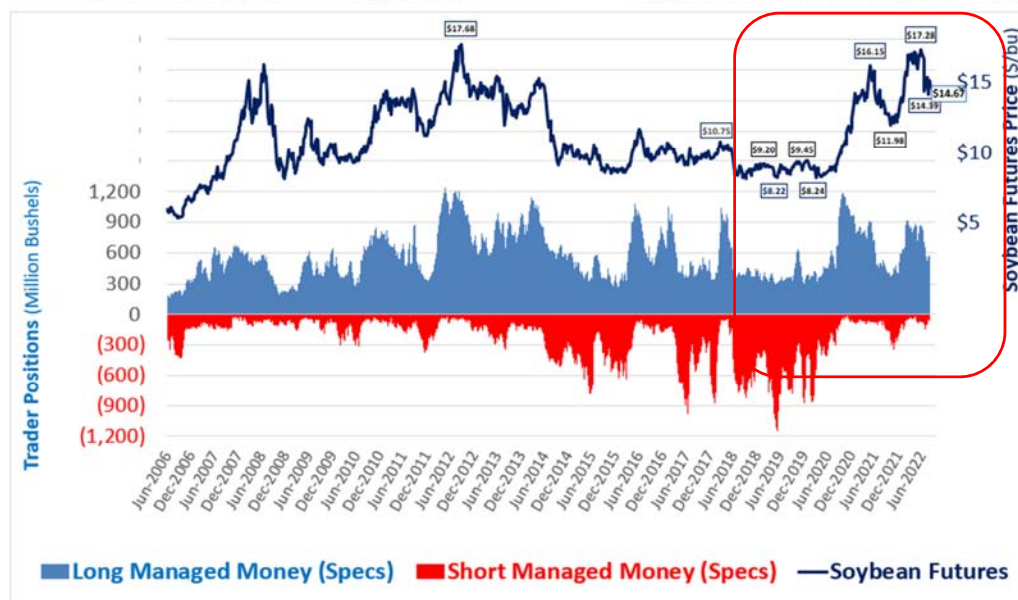


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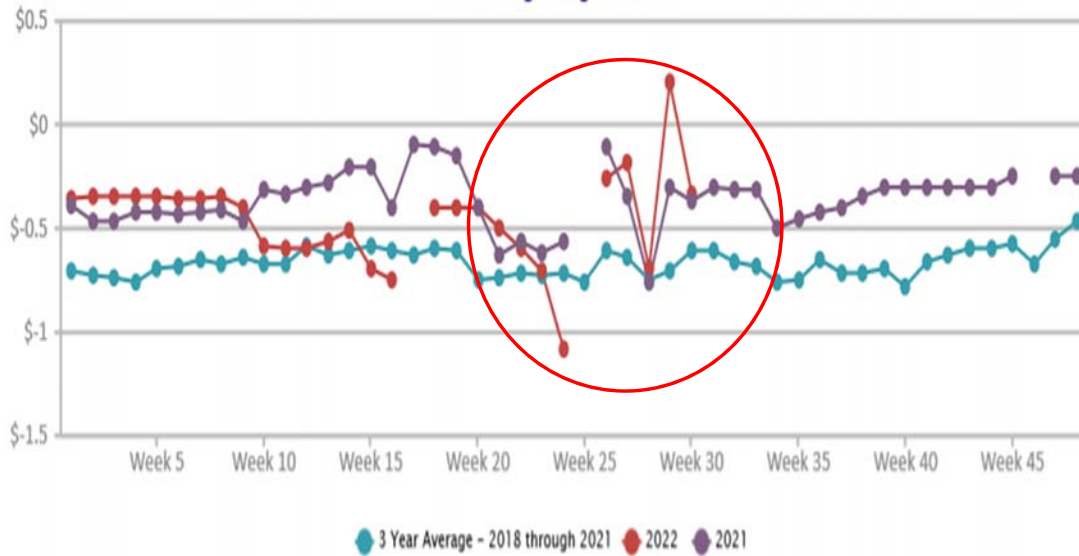
CME SOYBEANS Managed Money Traders^(Specs) Long/Short Positions w. Futures \$'s: June 2006 – August 9, 2022 (Weekly CFTC Position of Trader Data) + August 16, 2022 SEPT²⁰²² Soybean Futures

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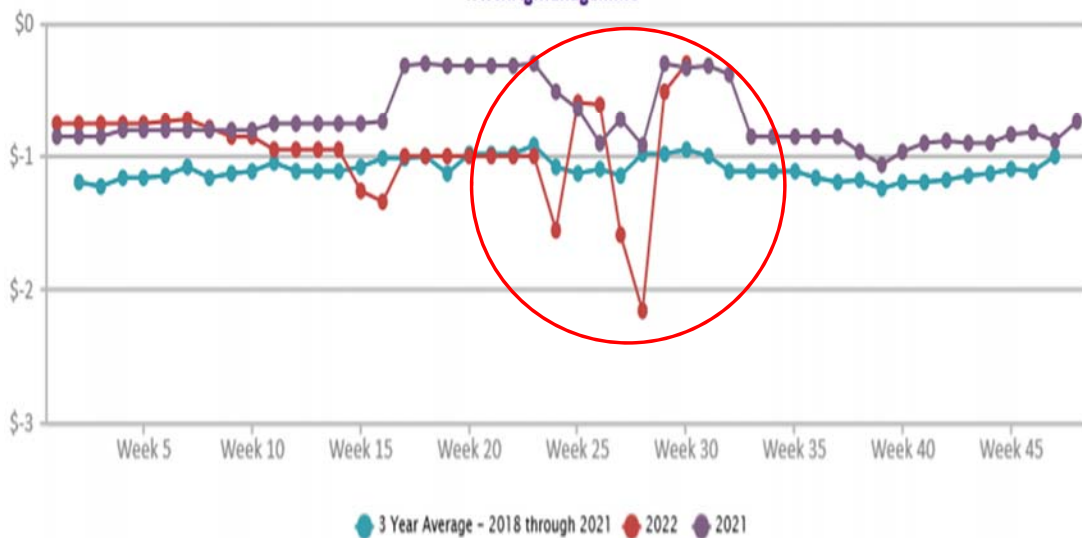
SALINA, KS: Soybeans Basis - CARGILL

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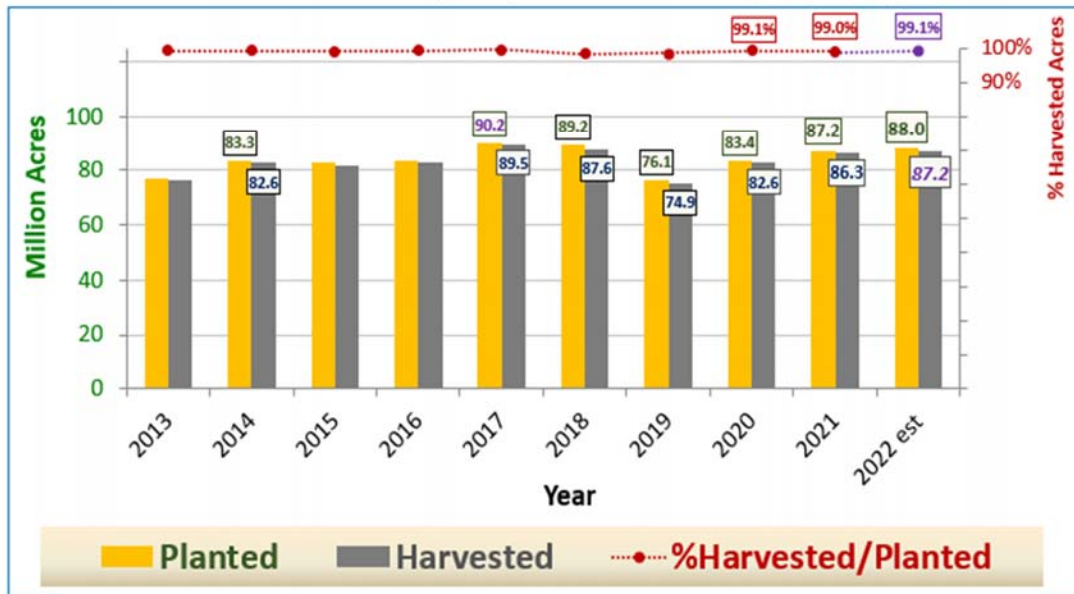
GARDEN CITY, KS: Soybeans Basis - GARDEN CITY COOP

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U.S. Soybean Planted & Harvested Acreage:

Years 2013-2022 as of the August 12, 2022 USDA WASDE Report



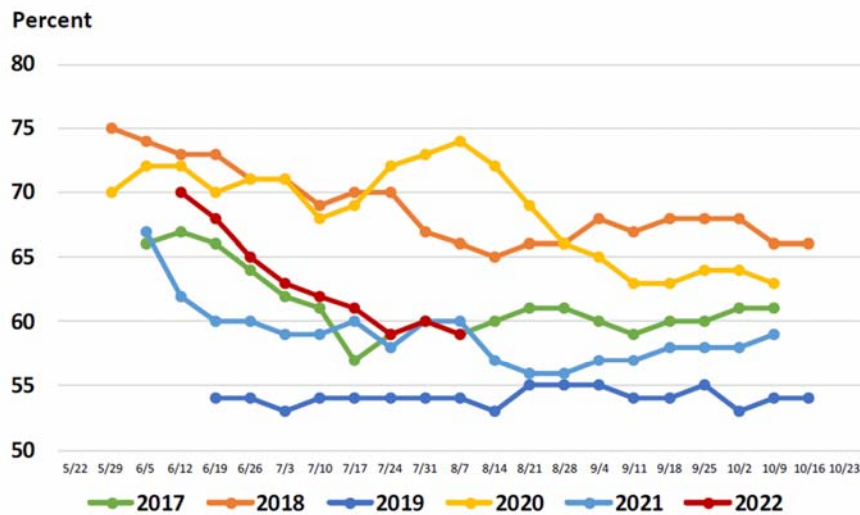
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United States Soybean Condition Percent Rated Good to Excellent

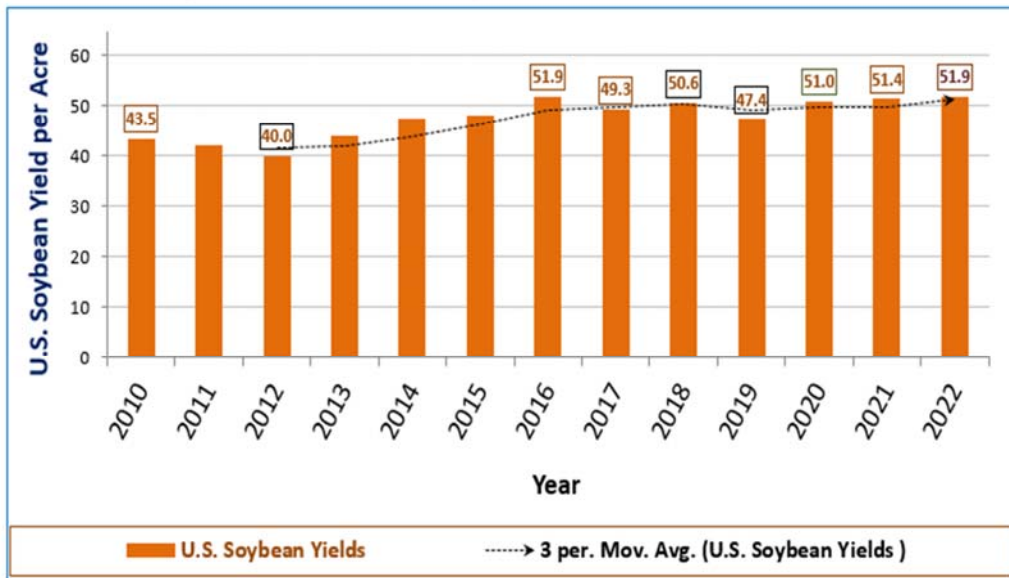


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U.S. Soybean Yields: Years 2010-2022

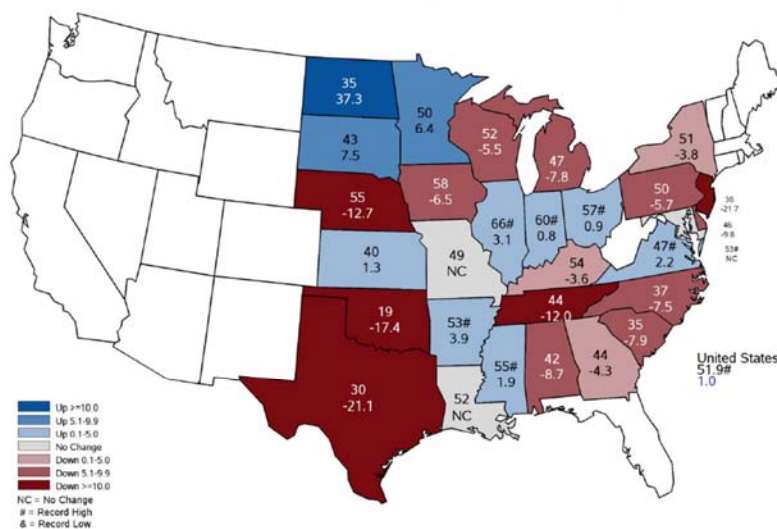
as of the August 12, 2022 USDA WASDE Report



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August 2022 Soybean Yield Bushels and Percent Change from Previous Year



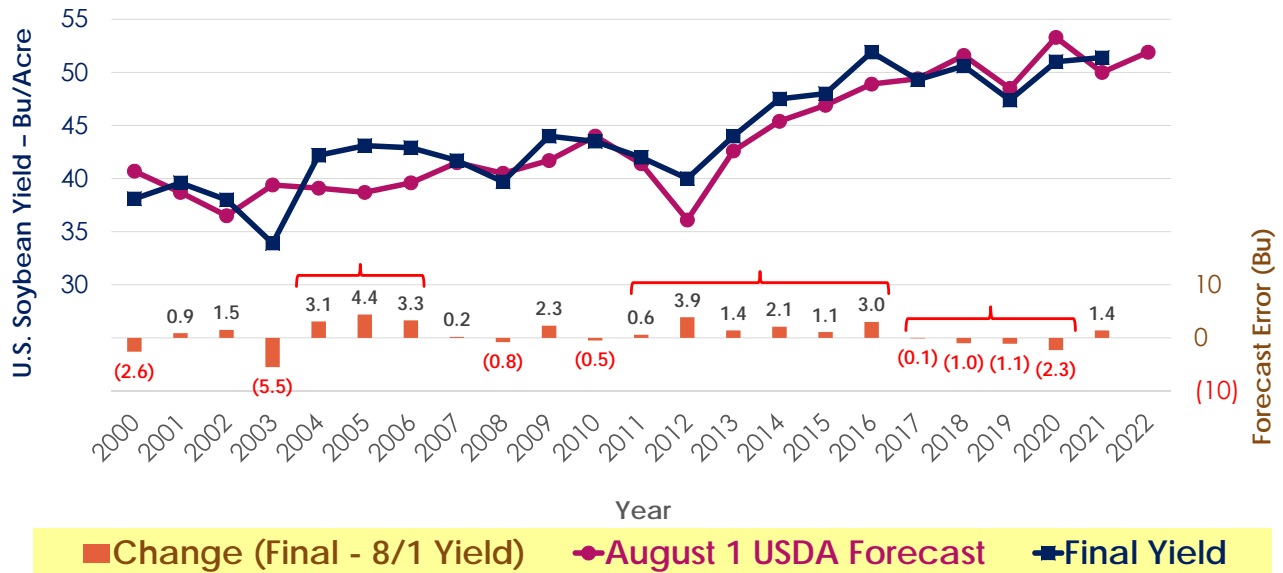
United States Department of Agriculture
National Agricultural Statistics Service

August 12, 2022

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U.S. Soybean Yields: 2000-2022

Final Accuracy of August 1st USDA Forecasts



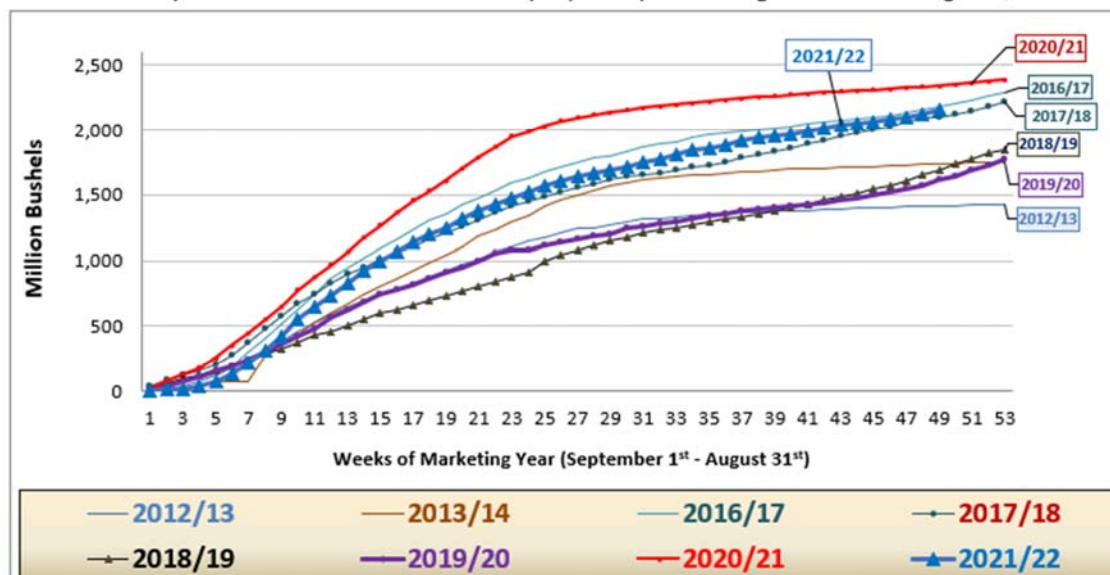
U.S. Soybean Production & Total Supplies: MY 2010/11

thru Projected "New Crop" MY 2022/23 as of the August 12, 2022 USDA WASDE Report



U.S. Soybean Exports: MY 2012/13 & MY 2016/17 - "Current" MY

2021/22 as of recent USDA FAS Weekly Export reports through the week of August 4, 2022



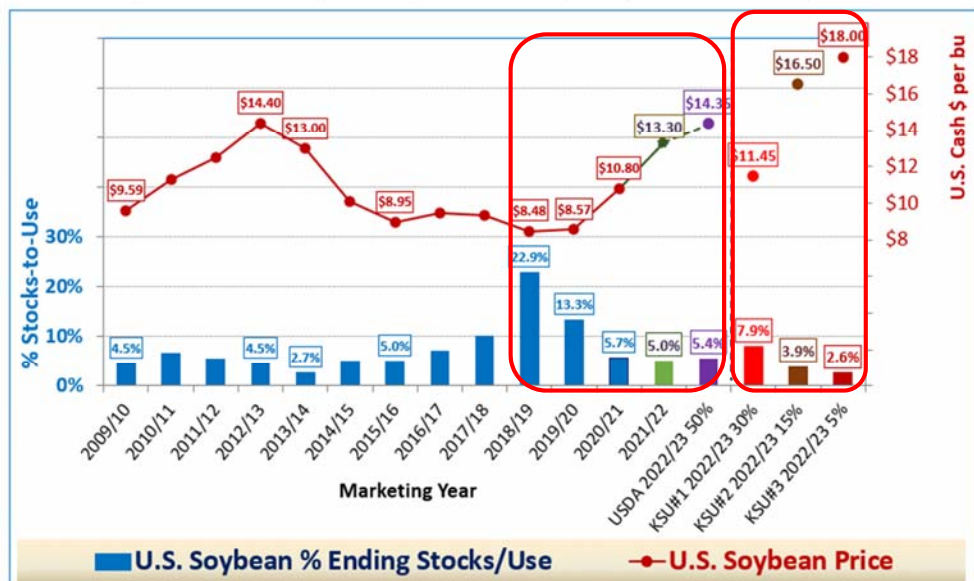
U.S. Soybean Supply-Demand Balance Sheet: "New Crop" MY

2022/23 as of the August 12, 2022 USDA WASDE report with KSU Scenarios for "New Crop" MY 2022/23

Item	A. USDA WASDE "New Crop" 2022/23 August 12, 2022	B. KSU Scenario #1 "New Crop" 2022/23 Low Exports: 2,080 bb	C. KSU Scenario #2 "New Crop" 2022/23 Low Yields: 50.5 bu/ac Lower Exports: 2,100 bb	D. KSU Scenario #3 "New Crop" 2022/23 Lower Yields: 49.0 bu/ac Lower Exports: 2,000 bb
% Probability of Occurring (KSU)	50% ^{KSUest}	30% ^{KSUest}	15% ^{KSUest}	5% ^{KSUest}
Planted Area (million acres)	88.025	88.025	88.025	88.025
Harvested Area (million acres)	87.211	87.211	87.211	87.211
% Harvested/Planted Area	99.08%	99.08%	99.08%	99.08%
Yield / harvested acre (bu/ac)	51.9	51.9	50.5	49.0
Beginning Stocks (million bushels)	225	225	225	225
Production (million bu.)	4,531	4,531	4,404	4,273
Imports (million bu.)	15	15	15	15
Total Supply (million bu.)	4,771	4,771	4,644	4,483
Domestic Crushings	2,245	2,245	2,245	2,245
Exports	2,155	2,080	2,100	2,000
Seed	102	102	102	102
Residual	24	24	24	24
Total Use	4,526	4,451	4,471	4,371
Ending Stocks	245	320	173	112
% Ending Stocks-to-Use	5.41%	7.89%	3.87%	2.56%
Days of Supply (% S/U x 365 days)	19.8 days	26.2 days	14.1 days	9.4 days
U.S. Avg. Farm Price (\$/bu)	\$14.35 ^{USDA} Vs \$13.66/bu KSU Futures & Basis-based forecast 8/10/2022	\$11.45 Vs \$13.66/bu KSU Futures & Basis-based forecast 8/10/2022	\$16.50 Vs \$13.66/bu KSU Futures & Basis-based forecast 8/10/2022	\$18.00 Vs \$13.66/bu KSU Futures & Basis-based forecast 8/10/2022

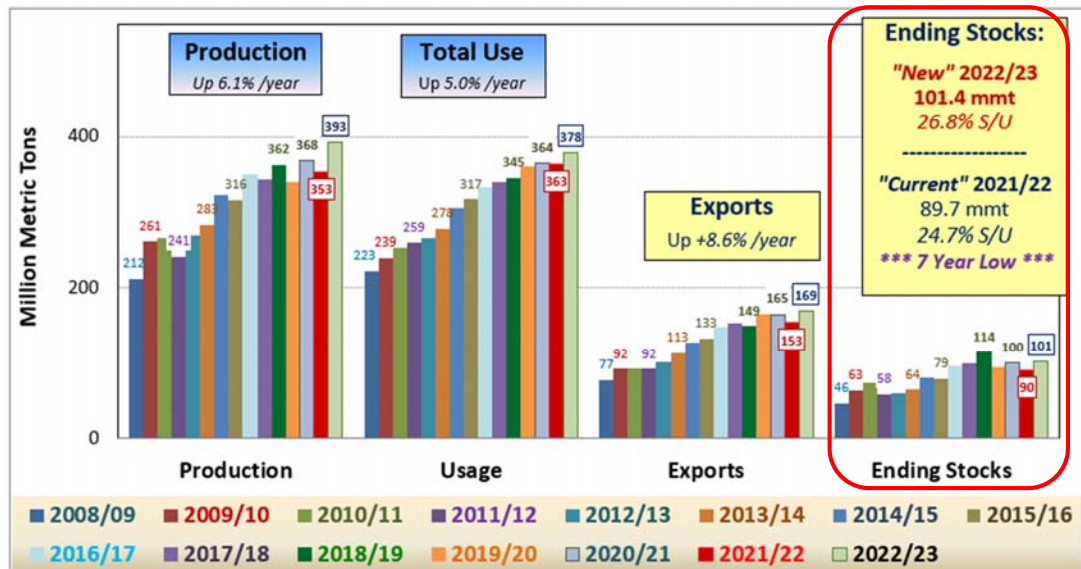
U.S. Soybean % Stocks/Use vs U.S. Cash \$'s

2009/10 – “New Crop” 2022/23 as of the August 12, 2022 USDA WASDE, with KSU scenarios



World Soybean Usage & Ending Stocks

MY 2008/09 through “New Crop” MY 2022/23 as of the August 12, 2022 WASDE Report



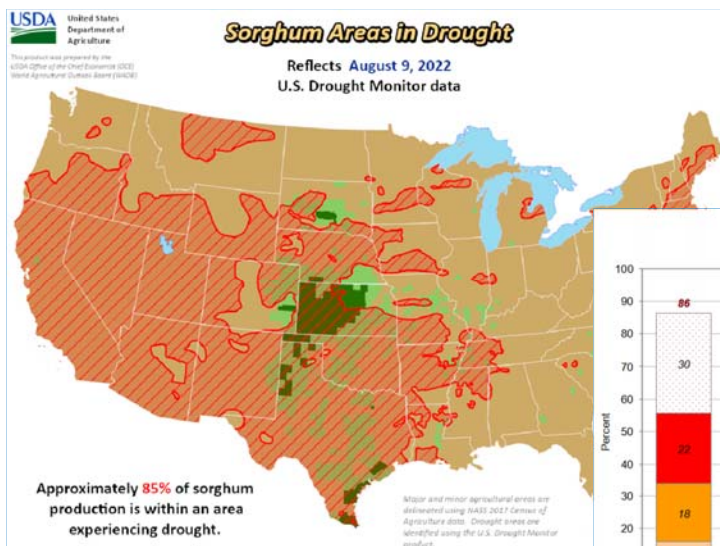
Sorghum Markets

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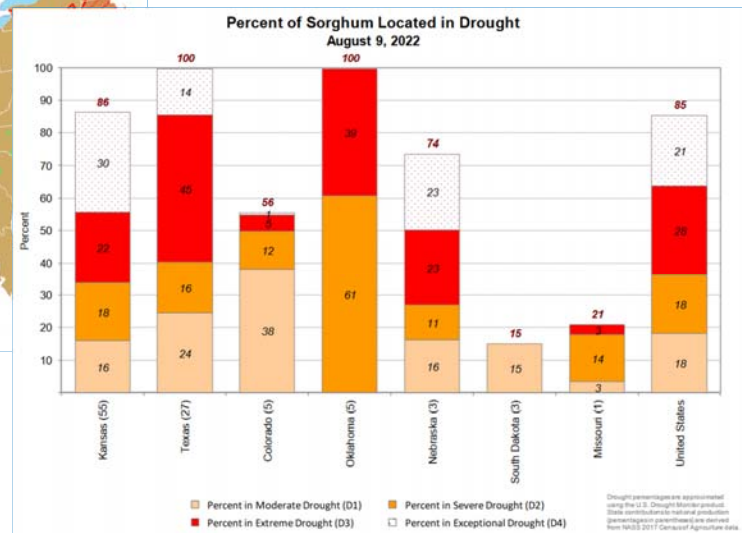


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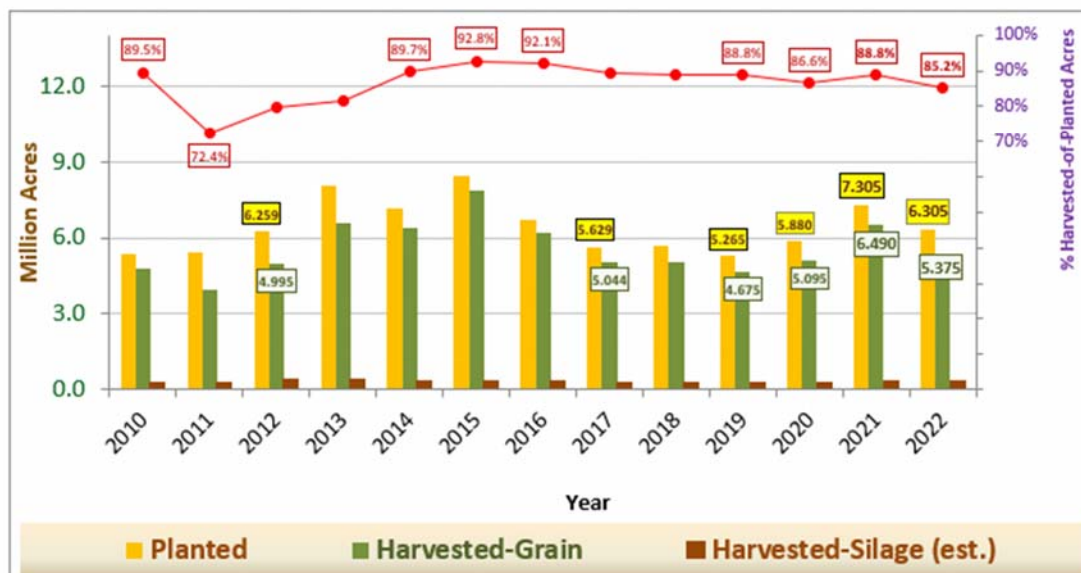


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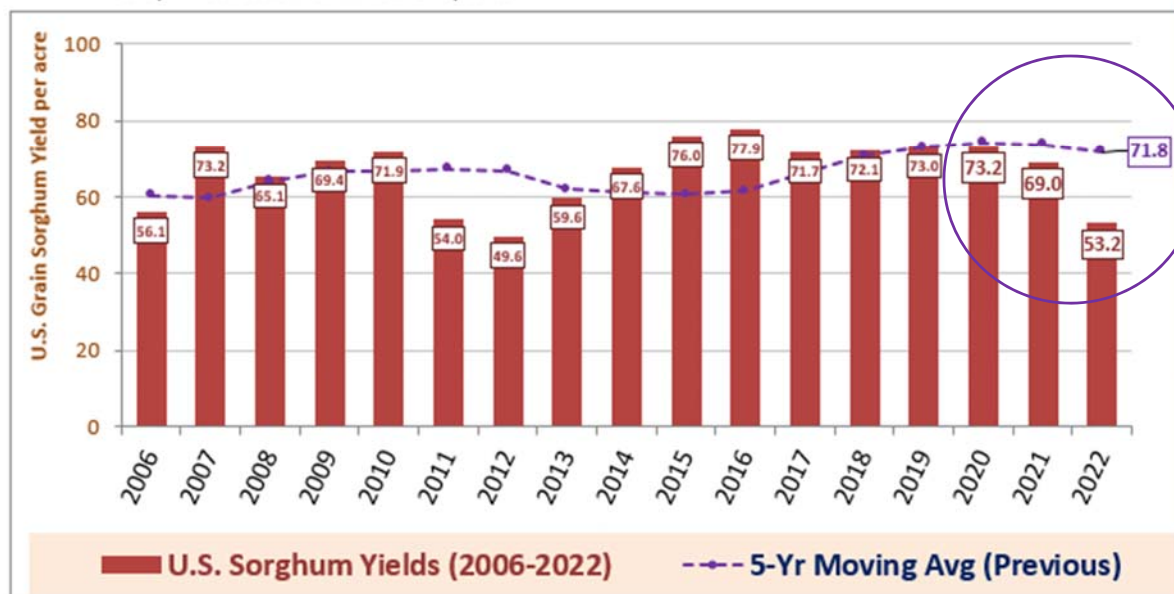
U.S. Grain Sorghum Planted & Harvested Acreage

(2010 – 2022) as of the August 12, 2022 USDA WASDE report



U.S. Grain Sorghum Yields for 2006-2022 as of the August 12, 2022 USDA

Crop Production & WASDE reports





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Cotton Markets

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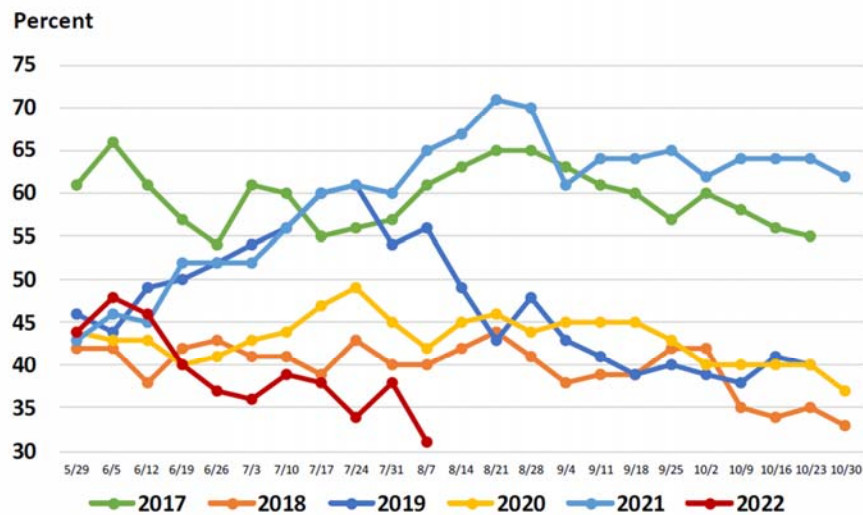
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United States Cotton Condition Percent Rated Good to Excellent



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United States Department of Agriculture
National Agricultural Statistics Service

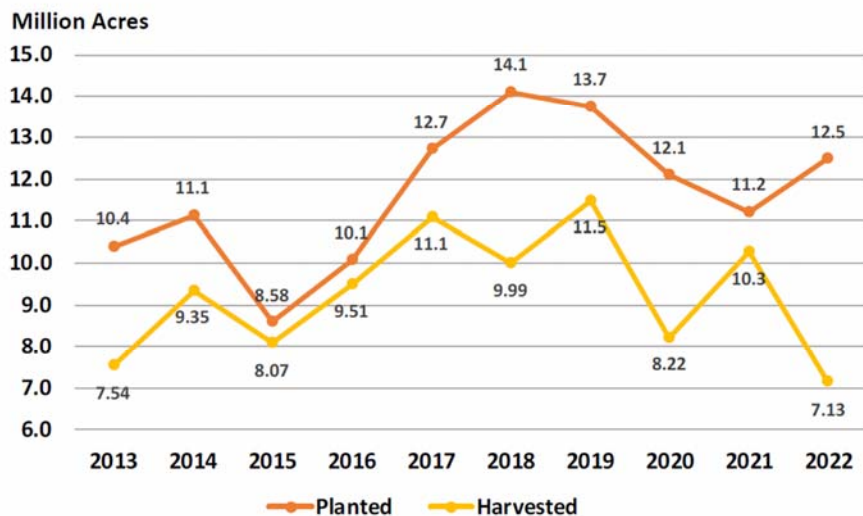
August 12, 2022



Cotton Acres United States



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United States Department of Agriculture
National Agricultural Statistics Service

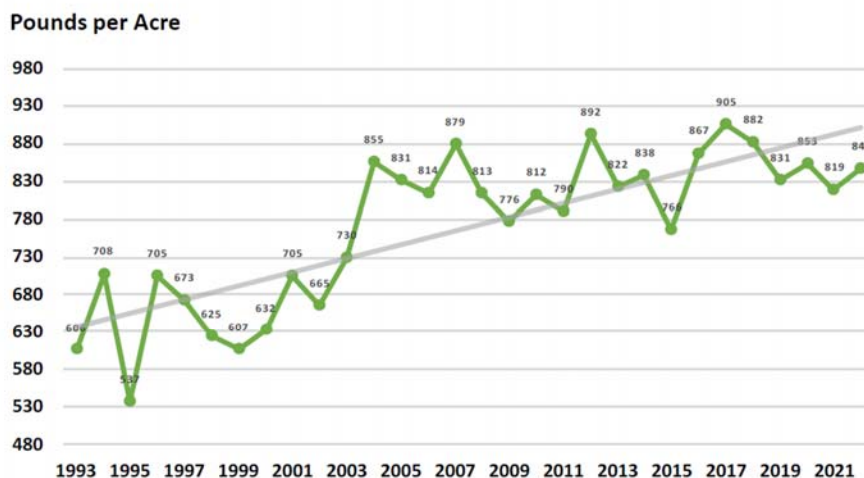
August 12, 2022



Cotton Yield United States



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United States Department of Agriculture
National Agricultural Statistics Service

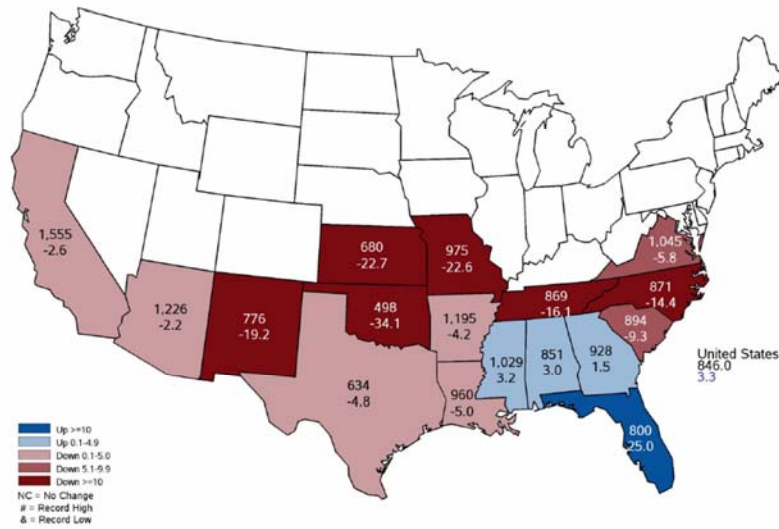
August 12, 2022



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August 2022 Cotton Yield

Pounds and Percent Change from Previous Year



United States Department of Agriculture
National Agricultural Statistics Service

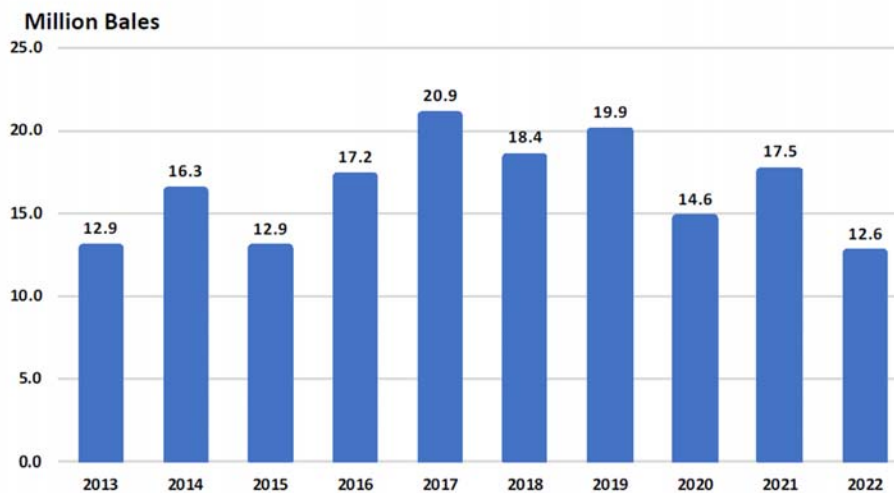
August 12, 2022



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Cotton Production

United States



United States Department of Agriculture
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August 12, 2022

Closing Perspective

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What to anticipate: Fall 2022 – Year 2023

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□ USDA Reports ⇒ *Bringing grain market volatility*

- Release dates: Sept. 12th, Oct. 12th, Nov. 9th, Dec. 9th & January 2023
 - Risk of further 2022 crop production declines for U.S. corn, soybean & HRS wheat from the northern states – yields or abandoned acres
 - Would be *supportive-to-bullish* to grains – depending on degree of crop declines

□ **“Active” Domestic & Foreign grain purchases @ harvest**

- User's looking to secure available “new crop” supplies
- *“Inverted” futures & strong basis* possible during Sep-Nov²⁰²² Quarter

What to anticipate: Fall 2022 – Year 2023

□ Fall Seeding²⁰²² of Hard Red Winter Wheat in Kansas

- Support from strong “new crop” HRW Wheat futures & Prospects for high 2023 crop Revenue Insurance Planning prices
 - JULY²⁰²³ KC HRW Wheat futures @ \$8.68 /bu 8/16/2022
- Strong price competition for acres from other Kansas crops in 2023 (Feedgrains & oilseeds)
- Soil moisture prospects in Fall 2022 will likely be the key factor
 - La Nina weather pattern continuation could cause dry conditions in fall 2022

What to anticipate: Fall 2022 – Year 2023

□ 2023 Spring Planting of Feedgrains & Oilseeds

- With tight stocks across crops – any threats to successfully planting 2023 U.S. corn or soybeans could cause **STRONG** market price volatility
 - NOV²⁰²³ Soybean futures @ \$13.35 ¾ /bu 8/16/2022
 - DEC²⁰²³ Corn futures @ \$5.86 /bu 8/16/2022
 - Fall 2023 “New Crop” Soy/Corn \$ Ratio = $\$13.35 \frac{3}{4} \div \$5.86 = 2.28$ (Corn advantage)
- Strong “new crop” price competition likely for 2023 planted acres between Feedgrains & Oilseeds ⇒ beginning *soon* after the 2022 fall harvest

What to anticipate: Fall 2022 – Year 2023

Q? Are Corn, Soybeans & Wheat futures *at risk* to fall sharply in the last ½ of year 2023?

- With "tight" beginning stocks across these crops – less risk of declines until at least late spring – early summer
 - THEN the *risk* to grain sellers is that crop markets will discount the risk of *"short crops"* in 2023
- ⇒ IF in Summer 2023 U.S. & Foreign crop prospects become *"OK-to-Good"*, THEN grain prices will likely *"slide"* into Fall 2023 (*by traders with no motive to "buy the market"*)



Questions?

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