

# Soybean Market Outlook for 2023

## 2023 Kansas Soybean School

Salina, Kansas

February 22, 2023

DANIEL O'BRIEN

EXTENSION AGRICULTURAL ECONOMIST

**KANSAS STATE**  
UNIVERSITY

Department of Agricultural Economics



## Soybean Markets



**KANSAS STATE**  
UNIVERSITY

Department of Agricultural Economics

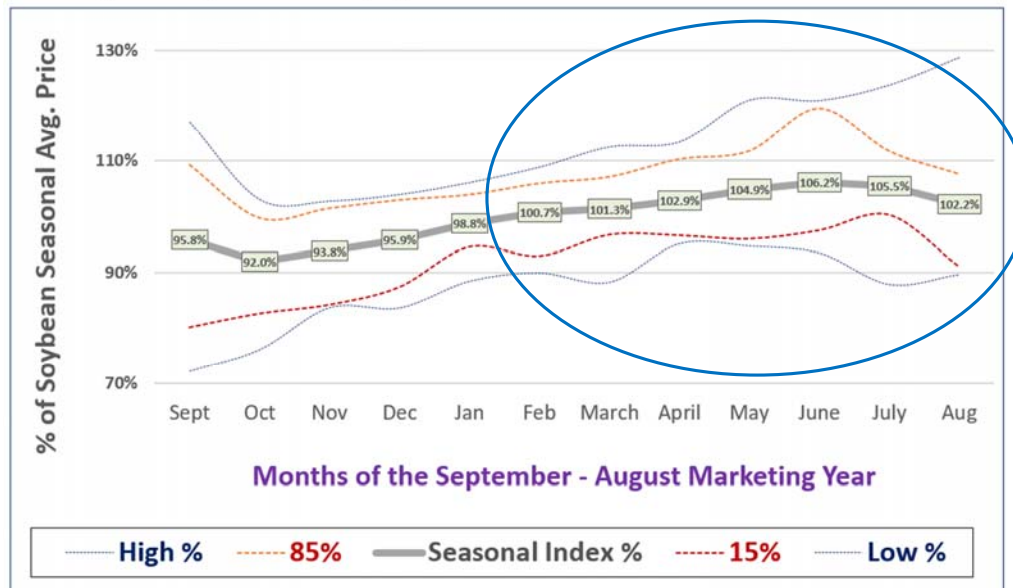
CME Soybean Futures <i>2/21/2023 Closes</i>			
Month	Close	Change	Carry /mo
<b>Mar<sup>Lead</sup> 23</b>	<b>\$15.48 <sup>3</sup>/<sub>4</sub></b>	<b>↑ \$0.21 <sup>1</sup>/<sub>2</sub></b>	---
May 23	\$15.44	↑ \$0.21 <sup>3</sup> / <sub>4</sub>	-\$0.02 <sup>375</sup>
July 23	\$15.36 <sup>3</sup> / <sub>4</sub>	↑ \$0.22 <sup>1</sup> / <sub>4</sub>	-\$0.03 <sup>625</sup>
Aug 23	\$15.01 <sup>1</sup> / <sub>4</sub>	↑ \$0.18 <sup>1</sup> / <sub>4</sub>	-\$0.35 <sup>50</sup>
Sep 23	\$14.32 <sup>1</sup> / <sub>2</sub>	↑ \$0.15 <sup>1</sup> / <sub>4</sub>	-\$0.68 <sup>75</sup>
<b>Nov<sup>Hvst</sup> 23</b>	<b>\$13.99</b>	<b>↑ \$0.12 <sup>3</sup>/<sub>4</sub></b>	<b>-\$0.16<sup>75</sup></b>
Jan 24	\$14.03 <sup>1</sup> / <sub>2</sub>	↑ \$0.13	+\$0.02 <sup>25</sup>
Mar 24	\$13.91 <sup>1</sup> / <sub>2</sub>	↑ \$0.13 <sup>1</sup> / <sub>4</sub>	-\$0.06

## CME Continuous Soybean Futures *Weekly to 2/17/2023*



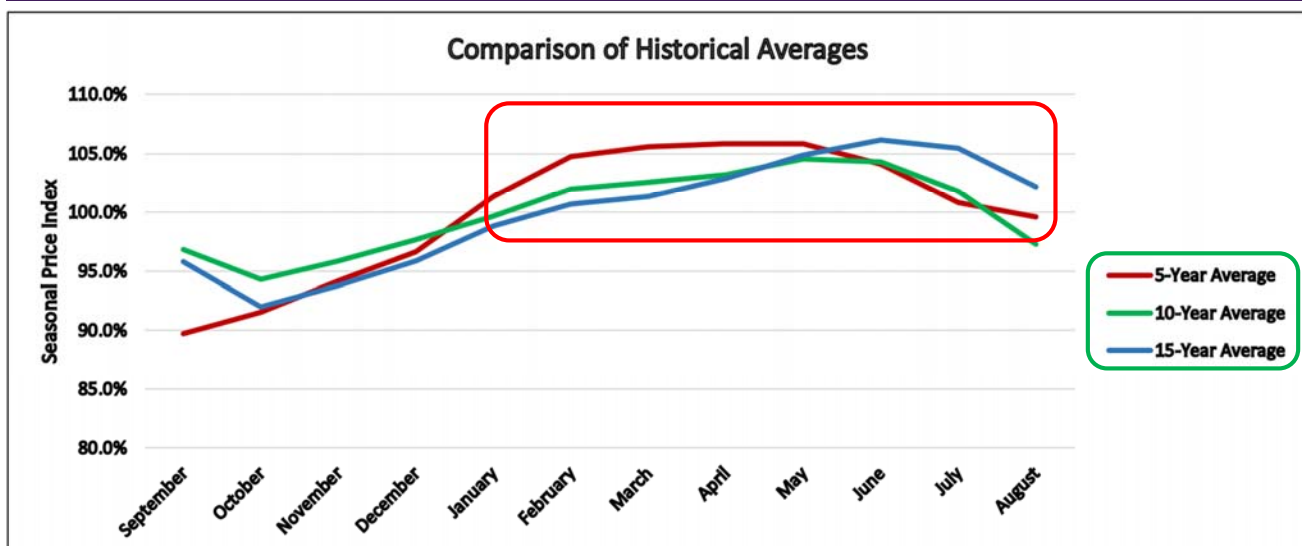
# Kansas Soybean Seasonal Price Index

(MY 1999/00 – MY 2021/22) – Source: KSU Seasonal Grain Price Indices



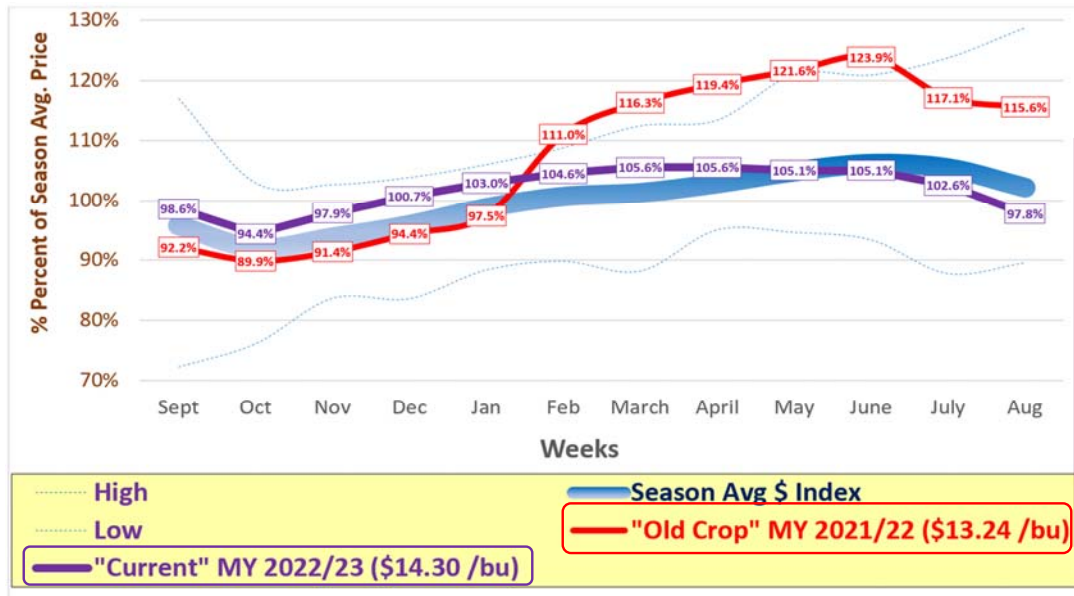
## Changing Kansas Seasonal Avg. Soybean \$'s

*For the last 5, 10, & 15 Years in Kansas*



# Kansas Soybean Seasonal Prices

Seasonal \$ Trends + MY 2021/22 & "Current" MY 2022/23 As of 2/17/2023



## USDA Forecasts:

"Old Crop"  
MY 2021/22  
= \$13.30 /bu <sup>U.S.</sup>

"New Crop"  
MY 2022/23  
= \$14.30 /bu <sup>U.S.</sup>

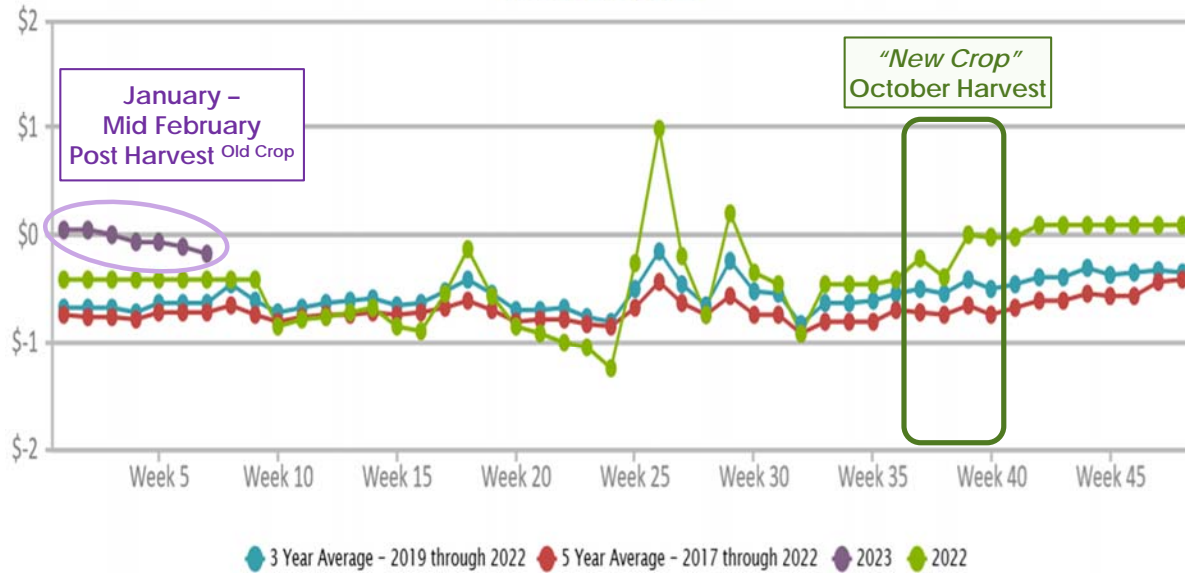
8

Kansas Cash & Futures Prices						
Date						
2/21/2023 (Market Closes)						
Grain Futures Contracts		Closing \$				
MAR 2023 Soybeans <sup>(Lead Contract)</sup>		\$15.4875				
NOV 2023 Soybeans <sup>(2023 Harvest Contract)</sup>		\$13.9900				
2/21/2023 (Market Closes)		Cash Grain & Harvest Contract Prices @ Kansas Grain Elevators				
Cash Market Spot & FC Bids	Representing the highest bids available at each location					
	Colby <sup>Area</sup>	Salina <sup>Area</sup>	Topeka <sup>Area</sup>	Garden City <sup>Area</sup>	Hutchinson <sup>Area</sup>	Columbus <sup>Area</sup>
	NW KS	NC KS	EC-NE KS	SW KS	SC KS	SE KS
Soybean Spot Cash\$	\$14.79	\$15.29	\$15.54	\$15.24	\$15.49	\$15.60
Soybean Spot Cash Basis	(\$0.70)	(\$0.20)	\$0.05	(\$0.25)	\$0.00	\$0.11
Soybean Harvest FC\$: Fall <sup>2022</sup>	\$13.04	\$13.49	\$13.44	\$13.14	\$13.20	\$13.39
Soybean Harvest FC\$ Basis	(\$0.95)	(\$0.50)	(\$0.55)	(\$0.85)	(\$0.79)	(\$0.60)
"New Crop" Soybean vs Corn \$ Ratio	2.23	2.32	2.38	2.05	2.21	2.35



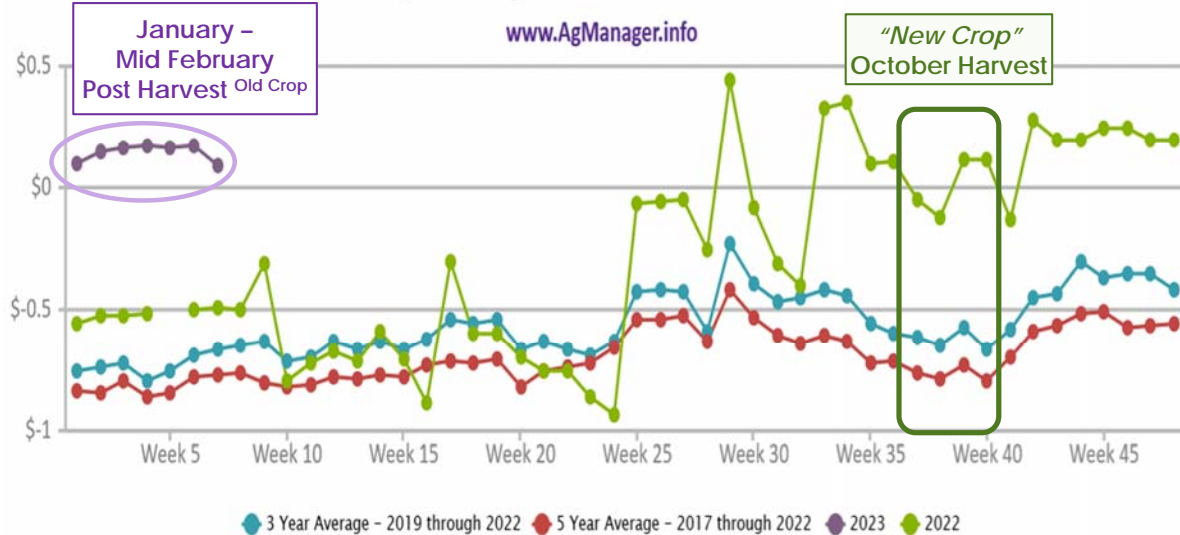
## SALINA, KS: Soybeans Basis - SCOLAR GRAIN CO

www.AgManager.info

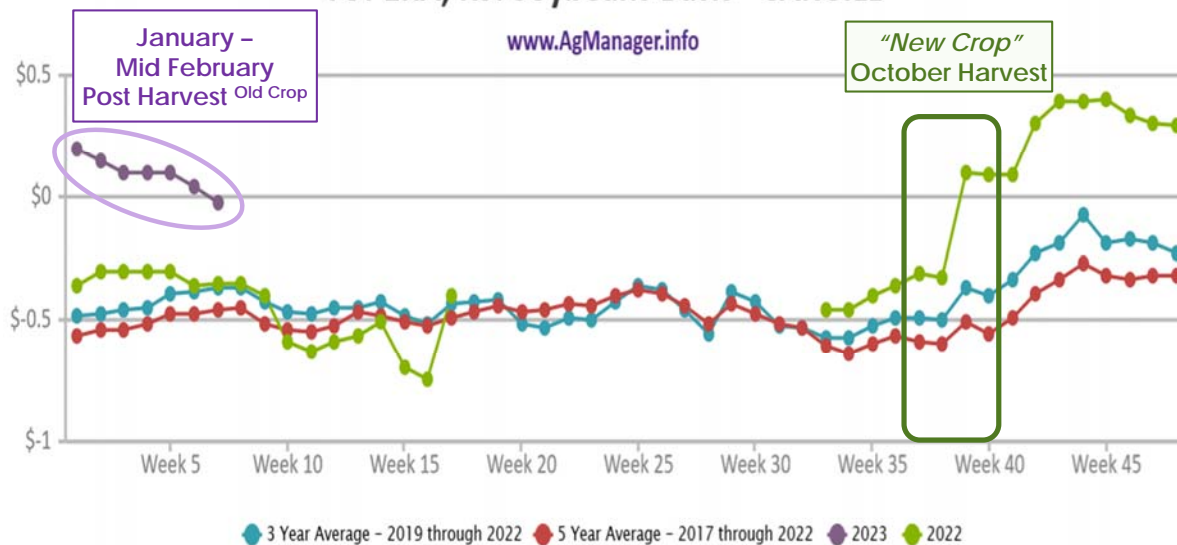


## HUTCHINSON, KS: Soybeans Basis - MID KANSAS COOP

www.AgManager.info



## TOPEKA, KS: Soybeans Basis - CARGILL



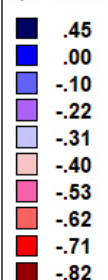
## Soybean Basis, 02-15-2023

### Soybean Basis Deviation, 02-15-2023

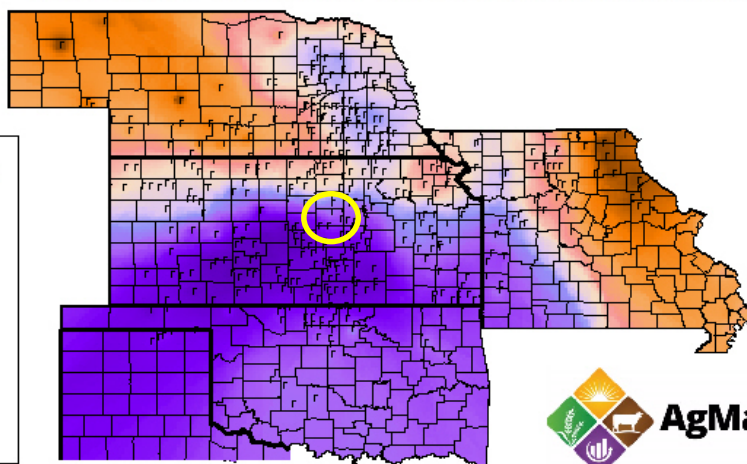
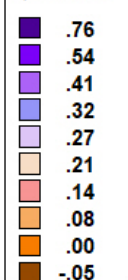
Basis Deviation = Current Basis - 3 Year Average Basis (2020, 2021, 2022)

CBT Mar  
Futures  
Price: \$15.26

\$/Bushel



\$/Bushel



# 2023 Irrigated Soybeans (center-pivot) Cost-Return

## -----North Central Kansas - Average yields

13

item	unit	price	quantity	amount	Sub-total
<b>INCOME</b>					
Product					
Soybeans - North Central KS	bu	\$12.66	75.00	\$949.50	\$949.50
--TOTAL INCOME--					\$949.50
<b>DIRECT EXPENSES</b>					
Additional labor					\$1.04
Crop insurance					\$12.64
Diesel					\$15.96
Fertilizers					\$66.98
Herbicides					\$82.63
Irrigation energy (NG)					\$53.20
Irrigation labor					\$8.10
Miscellaneous					\$12.10
Operator labor					\$5.59
Repair & Maintenance					\$19.42
Seeds					\$64.26
Interest on operating capital		8% percent on direct expenses			\$13.68
<b>TOTAL DIRECT EXPENSES--</b>					\$355.59
-----Total direct expenses per bu \$4.74					
<b>FIXED EXPENSES</b>					
Cash rent					\$195.00
Capital recovery (depreciation + interest)					\$235.08
<b>TOTAL FIXED EXPENSES--</b>					\$430.08
-----Total expenses per bu \$10.48					
RETURNS ABOVE DIRECT EXPENSES					\$593.91
RETURNS ABOVE TOTAL SPECIFIED EXPENSES					\$163.82

### 2023 Irrigated Corn Costs North Central KS

Yield = 75 bu /ac

Total Direct Expenses  
= \$4.74 /bu

Total of ALL Expenses  
= \$10.48 /bu

13.5 acre-inches of water applied  
150 foot well depth  
\$ 3.94 fuel cost per acre-inch of water applied  
.4 Mcf of natural gas per acre-inch of water applied  
\$ 9.75 per Mcf for cost of natural gas  
5.46 Mcf of fuel used in total

# 2023 Soybean Cost-Return Budget in North Central Kansas

## -----Average yields

14

Item	unit	price	quantity	amount	Sub-total
<b>INCOME</b>					
Product					
Soybeans - North Central KS	bu	\$12.66	41.00	\$519.06	\$519.06
--TOTAL INCOME--					\$519.06
<b>DIRECT EXPENSES</b>					
Additional labor					\$1.06
Crop insurance					\$19.01
Diesel					\$16.77
Fertilizers					\$43.71
Herbicides					\$79.02
Miscellaneous					\$7.86
Operator labor					\$6.22
Repair & Maintenance					\$14.86
Seeds					\$64.26
Interest on operating capital		8% percent on direct expenses			\$10.11
<b>TOTAL DIRECT EXPENSES--</b>					\$262.89
-----Total direct expenses per bu \$6.41					
<b>FIXED EXPENSES</b>					
Cash rent					\$95.00
Capital recovery (depreciation + interest)					\$54.28
<b>TOTAL FIXED EXPENSES--</b>					\$149.28
-----Total expenses per bu \$10.05					
RETURNS ABOVE DIRECT EXPENSES					\$256.17
RETURNS ABOVE TOTAL SPECIFIED EXPENSES					\$106.89

### 2023 Dryland Corn Costs North Central KS

Yield = 41 bu /ac

Total Direct Expenses  
= \$6.41 /bu

Total of ALL Expenses  
= \$10.05 /bu

Kansas Cash & Futures Prices						
Date						
2/21/2023 (Market Closes)						
Grain Futures Contracts		Closing \$				
MAR 2023 Soybeans	(Lead Contract)	\$15.4875				
NOV 2023 Soybeans	(2023 Harvest Contract)	\$13.9900				
2/21/2023 (Market Closes)		Cash Grain & Harvest Contract Prices @ Kansas Grain Elevators				
		Representing the highest bids available at each location				
Cash Market Spot & FC Bids	Colby <sup>Area</sup>	Salina <sup>Area</sup>	Topeka <sup>Area</sup>	Garden City <sup>Area</sup>	Hutchinson <sup>Area</sup>	Columbus <sup>Area</sup>
	NW KS	NC KS	EC-NE KS	SW KS	SC KS	SE KS
Soybean Spot Cash\$	\$14.79	\$15.29	\$15.54	\$15.24	\$15.49	\$15.60
Soybean Spot Cash Basis	(\$0.70)	(\$0.20)	\$0.05	(\$0.25)	\$0.00	\$0.11
Soybean Harvest FC\$: Fall <sup>2022</sup>	\$13.04	\$13.49	\$13.44	\$13.14	\$13.20	\$13.39
Soybean Harvest FC\$ Basis	(\$0.95)	(\$0.50)	(\$0.55)	(\$0.85)	(\$0.79)	(\$0.60)
"New Crop" Soybean vs Corn \$ Ratio	2.23	2.32	2.38	2.05	2.21	2.35

# Soybean Market Perspective





# Soybean Market Outlook <sup>2023</sup> in Kansas, the U.S. & Globally

17

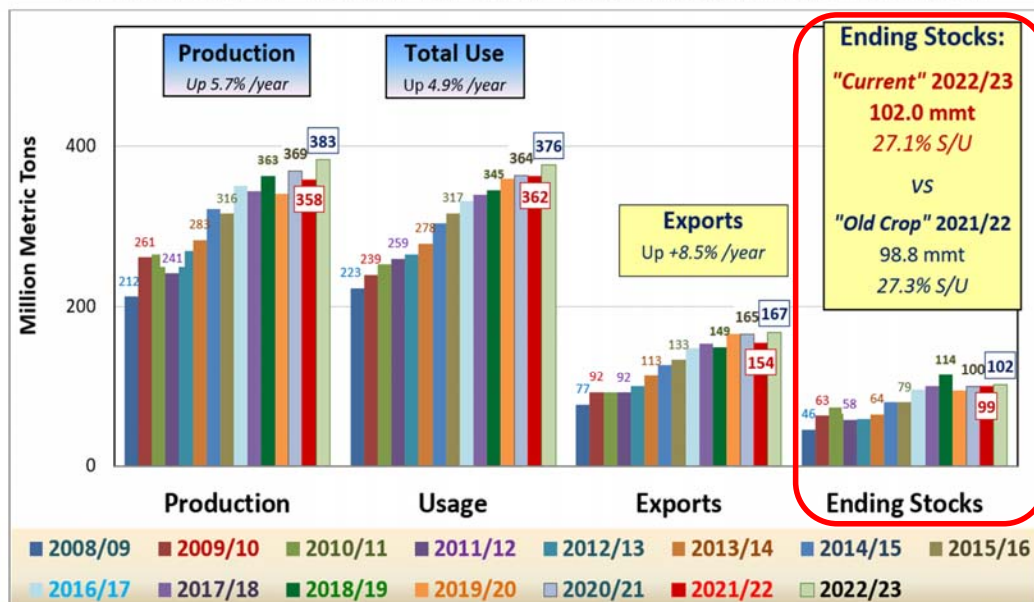
## 1) “Tight!” 2023 Global Corn, Other Grain & Oilseed Stocks

- *The importance of South America’s 2023 corn & soybean crops!!*
- Occurring &/or Anticipated in 2023:
  - Drought in Argentina
  - Smaller Crops & Exports from Ukraine (Sunflower, corn, wheat)

## World Soybean Usage & Ending Stocks

18

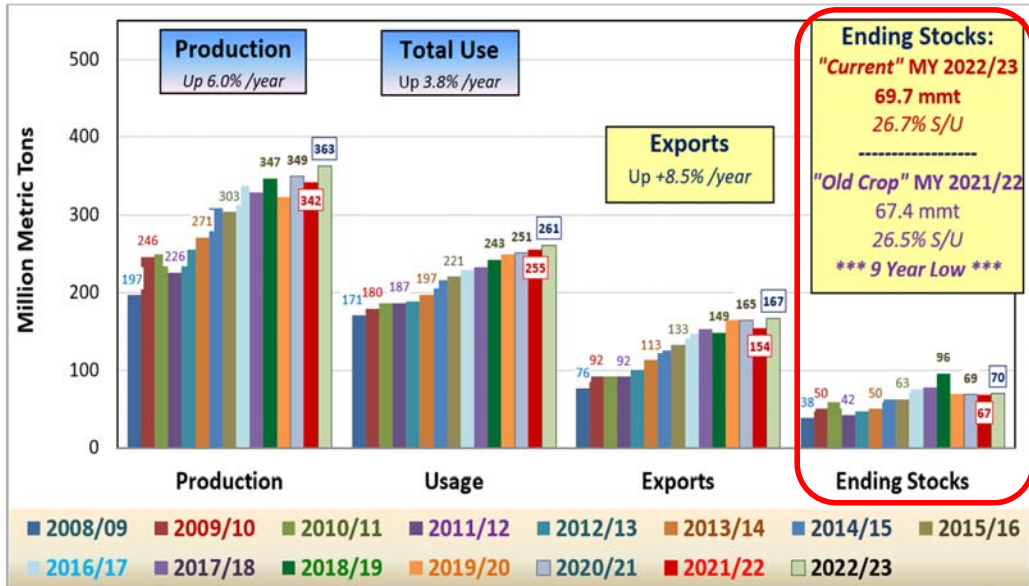
MY 2008/09 thru “Current” MY 2022/23 as of the February 8, 2023 WASDE Report



# “World Less-China” Soybean Use & End Stocks

19

MY 2008/09 - “Current” MY 2022/23 as of the February 8, 2023 WASDE Report



# World vs % “World Less-China” Soybean Stocks-to-Use

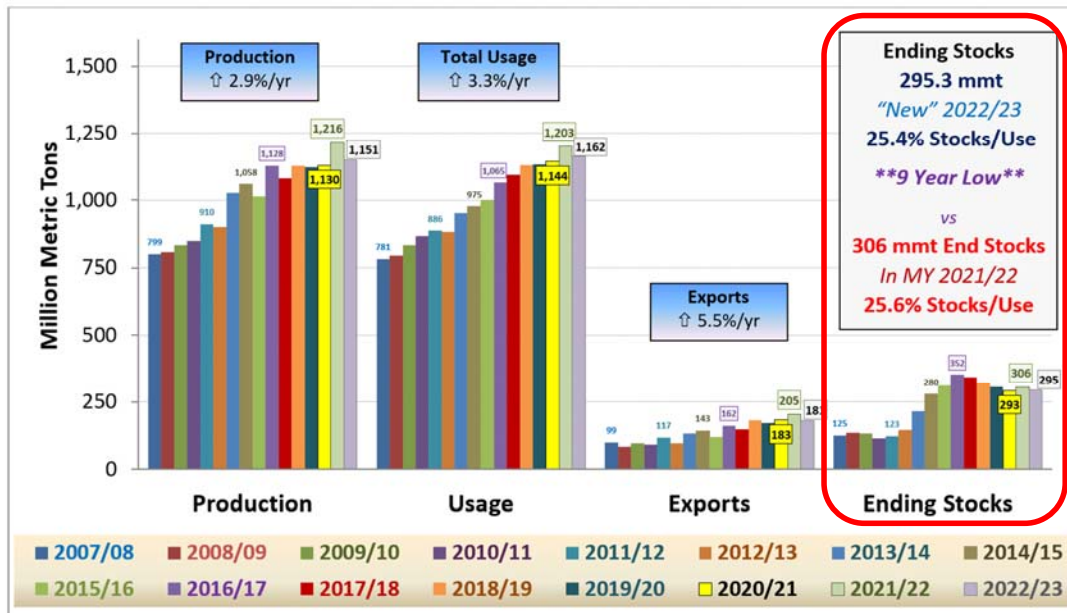
20

MY 2007/08 through “Current” MY 2022/23, as of the February 8, 2023 USDA WASDE report



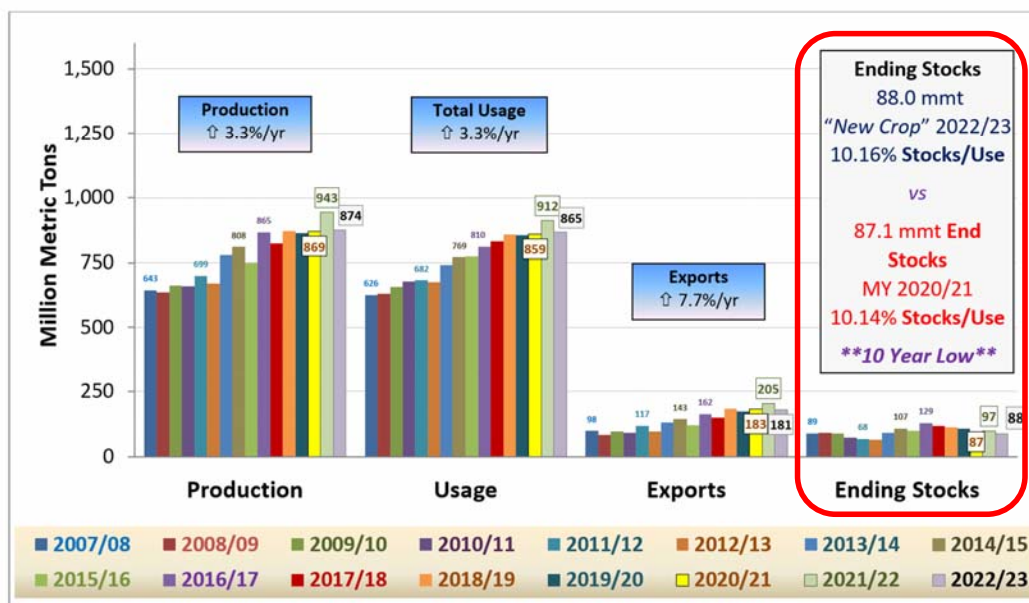
# World Corn Supply-Demand

MY 2007/08 – “Current” MY 2022/23 as of the February 8, 2023 USDA WASDE Report



# “World Less-China” Corn Supply-Demand

MY 2007/08 – “Current” MY 2022/23 as of the February 8, 2023 USDA WASDE Report



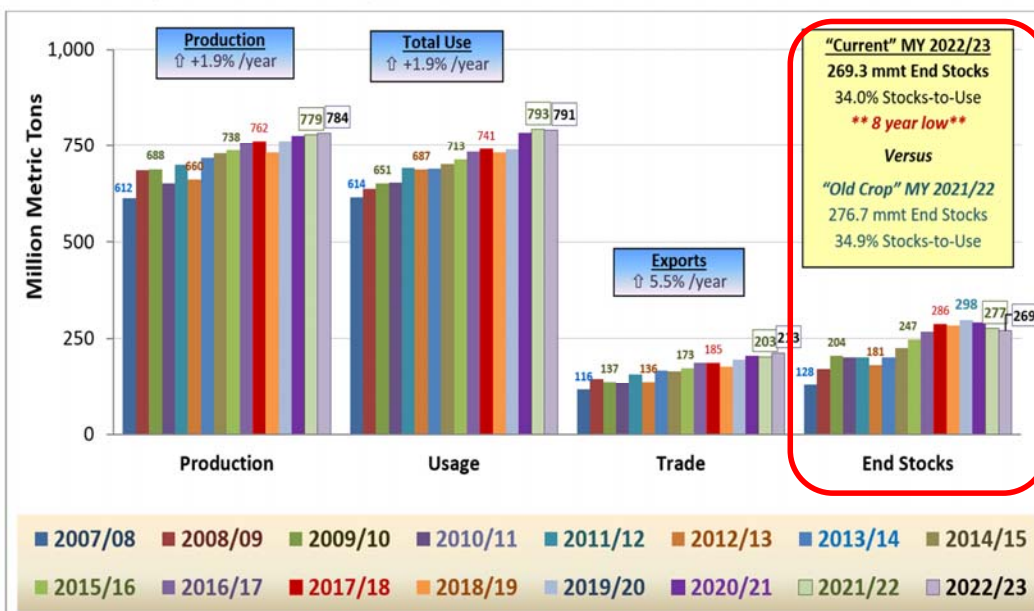
## World vs "World Less-China" Corn % Stocks-to-Use

MY 2007/08 through "Current" MY 2022/23, as of the February 8, 2023 USDA WASDE report.



## World Wheat Usage & Ending Stocks

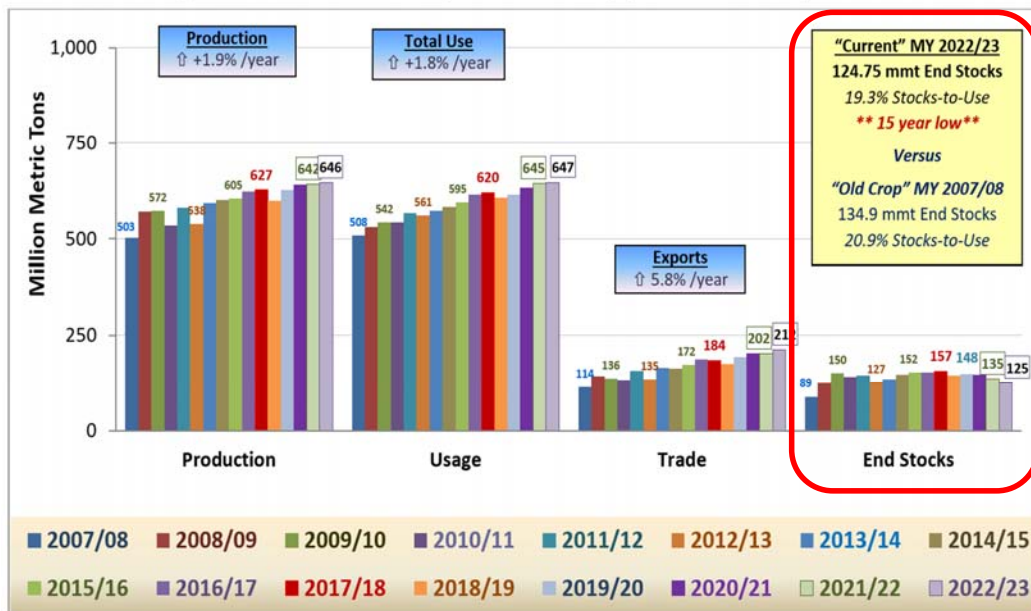
MY 2007/08 - "Current" 2022/23 as of the February 8, 2023 USDA WASDE Report





## “World<sup>Less-China</sup>” Wheat Usage & Ending Stocks

MY 2007/08 - “Current” MY 2022/23 as of the February 8, 2023 USDA WASDE Report



25

## World vs “World<sup>Less-China</sup>” End Stocks & % Stocks-to-Use

MY 2007/08 through “Current” MY 2022/23 as of the February 8, 2023 USDA WASDE report



26

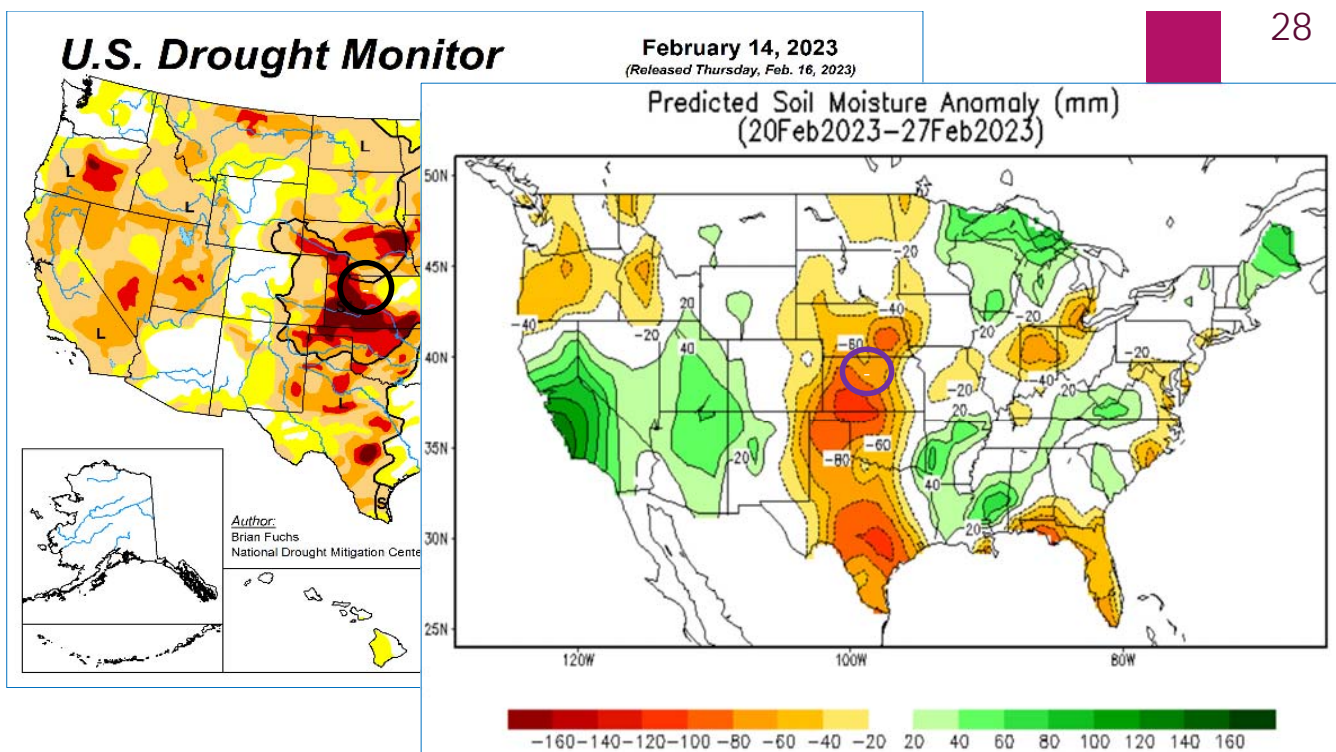
## 2) Continuance of dry La Nina Weather Pattern in 2023???

- “La Nina is expected to continue into winter, with equal chances of La Nina & ENSO-neutral during January-March 2023. In February-April 2023, there is a 71% Chance of ENSO-neutral.”

*U.S. Climate Prediction Center / NCEP January 3, 2023*

- “ENSO-neutral conditions are expected to begin within the next few months, & persist through the Northern Hemisphere spring & early summer.”

*USDA Weekly Weather and Crop Bulletin February 9, 2023 ENSO Diagnostic Discussion*

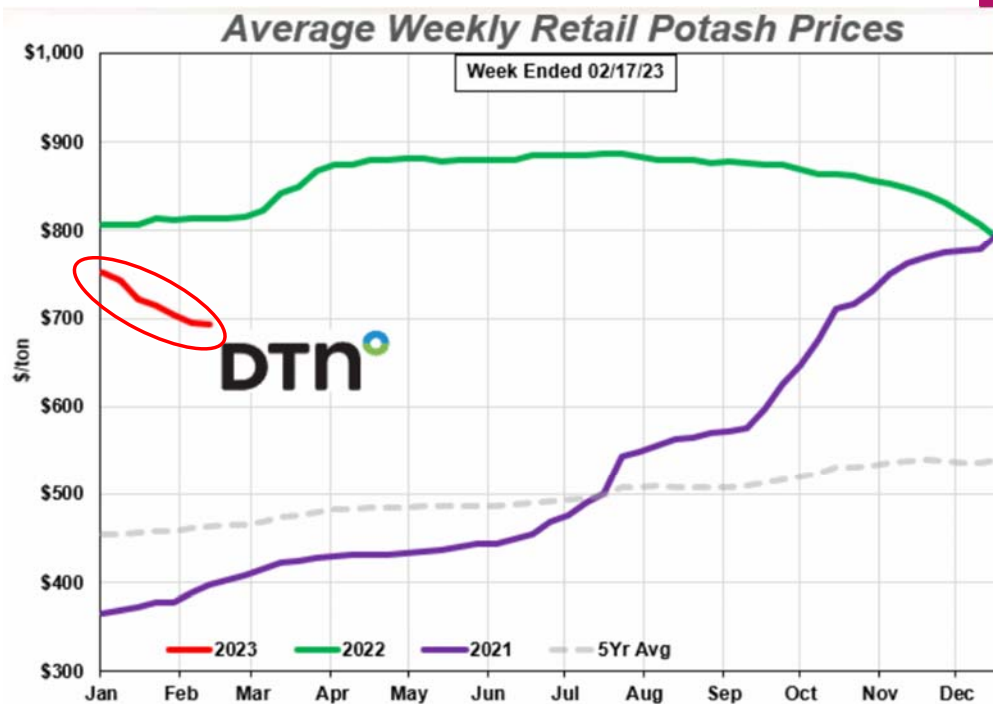
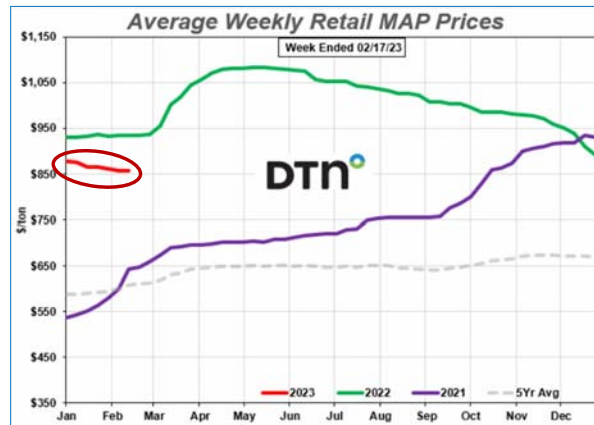
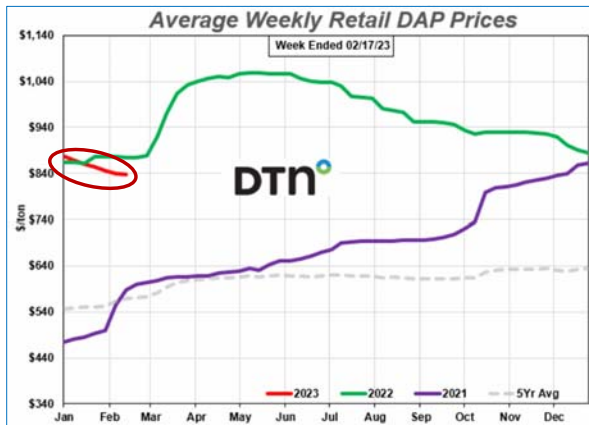




## Grain Market Outlook 2023 .....

31

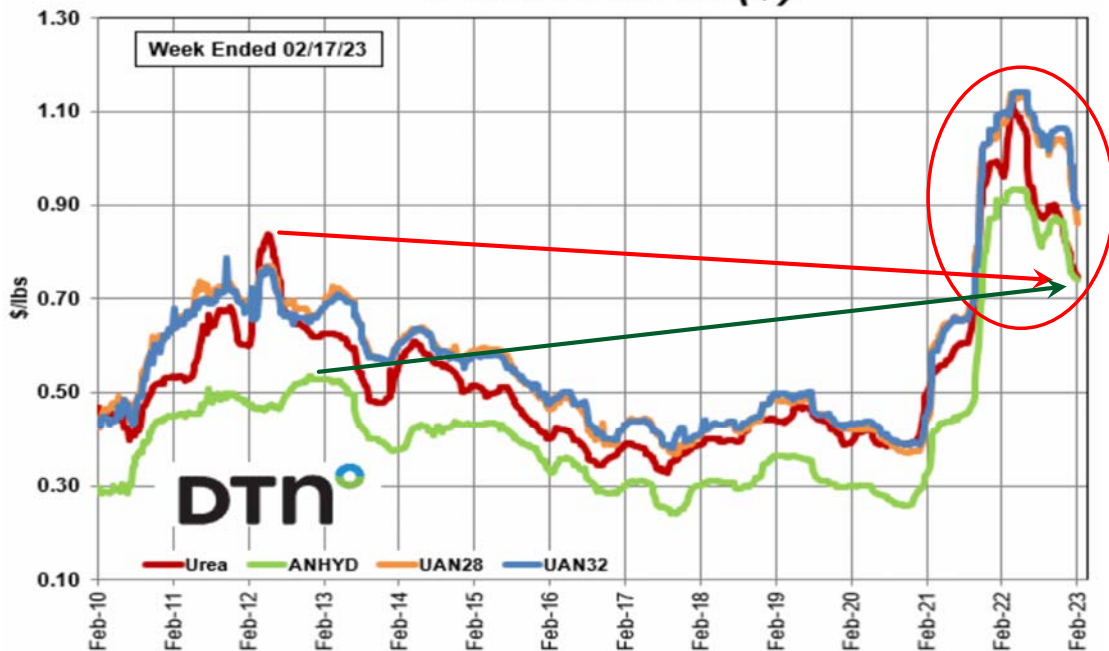
### 3) Moderating prices for Fertilizer & other Crop Inputs – (*but still historically high!*)





## Cost of N/lb. (\$)

33



## What to anticipate in Year 2023

34

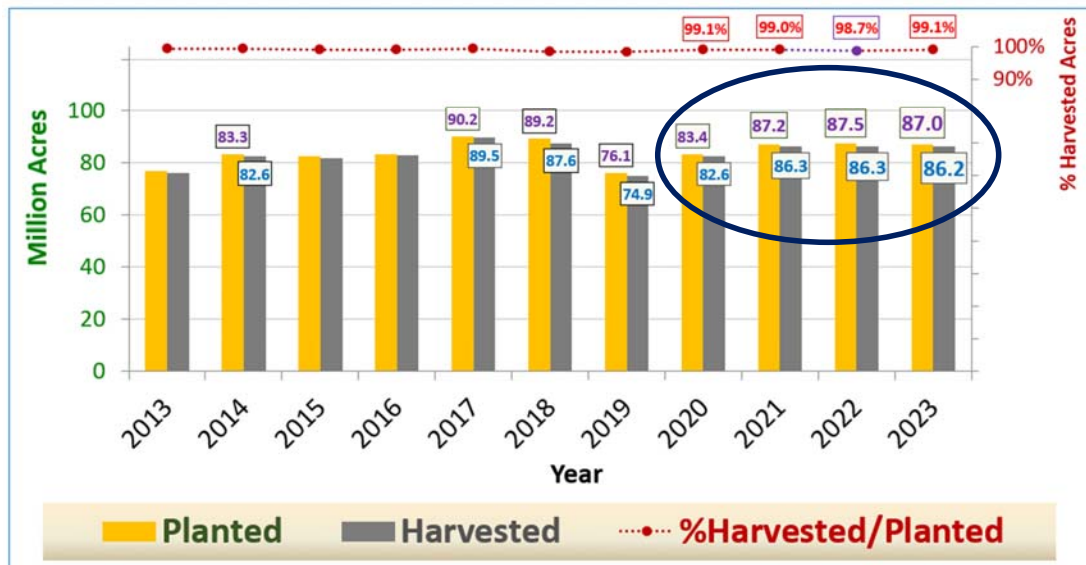
### 4) 2023 Spring Planting of Feedgrains & Oilseeds

- With tight stocks across crops – any threats to planting 2023 U.S. soybeans or corn could cause **STRONG** price volatility
  - NOV<sup>2023</sup> Soybean futures @ \$13.99 /bu <sup>2/21/2023 close</sup>
  - DEC<sup>2023</sup> Corn futures @ \$5.96 ½ /bu <sup>2/21/2023 close</sup>
- 2023 “New Crop” Soy/Corn \$ Ratio =  $\$13.99 \div \$5.96 \frac{1}{2} = 2.35$  (vs 2.52 Avg)
- 2023 USDA projections for planted acres: Soybeans vs Corn
  - ⇒ Predicted small change for **Soybeans**, increase for **Corn**

+ **Corn** Currently

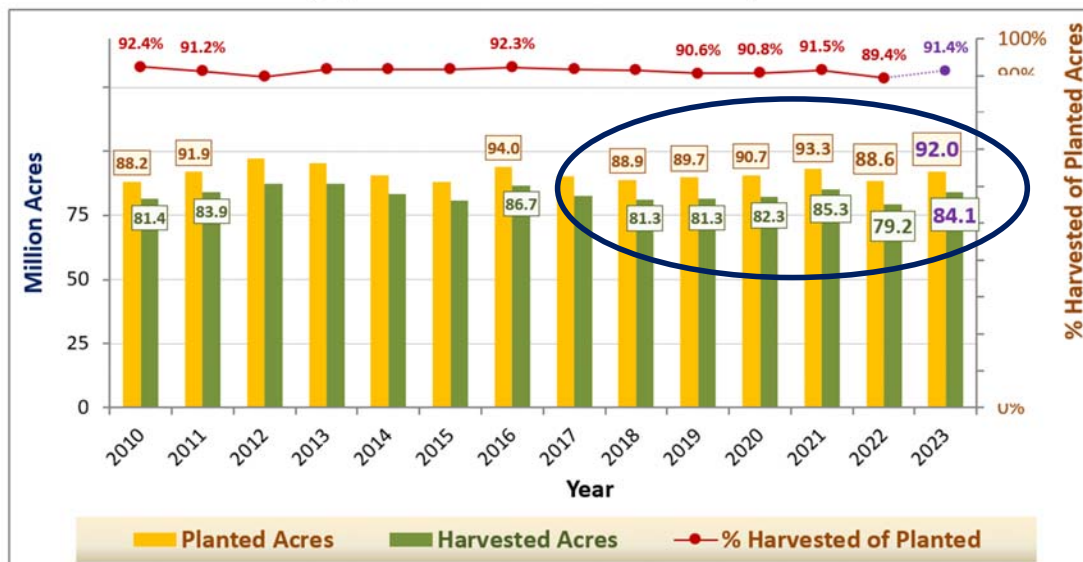
# U.S. Soybean Acreage for 2013-2023

Years 2013-2023 as of the February 8, 2023 USDA WASDE & NASS Reports



# U.S. Corn Acreage for 2010-2023

As of the February 8, 2023 USDA NASS & WASDE Reports



### 5) Impact of Ongoing & Possible Geopolitical Conflicts *In 2023*

- *Ukraine-Russia War???: Prospects for de-escalation / grain trade?*
- *China-Taiwan??? - IF this occurs, it would impact the global economy along with U.S. grain trade*
  - *Impacting U.S. soybeans, grain sorghum, likely all U.S. agricultural commodities – including U.S. corn*

## South America Corn-Soybean Calendar

38

### □ South America Planting Influences ⇒ *"Bid for Acres"*

#### • Brazil & Argentina Corn & Soybean Crop Calendar

##### ○ Brazil

- Corn: 1<sup>st</sup> crop *Planting* – October-December ⇒ Harvest: February-June
- Soybeans: *Planting* – October-December ⇒ Harvest: March-June
- Corn: 2<sup>nd</sup> crop *Planting* – January-February ⇒ Harvest: March-June

##### ○ Argentina

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

## What to anticipate: Year 2023 (2nd of 3)

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

- With "tight" beginning stocks across these crops – less risk of major declines until at least late spring – early summer
- THEN the *risk* to grain sellers is that crop markets will discount the possibility of *"short crops"* in 2023
- ⇒ IF in Summer <sup>2023</sup> U.S. & Foreign crop prospects become *"OK-to-Good"*, THEN grain prices *"slide" lower* into Fall 2023

## What to anticipate: Year 2023 (3rd of 3)

- USDA Reports ⇒ *Often a "driver" of grain market volatility*
  - WASDE: Jan. 12, 2/8\*\*, 3/8, 4/8, 5/12, 6/9, 7/12, 8/11, 9/12.....
  - Planted Area: Prospective Plantings – *March 31*, Acreage – *June 30*
- Prospects for "Active" Demand-Pull for Corn in Western KS
  - User's securing available "new crop" supplies (i.e. *"scrambling!"*)
  - *Possibility of "Inverted" futures & strong basis* during **Sep-Nov<sup>2023</sup>** Quarter *IF* a short crop happens in 2023 ⇒ What are the odds?



# U.S. Soybean Supply-Demand Balance Sheet

41

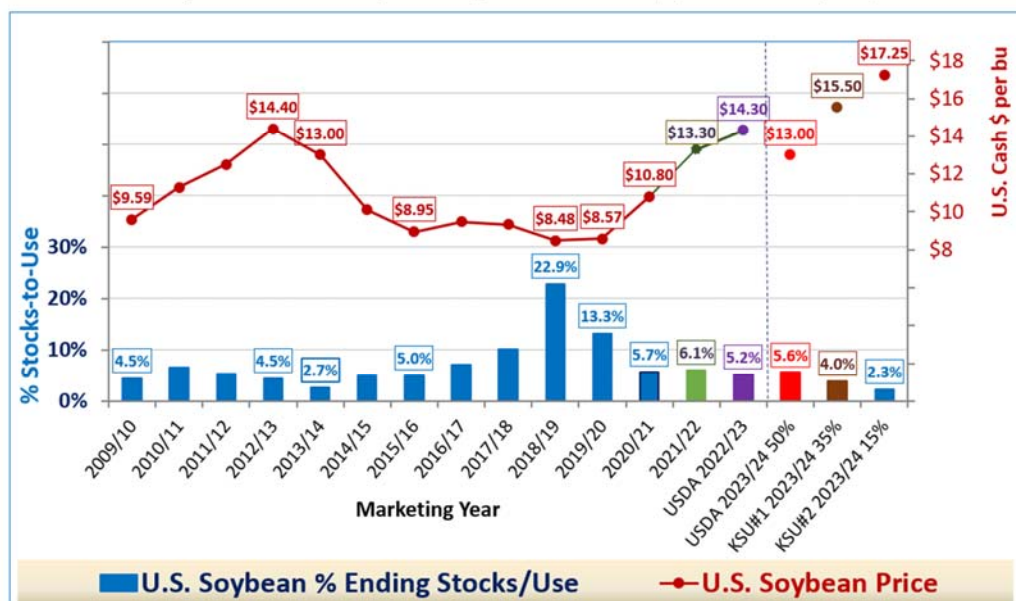
"New Crop" MY 2023/24 as of the February 8, 2023 USDA WASDE with KSU Scenarios

Item	A. USDA WASDE - KSU Adj. "New Crop" 2023/24 February 8, 2023	B. KSU Scenario #1 "New Crop" 2023/24 Less Yield: 50.5 bu/ac + Rationed Use	C. KSU Scenario #2 "New Crop" 2022/23 Lower Yield: 49.0 bu/ac + More Rationed Use
% Probability of Occurring (KSU)	50% <sup>KSUest</sup>	35% <sup>KSUest</sup>	15% <sup>KSUest</sup>
Planted Area (million acres)	87.000	87.000	87.000
Harvested Area (million acres)	86.200	86.200	86.200
% Harvested/Planted Area	99.08%	99.08%	99.06%
Yield / harvested acre (bu/ac)	52.0	50.5	49.0
Beginning Stocks (million bushels)	225	225	225
Production (million bu.)	4,480	4,353	4,224
Imports (million bu.)	15	15	15
Total Supply (million bu.)	4,720	4,593	4,464
Domestic Crushings	2,295	2,270	2,245
Exports	2,050	2,025	2,000
Seed	103	103	103
Residual	20	20	16
Total Use	4,468	4,418	4,364
Ending Stocks	252	175	100
% Ending Stocks-to-Use	5.64%	3.96%	2.29%
Days of Supply (% S/U x 365 days)	20.6 days	14.5 days	8.4 days
U.S. Avg. Farm Price (\$/bu)	\$13.00 <sup>USDA</sup>	\$15.50 <sup>KSU</sup>	\$17.25 <sup>KSU</sup>

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

42

MY 2009/10 – "New Crop" 2023/24 as of February 8, 2023 USDA Reports, w. KSU scenarios

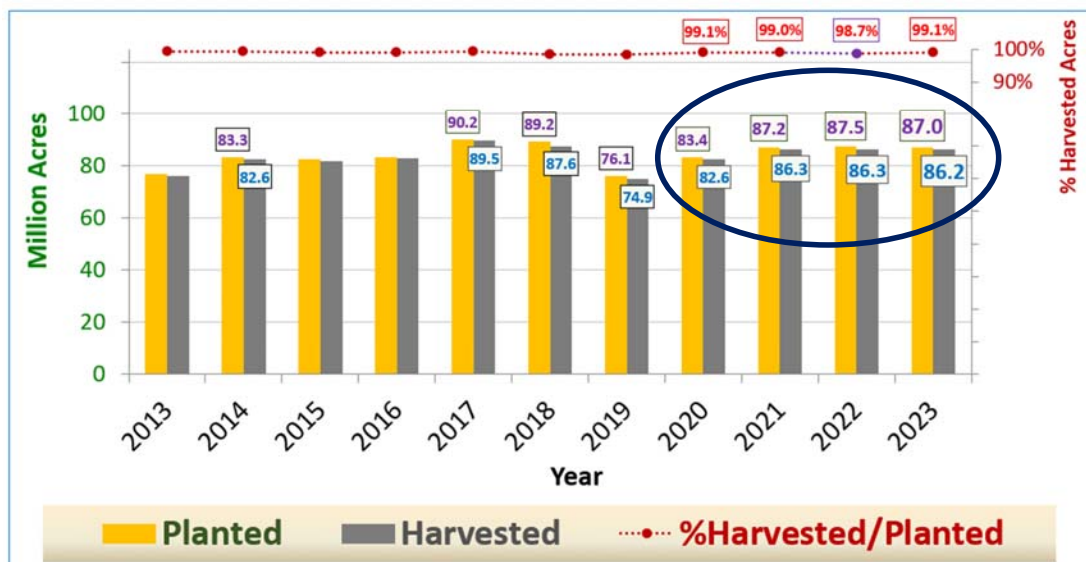


# Soybean Supply-Demand



## U.S. Soybean Acreage for 2013-2023

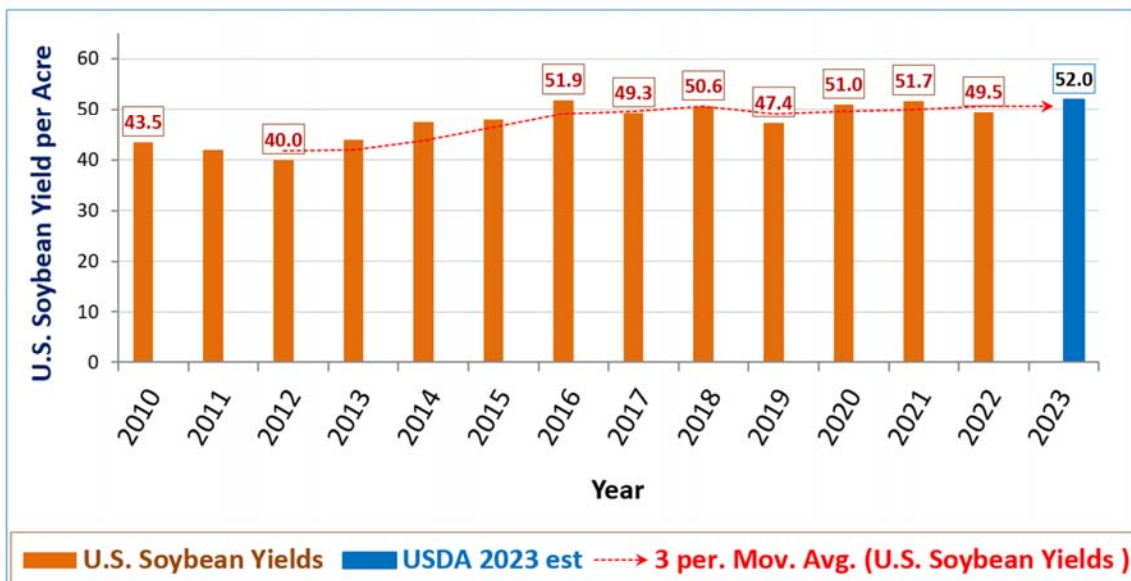
Years 2013-2023 as of the February 8, 2023 USDA WASDE & NASS Reports



# U.S. Soybean Yields: Years 2010-2023

45

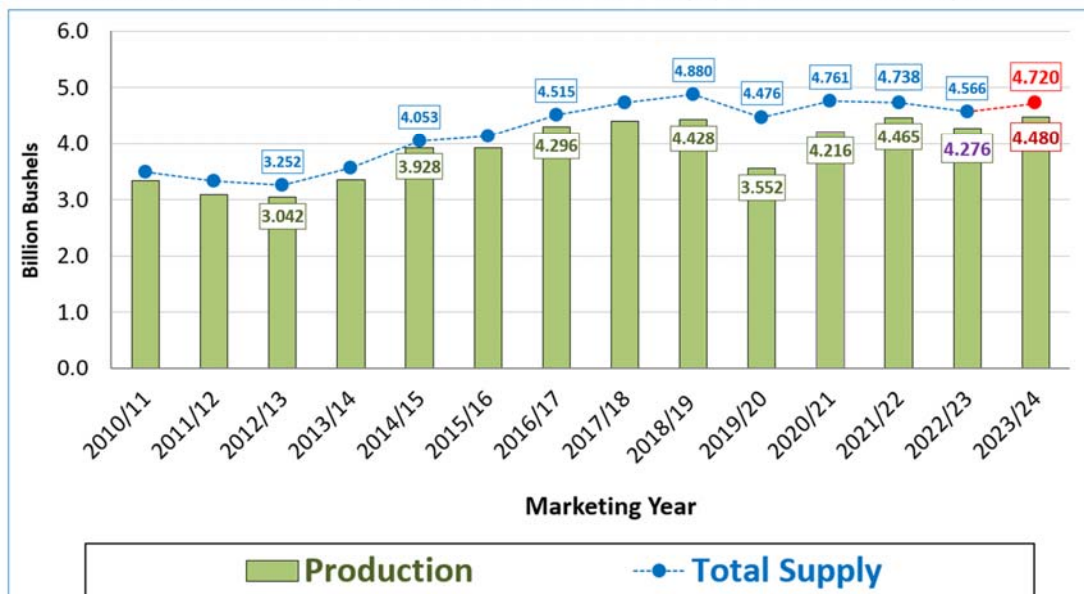
as of the January 12, 2023 USDA WASDE & NASS Reports



# U.S. Soybean Production & Total Supply

46

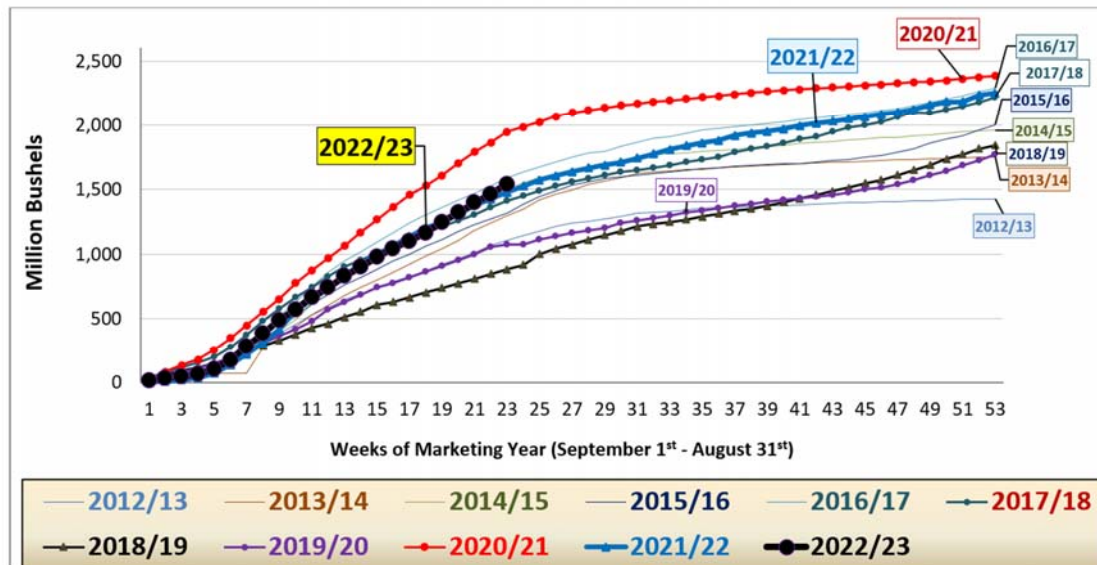
MY 2010/11 thru "New Crop" MY 2023/24 as of the February 8, 2023 USDA WASDE Report



# U.S. Soybean Exports

47

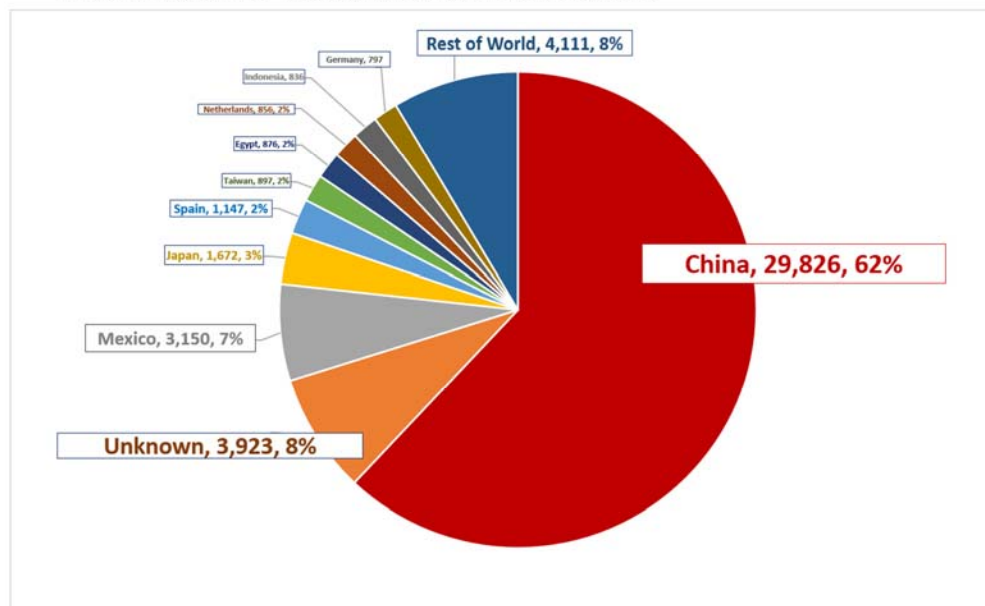
MY 2012/13 thru "Current" MY 2022/23, USDA FAS Weekly Export reports thru 2/9/2023



## U.S. Soybean Export Buyers in "Current" MY 2022/23

48

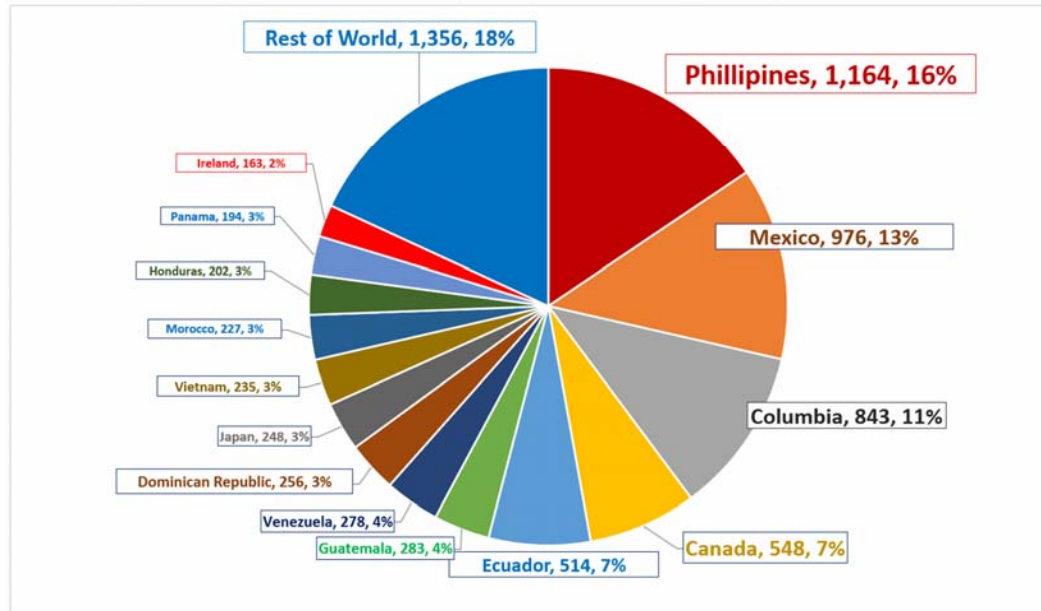
Through January 19, 2023 – USDA U.S. Export Shipments & Sales (1,000 mt)





## U.S. Soy Meal Export Buyers in “Current” 2022/23

Through February 9, 2023 – USDA U.S. Export Shipments & Sales (1,000 mt)



49

## U.S. Soybean Use & Ending Stocks

MY 2000/01 – “New Crop” MY 2023/24 as of the February 8, 2023 USDA WASDE Report

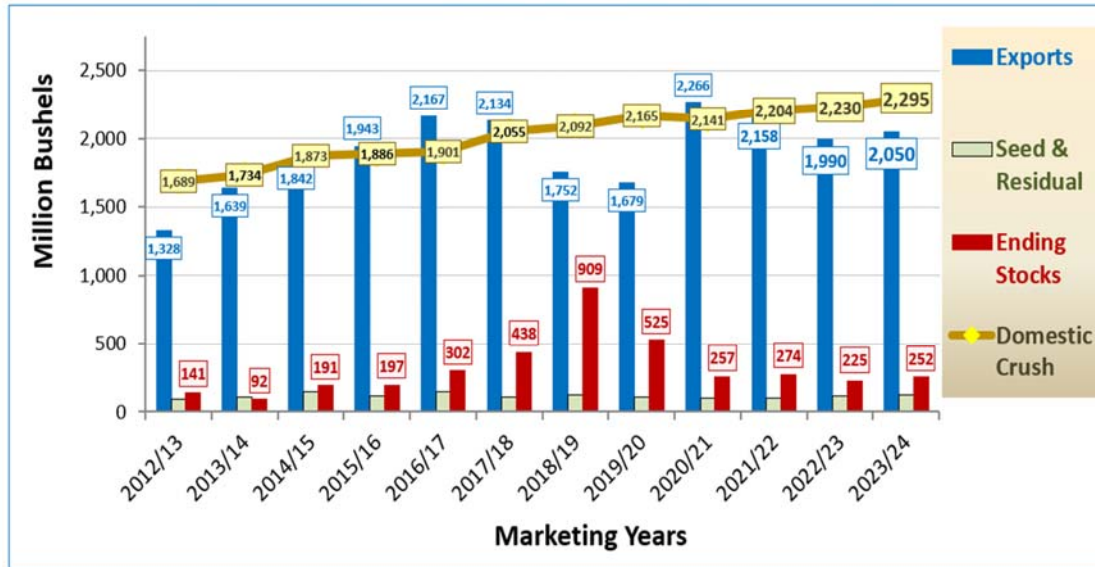


50

# U.S. Soybean Use & Ending Stocks

51

MY 2012/13 - Projected "New Crop" MY 2023/24 as of the February 8, 2023 USDA WASDE Report



# U.S. Soybean Supply-Demand Balance Sheet

52

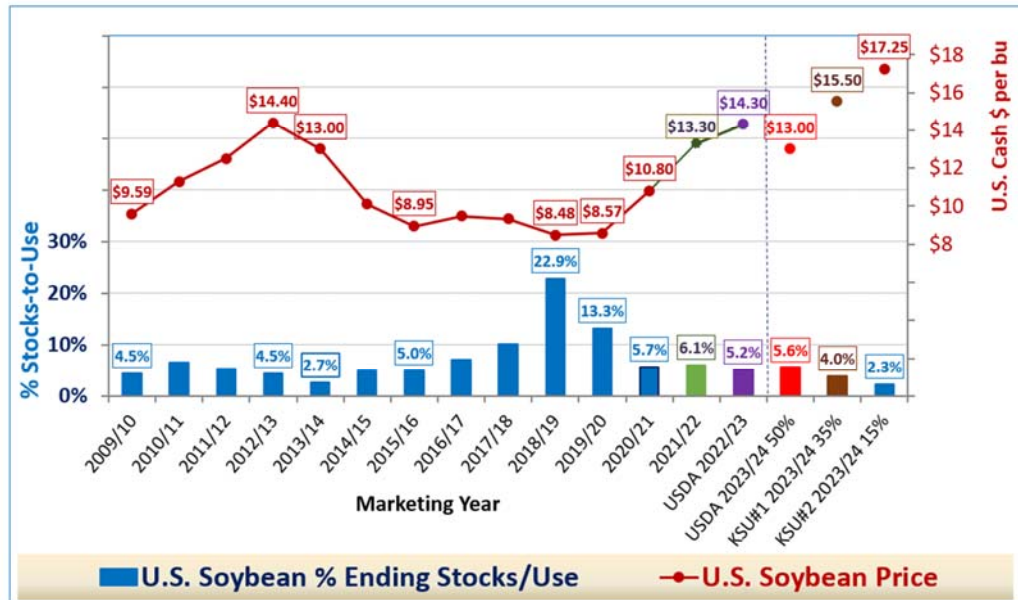
"New Crop" MY 2023/24 as of the February 8, 2023 USDA WASDE with KSU Scenarios

Item	A. USDA WASDE - KSU Adj. "New Crop" 2023/24 February 8, 2023	B. KSU Scenario #1 "New Crop" 2023/24 Less Yield: 50.5 bu/ac + Rationed Use	C. KSU Scenario #2 "New Crop" 2022/23 Lower Yield: 49.0 bu/ac + More Rationed Use
% Probability of Occurring (KSU)	50% <sup>KSUest</sup>	35% <sup>KSUest</sup>	15% <sup>KSUest</sup>
Planted Area (million acres)	87.000	87.000	87.000
Harvested Area (million acres)	86.200	86.200	86.200
% Harvested/Planted Area	99.08%	99.08%	99.06%
Yield / harvested acre (bu/ac)	52.0	50.5	49.0
Beginning Stocks (million bushels)	225	225	225
Production (million bu.)	4,480	4,353	4,224
Imports (million bu.)	15	15	15
Total Supply (million bu.)	4,720	4,593	4,464
Domestic Crushings	2,295	2,270	2,245
Exports	2,050	2,025	2,000
Seed	103	103	103
Residual	20	20	16
Total Use	4,468	4,418	4,364
Ending Stocks	252	175	100
% Ending Stocks-to-Use	5.64%	3.96%	2.29%
Days of Supply (% S/U x 365 days)	20.6 days	14.5 days	8.4 days
U.S. Avg. Farm Price (\$/bu)	\$13.00 <sup>USDA</sup>	\$15.50 <sup>KSU</sup>	\$17.25 <sup>KSU</sup>

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

53

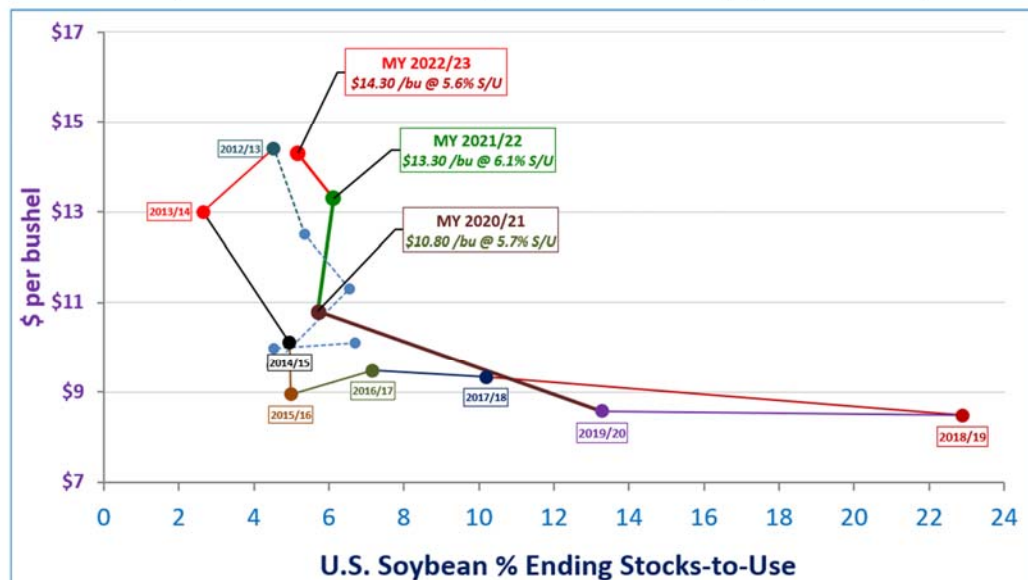
MY 2009/10 – “New Crop” 2023/24 as of February 8, 2023 USDA Reports, w. KSU scenarios



## U.S. Soybean \$ vs U.S. % Stocks-to-Use

54

MY 1973/74 thru “Current” MY 2022/23 as of the February 8, 2023 USDA Report



## World Soybean Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the February 8, 2023 USDA WASDE Report



## World Soybean Oil Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the February 8, 2023 USDA WASDE Report



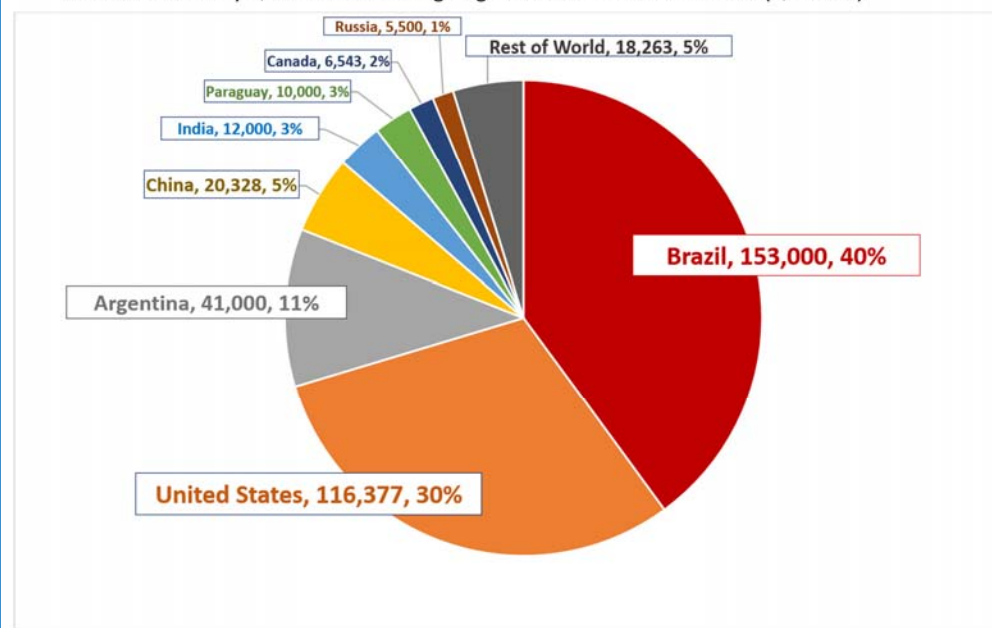
## World Soybean Meal Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the January 12, 2023 USDA WASDE Report



## Soybean Producing Countries: "Current" MY 2022/23

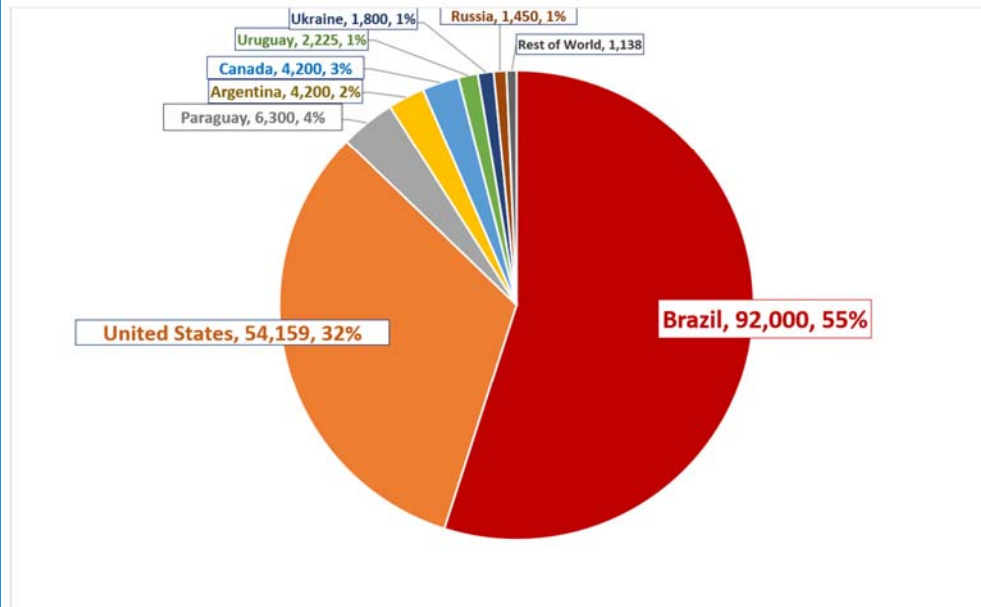
As of the February 8, 2023 USDA Foreign Agricultural Service PSD Online (1,000 mt)





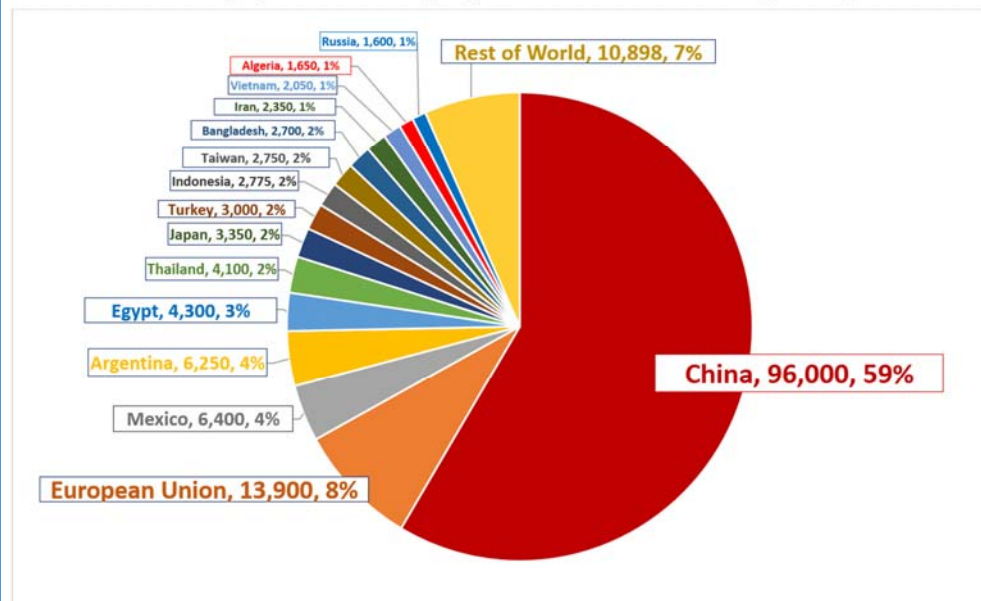
## World Soybean Exporters: "Current" MY 2022/23

As of the February 8, 2023 USDA FAS PSD Online (1,000 mt)



## World Soybean Importers: "Current" MY 2022/23

As of the February 8, 2023 USDA Foreign Agricultural Service PSD Online (1,000 mt)



## South America Soybean Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the February 8, 2023 USDA WASDE Report



## Brazil Soybean Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the February 8, 2023 USDA WASDE Report



## Argentina Soybean Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the February 8, 2023 USDA WASDE Report



## China Soybean Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the February 8, 2023 USDA WASDE Report



## China Soybean Meal Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the February 8, 2023 USDA WASDE Report



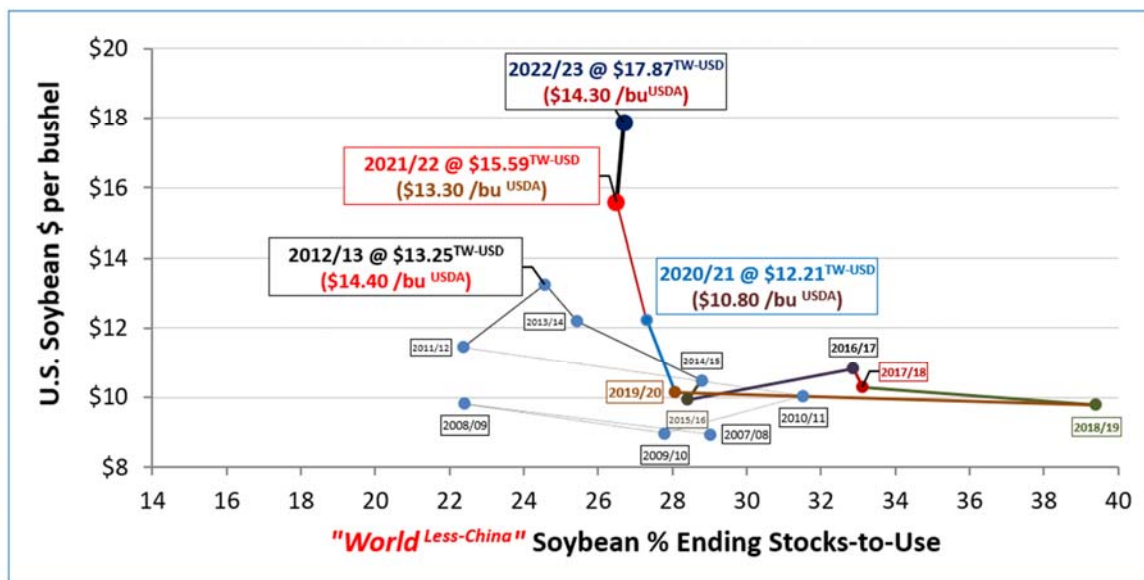
## China Soybean Oil Supply-Demand

MY 2007/08 – "Current" MY 2022/23 as of the January 12, 2023 USDA WASDE Report



# U.S. Soybean \$<sup>USD</sup>\$ Adj vs *"World Less-China"* % S/U 61

MY 2007/08 thru "Current" MY 2022/23 as of the February 8, 2023 WASDE Report



## Questions?

Daniel O'Brien – Extension Ag Economist

Blog: [www.ksugrains.wordpress.com](http://www.ksugrains.wordpress.com)

KSUGrains on Twitter

[www.AgManager.info](http://www.AgManager.info)



KANSAS STATE  
UNIVERSITY

Department of Agricultural Economics