2023 Sorghum Markets & Strategies

'Winning-The-Game' Sorghum Marketing Workshop

Hoisington, Kansas

Wednesday, March 1, 2023

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KANSAS STATE UNIVERSITY Department of Agricultural Economics

The Winter 2017 Grain Market Situation

for U.S. & Kansas Farmers & Agribusinesses

1) **Large grain supplies were limiting grain prices**

2) **Wheat $'s near Marketing Loan** (Feedgrain $'s > Loan)

3) **Grain farmers were focusing on marketing 2016 Crops**

4) **U.S. & World Crop production plans for 2017??**

- ***More soybeans*** *are likely in 2017 in South America & U.S.*
- ***Lower U.S. & World wheat acres*** *with some World crop risk emerging*
- ***2017 U.S. Feedgrain acres to be same or lower*** *– ? in Brazil & Argentina*

The March 1, 2023 Grain Market Situation

for U.S. & Kansas Farmers & Agribusinesses

1) **Tightening grain stocks have supported grain prices** *2022-2023*

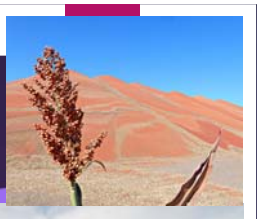
2) **All grain prices $'s far above Marketing Loan rates**

3) **Farmers focused on marketing 2022(Old) & 2023(New) Crops**

4) **U.S. & World Crop production plans for 2023??**

- ***More soybeans*** *are likely in 2023 in South America; but unsure in the U.S.*
- ***"La Nina" to "El Nino" weather change*** *– expecting less 2023 crop risk*
- ***2023 U.S. Feedgrain acres to be higher*** *– crop problems in South America*

Sorghum S-D Prospects



KANSAS STATE UNIVERSITY Department of Agricultural Economics

USDA Office of the Chief Economist
United States Department of Agriculture
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Forecasted planted acres for 23/24 above 22/23, *except for cotton*

Crop (mil. acres)	2018	2019	2020	2021	2022	2023F	%Δ
Corn	88.9	89.7	90.7	93.3	88.6	91.0	2.7%
Soybeans	89.2	76.1	83.4	87.2	87.5	87.5	0.0
Wheat	47.8	45.5	44.5	46.7	45.7	49.5	8.2%
All cotton	14.1	13.7	12.1	11.2	13.8	10.9	-20.8%
Rice	2.9	2.6	3.0	2.5	2.2	2.5	12.5%
Sorghum	5.7	5.3	5.9	7.3	6.3	6.5	2.8%

USDA Office of the Chief Economist
United States Department of Agriculture

Prices are expected to come down on the strength of the 2022/23 crop

Crop	2012-2016 avg	2017	2018	2019	2020	2021	2022	2023	Δ2023
Corn ($ / bu.)	4.40	3.36	3.61	3.56	4.53	6.00	**6.70**	**5.60**	-16.4%
All Rice ($ cwt)	13.48	12.90	12.60	13.60	14.40	16.10	**19.40**	**18.40**	-5.2%
Sorghum ($ / bu.)	4.15	3.22	3.26	3.34	5.04	5.94	**6.90**	**5.60**	-18.8%
Soybeans ($ / bu.)	11.18	9.33	8.48	8.57	10.80	13.30	**14.30**	**12.90**	-9.8%
Upland Cotton ($ / lb)	0.68	0.69	0.70	0.60	0.66	0.91	**0.83**	**0.80**	-3.6%
Wheat ($ / bu.)	5.88	4.72	5.16	4.58	5.05	7.63	**9.00**	**8.50**	-5.6%
Barley ($ / bu.)	5.73	4.47	4.62	4.69	4.75	5.31	**7.30**	--	--
Oats ($/ bu.)	3.31	2.59	2.66	2.82	2.77	4.55	**4.85**	--	--

Source: USDA OCE-WAOB, Marketing Year prices, Barley and Oat prices not forecast for the Ag Outlook Forum.

Sorghum Market Outlook

	2021/22	2022/23	2023/24	Change yr/yr
Area planted (mil acres)	7.3	6.3	6.5	*0.2*
Area harvested (mil acres)	6.5	4.6	5.7	*1.1*
Yield (bu/acre)	69	41.1	69.2	*28.1*
		Million bushels		
Beginning stocks	20	47	25	(22)
Production	448	188	394	*206*
Imports	-	-	-	-
Total supply	468	235	419	*184*
Domestic use (total)	127	120	155	*35*
-Feed and residual	81	70	105	*35*
-Food, seed, and industrial	45	50	50	-
Exports	294	90	230	*140*
Ending stocks	47	25	34	*9*
Stocks-to-use (percent)	11.2	11.9	8.8	*(3.1)*
Average farm price ($/bushel)	5.94	6.90	5.60	*(1.30)*

- Production boosted with return to normal yield and larger area
- Feed and residual use higher with larger crop
- Exports seen bouncing back based on larger supplies
- Stocks rebuilding slightly

2023 USDA Ag Outlook Forum, Arlington, VA, February 23-24, 2023

Corn Market Outlook

	2021/22	2022/23	2023/24	Change yr/yr
Area planted (mil acres)	93.3	88.6	91	*2.4*
Area harvested (mil acres)	85.3	79.2	83.1	*3.9*
Yield (bu/acre)	176.7	173.3	181.5	*8.2*
		Million bushels		
Beginning stocks	1,235	1,377	1,267	(110)
Production	15,074	13,730	15,085	*1,355*
Imports	24	50	25	*(25)*
Total supply	16,333	15,157	16,377	*1,220*
Domestic use (total)	12,484	11,965	12,290	*325*
-Feed and residual	5,718	5,275	5,600	*325*
-Food, seed, and industrial	6,766	6,690	6,690	-
--Ethanol and byproducts	5,326	5,250	5,250	-
Exports	2,471	1,925	2,200	*275*
Ending stocks	1,377	1,267	1,887	*620*
Stocks-to-use (percent)	9.2	9.1	13.0	*3.9*
Average farm price ($/bushel)	6.00	6.70	5.60	*(1.10)*

- Production boosted with larger area planted and trend yields
- Domestic feed and residual use rebounding with higher supplies
- Higher exports
- Ethanol use unchanged at 5.25 billion bushels with steady gasoline consumption
- Ending stocks projected up
- Price forecast lower

2023 USDA Ag Outlook Forum, Arlington, VA, February 23-24, 2023

Soybean Market Outlook

	2021/22	2022/23	2023/24	Change yr/yr
Area planted (mil acres)	87.2	87.5	87.5	0
Area harvested (mil acres)	86.3	86.3	86.7	0.4
Yield (bu/acre)	51.7	49.5	52	2.5
		Million bushels		
Beginning stocks	257	274	225	(49)
Production	4,465	4,276	4,510	234
Imports	16	15	15	-
Total supply	4,738	4,566	4,750	184
Crush	2,204	2,230	2,310	80
Exports	2,158	1,990	2,025	35
Total use	4,464	4,340	4,461	121
Ending stocks	274	225	290	65
Stocks-to-use (percent)	6.1	5.2	6.5	1.3
Average farm price ($/bushel)	13.30	14.30	12.90	(1.40)

- Production up mainly on return to trend yield
- Growth in crush to support larger soyoil use
- Exports up slightly
- Stocks larger
- Price forecast lower

2023 USDA Ag Outlook Forum, Arlington, VA, February 23-24, 2023

Wheat Market Outlook

	2021/22	2022/23	2023/24	Change yr/yr
Area planted (mil acres)	46.7	45.7	49.5	3.8
Area harvested (mil acres)	37.1	35.5	38.4	2.9
Yield (bu/acre)	44.3	46.5	49.2	2.7
		Million bushels		
Beginning stocks	845	698	568	(130)
Production	1,646	1,650	1,887	237
Imports	95	120	120	-
Total supply	2,587	2,468	2,575	107
Domestic use (total)	1,088	1,125	1,142	17
-Food use	972	975	977	2
-Seed use	58	70	65	(5)
-Feed and residual	59	80	100	20
Exports	800	775	825	50
Total use	1,888	1,900	1,967	67
Ending stocks	698	568	608	40
Stocks-to-use (percent)	37.0	29.9	30.9	1.0
Average farm price ($/bushel)	7.63	9.00	8.50	(0.50)

- Area up on strong price incentives
- Yield back to trend
- Slow growth in food use
- Feed and residual up with larger supplies
- Exports up, but still relatively low
- Stocks rebounding slightly

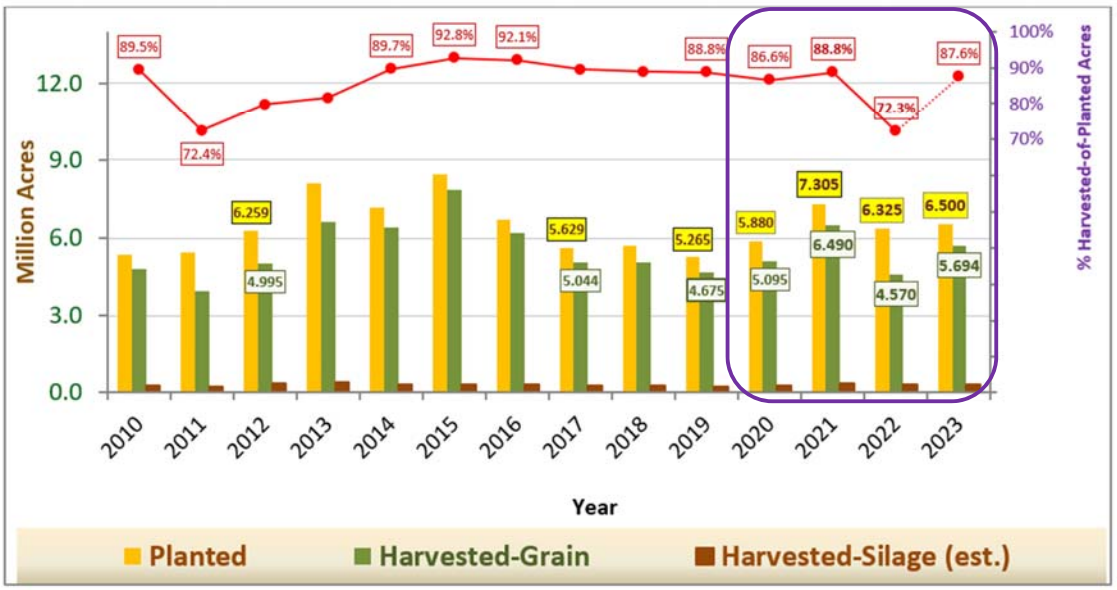
2023 USDA Ag Outlook Forum, Arlington, VA, February 23-24, 2023

Questions to Consider Moving Forward

- Does drought in the Great Plains continue?
- What will spring planting conditions be like?
- What will Ukraine be able to produce and export?
- Will we continue to see strength in the U.S. dollar?
- What other global supply shocks will we see? Weather in South America?

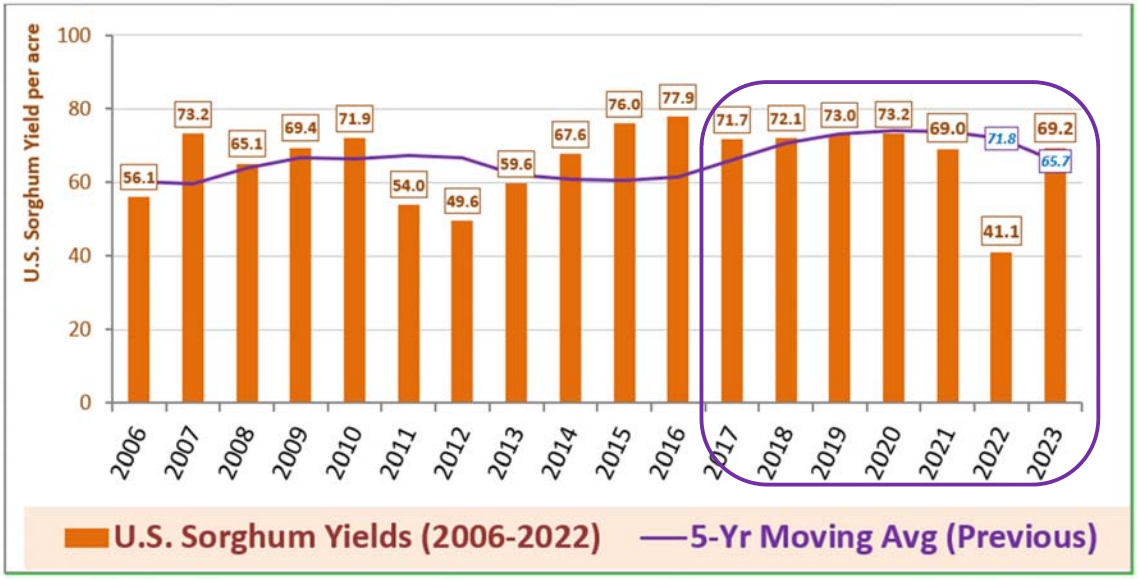
U.S. Sorghum Planted & Harvested Acres

Years 2010 – 2023 as of USDA Information available on February 28, 2023



U.S. Grain Sorghum Yields

Years 2010 – 2023 as of USDA Information available on February 28, 2023

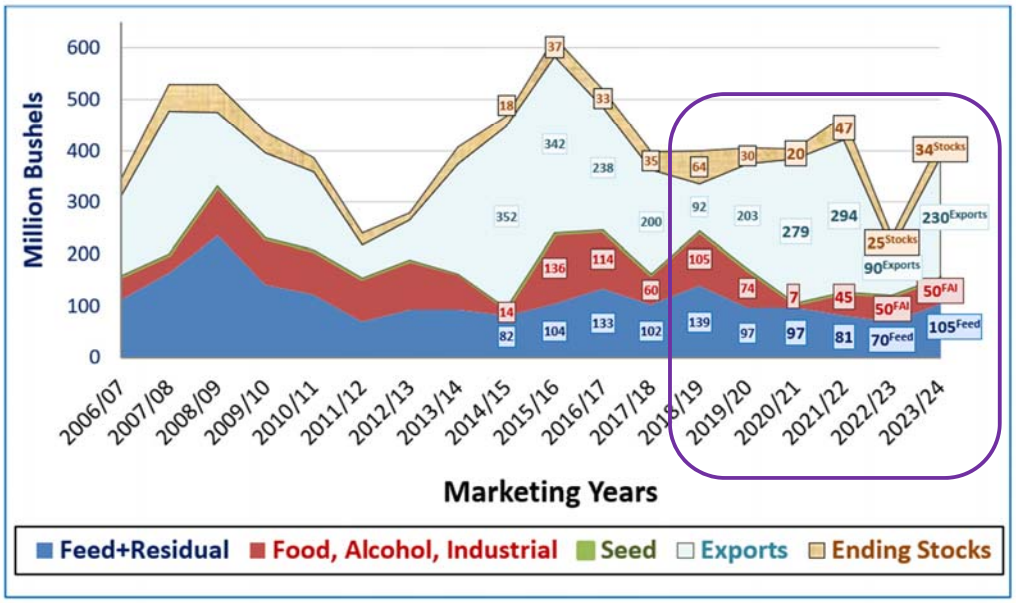


U.S. Sorghum Total Supplies

MY 2006/07 - *"New Crop"* MY 2023/24 as of USDA Information available on February 28, 2023

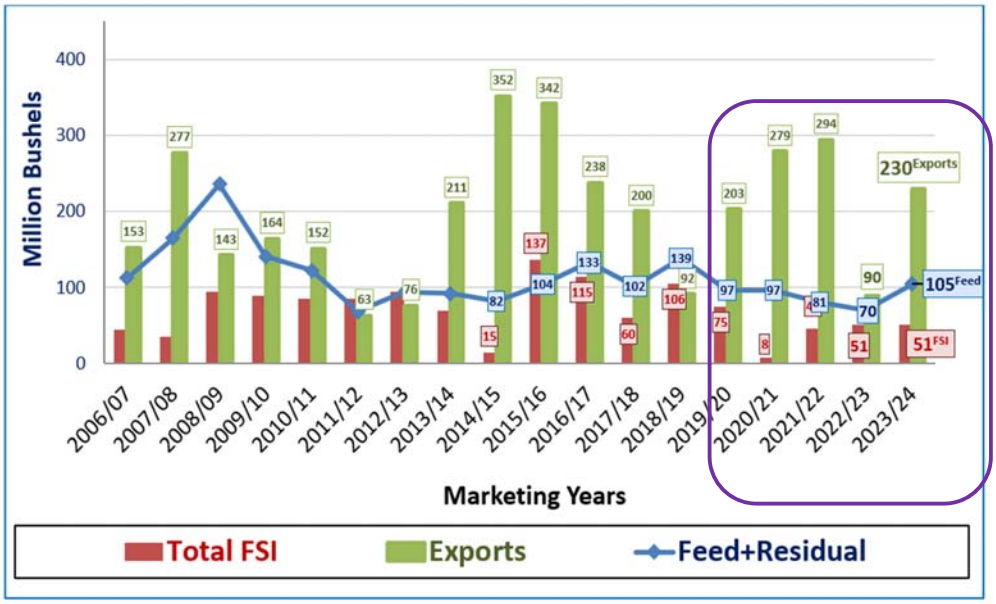
U.S. Sorghum Use & End Stocks

MY 2006/07 - *"New Crop"* MY 2023/24 as of USDA Information available on February 28, 2023



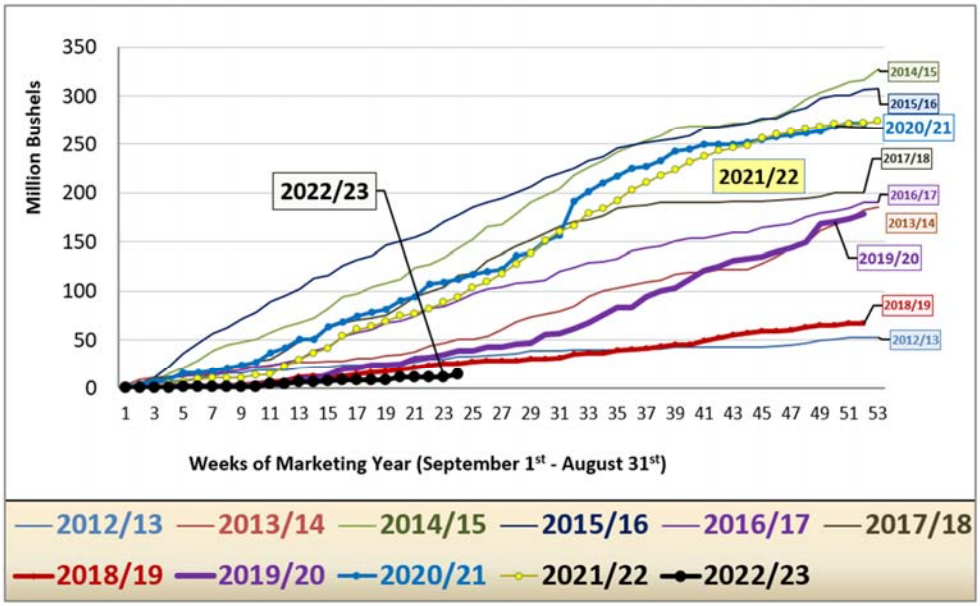
U.S. Grain Sorghum Use Trends

MY 2006/07 - *"New Crop"* MY 2023/24 as of USDA Info. available on February 28, 2023



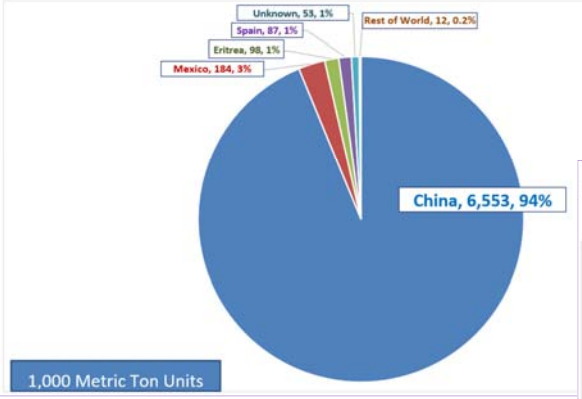
U.S. Grain Sorghum Exports

MY 2012/13 - "Current" MY 2022/23 as of February 16, 2023 - via USDA FAS



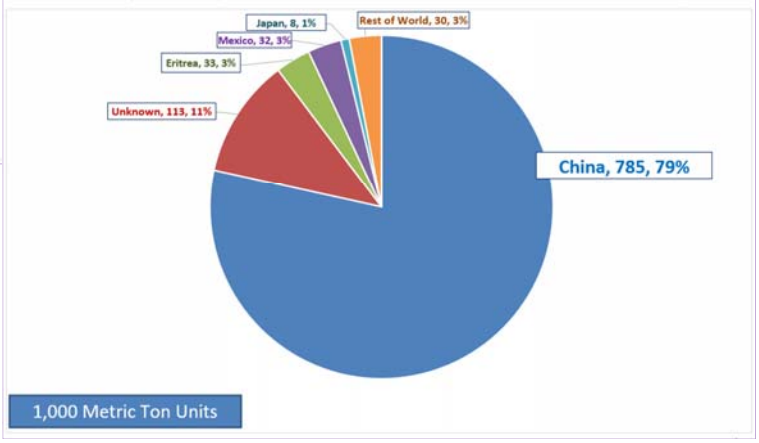
U.S. Grain Sorghum Export Buyers "Old Crop" MY 2021/22

Outstanding Sales + Shipments for "Old Crop" MY 2021/22 as of 8/25/2022 USDA FAS Reports



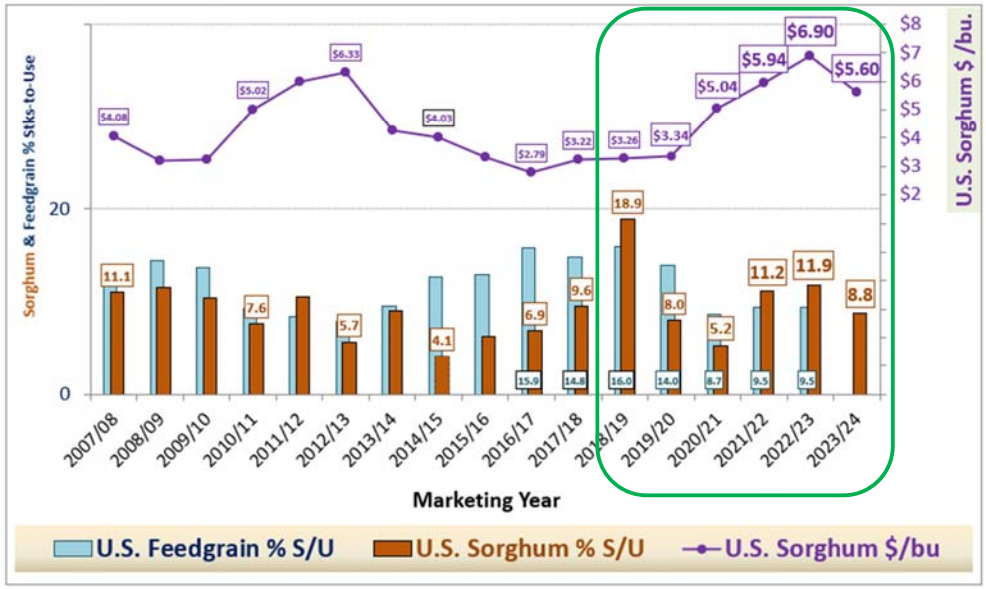
U.S. Grain Sorghum Export Buyers "Current" MY 2022/23

Outstanding Sales + Shipments for "Current" MY 2022/23 as of 2/16/2023 USDA FAS Reports



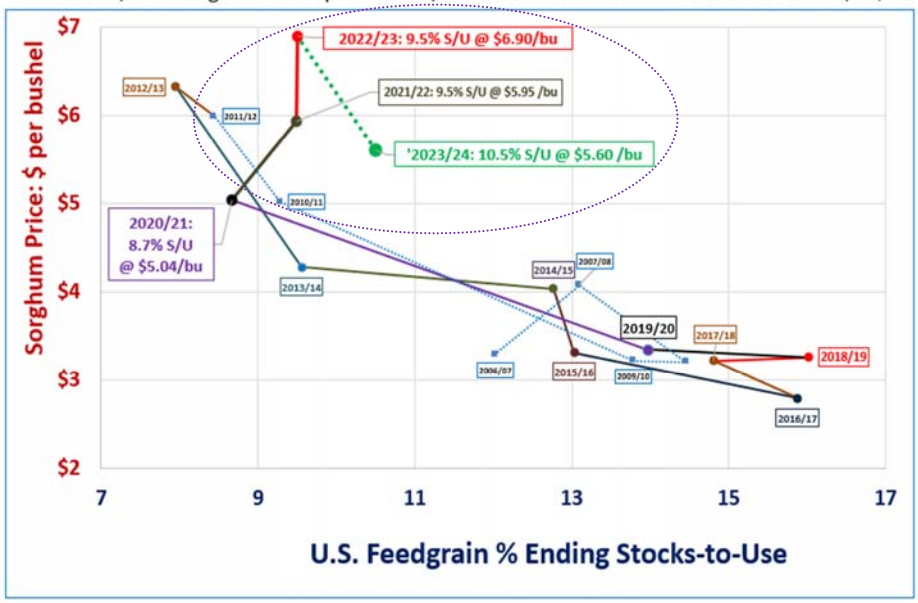
U.S. Sorghum % Stocks/Use vs Cash $

MY 2004/05 - "New Crop" MY 2023/24 as of USDA Information available on February 28, 2023



U.S. Sorghum $ vs Feedgrain % S/U

MY 1975/76 through "New Crop" MY 2023/24 as of USDA Information available on February 28, 2023



Feedgrain & Sorghum Market Outlook 2023

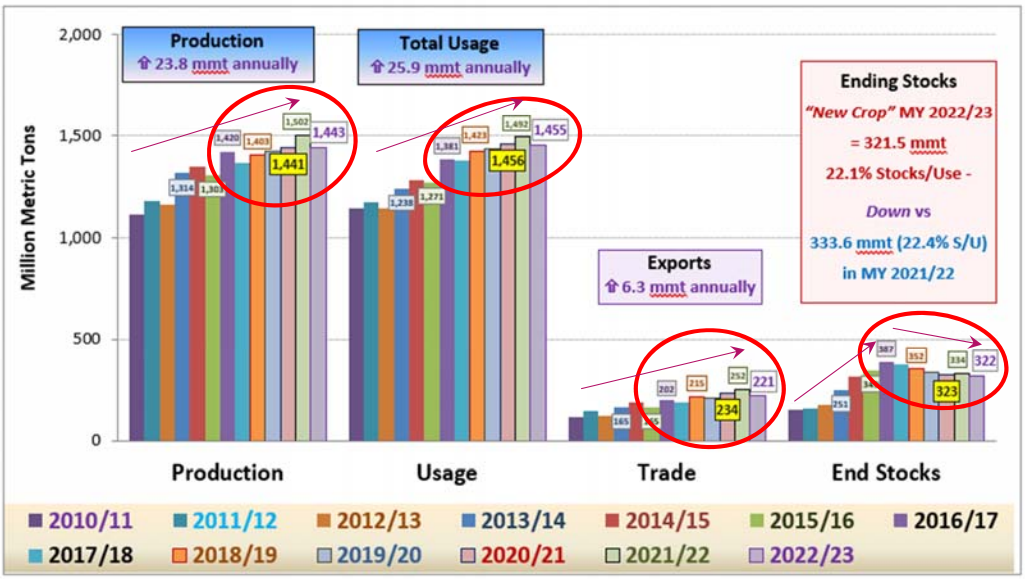
in Kansas, the U.S. & Globally

1) "*Tight!*" *2023* Global Feedgrain, Oilseed & Wheat Stocks

- *The importance of* ***South America's 2023 corn & soybean crops!!***
- **Occurring &/or Anticipated in 2023**:
  - *Drought* in **Argentina** & *large crops* in **Brazil**
  - *Smaller* Crops & Exports from **Ukraine** & *uncertainty* re: **China**

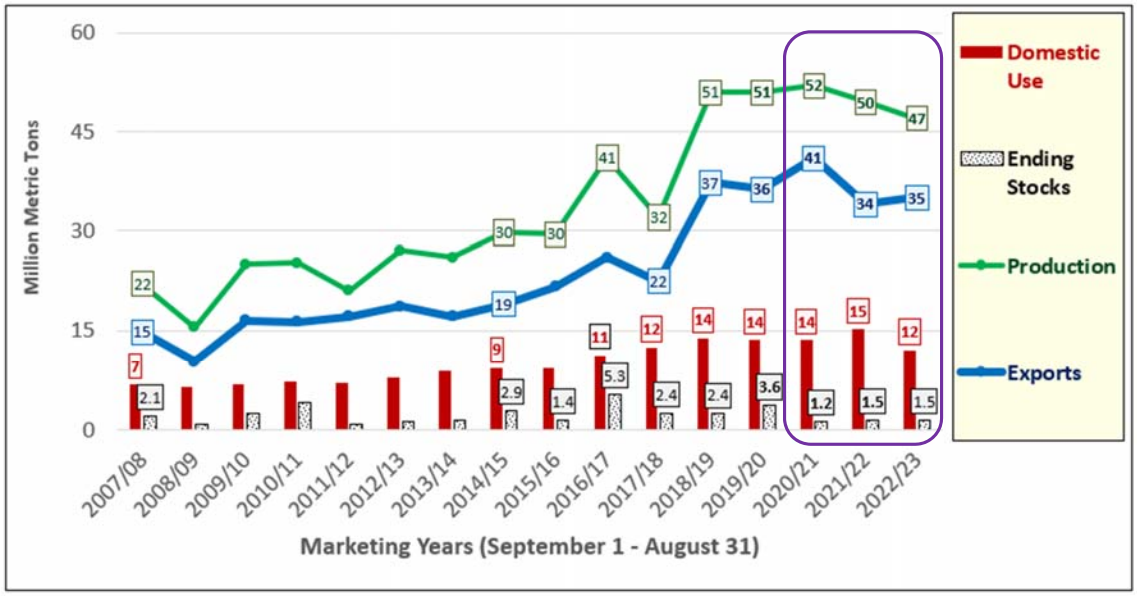
World Coarse Grain Supply-Demand:

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



Argentina Corn Supply-Demand

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



Brazil Corn Supply-Demand

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

South America Corn-Soybean Calendar

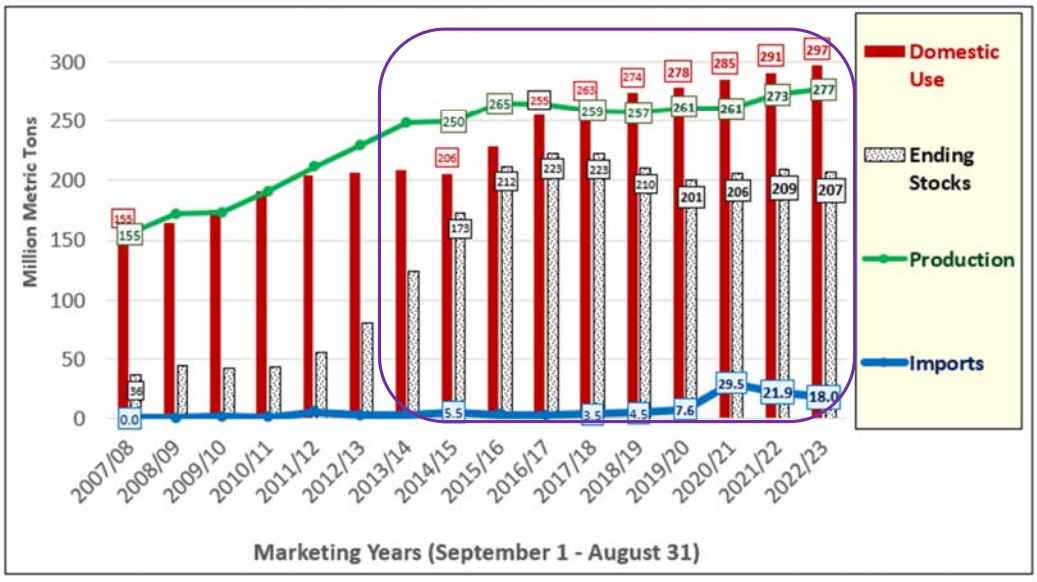
- **South America Planting Influences** ⇨ *"Bid for Acres"*
  - **Brazil & Argentina Corn & Soybean Crop Calendar**
    - **Brazil**
      - **Corn**: 1st crop ***Planting*** – October-December ⇨ ***Harvest***: February-June
      - **Soybeans**: ***Planting*** – October-December ⇨ ***Harvest***: March-June
      - **Corn**: 2nd crop ***Planting*** – January-February ⇨ ***Harvest***: March-June
    - **Argentina**
      - **Corn**: ***Planting*** – mid September-December ⇨ ***Harvest***: mid March-early June
      - **Soybeans**: 1st crop ***Planting*** – November-December ⇨ ***Harvest***: Late March-early May
      - **Soybeans**: 2nd crop ***Planting*** – December-early Jan. ⇨ ***Harvest***: mid April – mid June

Ukraine Corn Supply-Demand

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

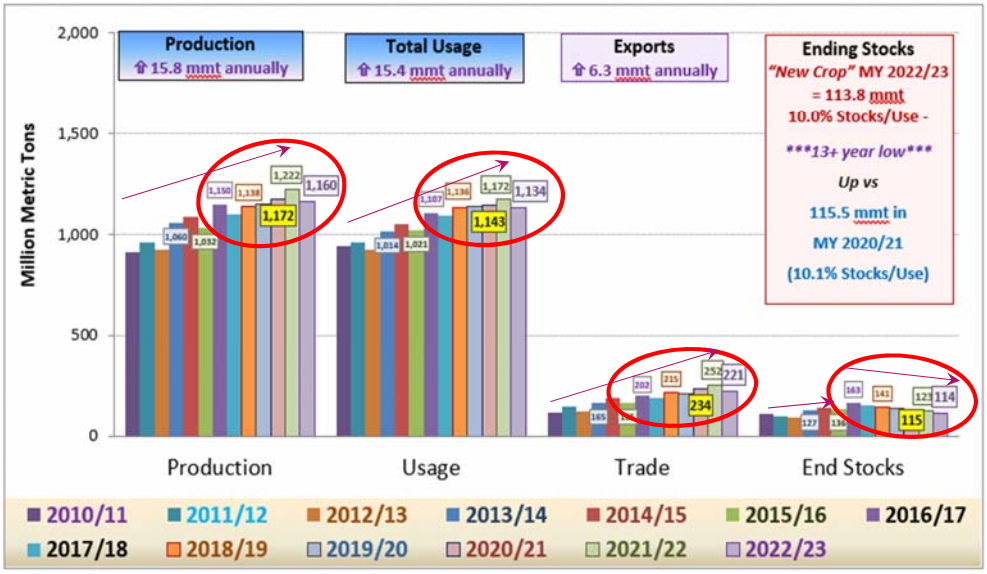
China Corn Supply-Demand

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



"World Less-China" Coarse Grain S-D

MY 2007/08 thru "New Crop" 2022/23 as of the February 8, 2023 USDA WASDE report



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Grain Market Outlook 2023…….

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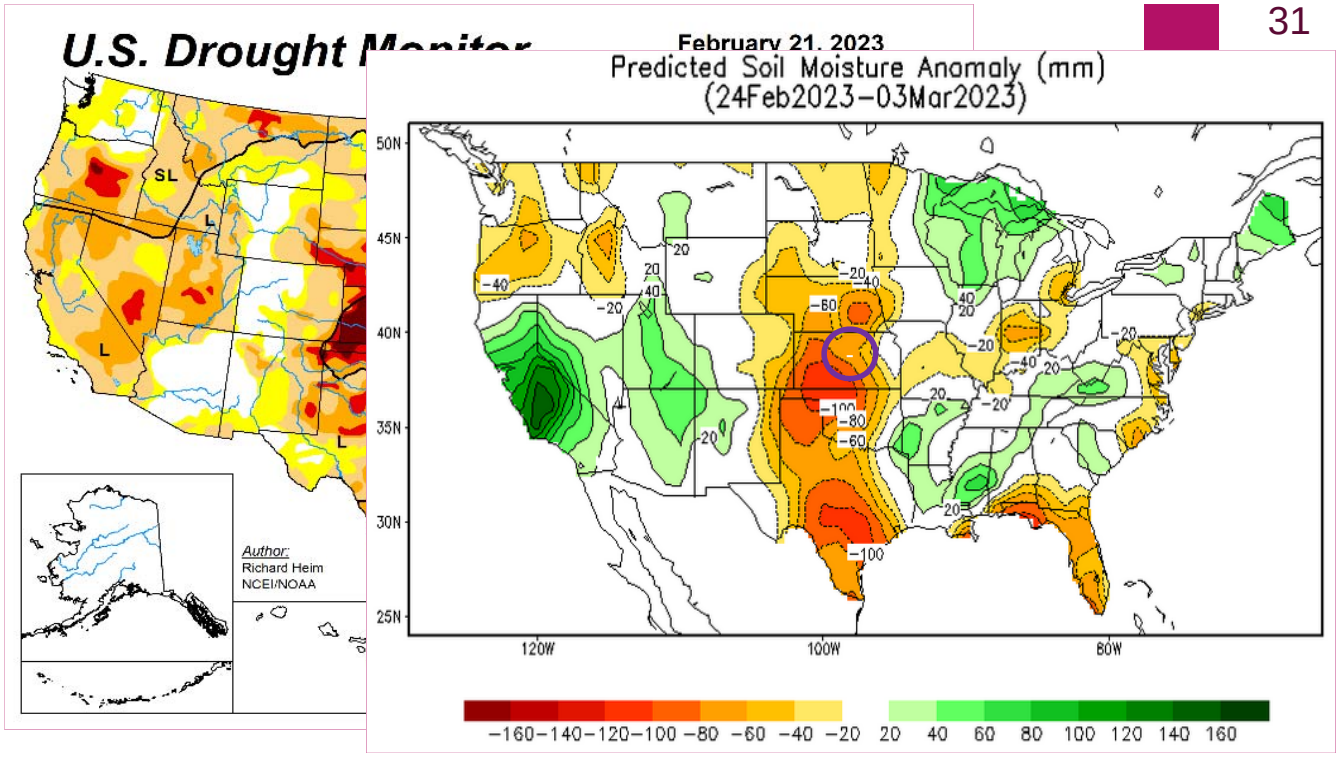
2) Continuance of dry La Nina Weather Pattern in 2023???

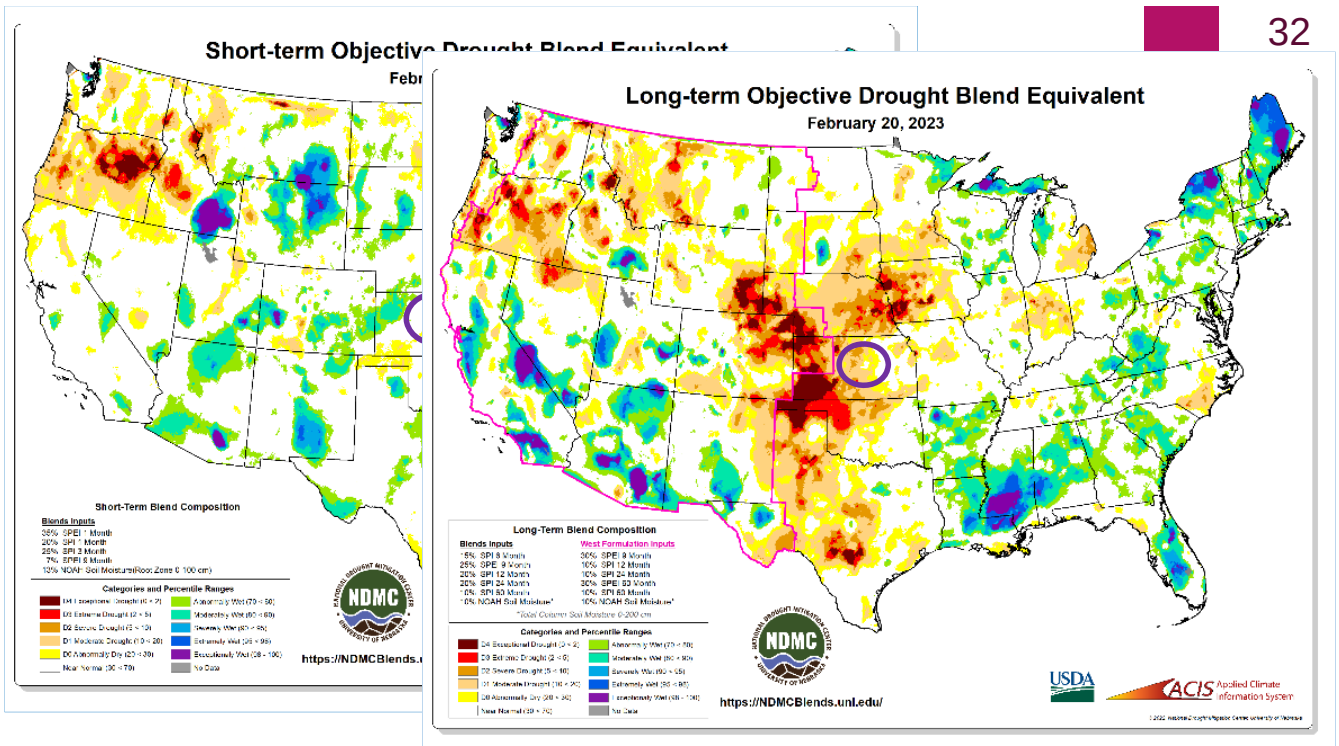
- "La Nina is expected to continue into winter, with equal chances of La Nina & ENSO-neutral during January-March 2023. In February-April 2023, there is a 71% Chance of ENSO-neutral."

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

- "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."

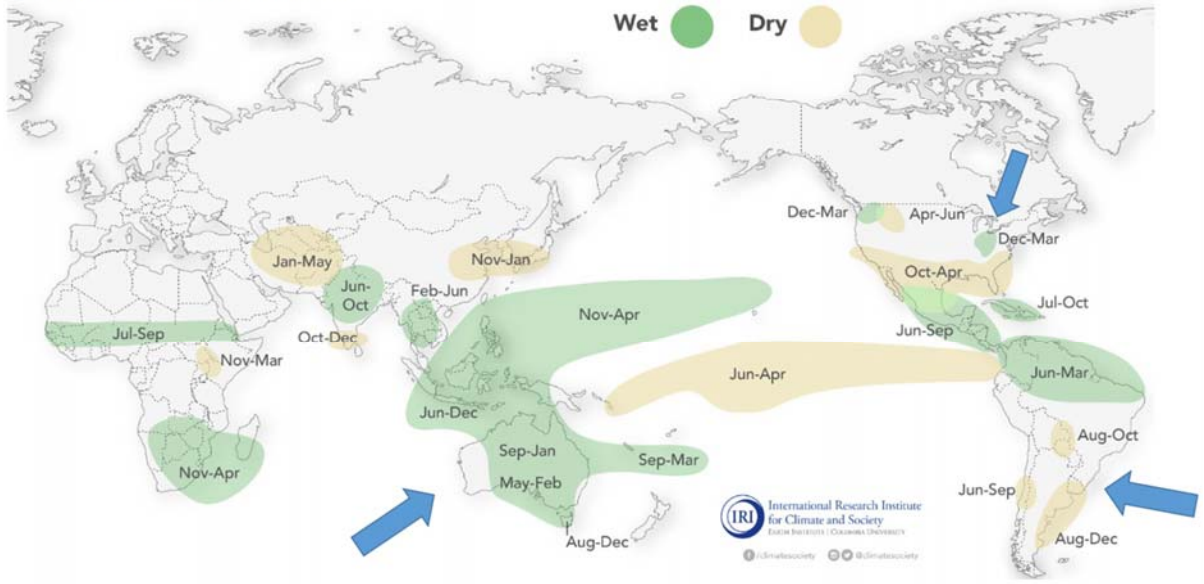
  Severe Weather Europe, Andrej Flis *January 11, 2023*


U.S. Drought Monitor
February 21, 2023
Predicted Soil Moisture Anomaly (mm)
(24Feb2023–03Mar2023)
Author:
Richard Heim
NCEI/NOAA
50N
45N
40N
35N
30N
25N
120W
100W
80W
−160 −140 −120 −100 −80 −60 −40 −20 20 40 60 80 100 120 140 160


Short-term Objective Drought Blend Equivalent
Short-Term Blend Composition
Long-term Objective Drought Blend Equivalent
February 20, 2023
Long-Term Blend Composition
https://NDMCBlends.unl.edu/
NDMC
USDA
ACIS Applied Climate Information System

'Triple Dip' La Niña coming to an end

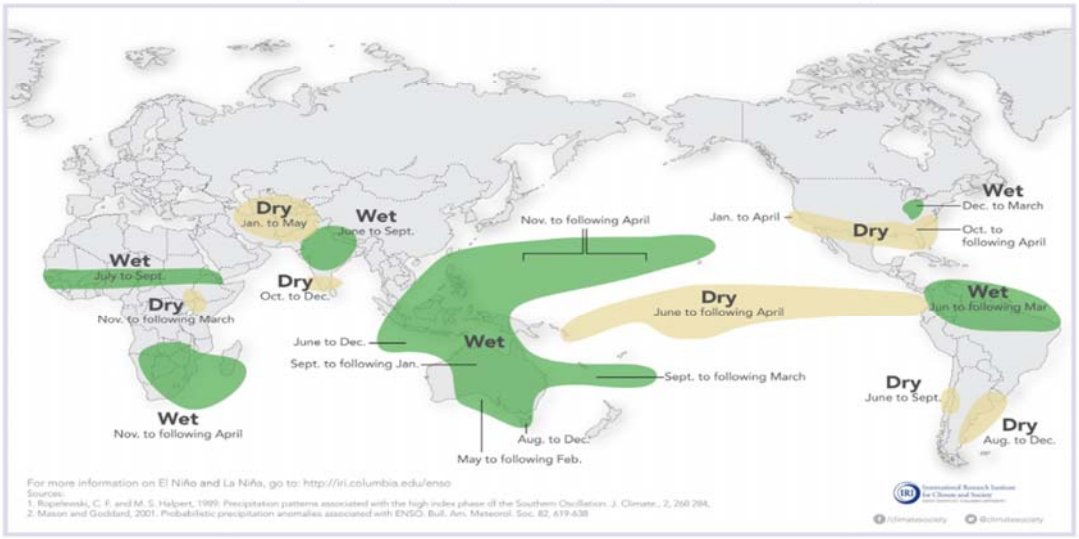
La Niña and rainfall patterns



USDA Agricultural Weather Assessments
OCE/World Agricultural Outlook Board

La Niña and Rainfall

La Niña conditions in the tropical Pacific are known to shift rainfall patterns in many different parts of the world. Although they vary somewhat from one La Niña to the next, the strongest shifts remain fairly consistent in the regions and seasons shown on the map below.



USDA Agricultural Weather Assessments
OCE/World Agricultural Outlook Board

El Niño and Rainfall

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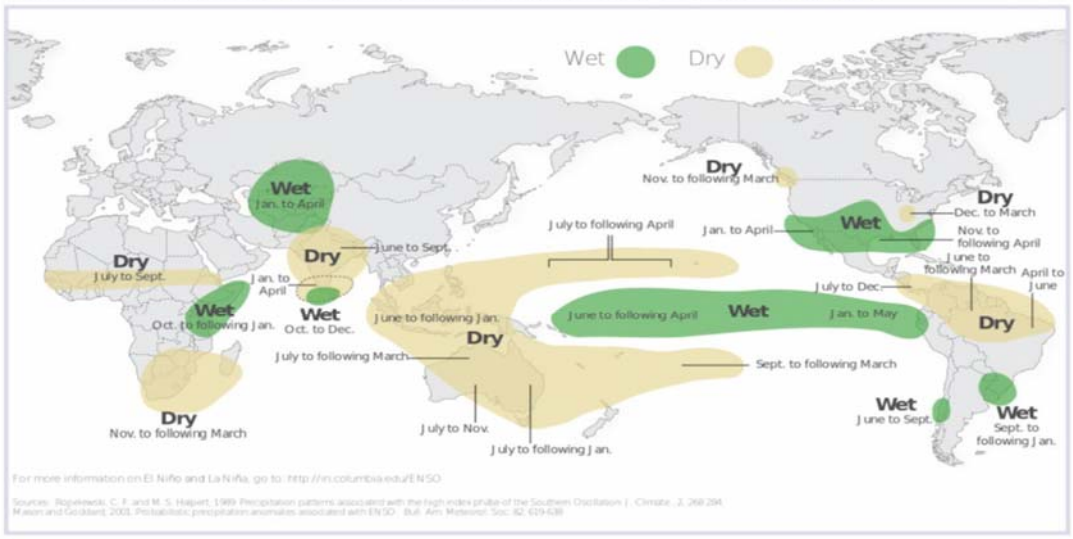
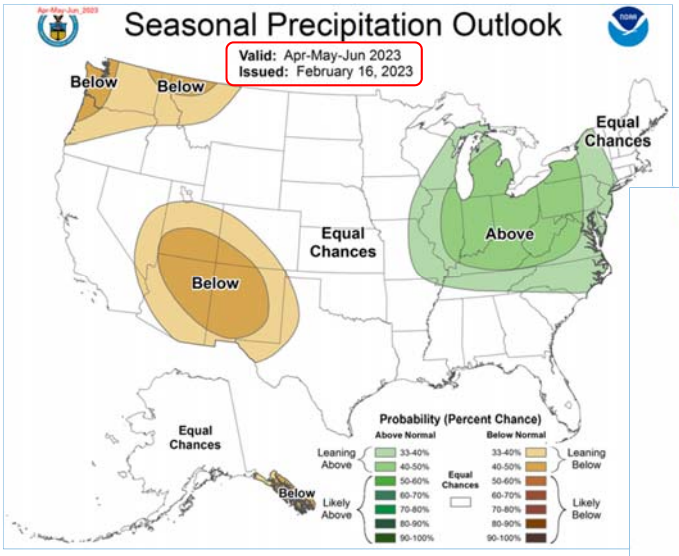
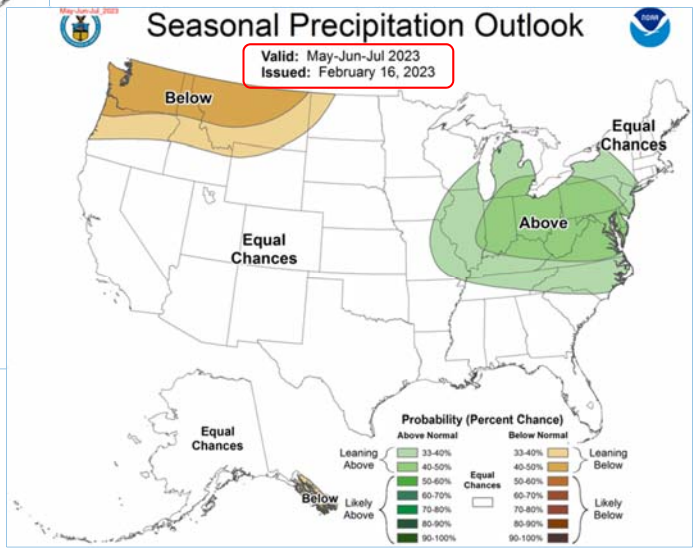
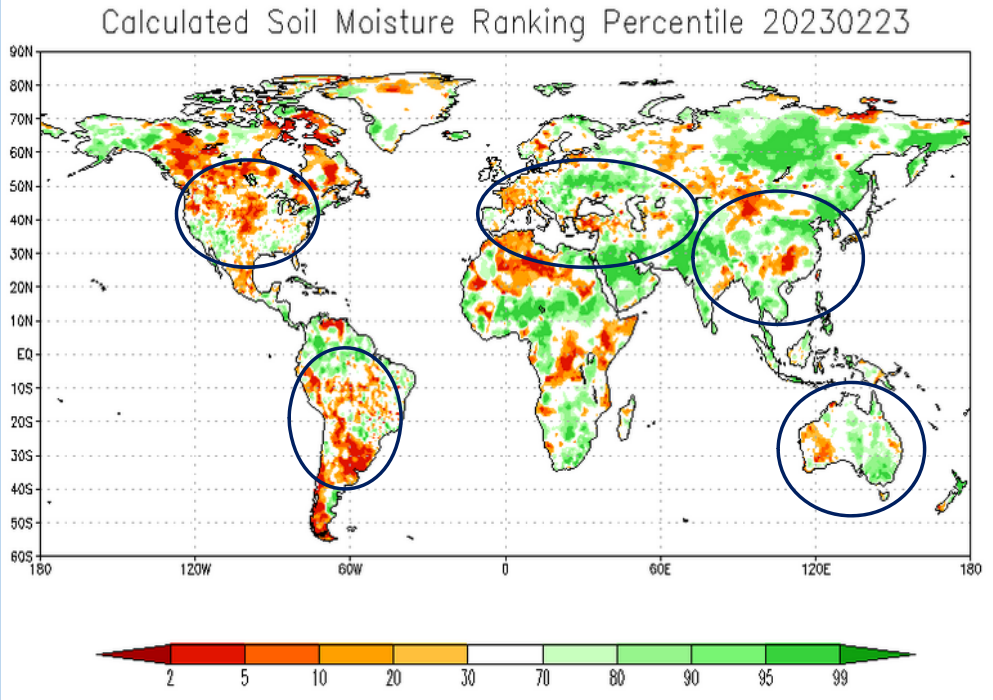








Grain Market Outlook 2023…….

3) Moderating Fertilizer $'s & other Crop Input costs

- *Lower* ***natural gas $'s****, but continued* ***supply-chain challenges***

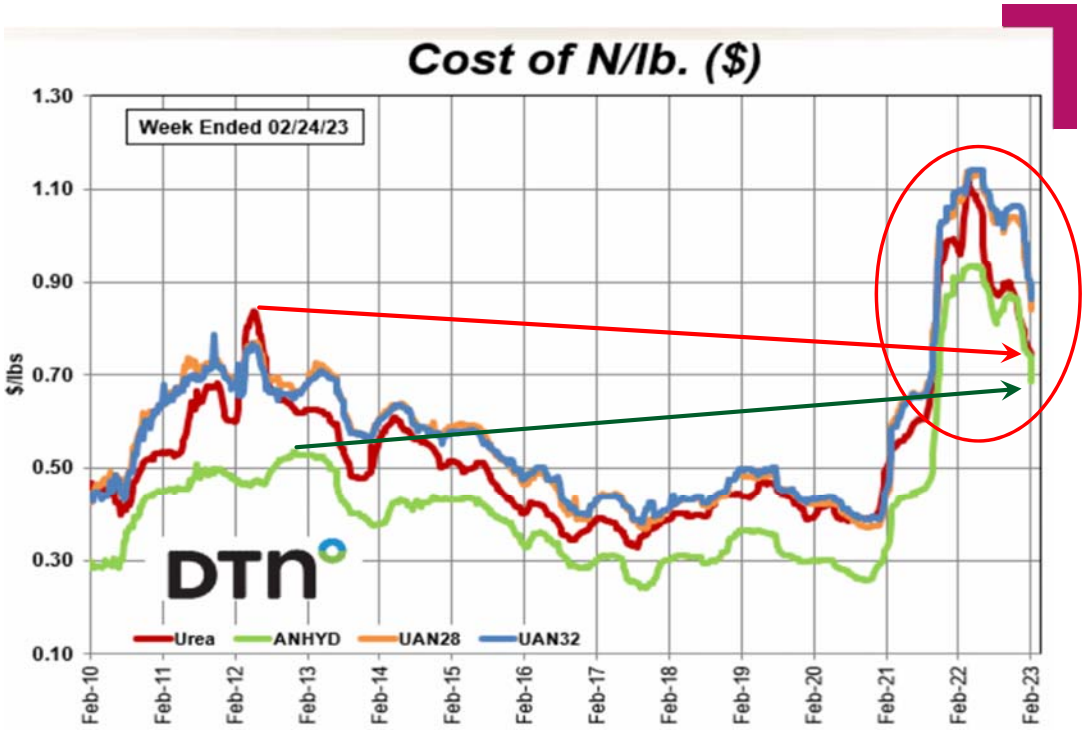
USDA Iowa Production Cost Summary

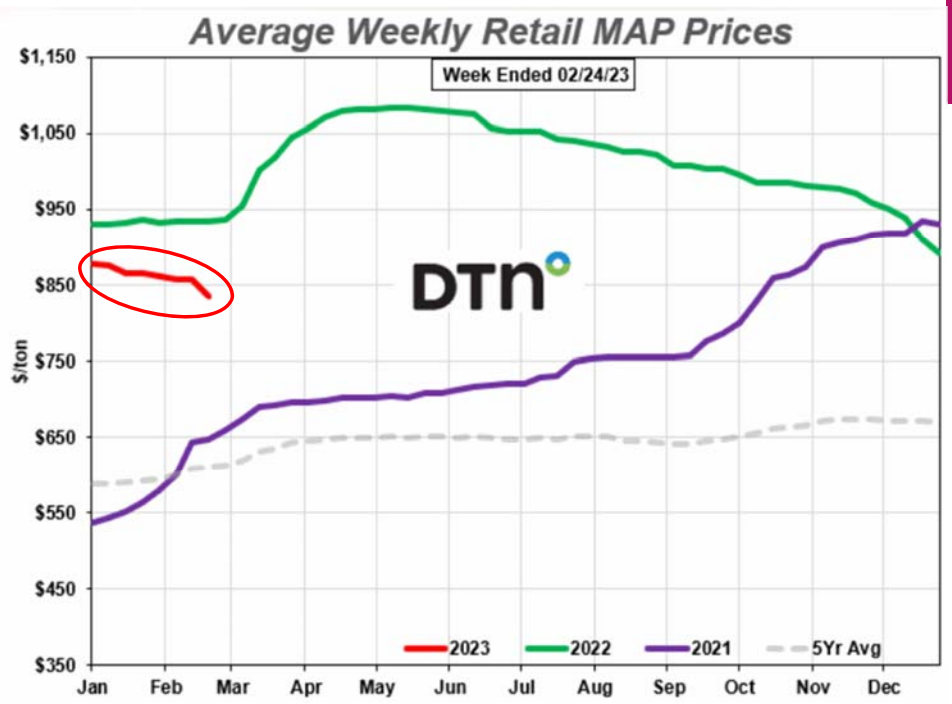
AMS Livestock, Poultry and Grain Market News
IA Dept. of Ag Market News

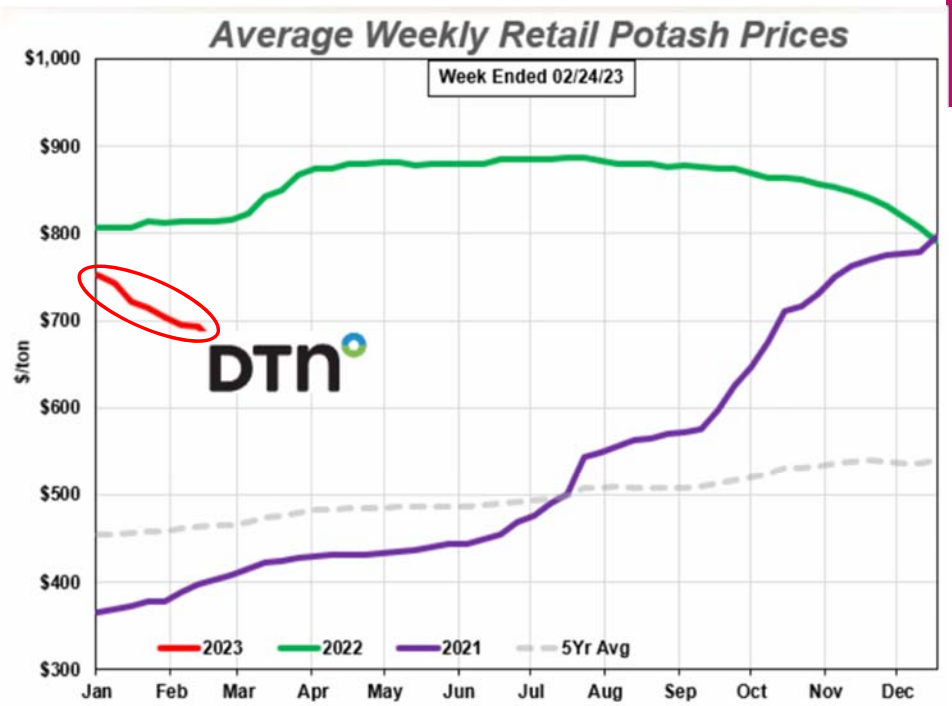
February 21, 2023

Product	Unit	Offer	Average	Change
Anhydrous Ammonia	Per Ton	1,175.00 – 1,200.00	1,191.00	DN 8.55
Urea 46-0-0	Per Ton	650.00 – 796.00	740.50	DN 24.75
Liquid Nitrogen 32-0-0	Per Ton	525.00 – 628.00	587.67	DN 30.33
MAP (Monoammonium Phosphate 11%N 52%P)	Per Ton	725.00 – 1,025.00	872.00	DN 35.50
Potash (Red) 0-0-60	Per Ton	520.00 – 875.00	676.00	DN 99.83
Farm Diesel < 1000 gallons	Per Gallon	3.35 – 3.40	3.38	DN 0.16
Propane (LP Gas) < 1000 gallons	Per Gallon	1.79 – 2.15	1.97	UP 0.04


$NATGAS Natural Gas - Continuous Contract (EOD) CME
©StockCharts.com
28-Feb-2023
Open 2.65 High 2.79 Low 2.55 Close 2.75 Volume 38.2M Chg +0.20 (+7.81%)
$NATGAS (Weekly) 2.75
MA(3) 2.52
MA(7) 2.65
3.40
2.26
3.32
2.42
6.47
4.82
3.52
5.57
4.88
9.00
6.43
9.66
5.32
9.42
7.53
10.03
4.90
8.18
5.73
2.11
2.75
O N D 21 F M A M J J A S O N D 22 F M A M J J A S O N D 23 F

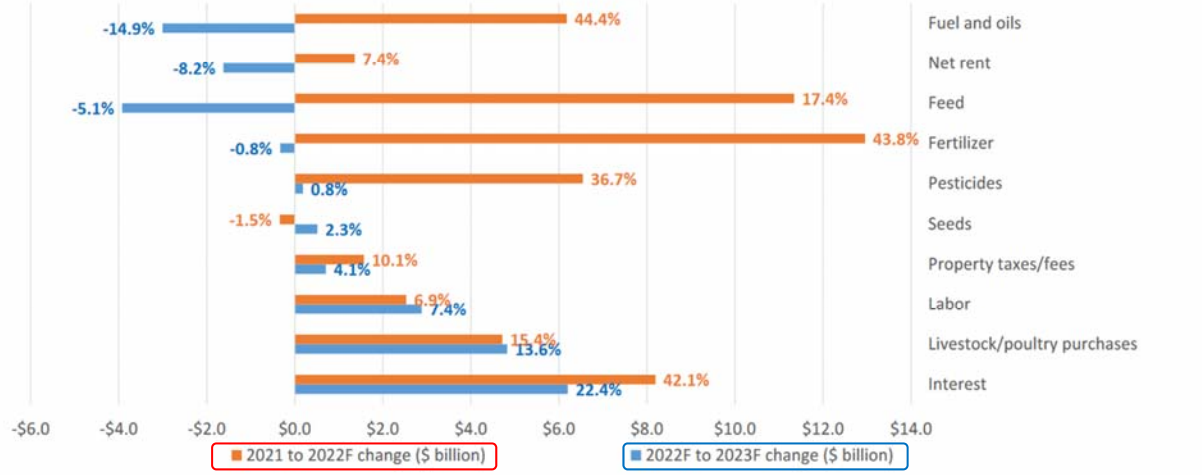

Cost of N/lb. ($)
Week Ended 02/24/23
$/lbs
1.30
1.10
0.90
0.70
0.50
0.30
0.10
DTN
Urea
ANHYD
UAN28
UAN32
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Feb-21
Feb-22
Feb-23


Average Weekly Retail MAP Prices
Week Ended 02/24/23
$1,150
$1,050
$950
$850
$750
$650
$550
$450
$350
$/ton
DTN
2023
2022
2021
5Yr Avg
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Average Weekly Retail Potash Prices
Week Ended 02/24/23
$1,000
$900
$800
$700
$600
$500
$400
$300
$/ton
DTN
2023
2022
2021
5Yr Avg
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

USDA Office of the Chief Economist
United States Department of Agriculture

General moderating of changes in expenses expected over 2022-2023 compared to 2021-2022



Data source: USDA, Economic Research Service, Farm Income and Wealth Statistics
Data as of February 7, 2023. F = Forecast

Note: percent year over year change over shown in call-out boxes

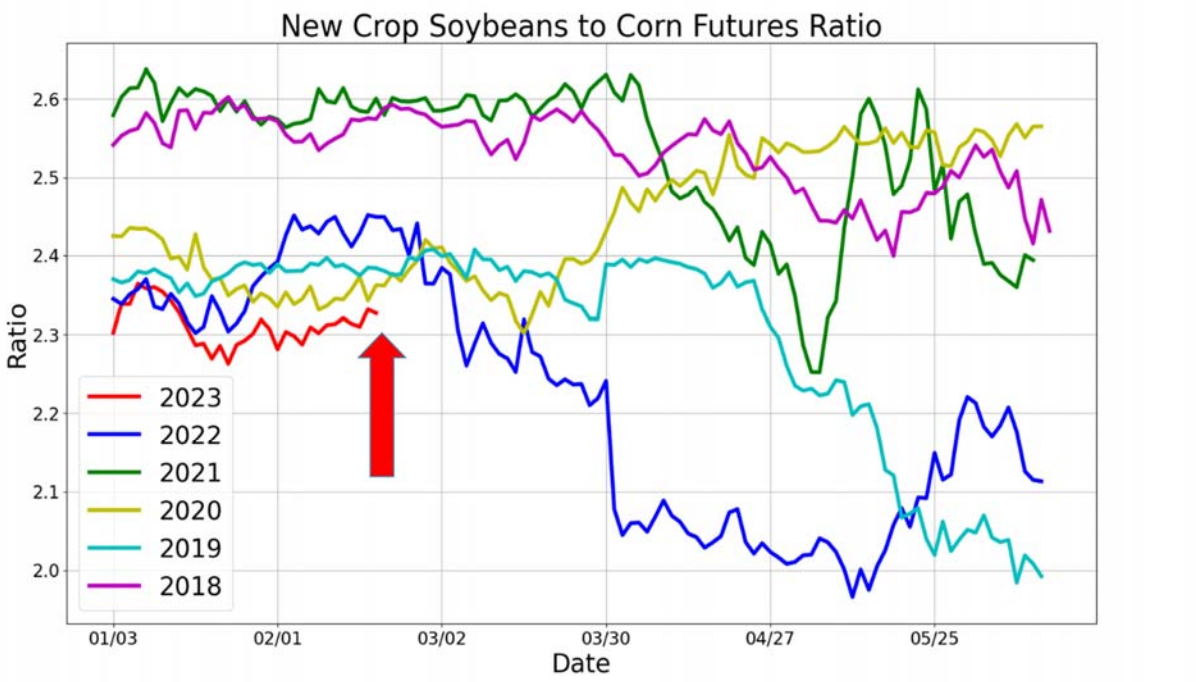
What to anticipate in Year 2023

4) 2023 Spring Planting of Feedgrains & Oilseeds

- ***"New Crop"* 2023 Prices favoring Corn Acres in 2023**
  - **NOV^{2023} Soybean futures** @ $13.72 /bu 2/28/2023 close
  - **DEC^{2023} Corn futures** @ $5.76 /bu 2/28/2023
  - ➢ **2023 "New Crop" Soy/Corn $ Ratio** = $13.72 ÷ $5.76 = **2.38** (vs 2.30 Avg)

+ Soybeans; — Feedgrains

- ***However,*** lower fertilizer & other crop input costs will *encourage* higher **2023 U.S. Feedgrain Acres** – ≈ **6.5 mln. acres Sorghum + 91.0 mln. ac. Corn**



What to anticipate: Year 2023

5) 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*

➢ ***"Strong"* Demand-Pull for Feedgrains in Kansas 2023**

- Summer demand likely for *"New Crop"* supplies
- ***Possibility of* strong Summer 2023 Corn Market Volatility IF a "short crop" happens in 2023** ⇨ What are the odds of a short crop in 2023?

What to anticipate: Year 2023

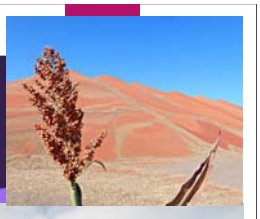
6) Are grain markets *at risk* to *fall sharply* in late 2023?

- **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 2023 U.S. & Foreign crop prospects are ***"OK-to-Good"***, ***THEN*** grain markets likely ***"slide" lower*** into Fall 2023

Sorghum Market Prices



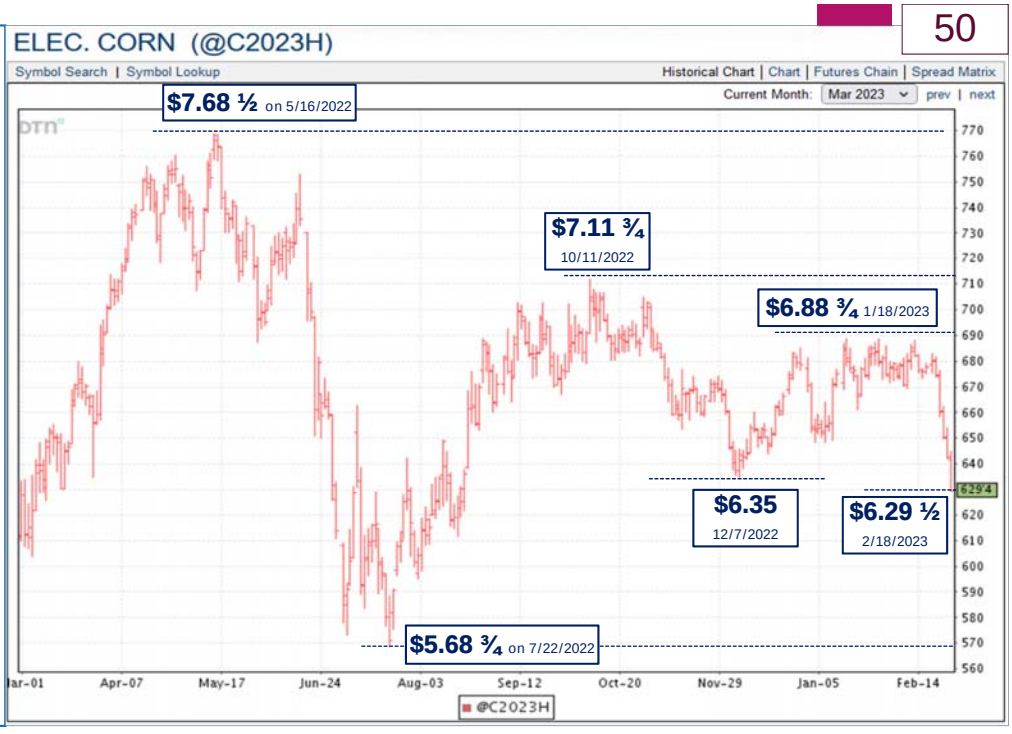
KANSAS STATE UNIVERSITY Department of Agricultural Economics

CME Corn Futures 2/28/2023 Closes			
Month	Close	Change	Carry /mo
Mar^{Lead} 23	**$6.29 ½**	**⇩ $0.13 ¼**	---
May 23	$6.30 ¼	⇩ $0.13 ¼	+$0.00^{375}
July 23	$6.22 ¼	⇩ $0.11 ½	-$0.04
Sept 23	$5.82 ½	⇩ $0.07 ½	-$0.19^{875}
Dec^{Hvst} 23	**$5.69 ¾**	**⇩ $0.06 ¼**	-$0.04^{25}
Mar 24	$5.77 ¾	⇩ $0.06 ½	+$0.02^{67}
May 24	$5.82 ¾	⇩ $0.06 ¼	+$0.02^{50}
July 24	$5.84 ¾	⇩ $0.06 ¼	+$0.01

CME Corn Futures

"Old Crop"
MARCH 2023
OHLC $'s

$6.29 ½ /bu
Market Close
Tuesday,
2/28/2023



CME Corn Futures

"New Crop" DEC 2023 OHLC $'s

$5.69 ¾ /bu

Market Close

Tuesday, 2/28/2023

CME Corn Futures

"New Crop" DEC 2023 OHLC $'s

$5.69 ¾ /bu

Market Close

Tuesday, 2/28/2023

CME Corn Futures *Continuous Weekly to 2/28/2023*

CME Corn Futures *Continuous Weekly to 2/28/2023*

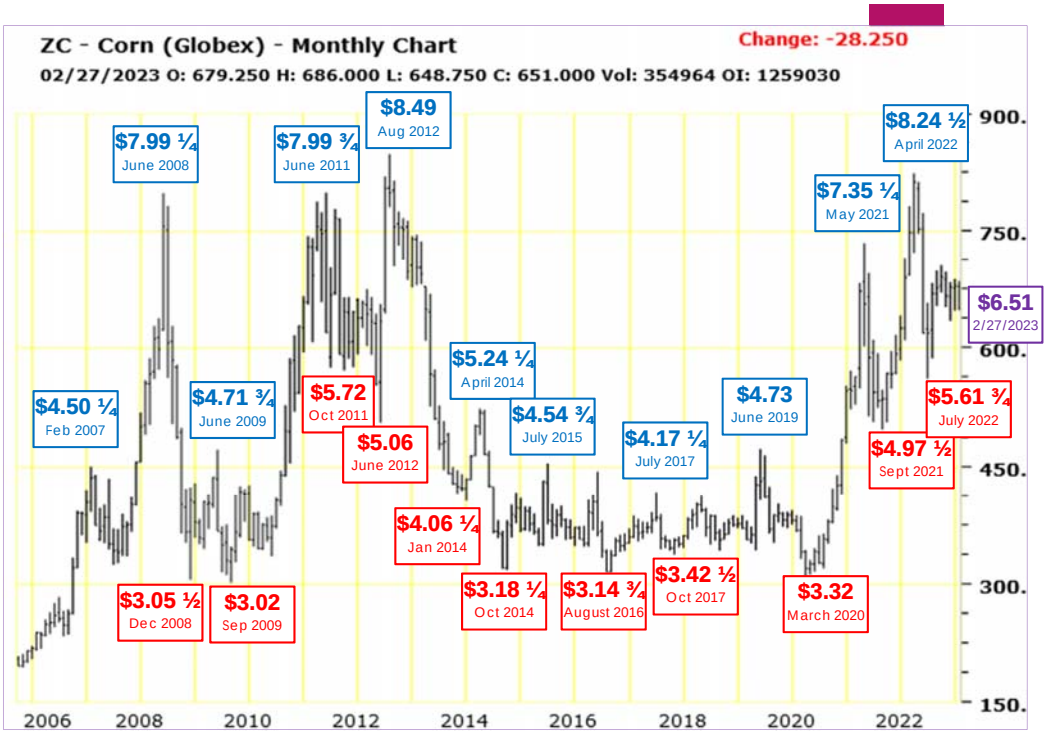
CME Corn Futures

Monthly

"Continuous"

OHLCs

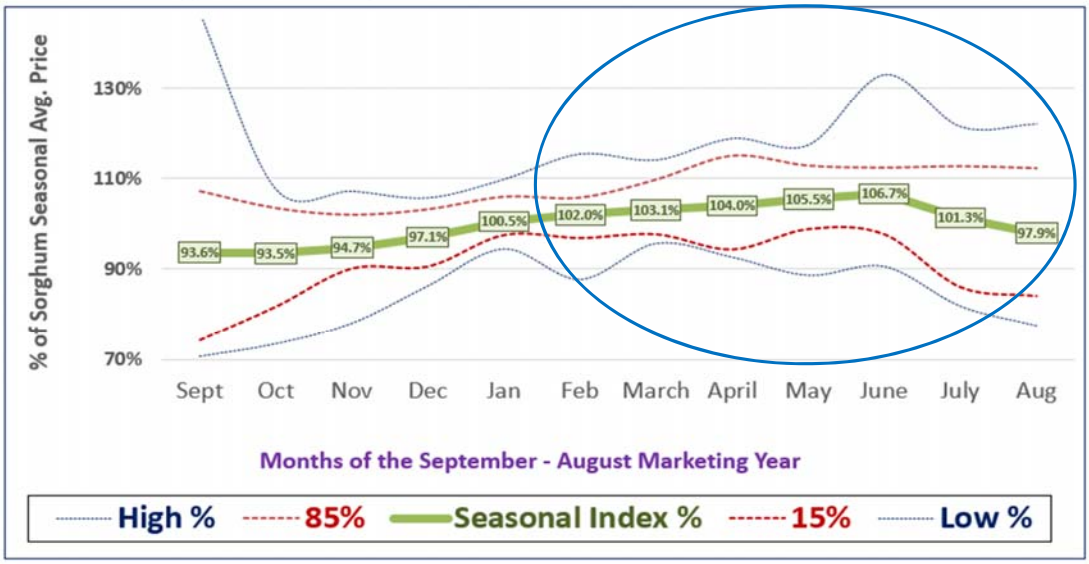
Dec^{2005} to Feb^{2023}



Corn Futures Seasonal $'s & Volatility since 2014

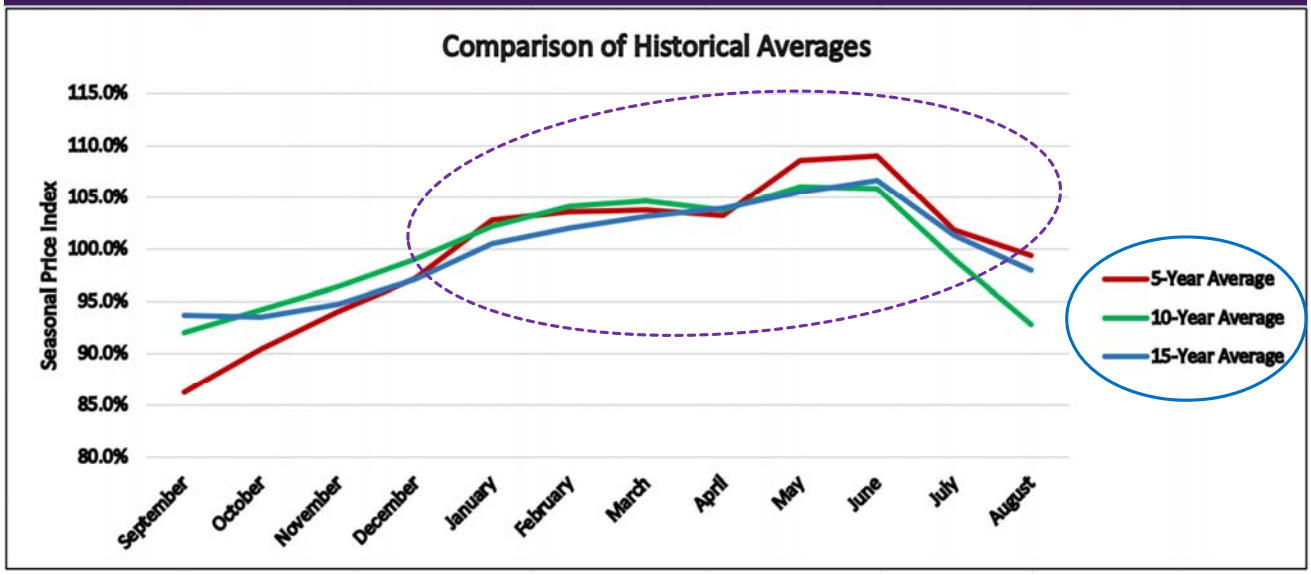
KS Sorghum *Seasonal $ Index* Central KS

MY 1999/00 – MY 2021/22



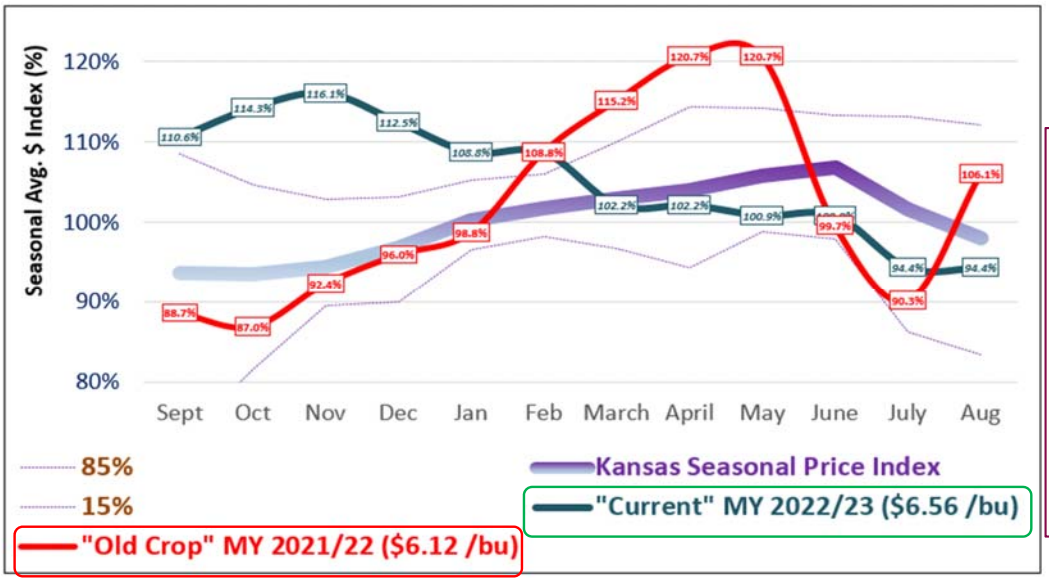
Changing Seasonal Avg. Sorghum $ Indices

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



Sorghum Seasonal Prices *Kansas-U.S.*

Long Term Seasonal $ Trends + MY 2021/22 & "Current" MY 2022/23 As of 2/28/2023



USDA Milo $ Forecasts:

"Old Crop"
MY 2021/22
= $5.94 /bu U.S.

"Current"
MY 2022/23
= $6.90 /bu U.S.

My DTN Cash Bids

Tuesday, Feb. 28, 2023

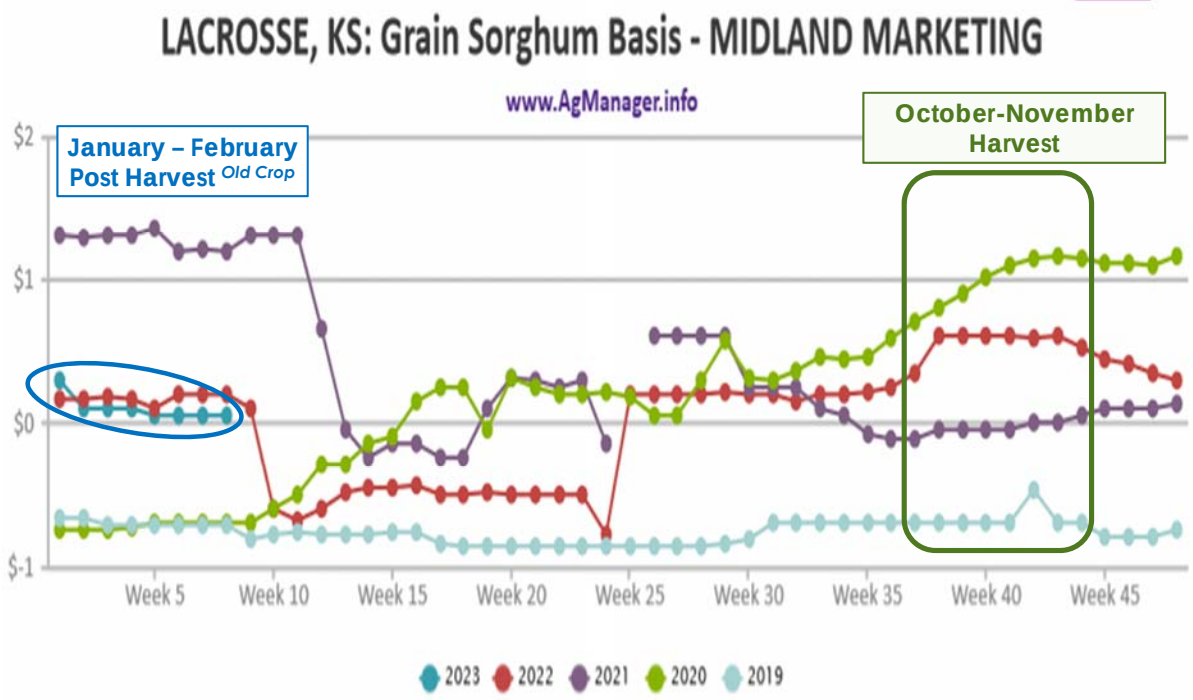
Elevator/Location	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023
MID STATE FARMERS COOP OTIS, KS	6.44			---	---	---	---	5.26
AMERICAN PLAINS COOP ALBERT, KS	6.68			---	---	---	---	5.21
AMERICAN PLAINS COOP-DUNDEE GREAT BEND, KS	6.68			---	---	---	---	5.21
AMERICAN PLAINS COOP GREAT BEND, KS	6.68			---	---	---	---	5.21
CENTRAL PRAIRIE COOP CLAFLIN, KS	6.72			---	---	---	---	5.26
MID STATE FARMERS COOP BISON, KS	6.44			---	---	---	---	5.26
MID STATE FARMERS COOP TIMKEN, KS	6.44	---	---	---	---	---	---	5.26
BARTLETT GRAIN CO LP GREAT BEND, KS	6.69	---	---	---	---	---	---	5.41
UNITED AG SERVICE GORHAM, KS	6.69	---	---	---	---	---	---	5.27
AMERICAN PLAINS COOP ELLINWOOD, KS	6.68	---	---	---	---	---	---	5.21
AMERICAN PLAINS COOP PAWNEE ROCK, KS	6.68	---	---	---	---	---	---	5.21
MIDLAND MARKETING LACROSSE, KS	6.39	---	---	---	---	---	---	---

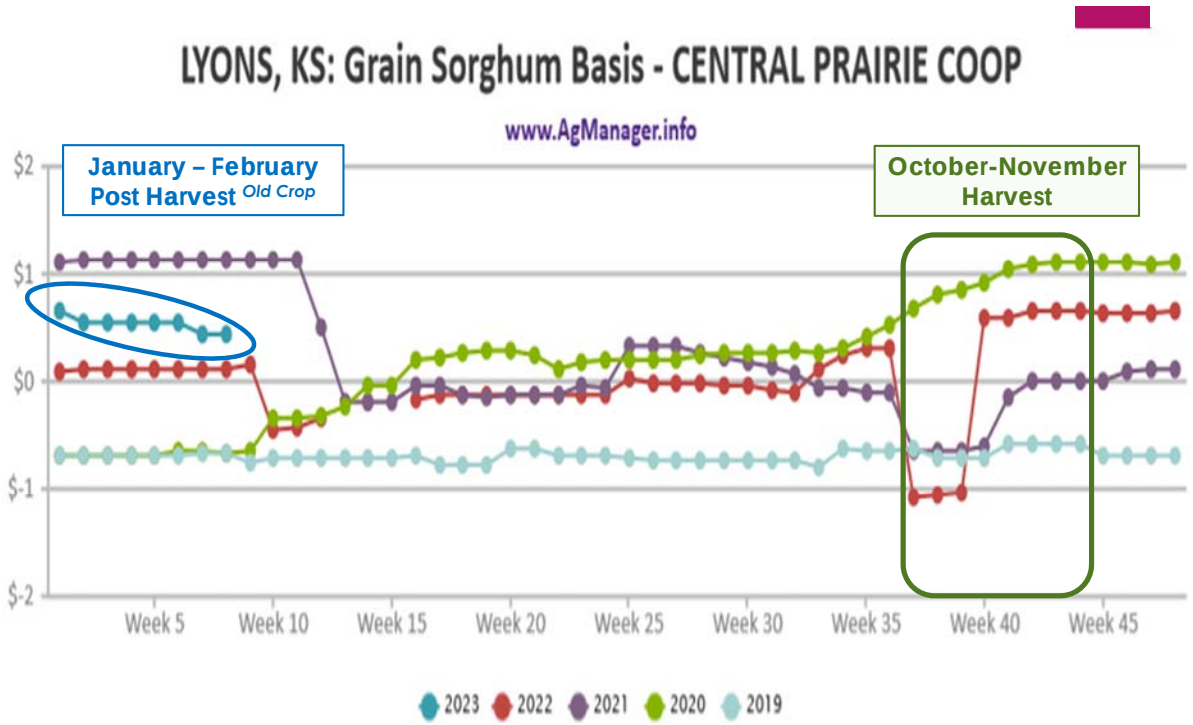
Elevator Old Crop Spot Basis:

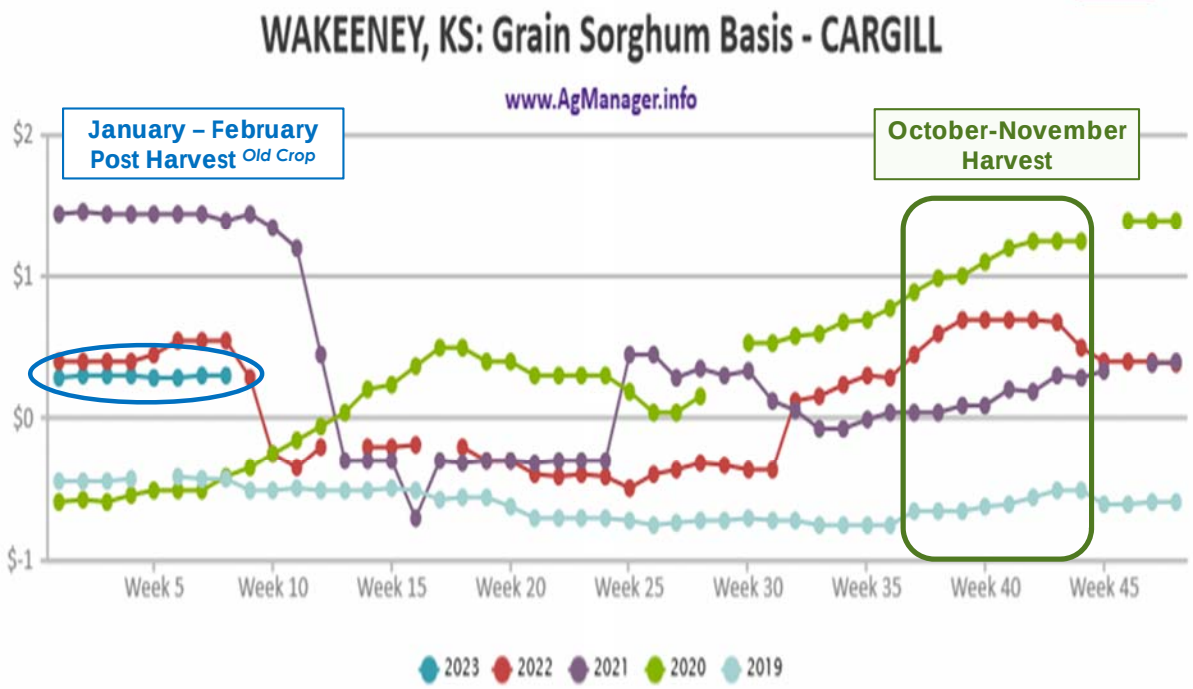
$0.06 to $0.35 *Over* MAR2023

Elevator New Crop FC Basis:

$0.30 to $0.50 *Under* DEC2023


LACROSSE, KS: Grain Sorghum Basis - MIDLAND MARKETING
www.AgManager.info
January – February
Post Harvest Old Crop
October-November
Harvest
$2
$1
$0
$-1
Week 5
Week 10
Week 15
Week 20
Week 25
Week 30
Week 35
Week 40
Week 45
2023
2022
2021
2020
2019


LYONS, KS: Grain Sorghum Basis - CENTRAL PRAIRIE COOP
www.AgManager.info
January – February
Post Harvest Old Crop
October-November
Harvest
$2
$1
$0
$-1
$-2
Week 5
Week 10
Week 15
Week 20
Week 25
Week 30
Week 35
Week 40
Week 45
2023
2022
2021
2020
2019



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Elevator Old Crop Spot Basis:

$0.06 to $0.35 *Over* MAR^{2023}

Elevator New Crop FC Basis:

$0.30 to $0.50 *Under* DEC^{2023}

2023 Grain Sorghum Cost-Return Budget in South Central Kansas -----Average yields

Item	unit	price	quantity	amount	Sub-total
INCOME					
Product					
Grain Sorghum - South Central KS	bu	$6.16	115.00	$708.40	$708.40
--TOTAL INCOME--					$708.40
DIRECT EXPENSES					
					$0.00
Additional labor					$0.59
Crop insurance					$20.57
Custom Operations					$19.32
Diesel					$19.30
Fertilizers					$128.37
Herbicides					$25.98
Miscellaneous					$7.26
Operator labor					$7.29
Repair & Maintenance					$13.23
Seeds					$9.37
Interest on operating capital	8% percent on direct expenses				$10.05
--TOTAL DIRECT EXPENSES--					$261.34
----------Total direct expenses per bu $2.27					
FIXED EXPENSES					
Cash rent					$50.00
Capital recovery (depreciation + interest)					$54.84
--TOTAL FIXED EXPENSES--					$104.84
----------Total expenses per bu $3.18					
RETURNS ABOVE DIRECT EXPENSES					$447.06
RETURNS ABOVE TOTAL SPECIFIED EXPENSES					$342.22

2023 Sorghum Costs South Central KS

Yield = 115 bu /ac

Total Direct Expenses = $2.27 /bu

Total of ALL Expenses = $3.18 /bu

2023 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget -----South Central KS - Average yields

Item	unit	price	quantity	amount	Sub-total
INCOME					
Product					
Grain Sorghum - South Central KS	bu	$6.16	160.00	$985.60	$985.60
--TOTAL INCOME--					$985.60
DIRECT EXPENSES					
Additional labor					$0.86
Crop consulting					$7.28
Crop insurance					$26.50
Custom Operations					$19.32
Diesel					$18.04
Fertilizers					$172.90
Herbicides					$56.79
Irrigation energy (NG)					$39.41
Irrigation labor					$6.00
Miscellaneous					$12.10
Operator labor					$6.73
Repair & Maintenance					$17.40
Seeds					$14.99
Interest on operating capital	8% percent on direct expenses				$15.93
--TOTAL DIRECT EXPENSES--					$414.27
----------Total direct expenses per bu $2.59					
FIXED EXPENSES					
Cash rent					$175.00
Capital recovery (depreciation + interest)					$236.55
--TOTAL FIXED EXPENSES--					$411.55
----------Total expenses per bu $5.16					
RETURNS ABOVE DIRECT EXPENSES					$571.33
RETURNS ABOVE TOTAL SPECIFIED EXPENSES					$159.78

2023 Sorghum Costs SC Kansas Irrigated

Yield = 160 bu /ac

Total Direct Expenses = $2.59 /bu

Total of ALL Expenses = $5.16 /bu

2023 Grain Sorghum Cost-Return Budget in North Central Kansas -----Average yields

Item	unit	price	quantity	amount	Sub-total
INCOME					
Product					
Grain Sorghum - North Central KS	bu	$6.14	120.00	$736.80	$736.80
--TOTAL INCOME--					$736.80
DIRECT EXPENSES					
Additional labor					$0.86
Crop insurance					$20.09
Custom Operations					$19.32
Diesel					$18.04
Fertilizers					$142.15
Herbicides					$56.79
Miscellaneous					$7.86
Operator labor					$6.73
Repair & Maintenance					$13.80
Seeds					$13.14
Interest on operating capital	8% percent on direct expenses				$11.95
--TOTAL DIRECT EXPENSES--					$310.75
----------Total direct expenses per bu $2.59					
FIXED EXPENSES					
Cash rent					$95.00
Capital recovery (depreciation + interest)					$53.73
--TOTAL FIXED EXPENSES--					$148.73
----------Total expenses per bu $3.83					
RETURNS ABOVE DIRECT EXPENSES					$426.05
RETURNS ABOVE TOTAL SPECIFIED EXPENSES					$277.32

2023 Sorghum Costs North Central KS

Yield = 120 bu /ac

Total Direct Expenses = $2.59 /bu

Total of ALL Expenses = $3.83 /bu

2023 Irrigated Grain Sorghum (center-pivot) Cost-Return Budget -----North Central KS - Average yields

Item	unit	price	quantity	amount	Sub-total
INCOME					
Product					
Grain Sorghum - North Central KS	bu	$6.14	160.00	$982.40	$982.40
--TOTAL INCOME--					$982.40
DIRECT EXPENSES					
Additional labor					$0.86
Crop consulting					$7.28
Crop insurance					$26.50
Custom Operations					$19.32
Diesel					$18.04
Fertilizers					$172.90
Herbicides					$56.79
Irrigation energy (NG)					$39.41
Irrigation labor					$6.00
Miscellaneous					$12.10
Operator labor					$6.73
Repair & Maintenance					$17.40
Seeds					$14.99
Interest on operating capital	8% percent on direct expenses				$15.93
--TOTAL DIRECT EXPENSES--					$414.27
----------Total direct expenses per bu $2.59					
FIXED EXPENSES					
Cash rent					$195.00
Capital recovery (depreciation + interest)					$236.55
--TOTAL FIXED EXPENSES--					$431.55
----------Total expenses per bu $5.29					
RETURNS ABOVE DIRECT EXPENSES					$568.13
RETURNS ABOVE TOTAL SPECIFIED EXPENSES					$136.58

2023 Sorghum Costs NC Kansas Irrigated

Yield = 160 bu /ac

Total Direct Expenses = $2.59 /bu

Total of ALL Expenses = $5.29 /bu

10 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
4.04 Mcf of fuel used in total

2023 Preharvest Marketing Plan

KANSAS STATE UNIVERSITY Department of Agricultural Economics

Preharvest Marketing Plan

WINNING THE GAME

Objective: Buy crop insurance to protect my production risk and price _____% of my anticipated crop (based on APH yield) or _____bushels.

Price _____ bushels at $_____ cash price ($_____ - _____ futures) (contract month) using _____

Price _____ bushels at $_____f/_____c, or by _____, 2023, using _____

Price _____ bushels at $_____f/_____c, or by _____, 2023, using _____

Price _____ bushels at $_____f/_____c, or by _____, 2023, using _____

Price _____ bushels at $_____f/_____c, or by _____, 2023, using _____

Price _____ bushels at $_____f/_____c, or by _____, 2023, using _____

Price _____ bushels at $_____f/_____c, or by _____, 2023, using _____

Plan starts on _____. Completed by _____.

Ignore decision dates and make no sale if prices are lower than $_____ _____ (month/commodity) futures / $_____ local cash price.

Sample Pre-Harvest Marketing Plan

Objective: Buy crop insurance to protect production risk and price 75% of our 67,000-bushel APH **(50,000 bu.).**

Using five, Increments

Price 10,000 bushels at $4.30 December futures/$4.15 cash or by April 15
Price 10,000 bushels at $4.50 fut./4.35 cash, or by May 15
Price 10,000 bushels at $4.60 fut./4.45 cash, or by Jun 15
Price 10,000 bushels at $4.75 fut./4.60 cash, or by Jul 15
Price 10,000 bushels at $5.00 fut./4.85 cash, or by Aug 15

Plan starts on January 1, 2023.

Ignore decision dates and make no sale if prices are lower than **$4.00 local cash** price.

Exit all options positions by October 1

WINNING THE GAME

What Would YOU Change?

50% is Plenty!

Objective: Buy crop insurance to protect production risk and price 75% of our 67,000-bushel APH (50,000 bu.).

Using five increments

Price 10,000 bushels at $4.30 December futures/$4.15 cash or by April 15
Price 10,000 bushels at $4.50 fut./4.35 cash, or by May 15
Price 10,000 bushels at $4.60 fut./4.45 cash, or by Jun 15
Price 10,000 bushels at $4.75 fut./4.60 cash, or by Jul 15
Price 10,000 bushels at $5.00 fut./4.85 cash, or by Aug 15

Plan starts on January 1, 2022.

Different prices, increments, dates?

Ignore decision dates and make no sale if prices are lower than $4.00 local cash price.

Exit all options positions by October 1

What's Your Price Outlook?

WINNING THE GAME

✓What's a Realistic Max Price Target?

Let's start with the seasonals

Fifteen Years: CME December Corn Futures

2008/22	Jan 1 Price	Preharvest Max Price	Change	Percent 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%
2012	$5.90	$8.39	$2.49	42%
2013	$5.92	$5.94	$0.01	0%
2014	$4.48	$5.13	$0.65	14%
2015	$4.20	$4.52	$0.32	8%
2016	$3.77	$4.49	$0.72	19%
2017	$3.84	$4.15	$0.31	8%
2018	$3.87	$4.27	$0.40	10%
2019	$3.98	$4.69	$0.70	18%
2020	$4.05	$4.05	$0.00	0%
2021	$4.35	$6.37	$2.02	46%
2022	$5.48	$7.66	$2.18	40%

Preharvest: On average, 25% of KS corn is harvested by the last week of September; and 25% of KS milo by mid-October.

WINNING THE GAME

2023	$6.07	$6.07	$0.00	0%

Let's put'em in order of "Change"

Fifteen Years: CME December Corn Futures

2008/22	Jan 1 Price	Preharvest Max Price	Change	Percent Change
2008	$4.80	$7.88	$3.08	64%
2012	$5.90	$8.39	$2.49	42%
2011	$5.53	$7.75	$2.23	40%
2022	$5.48	$7.66	$2.18	40%
2021	$4.35	$6.37	$2.02	46%
2010	$4.45	$5.22	$0.77	17%
2016	$3.77	$4.49	$0.72	19%
2019	$3.98	$4.69	$0.70	18%
2014	$4.48	$5.13	$0.65	14%
2018	$3.87	$4.27	$0.40	10%
2015	$4.20	$4.52	$0.32	8%
2017	$3.84	$4.15	$0.31	8%
2009	$4.56	$4.73	$0.17	4%
2013	$5.92	$5.94	$0.01	0%
2020	$4.05	$4.05	$0.00	0%

33% of the time; prices rise $2.00 or more (>40%)

67% of the time; prices rise $0.40 or more (>10%)

87% of the time; prices rise $0.17 or MORE

13% of the time; there was no change

WINNING THE GAME

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 $ $5.90 cash price ($_____ - DEC 2023 futures) (contract month) using FC, Hedge, Basis Contract

Price 5,000 bushels at $ $6.15 f/ $6.00 c, or by 4/1/23, 2023, using FC, Hedge, Basis Contract

Price 10,000 bushels at $ $6.40 f/ $6.25 c, or by 5/1/23, 2023, using FC, Hedge, Basis Contract

Price 10,000 bushels at $ $6.65 f/ $6.50 c, or by 5/15/23, 2023, using FC, Hedge, Basis Contract

Price 10,000 bushels at $ $6.90 f/ $6.75 c, or by 6/1/23, 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 March 1, 2023. Completed by July 15, 2023.

Ignore decision dates and make no sale if prices are lower than $ $5.00 Cost+ Minimum $?.?? (month/commodity) futures / $ $?.?? local cash price.

Sample Pre-Harvest Corn Marketing Plan

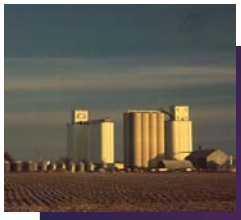
Objective: Buy up crop insurance coverage to 80% to protect production risk; and preharvest price 80% of APH.

Using five increments

Price 20% at $6.10 December futures, or by March 15
Price 20% at $6.30 December futures, or by April 15
Price 20% at $6.90 December futures, or by May 15
Price 30% at $7.50 December futures, or by June 15
Price 10% at $8.25 December futures, or by July 15

Ignore decision dates and make no sale if prices are lower than **$5.50 local cash** price.

Exit all options positions prior to Harvest



Questions?

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