# 2023 Corn Markets & Cost-Returns

'Winning-The-Game' Grain Marketing Workshop

Emporia, Kansas

January 31, 2023

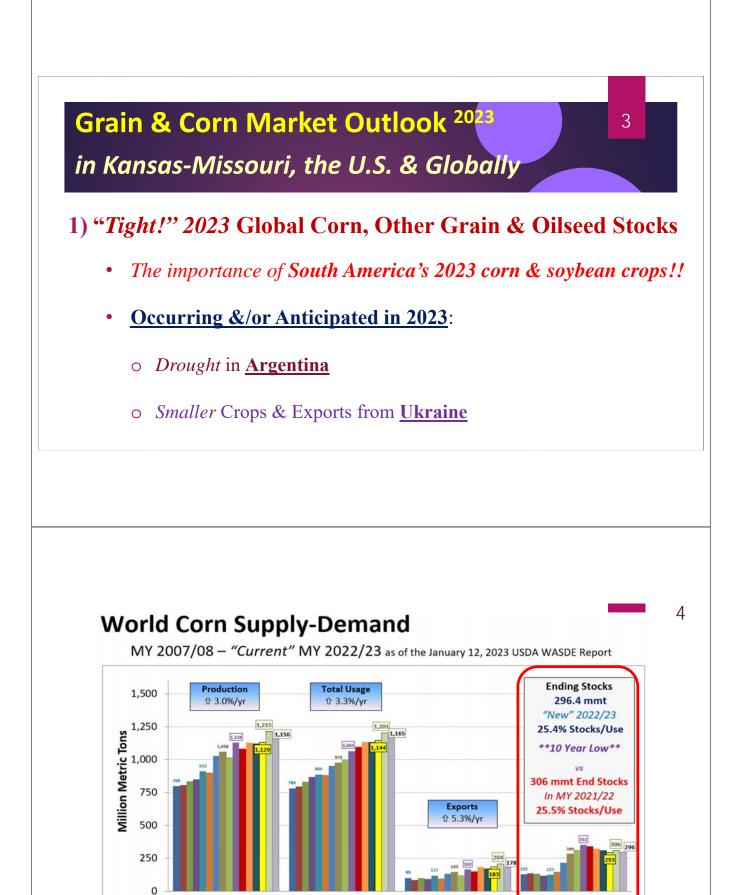
DANIEL O'BRIEN EXTENSION AGRICULTURAL ECONOMIST

KANSAS STATE

Department of Agricultural Economics

# Corn Market Perspective





Production

2009/10

2017/18

2008/09

2016/17

2007/08

2015/16

Usage

2010/11
2018/19

Ending Stocks

2014/15

2022/23

2013/14

□ 2021/22

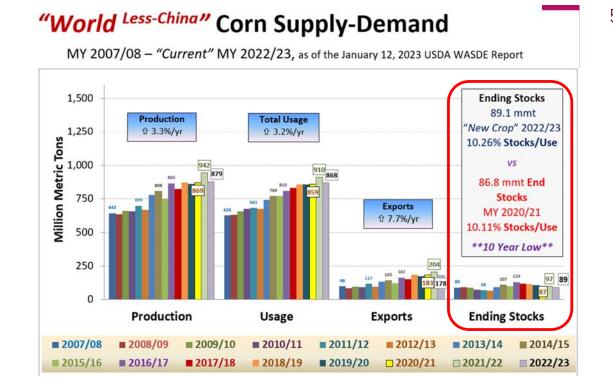
Exports

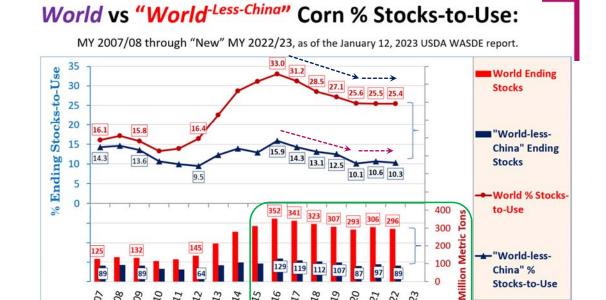
2012/13

2020/21

2011/12

2019/20





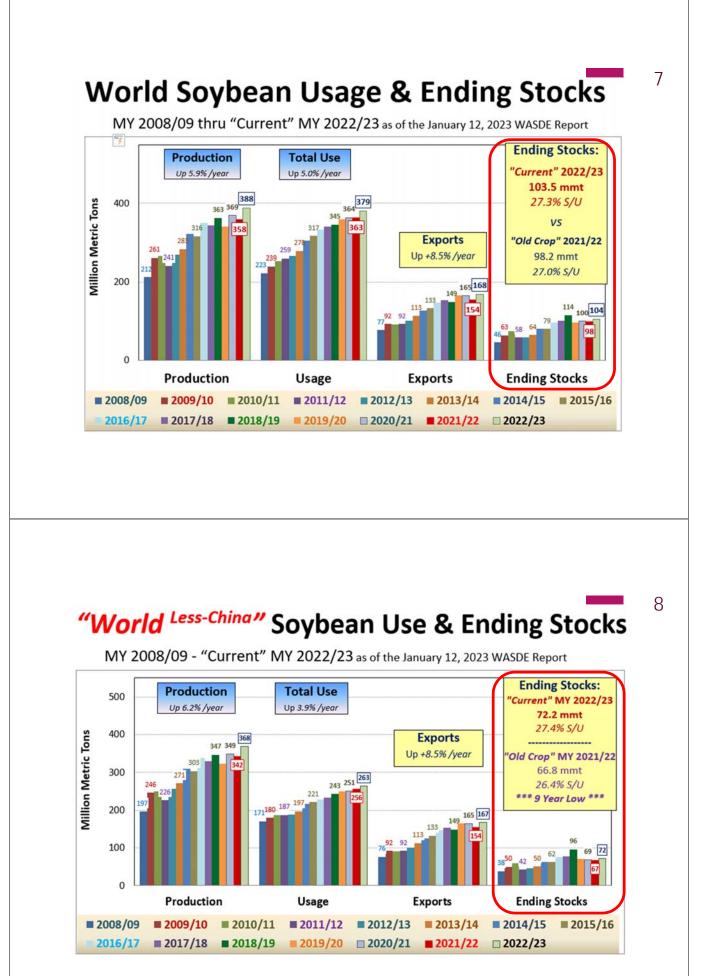
**Marketing Years** 

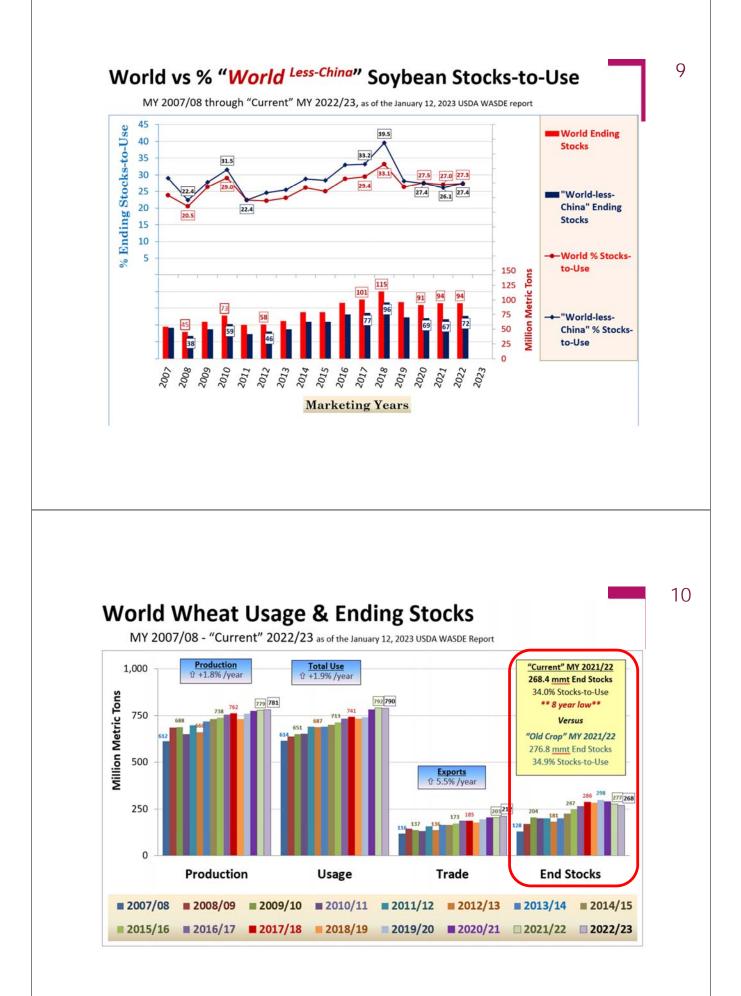
<sup>2021</sup> <sup>2022</sup> <sup>2023</sup>

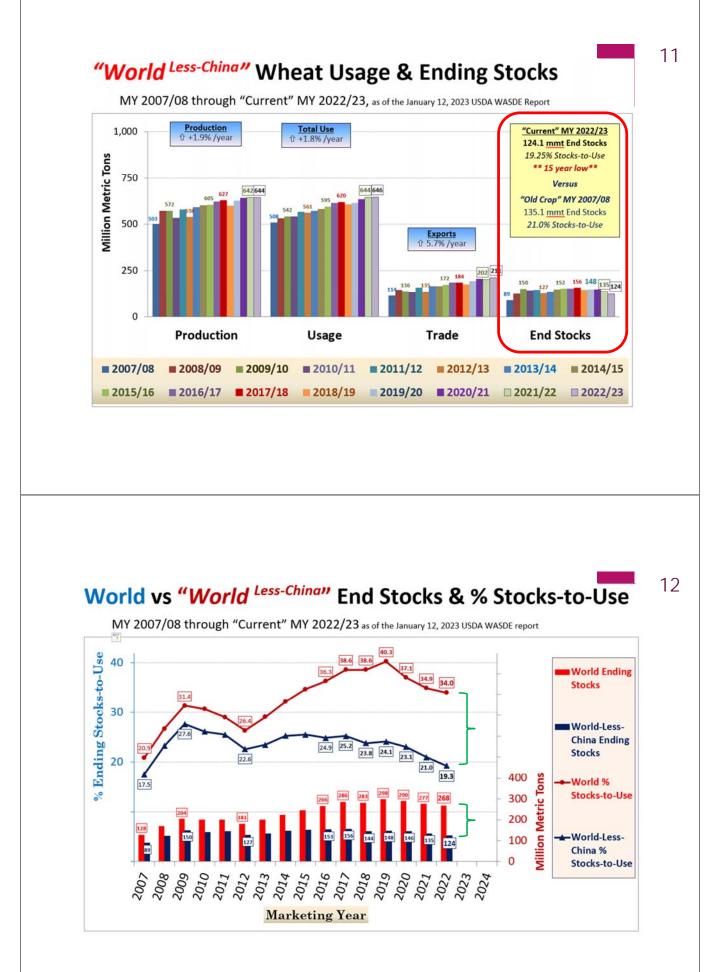
STO 

2009 2010 2011 2012 2012

Stocks-to-Use







### Grain Market Outlook <sup>2023</sup>

### 2) Carryover impact of the Crop Production damage in the Western-Central Plains during 2022-2023

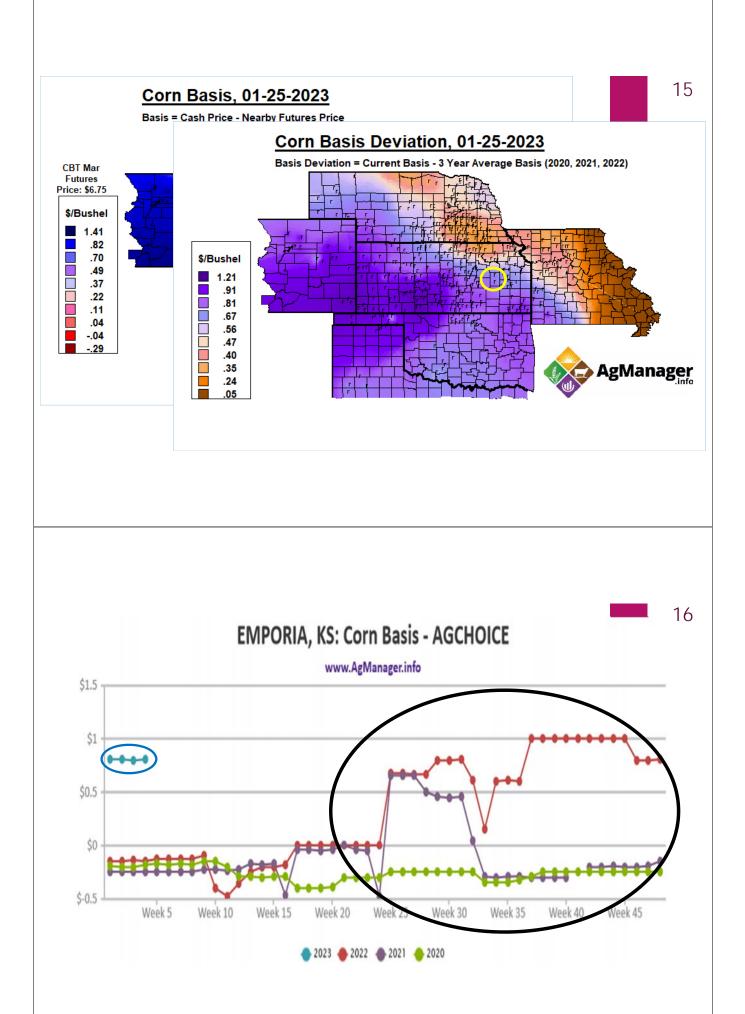
• Western Kansas / OK / TX / NE

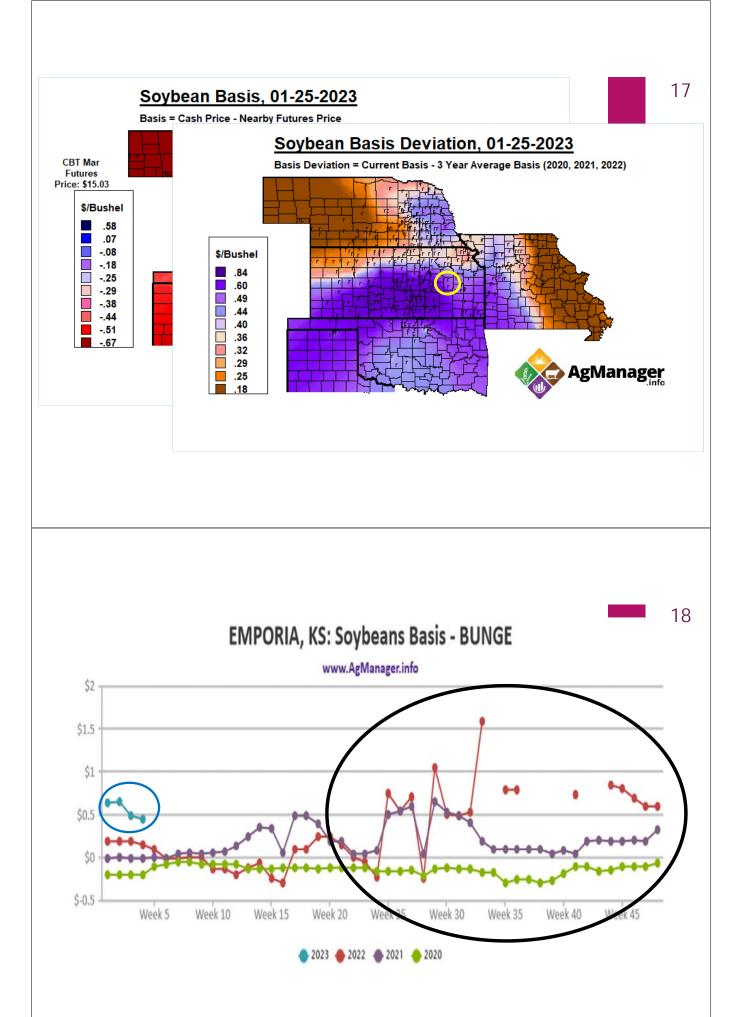
→ <u>Stronger</u> Corn & Soybean BASIS throughout the U.S. Corn Belt

#### ▶ Q? 2023 U.S. Corn, Soybean & Wheat Production?

 $\rightarrow$  Seasonal risk in Spring-Summer <sup>2023</sup> – Dry subsoils in many areas







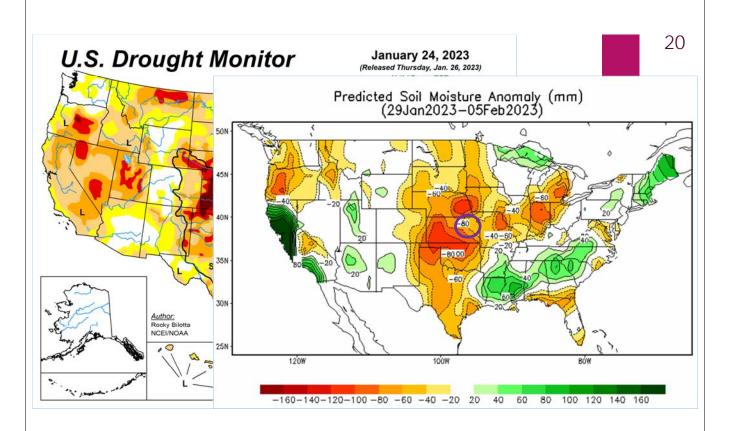
### Grain Market Outlook <sup>2023</sup>......

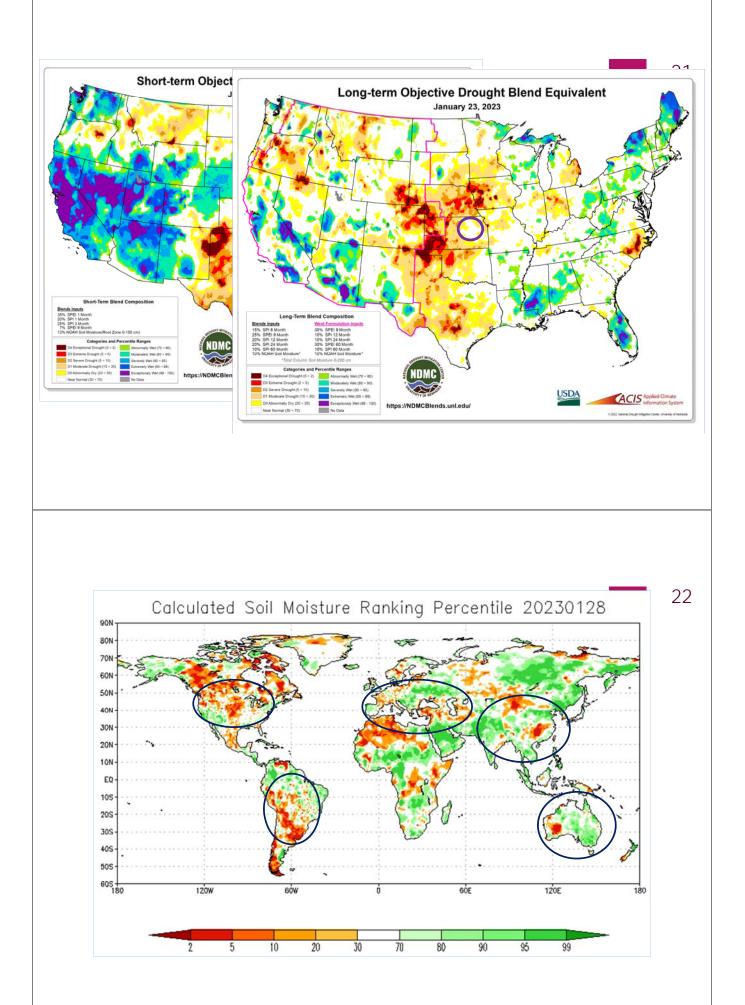
#### 3) Continuance of dry La Nina Weather Pattern in 2023???

 "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

 "La Nina is breaking down, and an El Nino is forecast to emerge in 2023. Returning after several years, an El Nino can completely change the weather patterns for the weather seasons of 2023 & 2024." Severe Weather Europe, Andrej Flis January 11, 2023





### Grain Market Outlook <sup>2023</sup>......

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

- Lower natural gas prices, w. but continued supply-chain challenges
- Lower fertilizer / crop input costs will <u>encourage</u> 2023 U.S. Corn Acres – ≈ 92 million acres in 2023
  - o 88.6 million acres in 2022
    - o 93.3 million acres in 2021
      - o 90.7 million acres in 2020





#### Illinois Production Cost Report

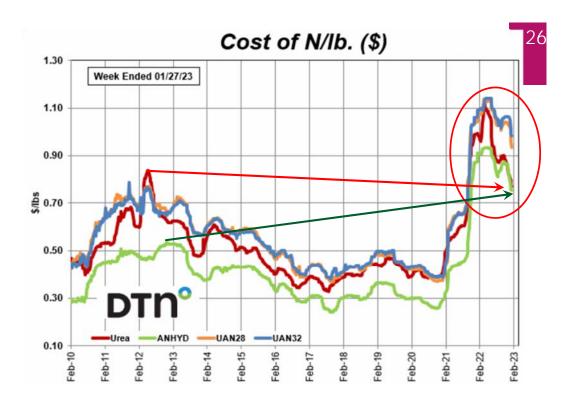
AMS Livestock, Poultry and Grain Market News IL Dept. of Ag Market News

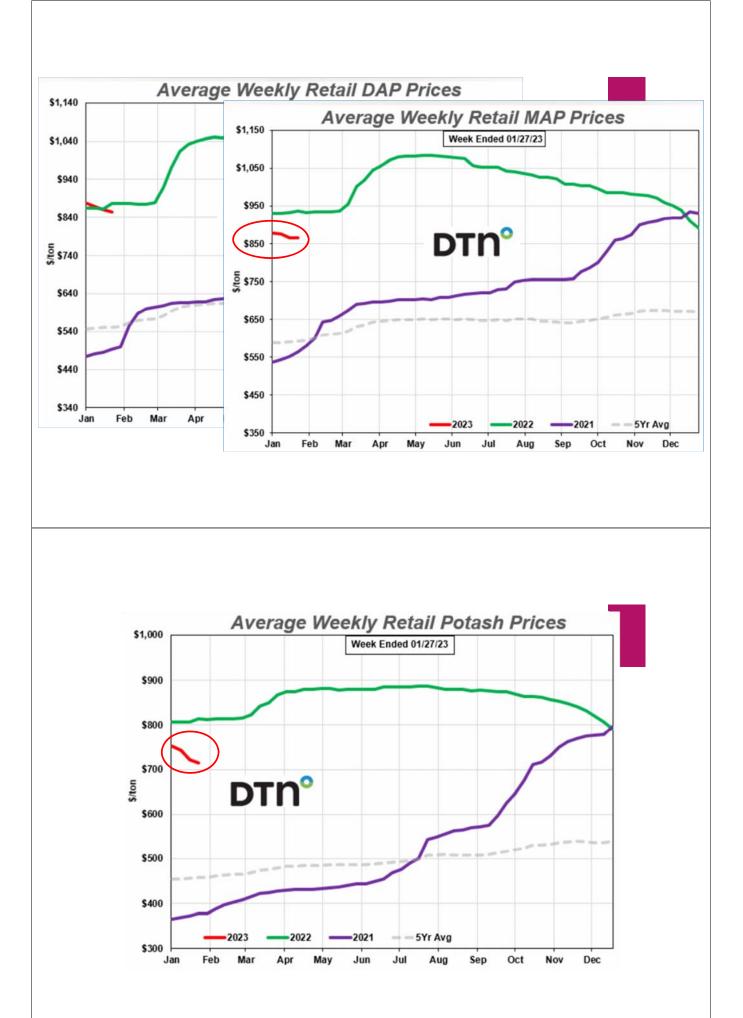
January 26, 2023

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Fertilizer

Distributor (Dollars Per Ton)				
Product	Sale Type	Price Range	Average	Change
Anhydrous Ammonia	Ask - FOB	1190.00-1490.00	1301.11	DN 7.22
Urea 46-0-0	Ask - FOB	670.00-700.00	686.67	DN 23.33
Liquid Nitrogen 28-0-0	Ask - DELV(Applied)	550.00-710.00	605.17	DN 9.33
DAP (Diammonium Phosphate 18%N 46%P)	Ask - FOB	800.00-850.00	822.50	DN 9.17
MAP (Monoammonium Phosphate 11%N 52%P)	Ask - FOB	790.00-925.00	870.00	UP 18.00
Potash (Potassium)	Ask - FOB	625.00-850.00	696.67	DN 17.46
Fuel				
Distributor(Dollars Per Gallon)				
Farm Diesel < 1000 gallons	Ask- FOB	3.76-4.34	4.03	UP 0.49





### Grain Market Outlook <sup>2023</sup>

#### 5) U.S. & Foreign Ag response in 2023 to current crop prices?

- Crop Acres? Usually, î Prices → î Crop Acres, BUT <u>ALL</u> crop \$'s are high (especially soybeans)
- <u>Crop Costs</u>? <u>*IF*</u> lower fertilizer & other crop costs, *THEN* it <u>supports</u>
   Corn acres & <u>decreases</u> Soybean acres in the U.S. Corn Belt <sup>2023</sup>
- **<u>Rationing Grain Use</u>**: Evidence of reduced corn & soybean use....
- Cropland Markets & Cash Rents: High crop prices being reflected

### What to anticipate in Year 2023 (1st of 3)

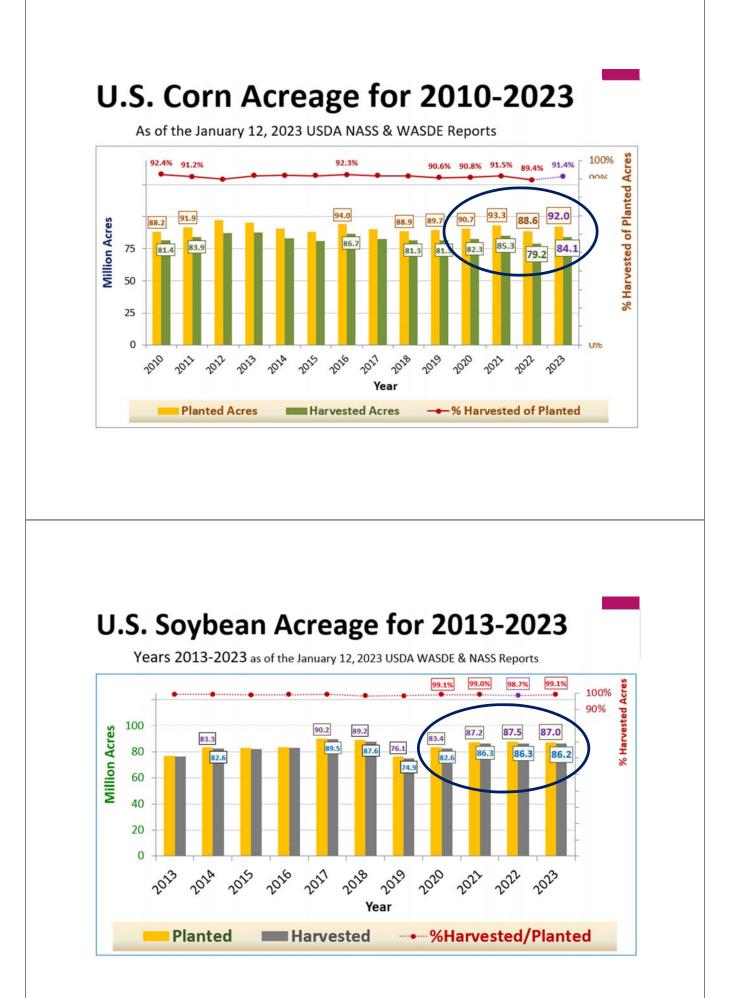
#### 2023 Spring Planting of Feedgrains & Oilseeds

- With <u>tight stocks</u> across crops any threats to planting 2023 U.S. <u>corn</u> or <u>soybeans</u> could cause *STRONG* price volatility
  - o NOV<sup>2023</sup> Soybean futures @ \$13.60 <sup>3</sup>/<sub>4</sub> /bu <sup>1/30/2023 p.m.</sup>
  - o DEC<sup>2023</sup> Corn futures @ \$5.88 <sup>3</sup>/bu <sup>1/30/2023 p.m.</sup>
  - > 2023 "New Crop" Soy/Corn \$ Ratio = \$13.60 <sup>3</sup>/<sub>4</sub> ÷ \$5.88 <sup>3</sup>/<sub>4</sub> = 2.31 (vs 2.52 Avg)

++ Corn

30

 Strong "new crop" price competition likely for 2023 planted acres between Feedgrains & Oilseeds ⇒ Likely in March-May 2023



### Grain Market Outlook <sup>2023</sup>......

### 6) 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

### Grain Market Outlook <sup>2023</sup>......

- 7) Overall Prospects for 2023 Crop Markets???
  - <u>U.S. Crop Prices supported @ Moderate-to-High Levels</u> <u>until</u> someday grain markets are confident of larger crops & rebuilding of stocks
    - "2023/24 'New Crop' Forward Bids" are vulnerable to moderate declines in late Spring – Summer<sup>2023</sup> & on into Fall harvest<sup>2023</sup>
  - Ukraine-Russia War Effect: *Smaller* Ukraine corn, wheat crops+*exports*
  - <u>South America Impact</u>: Brazil <sup>(Positive++)</sup> & Argentina<sup>(Negative-)</sup> crop prospects will effect U.S. prices through at least August<sup>2023</sup>



declines <u>UNTIL</u> at least <u>late spring – early summer</u>

<u>THEN</u> 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 are "OK-to-Good", <u>THEN</u> grain markets likely "slide" lower into Fall 2023

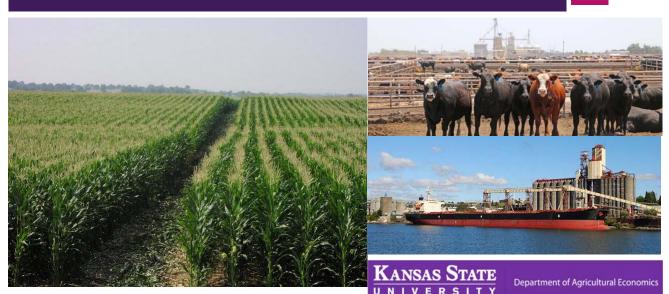
### What to anticipate: Year 2023 (3rd of 3)

- □ <u>USDA Reports</u> ⇒ Often a "driver" of grain market volatility
  - <u>WASDE</u>: Jan. 12\*\*, 2/8, 3/8, 4/8, 5/12, 6/9, 7/12, 8/11, 9/12.....
  - <u>Planted Area</u>: Prospective Plantings May 31, Acreage June 30

#### <u>"Strong" Demand-Pull for Feedgrains in the Western Corn Belt</u>

- Summer demand for "New Crop" supplies (i.e. "users 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?

# **Corn Market Prices**

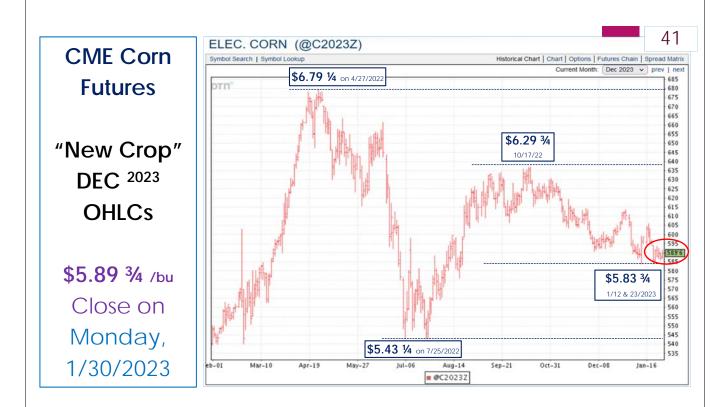


# Corn Futures CME – Tuesday, 2/1 7:08 a.m. Central

### ELEC. CORN (@C) [10]

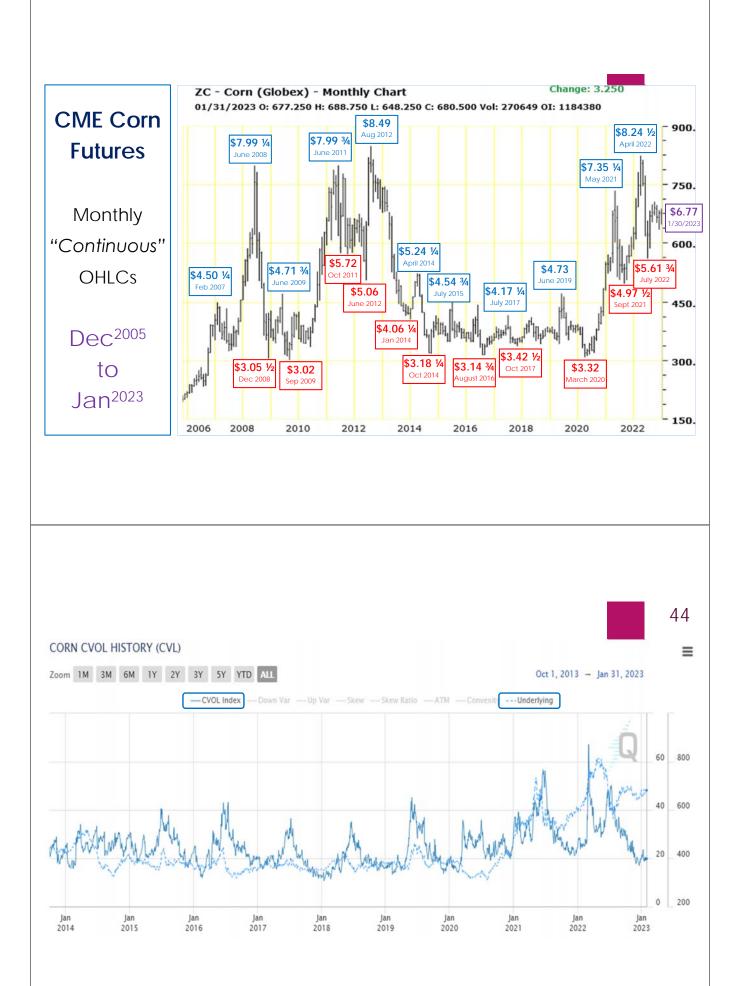
Month	Last	Chg	High	Low
Mar-23	681'6	-2'0	683'4	680'4
May-23	678'6	-2'4	681'0	678'0
Jul-23	665'4	-2'0	667'4	664'4
Sep-23	604'6	-0'6	605'6	603'6
Dec-23	589'2	-0'4	590'0	588'0
Mar-24	595'2	-1'4	597'0	595'2





### CME Corn Futures Continuous Weekly to 1/30/2023





U.S. Corn S	upply and	Demand
-------------	-----------	--------

	2021/2022	2022/2023	Change from	Change from
Item	estimate	forecast	December 9	2021/2022
Planted area (million acres)	93.3	88.6	**	-4.7
Harvested area (million acres)	85.3	79.2	-1.6	-6.1
Yield (bushels per acre)	176.7	173.3	1.0	-3.3
		Million	n bushels	
Beginning stocks	1,235	1,377	**	142
Production	15,074	13,730	-200	-1,344
Imports	24	50		26
Total supply	16,333	15,157	-200	-1,176
Feed and residual	5,718	5,275	-25	-443
Food, seed, and industrial	6,766	6,715	-10	-51
Ethanol	5,326	5,275		-51
Domestic use	12,484	11,990	-35	-494
Exports	2,471	1,925	-150	-546
Total use	14,956	13,915	-185	-1,041
Ending stocks	1,377	1,242	-15	-135
		Pe	rcent	- 7
Stocks to use ratio	9.2	8.9	**	-0.3
		Dollars	per bushel	
Average market price	6.00	6.70		0.70

-- No change. \*\* Rounds to zero.

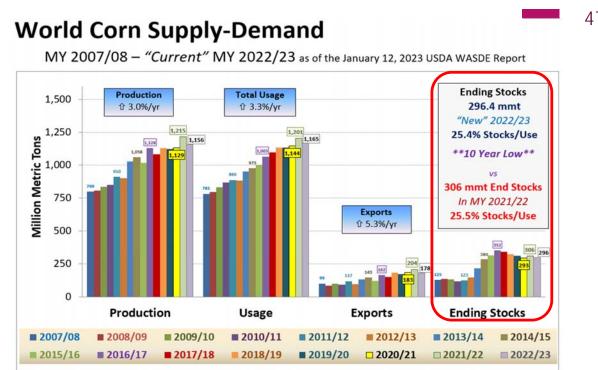
January 12, 2023

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#### World Corn Production

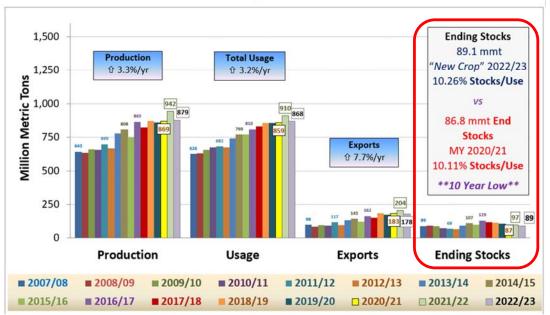
	202	1/2022		2022/2023			
Γ		Change from		Change from	Change from		
Country or Region	Estimate	December 9	Forecast	December 9	2021/2022		
			- Million Tons -				
World	1,214.9	-2.0	1,155.9	-5.9	-58.9		
United States	382.9		348.8	-5.1	-34.1		
Foreign	832.0	-2.0	807.2	-0.8	-24.8		
Argentina	49.5	-2.0	52.0	-3.0	2.5		
Brazil	116.0		125.0	-1.0	9.0		
Mexico	26.8		27.6		0.8		
Canada	14.0		14.5		0.6		
European Union	71.0		54.2		-16.8		
Serbia	6.0		5.4		-0.6		
FSU-12	63.7	1.00	46.3		-17.4		
Ukraine	42.1		27.0		-15.1		
Russia	15.2		14.0		-1.2		
South Africa	16.1	-	16.7		0.6		
China	272.6		277.2	3.2	4.6		
India	33.6		32.0		-1.6		

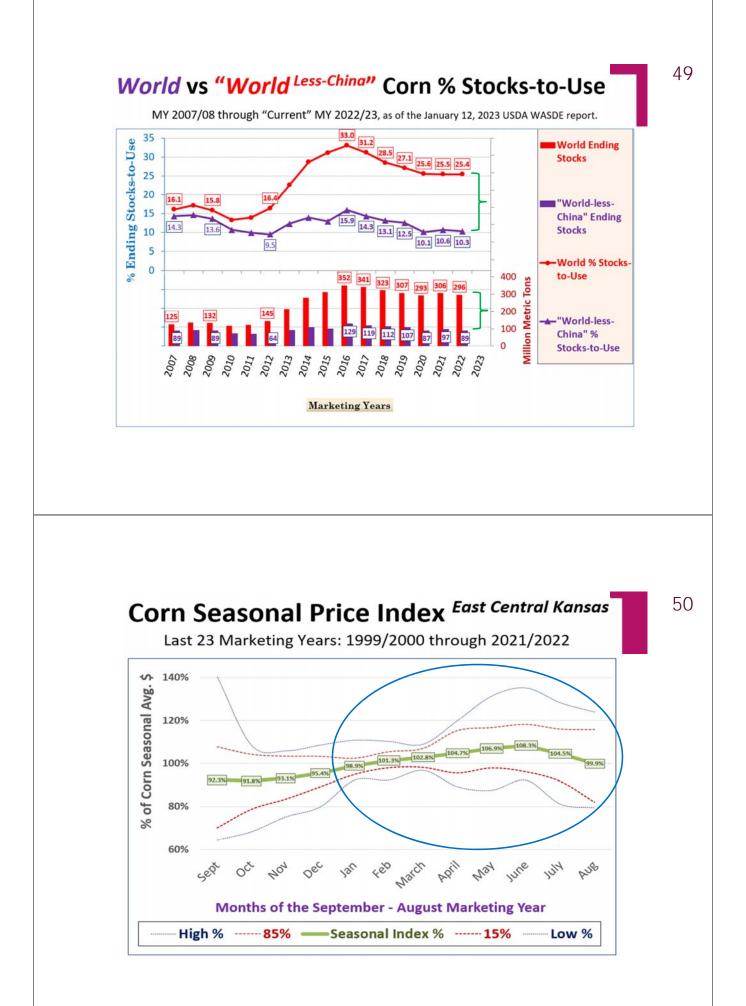
-- No change.

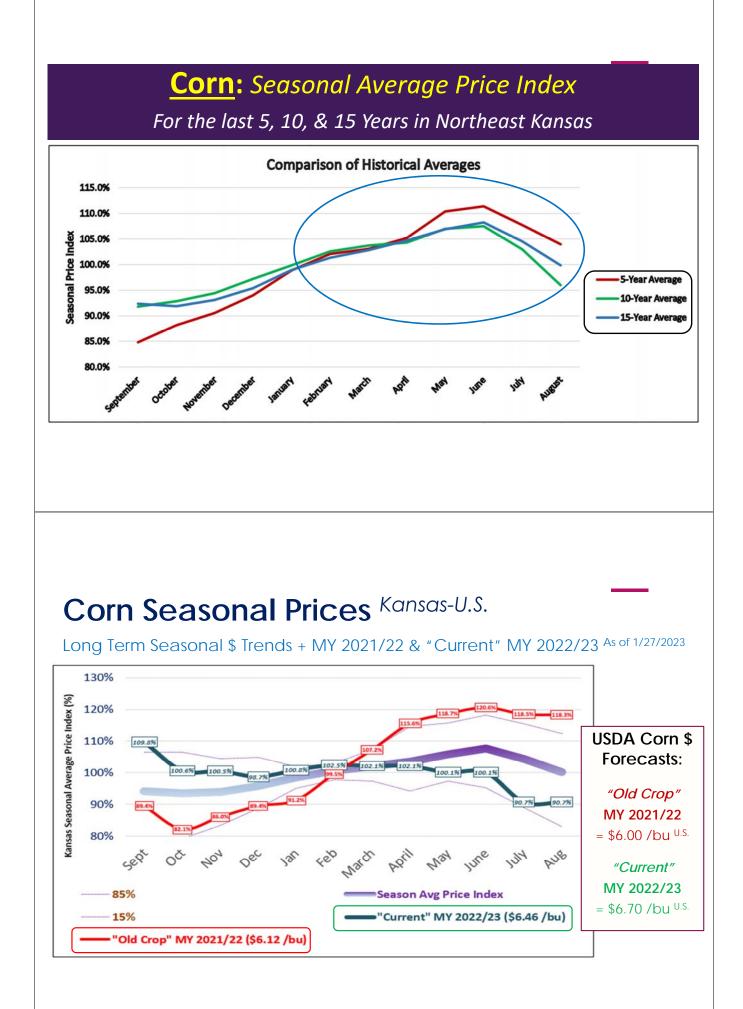




MY 2007/08 - "Current" MY 2022/23, as of the January 12, 2023 USDA WASDE Report







My DTN Cash Bids				Му	DTN Cash	Bids for Pos	stal Code 64	1473, Radiu	s 300 miles		53
Elevator/Location	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	
AGCHOICE EMPORIA, KS	7.60										
AGCHOICE OLPE, KS	7.40										
AGCHOICE OSAGE CITY, KS	7.40										
OTTAWA COOP BURLINGAME, KS	7.21	7.21								5.49	
MID KANSAS COOP ALTA VISTA, KS	7.18		· ()							5.44	
OTTAWA COOP SCRANTON, KS	7.21	7.21			9 					5.49	FC
OTTAWA COOP MELVERN, KS	7.30	7.30		lueso				, 202	3	5.49	Basis:
OTTAWA COOP WAVERLY, KS	7.30	7.30			EC	arly a.	.m.		-	5.49	\$0.40 under
OTTAWA COOP BURLINGTON, KS	7.30	7.30	·							5.49	DEC <sup>23</sup>
LEROY COOP GRIDLEY, KS	7.25										
OTTAWA COOP OVERBROOK, KS	7.21	7.21								5.49	
OTTAWA COOP TOPEKA, KS	7.25	7.25								5.49	



#### National Daily Ethanol Report

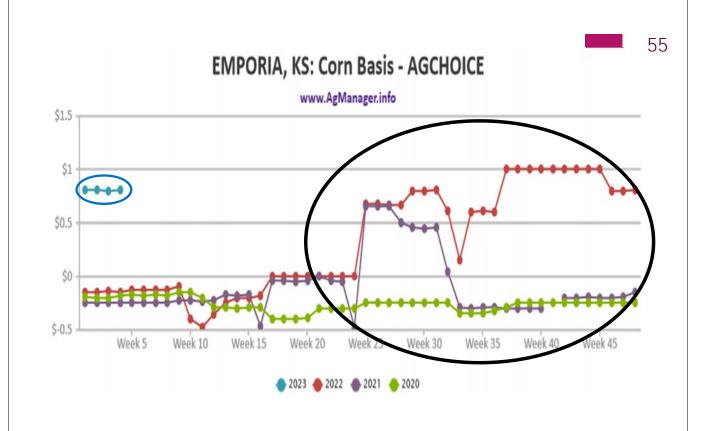
Agricultural Marketing Service Livestock, Poultry, and Grain Market News

# 54

January 30, 2023

US #2 Yellow Corn -Bulk

Ethanol Plant						
State/Province/Region	Sale Type	Basis (¢/bu)	Basis Change	Price (\$/Bu)	Price Change	Average
Illinois	Bid	-15.00H to 40.00H	UNCH	6.6800-7.2300	UP 0.0050	6.8950
Indiana	Bid	-20.00H to 17.00H	UNCH	6.6300-7.0000	UP 0.0050	6.8867
Iowa East	Bid	-20.00H to 15.00H	UNCH	6.6300-6.9800	UP 0.0050	6.8018
Iowa West	Bid	3.00H to 52.00H	UNCH	6.8600-7.3500	UP 0.0050	7.1455
Kansas	Bid	50.00H to 85.00H	UNCH	7.3300-7.6800	UP 0.0050	7.5300
Michigan	Bid	-30.00H to -17.00H	UNCH	6.5300-6.6600	UP 0.0050	6.5900
Minnesota	Bid	-25.00H to 33.00H	UNCH	6.5800-7.1600	UP 0.0050	6.9050
Missouri	Bid	5.00H to 55.00H	UNCH	6.8800-7.3800	UP 0.0050	7.0525
Nebraska	Bid	25.00H to 90.00H	UNCH	7.0800-7.7300	UP 0.0050	7.2769
Ohio	Bid	-15.00H to 12.00H	UNCH	6.6800-6.9500	UP 0.0050	6.8400
South Dakota	Bid	-12.00H to 50.00H	UNCH-DN 2	6.7100-7.3300	UP 0.0050-DN 0.0150	6.9654
Wisconsin	Bid	-45.00H to -21.00H	UNCH	6.3800-6.6200	UP 0.0050	6.5100

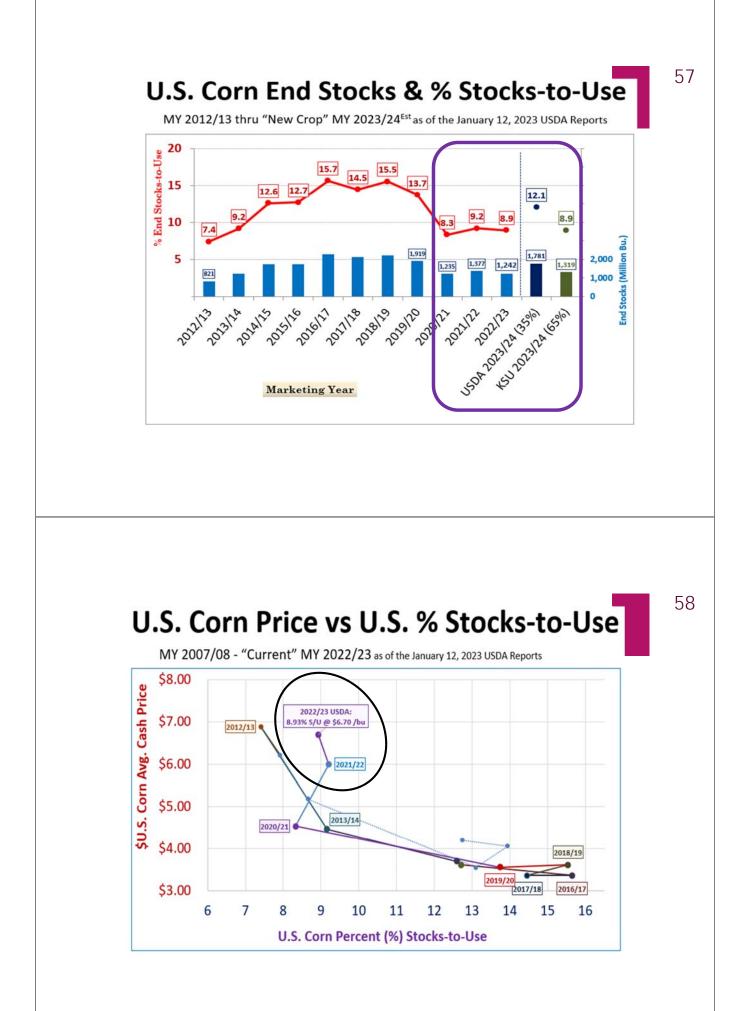


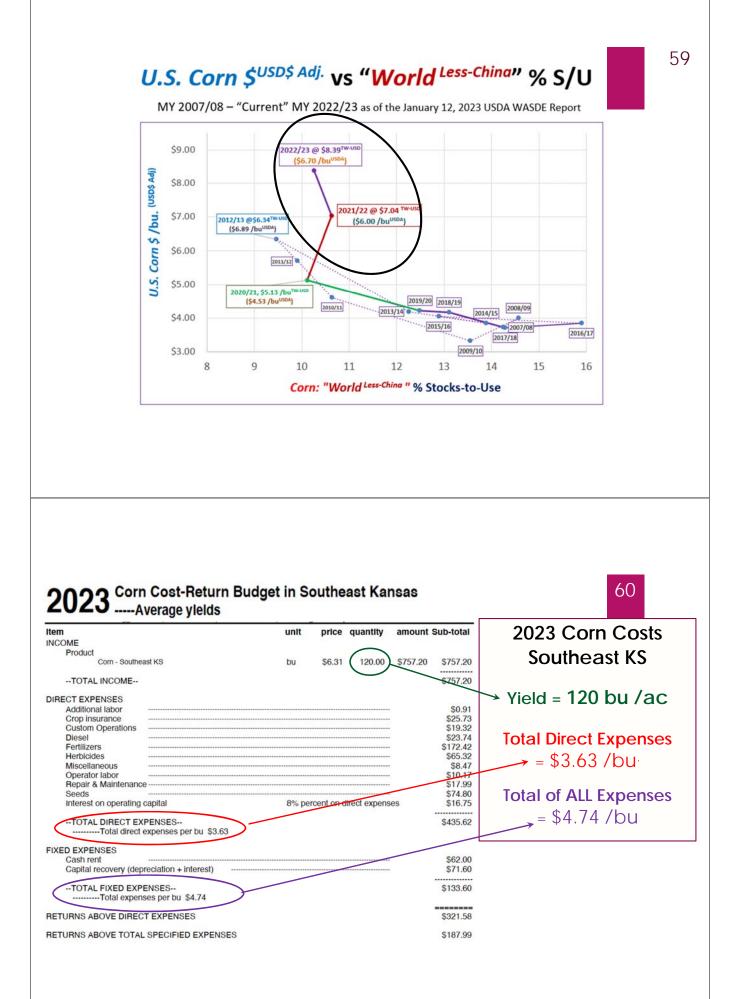
#### **U.S. Corn Supply-Demand Balance Sheet**

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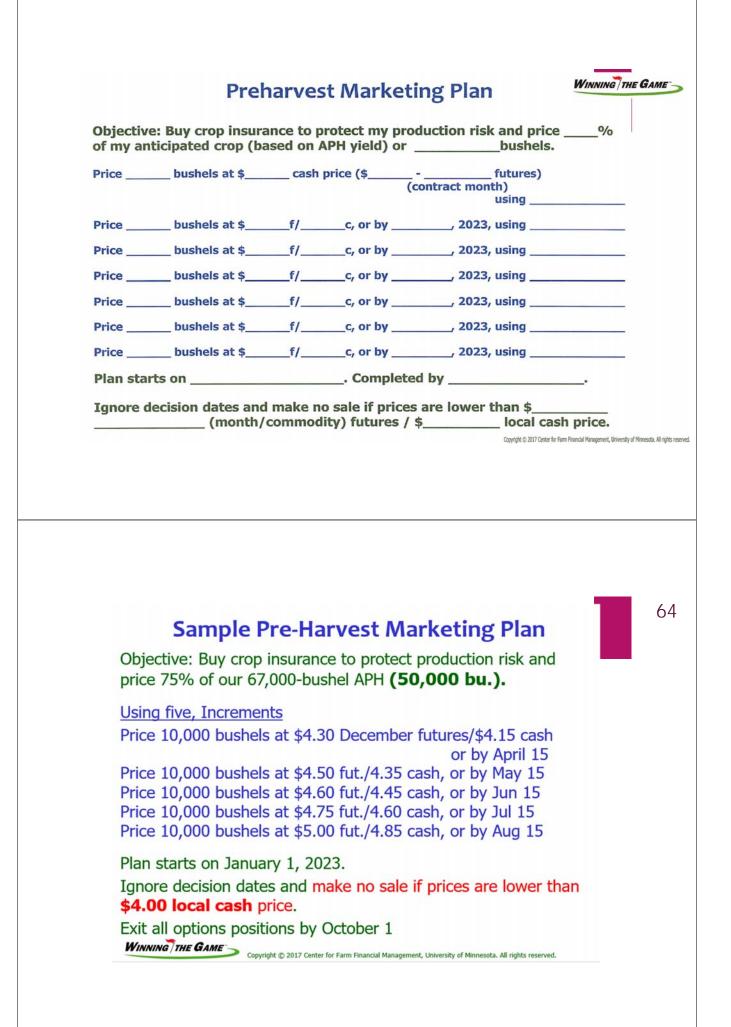
"Current" MY 2022/23 & Proj. "New Crop" MY 2023/24 as of the 1/13/2023 USDA WASDE + KSU Ests.

Item	USDA 2022/23 1/12/2023 WASDE 172.3 bu/ac 13.730 bb crop	A. USDA "New Crop" MY 2023/24 Scenario #1 "High Yields" = 181.5 bu/ac 15.265 bb crop	B. USDA "New Crop" MY 2023/24 Seematic #1 "Average Vields" = 176.0 bu/ac 14.802 bb crop
% Probability of Occurring (KSU)	75% <sup>KSUest</sup>	35% <sup>KSUest</sup>	65% <sup>KSUest</sup>
Planted Area (million acres)	88.579	92.000	92.000
Harvested Area (million acres)	79.207	84.100	84.100
% Harvested/Planted Area	89.42%	91.41%	91.41%
Yield / harvested acre (bu/ac)	172.3	181.5	176.0
		Million Bushels	
Beginning Stocks (million bushels)	1,377	1,242	1,242
Production (million bu.)	13,730	15,265	14,802
Imports (million bu.)	50.0	25.0	25.0
Total Supply (million bu.)	15,157	16,531	16,094
Ethanol for fuel Use (million bu.)	5,275	5,325	5,325
Food & Industrial Use (min bu)	1,419.4	1,419.4	1,419.4
Seed Use (million bu.)	30.6	30.6	30.6
Exports (million bu.)	1,925	2,275	2,275
Feed & Residual Use (million bu.)	5,275	5,700	5,700
Total Use (million bu.)	13,915	14,750	14,750
Ending Stocks (million bu.)	1,242	1,781	1,344
% Ending Stocks-to-Use	8.93%	12.07%	8.94%
Days of Supply (% S/U x 365 days)	32.6 days	44.1 days	32.6 days
U.S. Corn Average Farm Price (\$/bushel)	\$6.70 USDA \$6.46 KSU	\$5.70 USDA	\$6.45 KSU





#### 61 2023 Corn Cost-Return Budget in Northeast Kansas unit price quantity amount Sub-total 2023 Corn Costs Item INCOME Product Northeast KS Corn - Northeast KS bu \$6.03 145.00 \$874.35 \$874.35 \$874.35 --TOTAL INCOME --DIRECT EXPENSES Yield = 120 bu /ac \$0.96 \$7.57 \$27.38 Additional labor Crop consulting Crop insurance **Custom Operations** \$19.32 Diesel \$15.71 **Total Direct Expenses** Fertilizers \$204.96 \$30.72 \$115.43 Fungicides → = \$3.86 /bu· Herbicides Miscellaneous \$10.28 Operator labor \$6.25 Repair & Maintenance \$14.81 **Total of ALL Expenses** Seeds \$84.15 \$21.50 Interest on operating capital 8% percent on direct expenses **,** = \$5.08 /bu --TOTAL DIRECT EXPENSES--\$559.05 -- Total direct expenses per bu \$3.86 FIXED EXPENSES \$125.00 Cash rent Capital recovery (depreciation + interest) \$52.40 -- TOTAL FIXED EXPENSES--\$177.40 ----Total expenses per bu \$5.08 RETURNS ABOVE DIRECT EXPENSES \$315.30 RETURNS ABOVE TOTAL SPECIFIED EXPENSES \$137.90 62 2023 Preharvest Marketing Plan KANSAS STATE Department of Agricultural Economics UNIVERSITY





#### ✓ What's a Realistic Max Price Target?

#### Let's start with the seasonals

		Jan 1	Preharvest		Percent
	2008/22	Price	Max Price	Change	Change
	2008	\$4.80	\$7.88	\$3.08	64%
	2009	\$4.56	\$4.73	\$0.17	4%
	2010	\$4.45	\$5.22	\$0.77	17%
	2011	\$5.53	\$7.75	\$2.23	40%
Destauration	2012	\$5.90	\$8.39	\$2.49	42%
Preharvest: On	2013	\$5.92	\$5.94	\$0.01	0%
average, 25% of	2014	\$4.48	\$5.13	\$0.65	14%
KS corn is	2015	\$4.20	\$4.52	\$0.32	8%
narvested by the	2016	\$3.77	\$4.49	\$0.72	19%
last week of	2017	\$3.84	\$4.15	\$0.31	8%
September; and	2018	\$3.87	\$4.27	\$0.40	10%
25% of KS milo	2019	\$3.98	\$4.69	\$0.70	18%
by mid-October.	2020	\$4.05	\$4.05	\$0.00	0%
	2021	\$4.35	\$6.37	\$2.02	46%
WINNING THE GAME	2022	\$5.48	\$7.66	\$2.18	40%

	2023	\$6.07	\$6.07	\$0.00	0%
Let's put'e	em in oro	der of '	'Change"		
	Fifteen Ye	ears: CN	IE Decembe	er Corn F	utures
		Jan 1	Preharvest		Percent
	2008/22	Price	Max Price	Change	Change
220/ of the times	2008	\$4.80	\$7.88	\$3.08	64%
33% of the time;	2012	\$5.90	\$8.39	\$2.49	42%
prices rise \$2.00 or more (>40%)	2011	\$5.53	\$7.75	\$2.23	40%
	2022	\$5.48	\$7.66	\$2.18	40%
	2021	\$4.35	\$6.37	\$2.02	46%
(70) of the times	2010	\$4.45	\$5.22	\$0.77	17%
67% of the time; prices rise \$0.40 or	2016	\$3.77	\$4.49	\$0.72	19%
more (>10%)	2019	\$3.98	\$4.69	\$0.70	18%
11010 (>1070)	2014	\$4.48	\$5.13	\$0.65	14%
	2018	\$3.87	\$4.27	\$0.40	10%
87% of the time;	2015	\$4.20	\$4.52	\$0.32	8%
prices rise \$0.17 or	2017	\$3.84	\$4.15	\$0.31	8%
MORE	2009	\$4.56	\$4.73	\$0.17	4%
13% of the time;	2013	\$5.92	\$5.94	\$0.01	0%
nere was no change	2020	\$4.05	\$4.05	\$0.00	0%

#### **Preharvest Marketing Plan**

Objective: Buy crop insurance to protect my production risk and price 50 % of my anticipated crop (based on APH yield) or 60,000 bushels.

Price 5,000 bushels at \$ \$5.75 cash price (\$	- DEC 2023 futures	)
	(contract month) using	FC, Hedge, Basis Contract
Price 5,000 bushels at \$ \$6.15 f/ \$6.00 c, or by	2/1/23 , 2023, using	FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$6.40 f/ \$6.25 c, or by	3/15/23 , 2023, using	FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$6.65 f/ \$6.60 c, or by	4/15/23 , 2023, using	FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$6.90 f/ \$6.75 c, or by	5/15/23 , 2023, using	FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$7.15 f/ \$7.00 c, or by	6/15/23 , 2023, using _	FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$7.40 f/ \$7.25 c, or by	7/15/23 , 2023, using _	FC, Hedge, Basis Contract
Plan starts on February 1, 2023 . Compl	leted by July 15, 20	-
Ignore decision dates and make no sale if pri	ices are lower than \$	\$5.00 Cost of Prodn.
\$ ?.?? (month/commodity) future		cash price.

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WINNING THE GAME

Preharvest Marketing Plan	WINNING THE GAME
Objective: Buy crop insurance to protect my production risk and p of my anticipated crop (based on APH yield) or60,000bushe	
Price 5,000 bushels at \$\$5.75 cash price (\$	FC, Hedge, Basis Contract
Price 5,000 bushels at \$ \$6.15 f/ \$6.00 c, or by 2/1/23 , 2023, using	FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$6.40 f/ \$6.25 c, or by 3/15/23 , 2023, using	FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$6.65 f/ \$6.60 c, or by 4/15/23 , 2023, using	FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$6.90 f/ \$6.75 c, or by 5/15/23, 2023, using	FC, Hedge, Basis Contract FC, Hedge, Basis Contract
Price 10,000 bushels at \$ \$7.40 f/ \$7.25 c, or by 7/15/23, 2023, using	FC, Hedge, Basis Contract
Plan starts on February 1, 2023 . Completed by July 15, 20	023
Ignore decision dates and make no sale if prices are lower than \$	\$5.00 Cost of Prodn.

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