

2023 AEDE Outlook and Policy Conference

Commodity Market Outlook Focusing on Corn and Soybean

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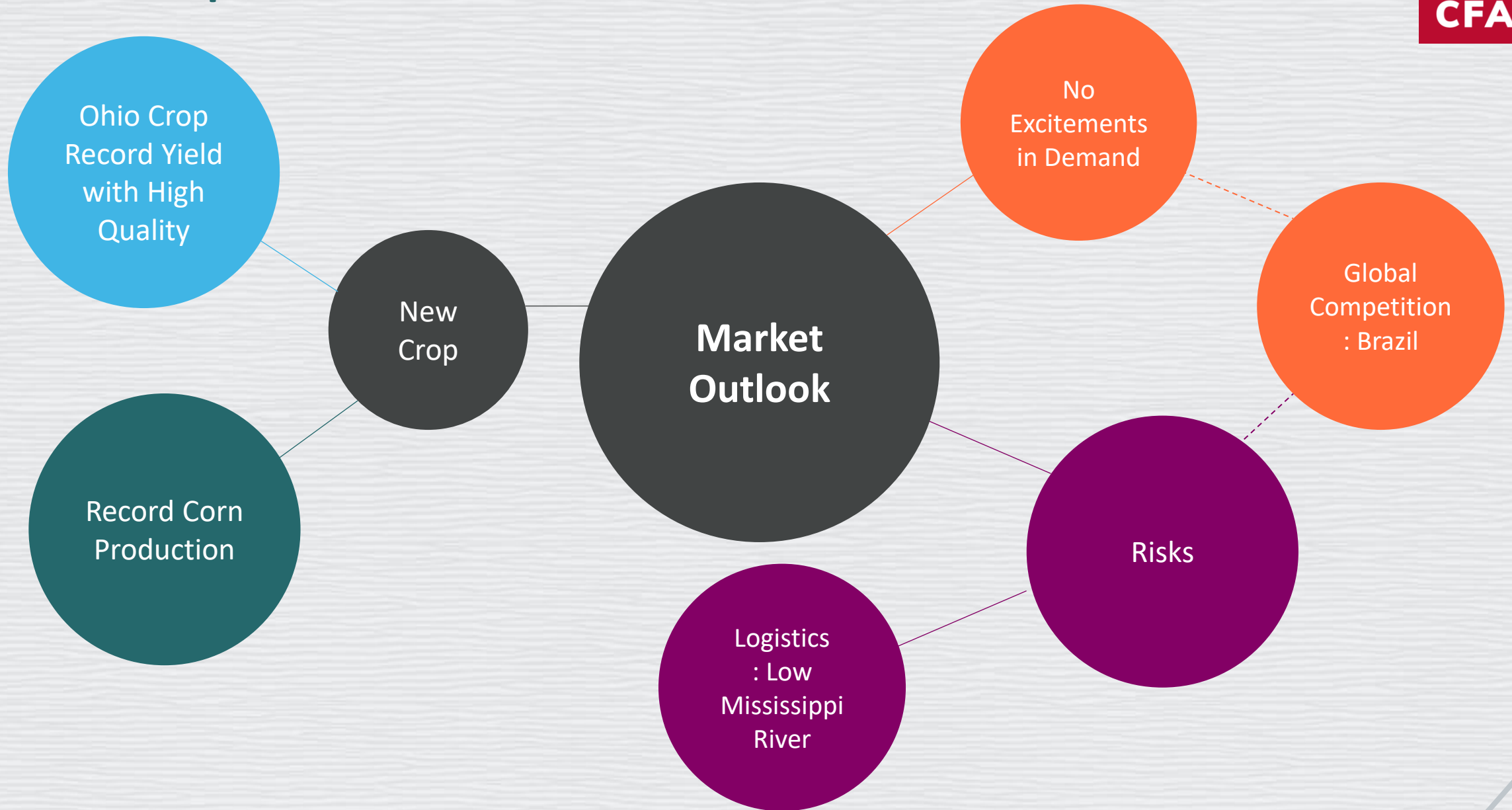


THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Roadmap

CFAES

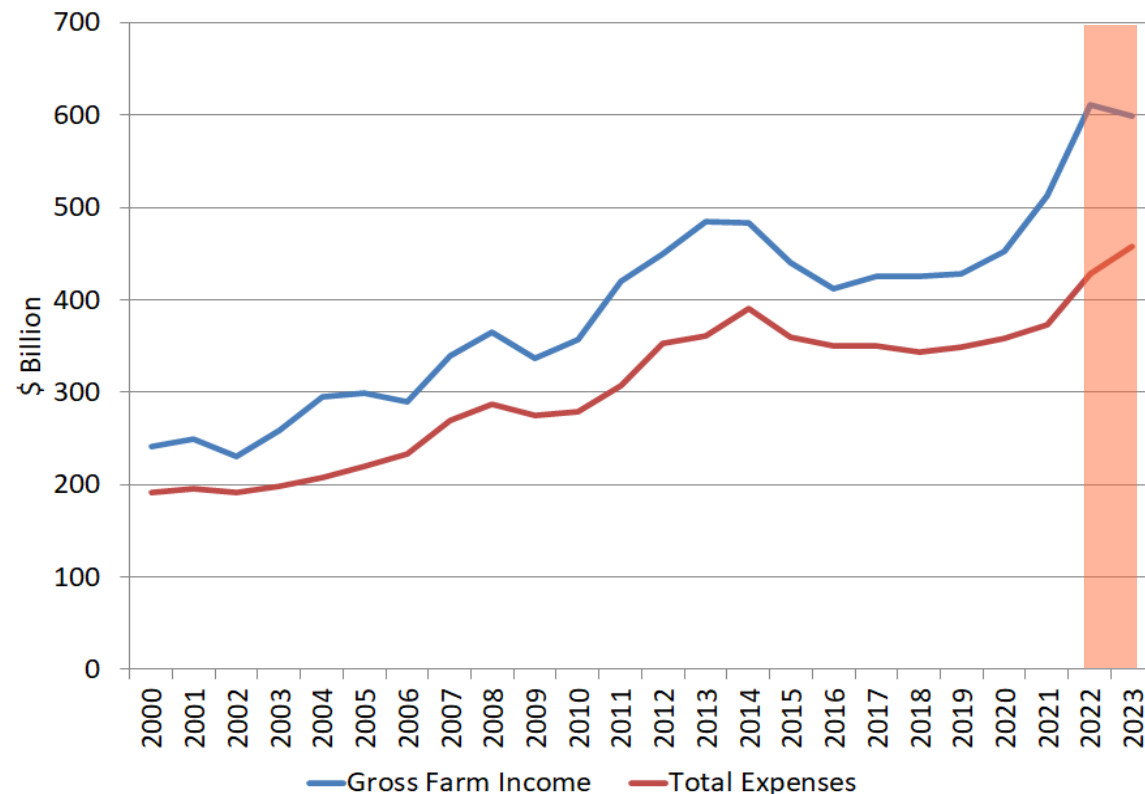


Is Farm Economic Downturn Coming?

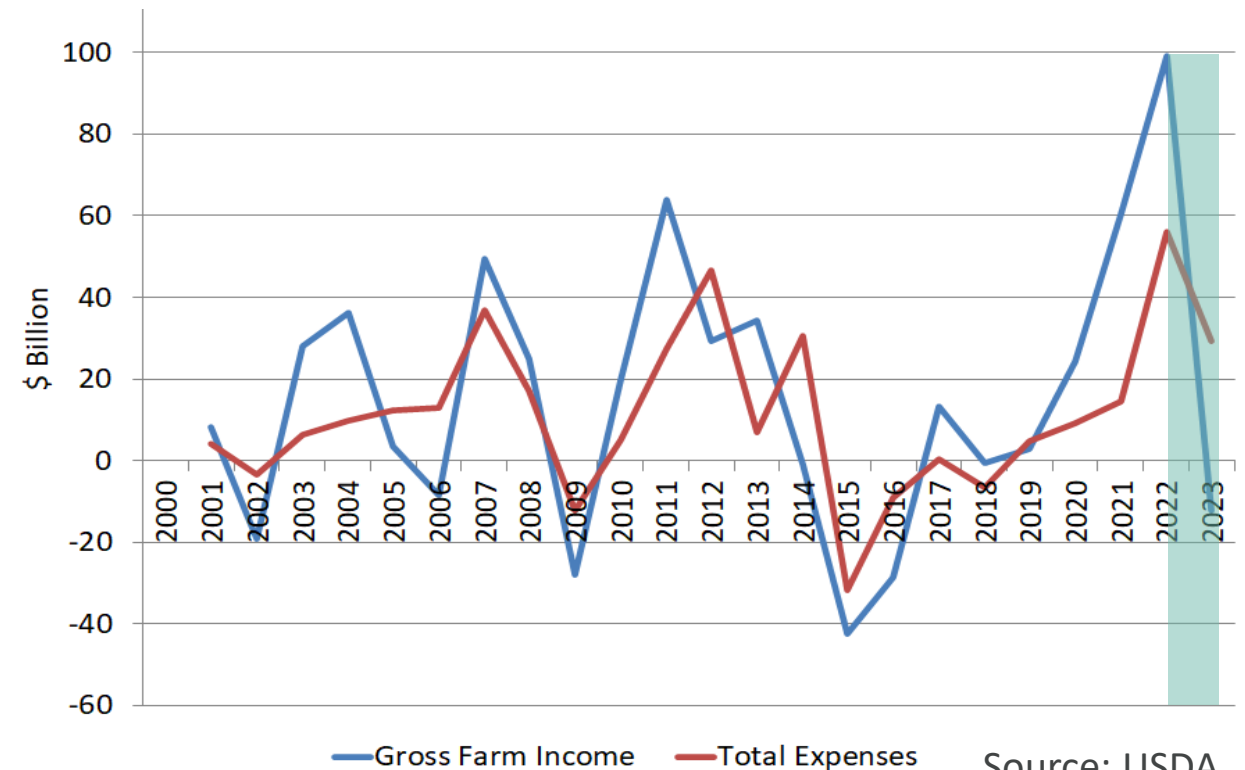
CFAES

2023 Farm Sector Income Forecast

Farm Income and Expenses

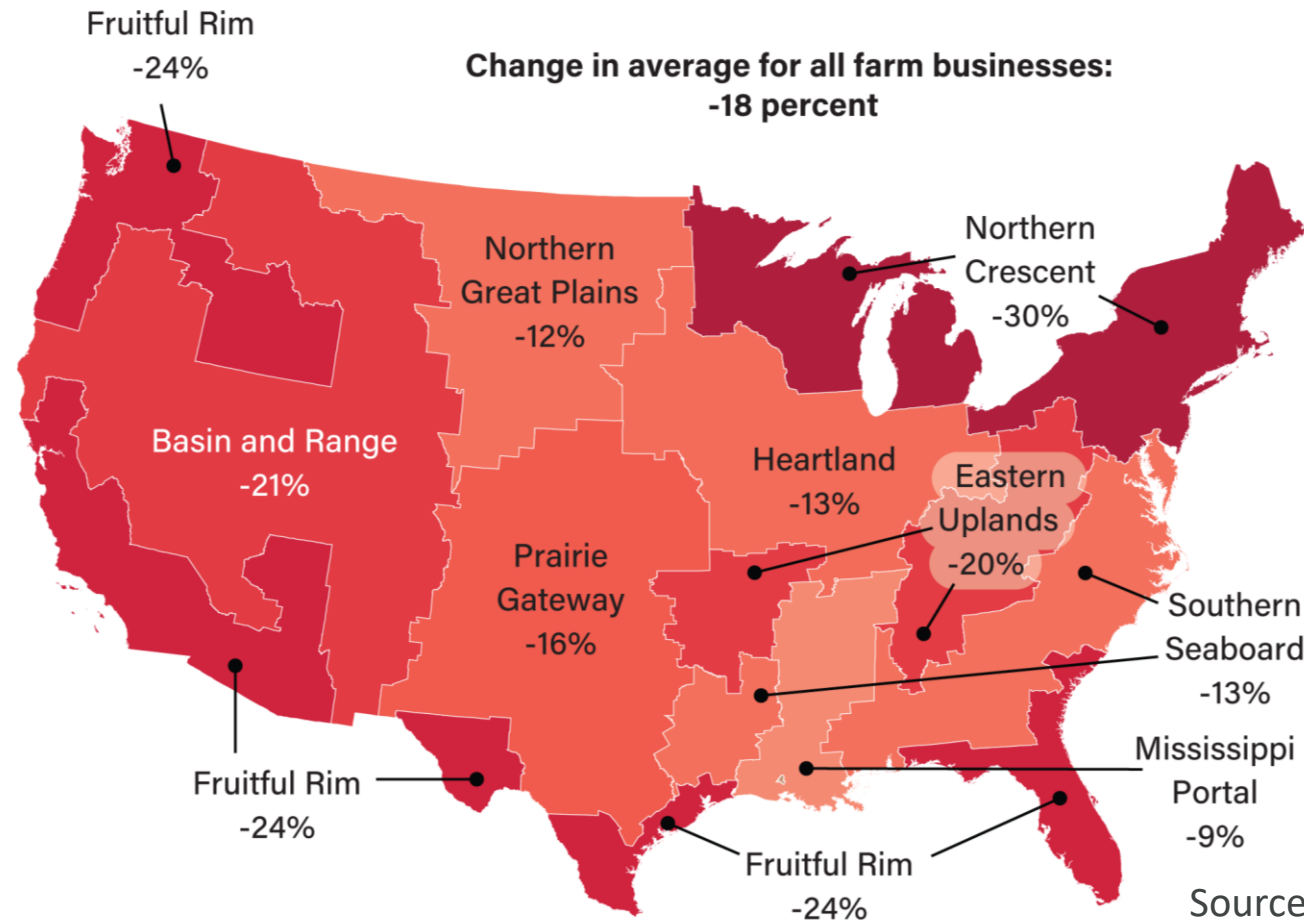


Changes in Farm Income and Expenses



Source: USDA

Percentage Change in Avg Net Cash Income



- Overall, farm business net income is projected to be 18% lower in 2023
 - Heartland: -13%
 - Eastern Uplands: -20%
- **Ohio growers will likely see 13%-20% of decreased net income compared to last year**

Source: USDA ERS, Farm Income and Wealth Statistics

Ohio Cash Prices – Toledo Region

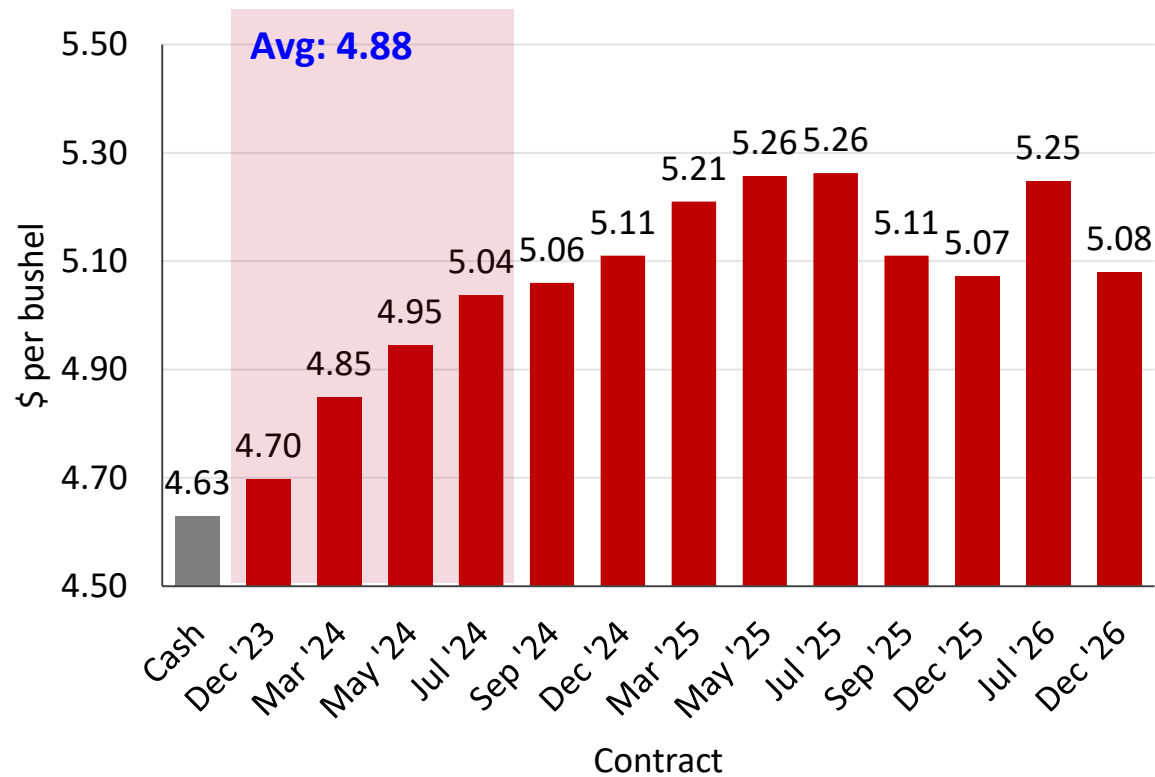


- OSUE Enterprise Budget cost estimate:
 - Corn: \$5.61 /bu
 - Soybean: \$12.74 /bu
- WASDE Season Avg Price
 - Corn: \$4.85 /bu
 - Soybean: \$12.90 /bu

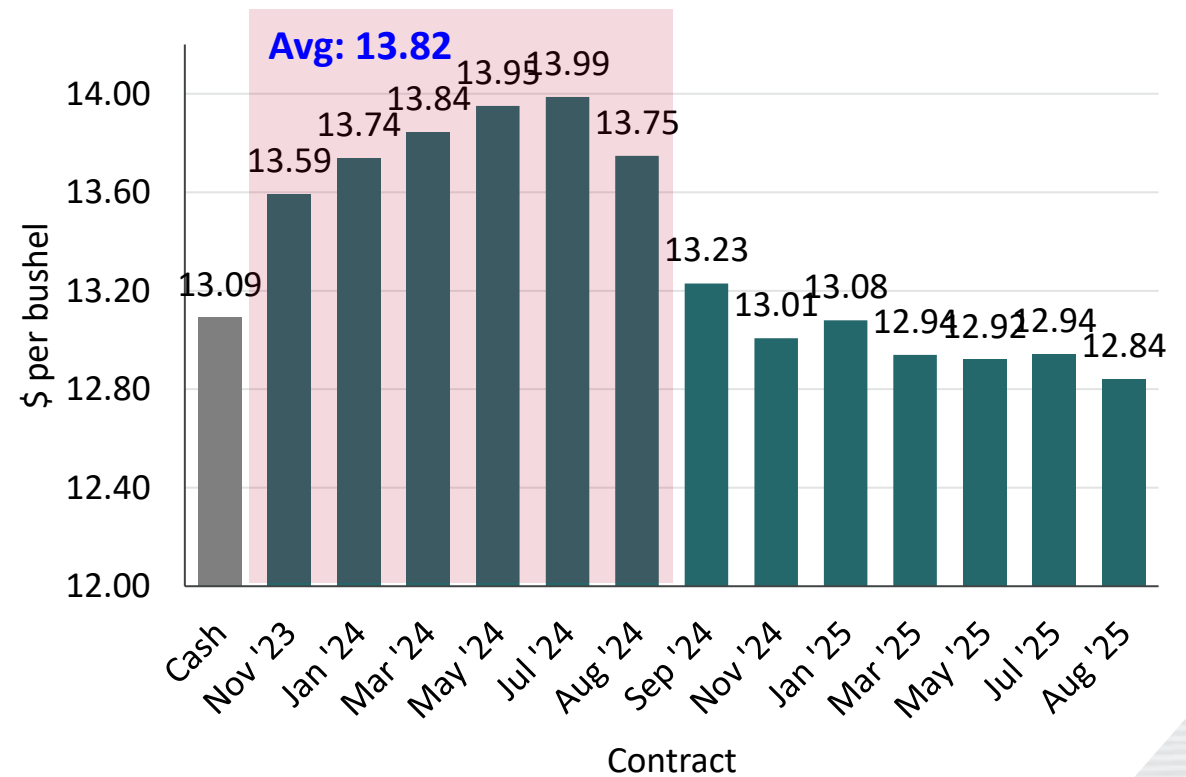
Source: USDA ARMS and OSUE

Futures – Fundamentals Reflect Production

Corn Futures



Soybean Futures



Source: Barchart, Nov 8, 2023

U.S. Corn Supply and Use – WASDE (Nov 9, 2023)

CFAES

Marketing Year (2023/24 = 9/1/23 to 8/31/24)		2022/23	2023/24F	ΔOct	Δ2022/23
Area Planted (Harvested)	(mil. acres)	88.6 (79.1)	94.9 (87.1)	--	7.1% (10%)
Yield	(bu./acre)	173.4	174.9	1.9	0.9%
Beg. Stocks	(mil. bu.)	1,377	1,361	--	-1.2%
Production	(mil. bu.)	13,715	15,234	170	11.1%
Imports	(mil. bu.)	39	25	--	-35.9%
Total Supply	(mil. bu.)	15,130	16,621	170	9.9%
Feed & Residual	(mil. bu.)	5,549	5,650	50	1.8%
Ethanol	(mil. bu.)	5,176	5,325	25	2.9%
Food, Seed, & Other	(mil. bu.)	373	325	--	-12.9%
Exports	(mil. bu.)	1,661	2,075	50	24.9%
Total Use	(mil. bu.)	13,769	14,465	125	5.1%
Ending Stocks	(mil. bu.)	1,361	2,156	45	58.4%
Season-Average Price	(\$/bu.)	6.54	4.85	-0.1	-25.8%

- Record-level total production

Harvested/Planted ratio:

- 22/23: 89.3%
- 23/24F: 91.8%

Stocks to use ratio:

- 22/23: 9.9%
- 23/24F: 14.9%

Per acre revenue:

- 22/23: \$1,134/a
- 23/24F: \$848/a

- How much ethanol and exports use will get close to the forecast is the big question

Source: USDA-WAOB

U.S. Soybean Supply and Use – WASDE (Nov 9, 2023)

CFAES

Marketing Year (2022/23 = 9/1/21 to 8/31/23)		2022/23	2023/24F	ΔSep	Δ2022/23
Area Planted (Harvested)	(mil. acres)	87.5 (86.2)	83.6 (82.8)	--	-4.5% (-4%)
Yield	(bu./acre)	49.6	49.9	0.3	0.6%
Beg. Stocks	(mil. bu.)	274	268	0	-2.2%
Production	(mil. bu.)	4270	4129	25	-3.3%
Imports	(mil. bu.)	25	30	--	20.0%
Total Supply	(mil. bu.)	4,569	4,428	25	-3.1%
Crush	(mil. bu.)	2,212	2,300	--	4.0%
Exports	(mil. bu.)	1,992	1,755	--	-11.9%
Seed & Residual	(mil. bu.)	97	127	-1	30.9%
Total Use	(mil. bu.)	4,301	4,182	-1	-2.8%
Ending Stocks	(mil. bu.)	268	246	26	-8.2%
Season-Avg Price	(\$/bu.)	14.2	12.9	--	-9.2%

-- means no change

Source: USDA-WAOB

Harvested/Planted ratio:

- 22/23: 98.5%
- 23/24F: 99.0%

Stocks to use ratio:

- 22/23: 6.2%
- 23/24F: 5.9%

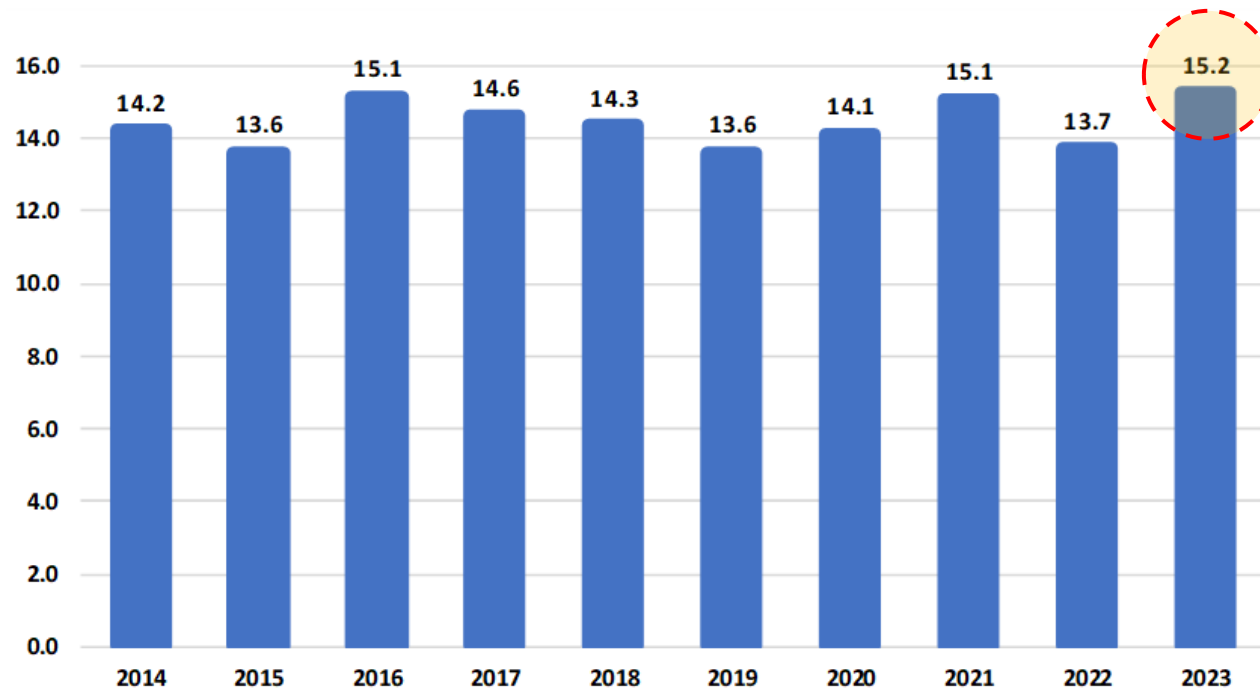
Per acre revenue:

- 22/23: \$704/a
- 23/24F: \$644/a

Tight ending stock supports the soybean fundamentals

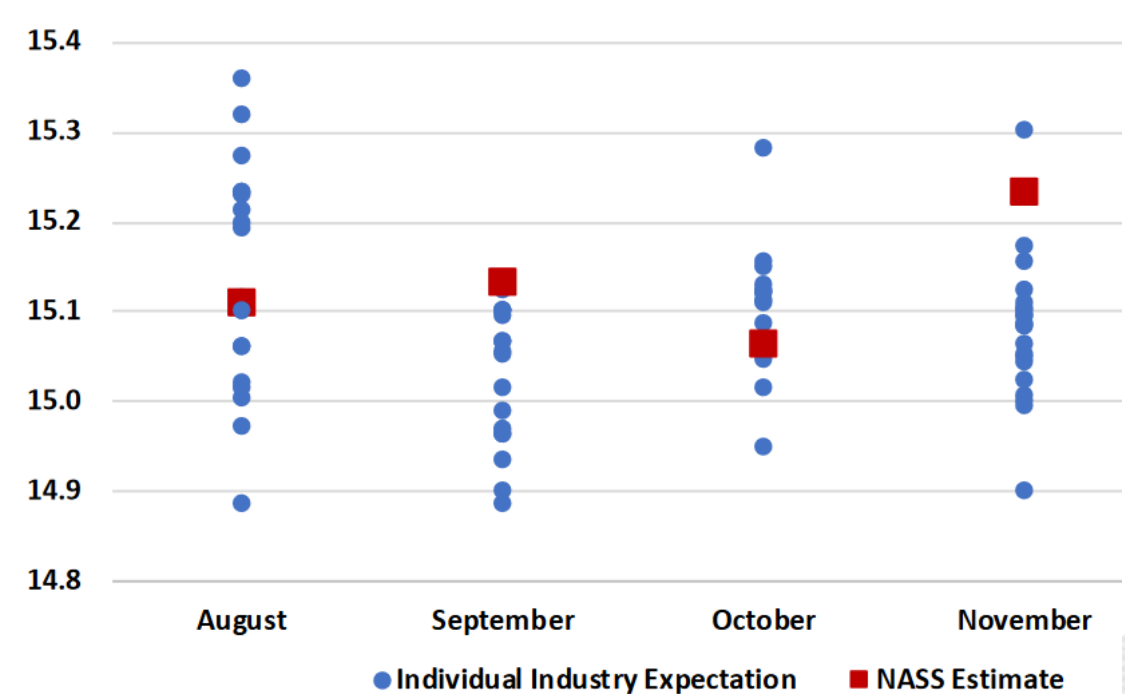
Corn Production Estimates and Expectations

Billion Bushels

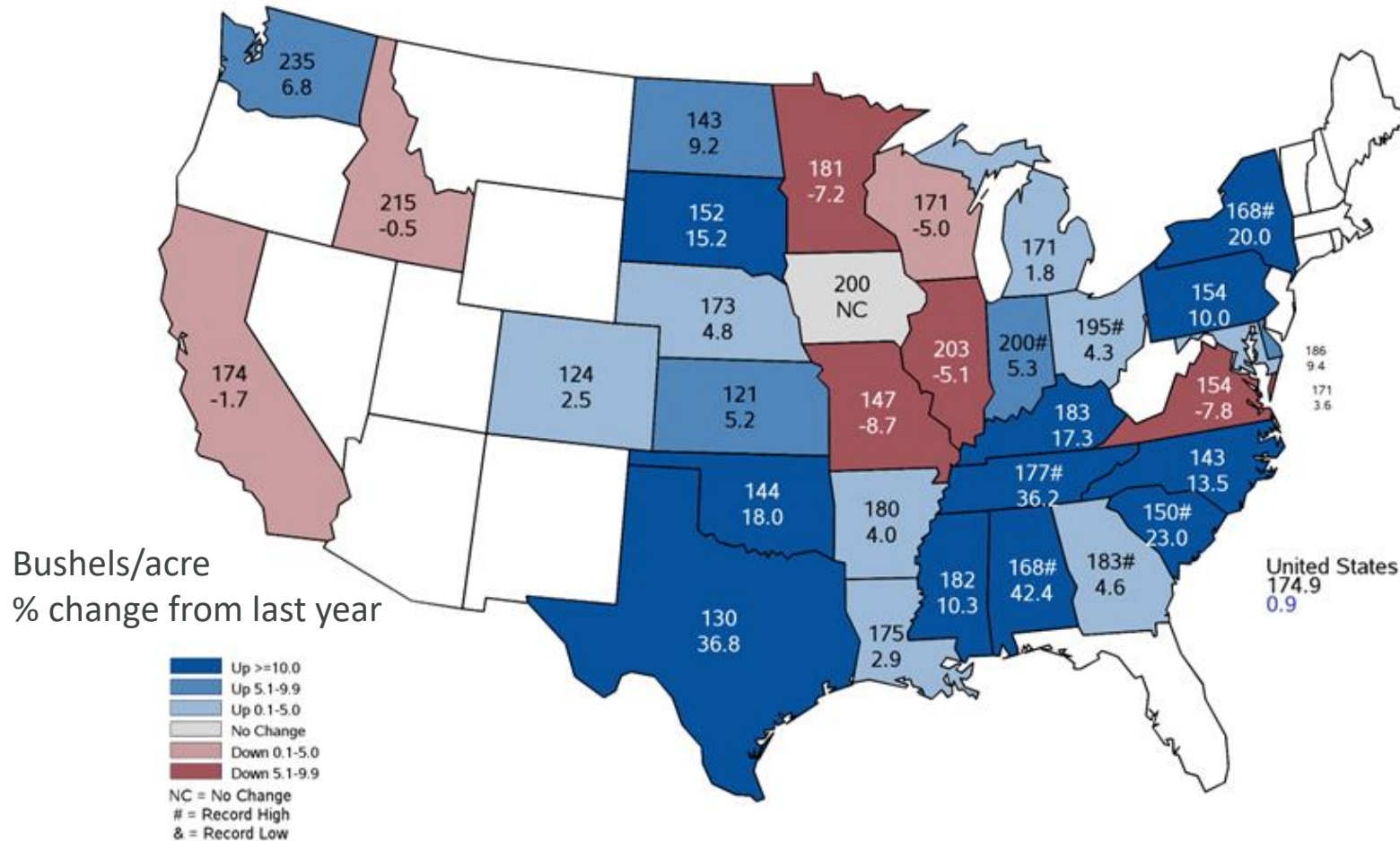


Source: USDA NASS, Nov 9, 2023

Billion Bushels



Corn Yield by State



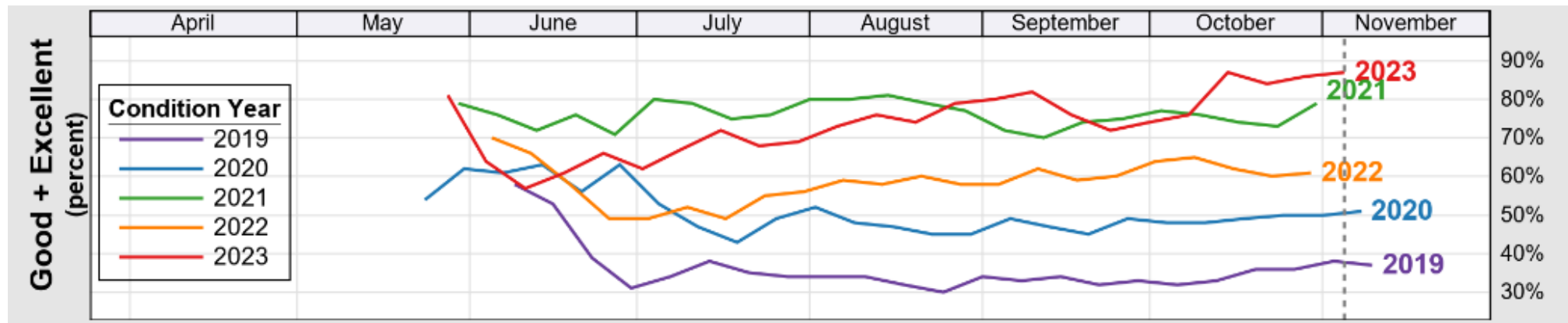
- **Ohio record yield: 195 bu/a**
- **National yield: 174.9 bu/a**
- Eastern Midwest region (OH, IN, KY) is forecast to have good harvest

Source: USDA NASS,
Nov 9, 2023

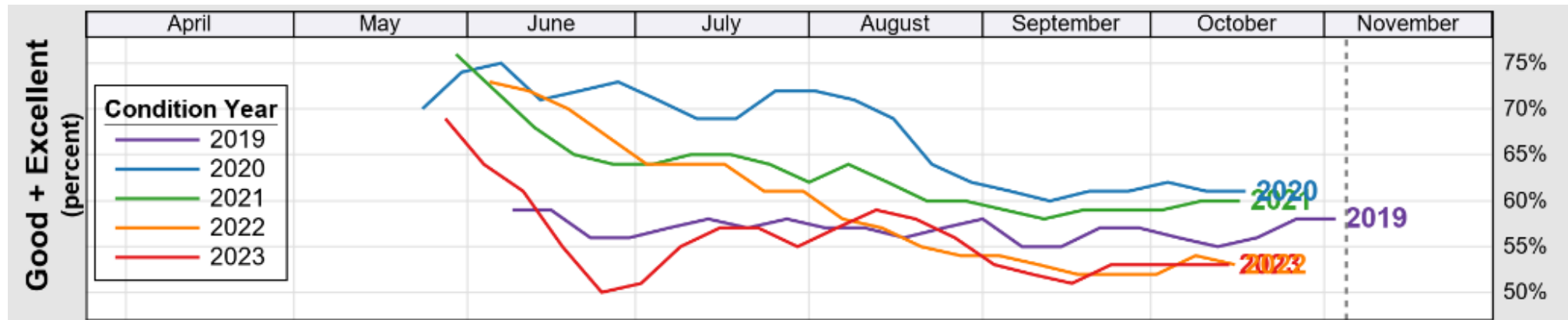
Corn New Crop Quality – Ohio and U.S.

Crop Progress: Corn in Ohio, 2023

Source: USDA NASS

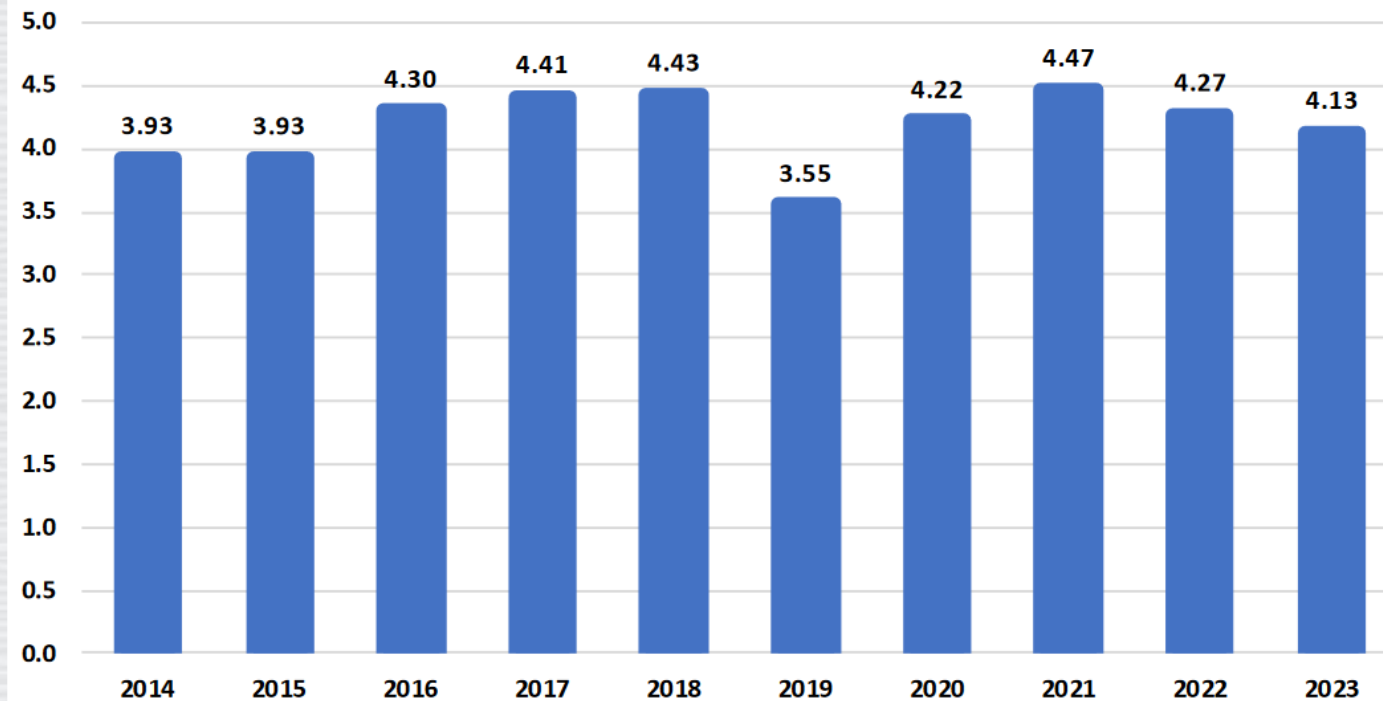


Crop Progress: Corn in United States, 2023



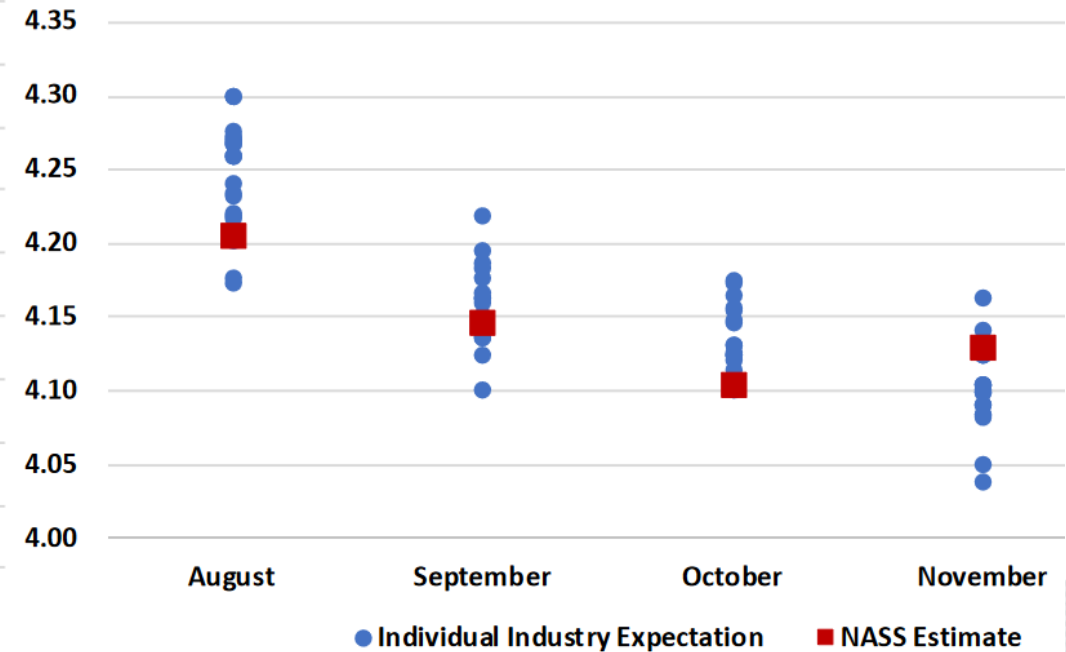
Soybean Production Estimates and Expectations

Billion Bushels

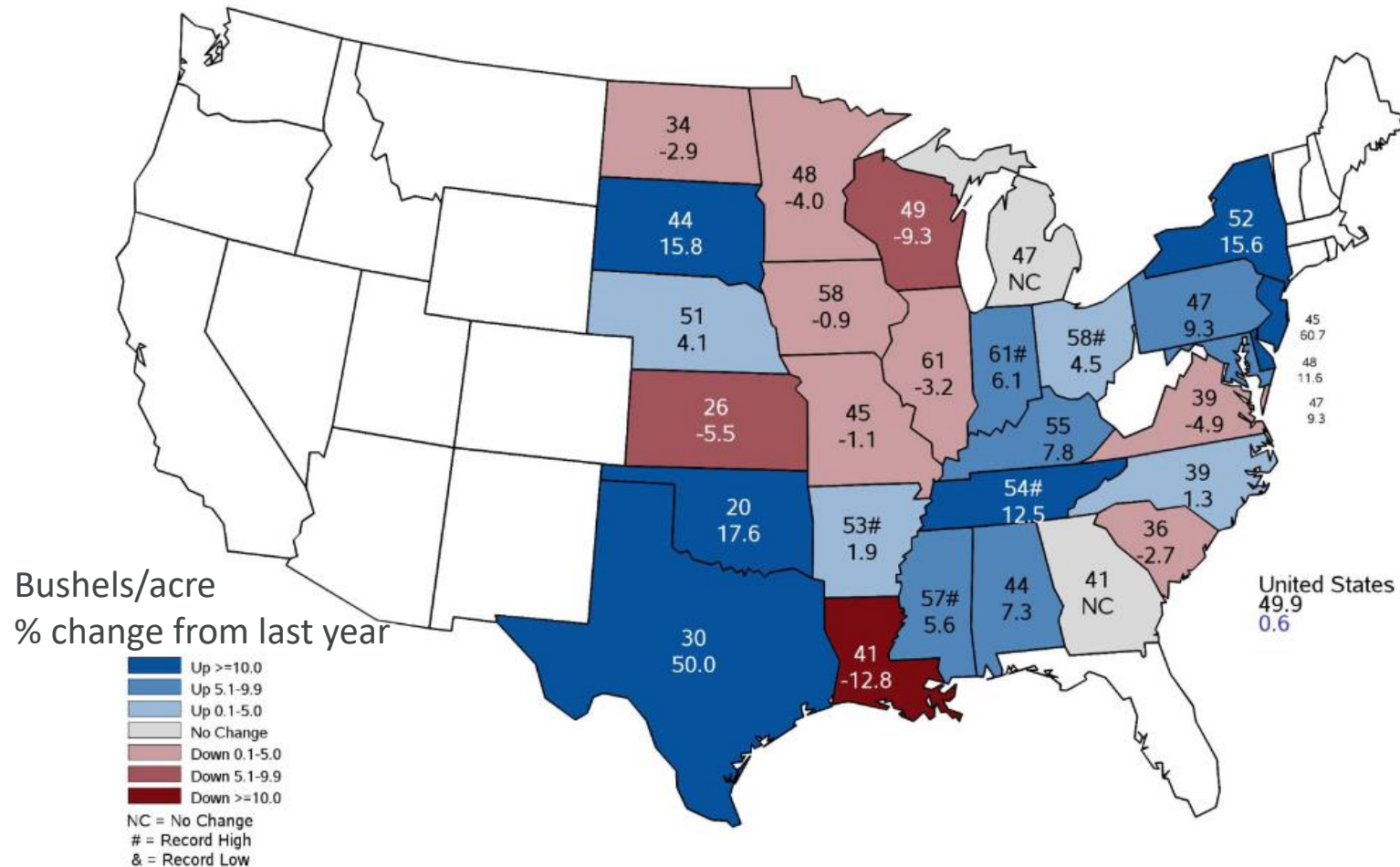


Source: USDA NASS, Nov 9, 2023

Billion Bushels



Soybean Yield by State



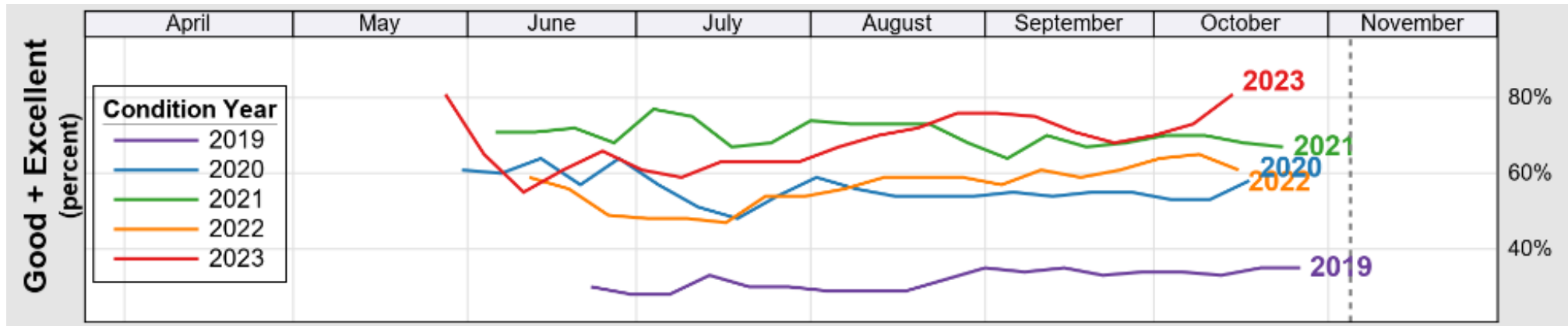
- **Ohio record yield: 58 bu/acre**
- **National yield: 49.9 bu/acre**
- Similar to corn, the eastern Midwest region (OH, IN, KY) shows a good harvest prospect

Source: USDA NASS,
Nov 9, 2023

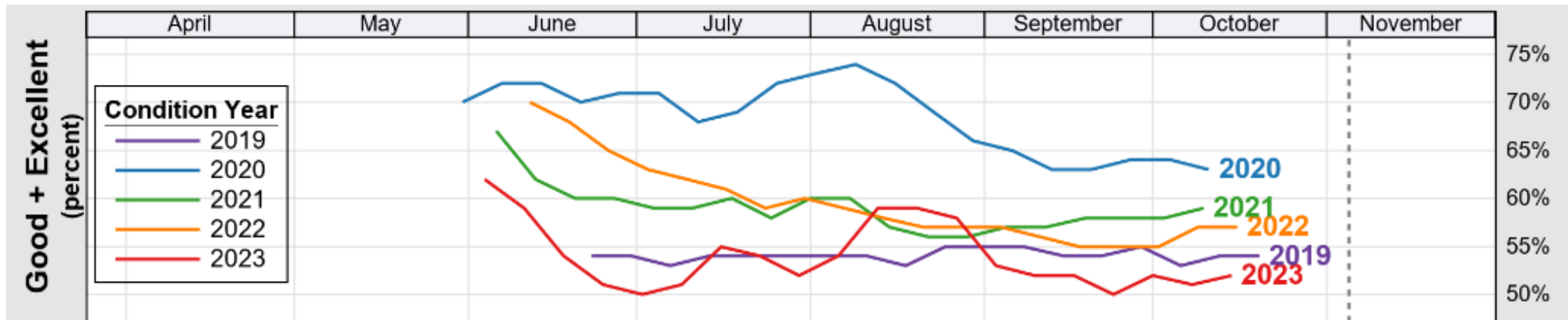
Soybean New Crop Quality – Ohio and U.S.

Crop Progress: Soybeans in Ohio, 2023

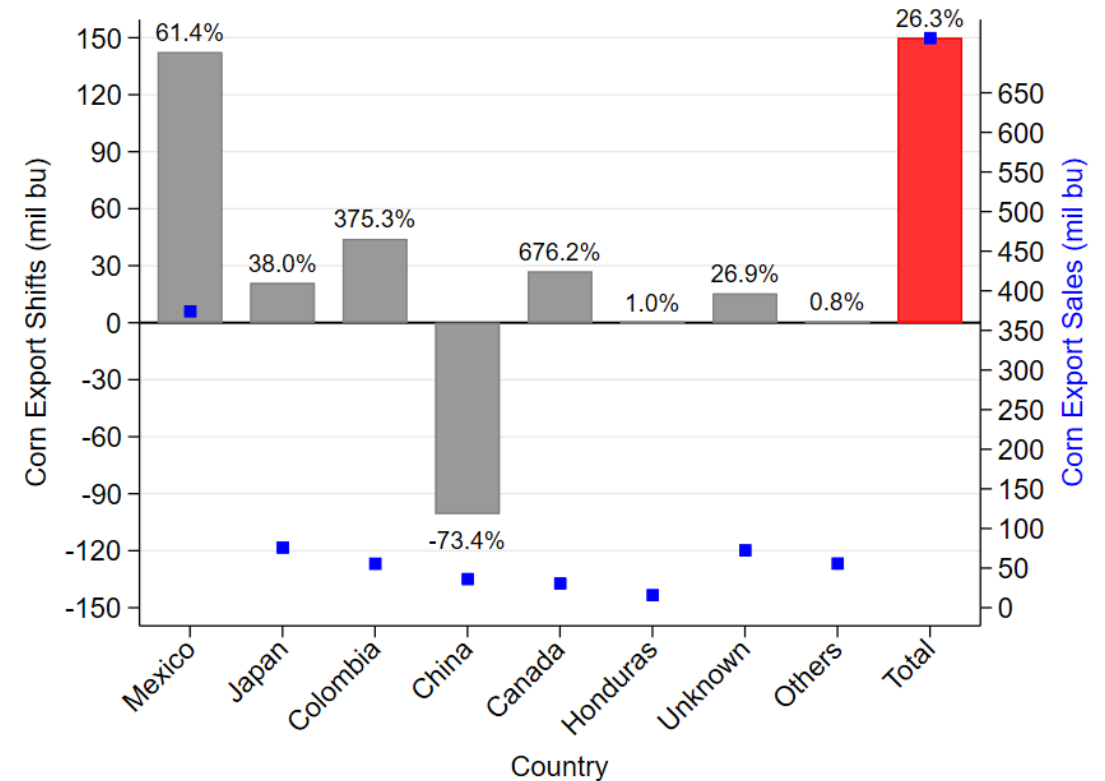
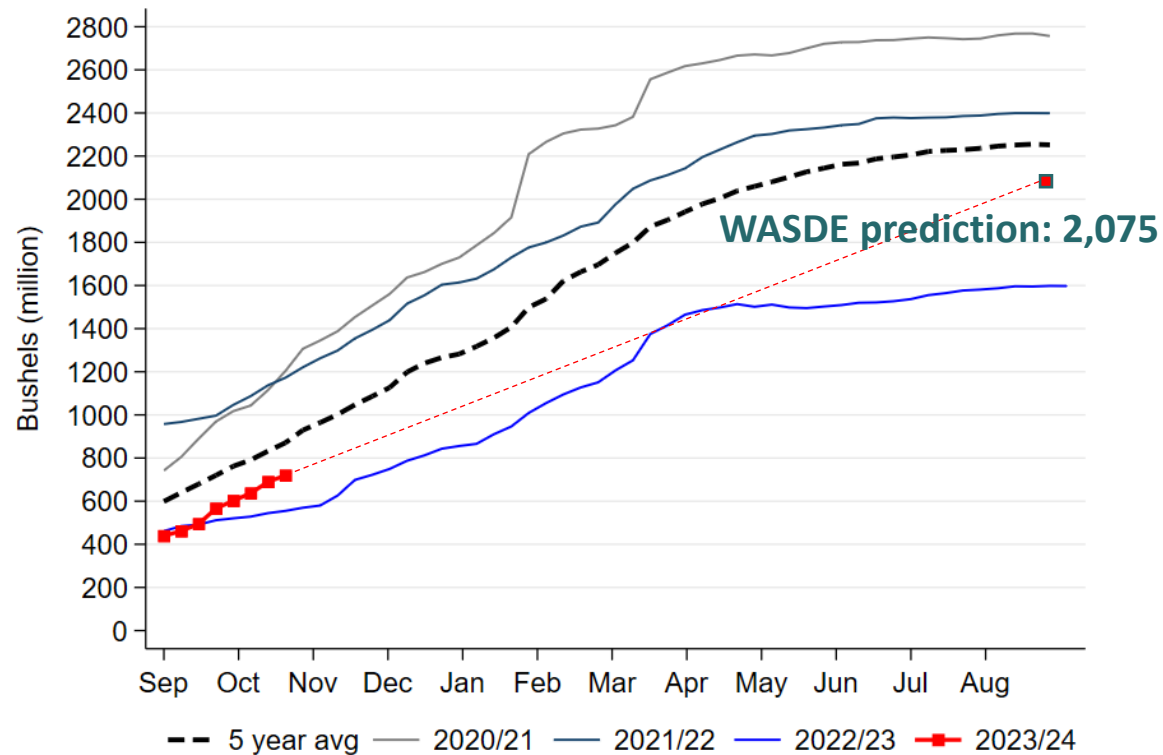
Source: USDA NASS



Crop Progress: Soybeans in United States, 2023

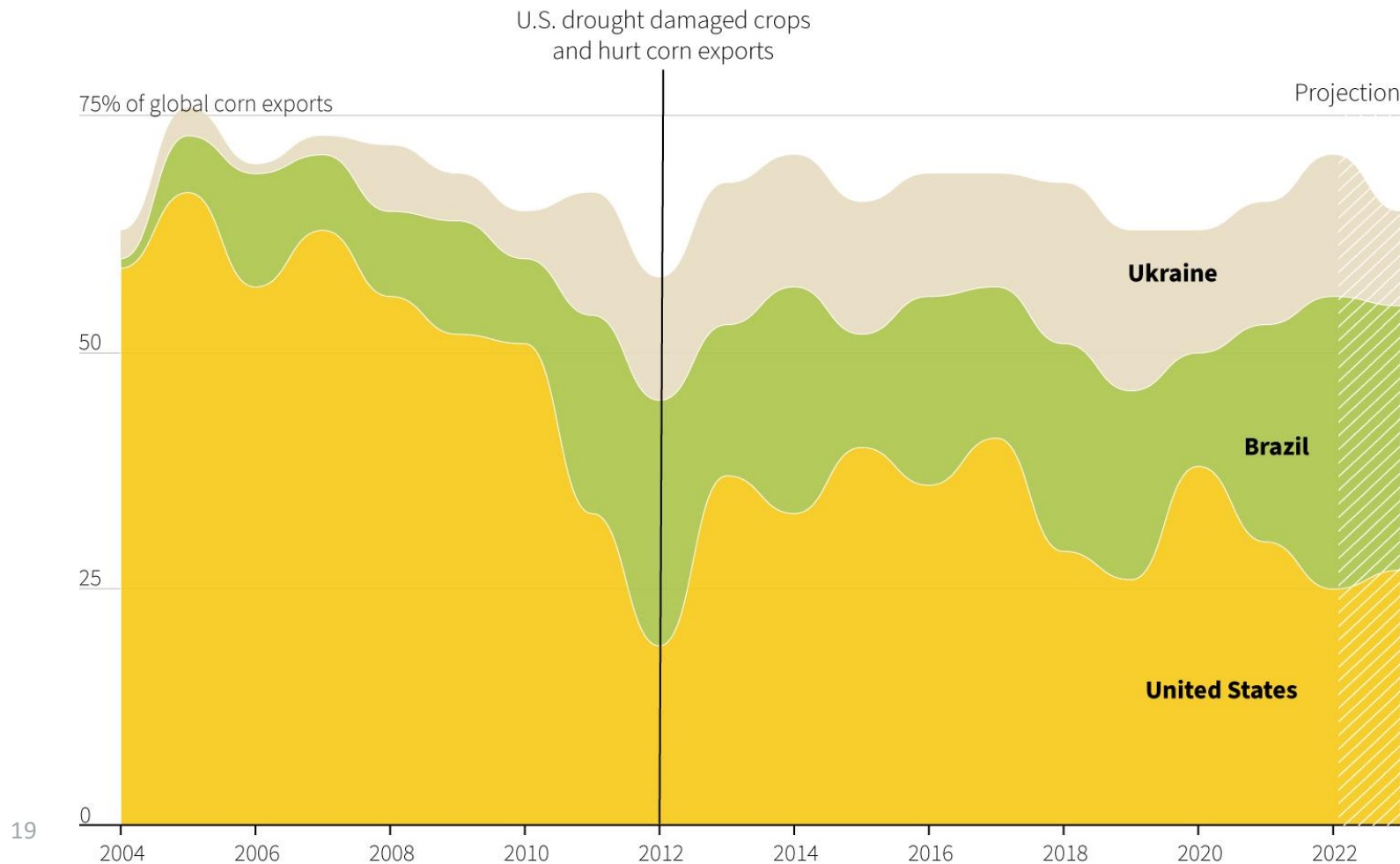


Corn Exports Progress



Source: USDA FAS

Brazil Continues to Be the Top Corn Exporter



- Brazil offset loss of much of the corn exports from Ukraine
- Global export shares 2023 prediction
 - **US: 27%**
 - **Brazil: 27.8%**

Source: Prinz Magtulis,
Reuters, June 28, 2023

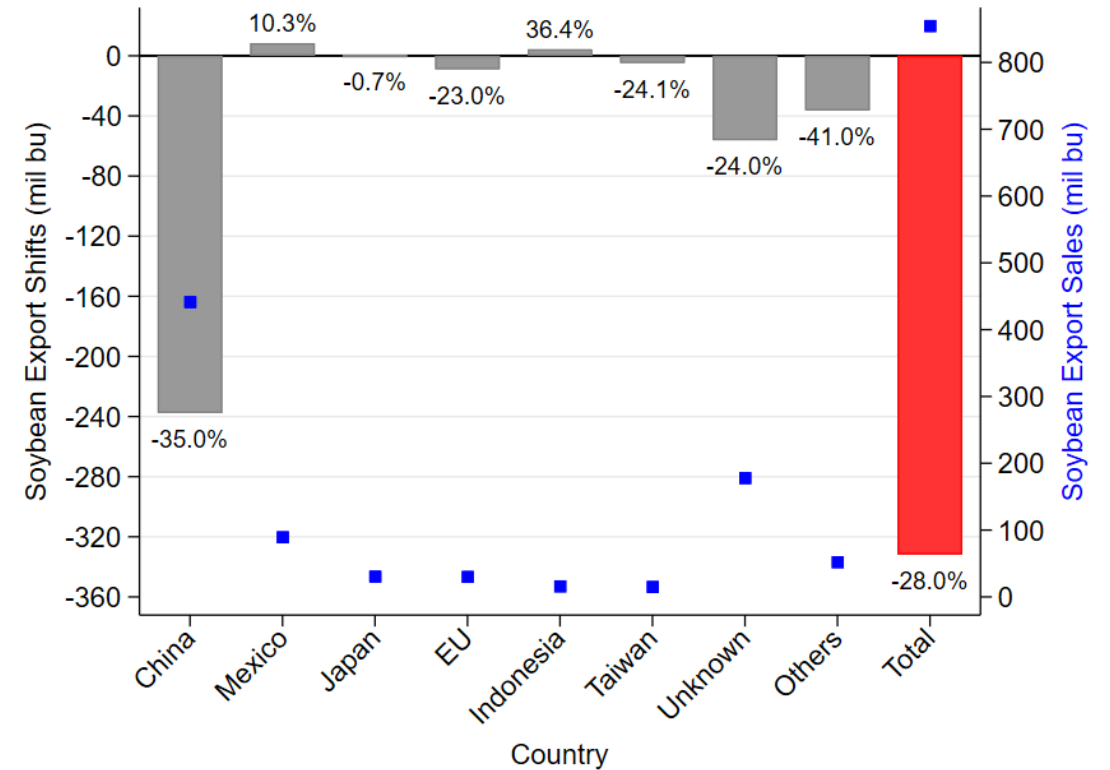
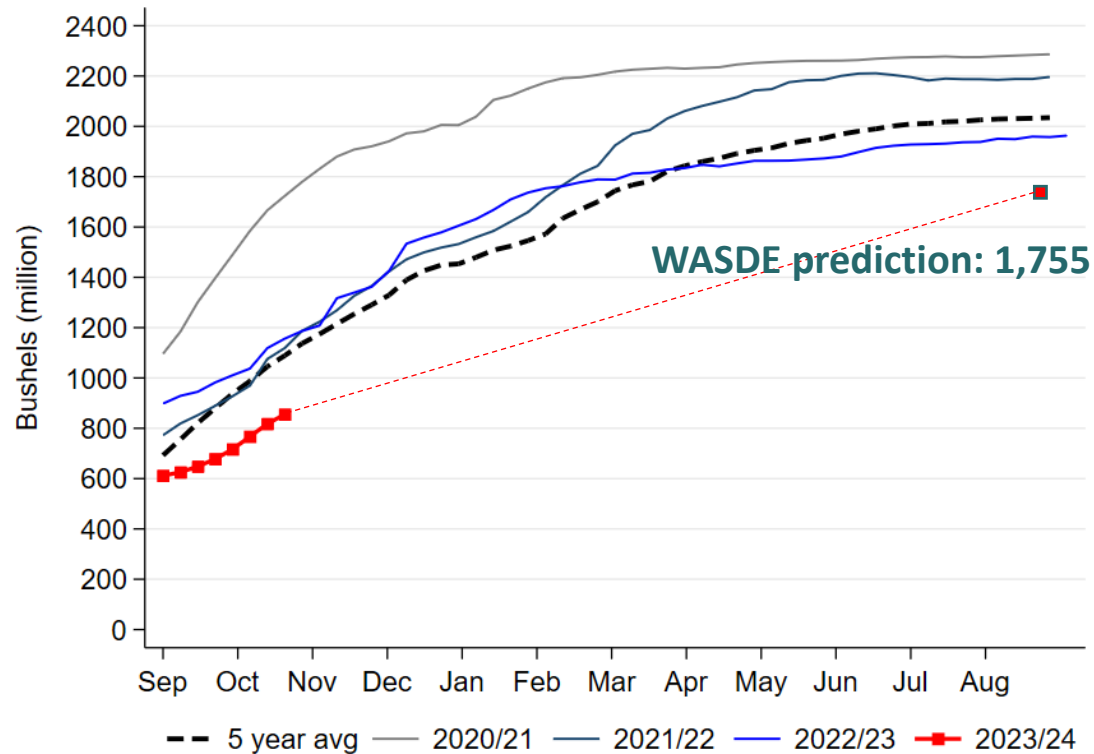
World Corn Balance Forecast

Country	2022/23	2023/24F	ΔOct	Δ2022/23	Item	22/23	23/24F	ΔOct	Δ22/23
World	1,157.10	1,220.80	6.3	5.5%	Beginning stocks	310.3	299.2	1.1	-3.6%
US	348.4	387	4.3	11.1%	Production	1,157.10	1,220.80	6.3	5.5%
Foreign	808.7	833.8	2	3.1%	Total supply	1,467.40	1,520.00	7.4	3.6%
Argentina	34	55	--	61.8%	Feed	730.6	759.8	3.5	4.0%
Brazil	137	129	--	-5.8%	Total use	1,168.20	1,205.00	4.8	3.2%
Mexico	28.1	26.5	-0.9	-5.7%	Trade	180.9	199.6	3.4	10.3%
Canada	14.5	15.3	--	5.5%	Ending stocks	299.2	315	2.6	5.3%
EU	52.3	59.8	0.1	14.3%					
Serbia	5	7	--	40.0%					
FSU-12	47.7	51.6	2.9	8.2%					
Ukraine	27	29.5	1.5	9.3%					
Russia	15.8	16	1.4	1.3%					
South Africa	17.1	16.8	--	-1.8%					
China	277.2	277	--	-0.1%					
India	38.1	34.3	--	-10.0%					

Units are million metric tons (MTs)

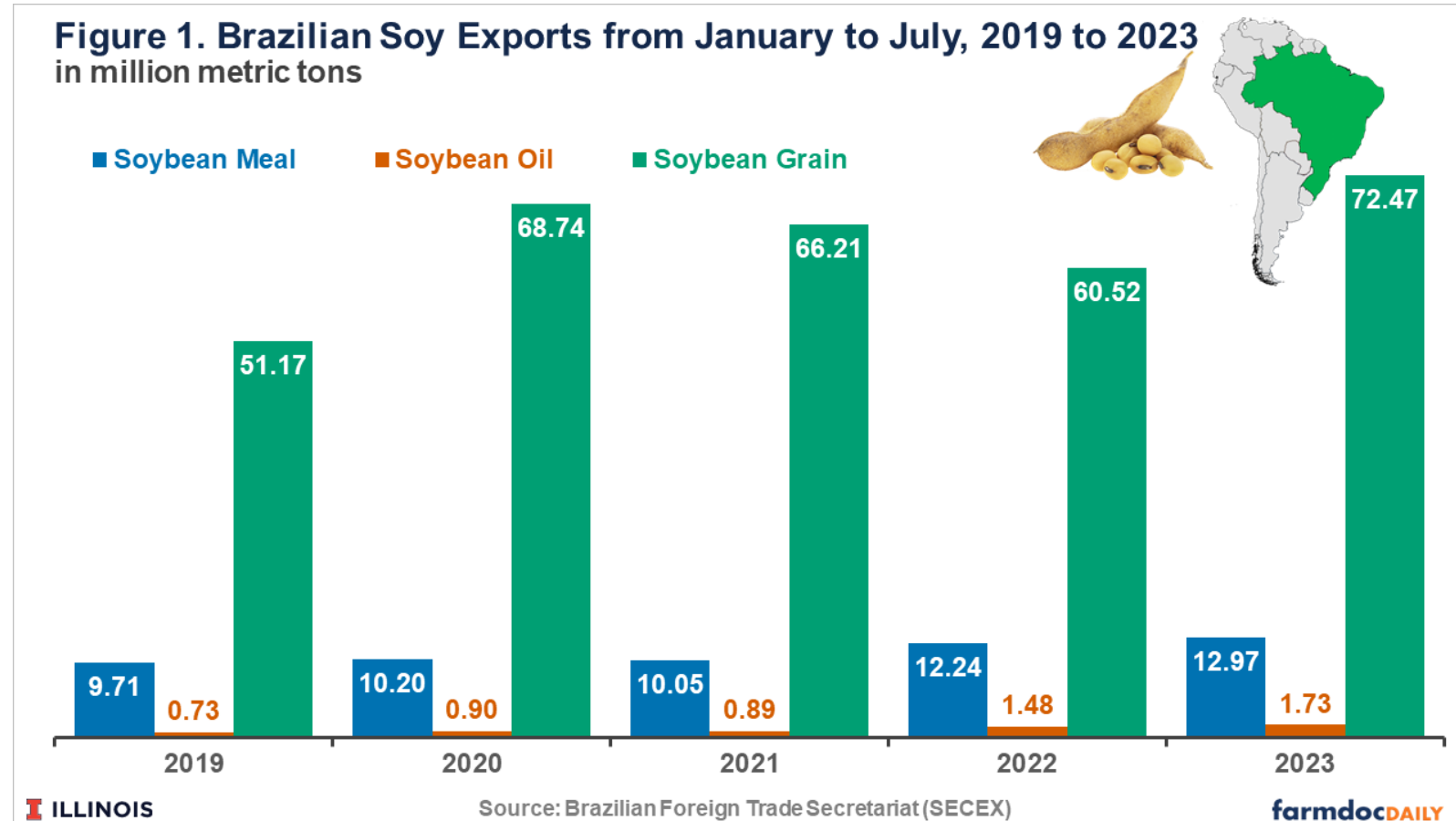
Source USDA WASDE, Nov 2023

Soybean Exports Progress



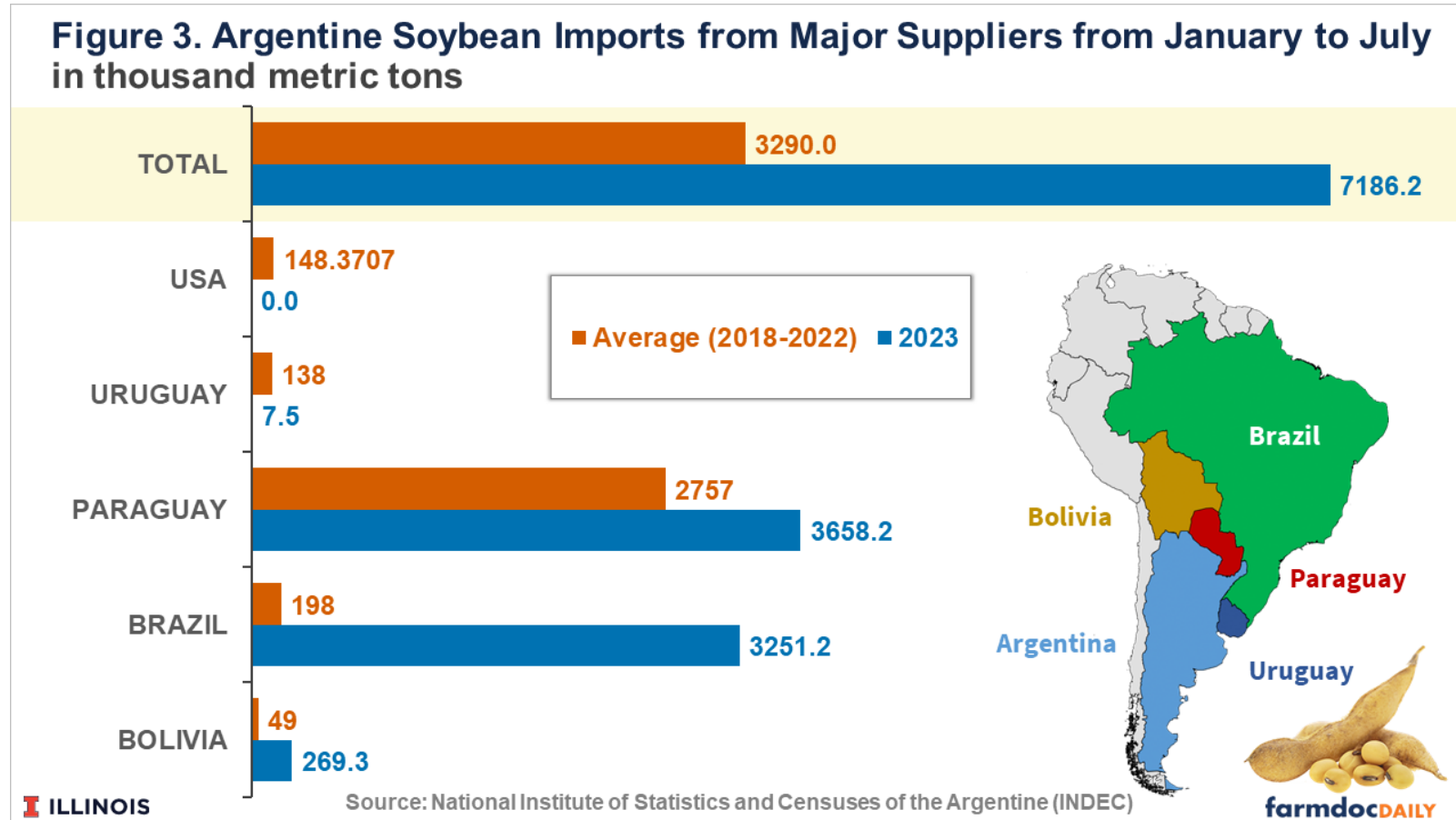
Source: USDA FAS

Brazil Soybean Export Record-Fast Progress



(Farmdoc Daily, Colussi et al., September 6, 2023)

Brazil Soybean Export Record-Fast Progress



(Farmdoc Daily, Colussi et al., September 6, 2023)

Inside Scoop from Brazil

Crop Balance Estimate by Conab

Source: 2ND Survey in 2023/24 by Conab (National Supply Company), Nov 9 2023

	Soybean			Corn		
(Unit: Mil. Bu)	2022/23	2023/24F	Δ2022/23	2022/23	2023/24F	Δ2022/23
Initial stock	186.61	205.12	9.9%	318.74	400.08	25.5%
Production	6,086.85	6,394.53	5.1%	5,187.39	4,687.65	-9.6%
Import	7.87	7.87	0.0%	74.80	82.68	10.5%
Total Supply	6,281.34	6,607.52	5.2%	5,580.93	5,170.41	-7.4%
Seeds/others	154.65	161.65	4.5%	3,133.61	3,325.41	6.1%
Export	3,860.55	4,055.71	5.1%	2,047.24	1,496.06	-26.9%
Processing	2,061.02	2,139.76	3.8%	--	--	--
Total Use	6,076.22	6,357.13	4.6%	5,180.85	4,821.47	-6.9%
Final storage	205.12	250.43	22.1%	400.08	348.94	-12.8%

World Soybean Balance Forecast

Country	2022/23	2023/24F	ΔOct	Δ2022/23
World	372.2	400.4	0.9	7.6%
US	116.2	112.4	0.7	-3.3%
Foreign	256	288	0.2	12.5%
Argentina	25	48	--	92.0%
Brazil	158	163	--	3.2%
Paraguay	9.1	10	--	9.9%
Canada	6.5	6.7	--	3.1%
India	12.4	11	--	-11.3%
China	20.3	20.5	--	1.0%

Units are million metric tons (MTs)

Source USDA WASDE, Nov 2023

Item	22/23	23/24F	ΔOct	Δ22/23
Beginning stocks	98.1	100.3	-1.6	2.2%
Production	372.2	400.4	0.9	7.6%
Total supply	470.3	500.7	-0.7	6.5%
Crush	313.4	329.5	1	5.1%
Total use	364.1	383.7	0.4	5.4%
Trade	170.9	168.3	0.1	-1.6%
Ending stocks	100.3	114.5	-1.1	14.2%

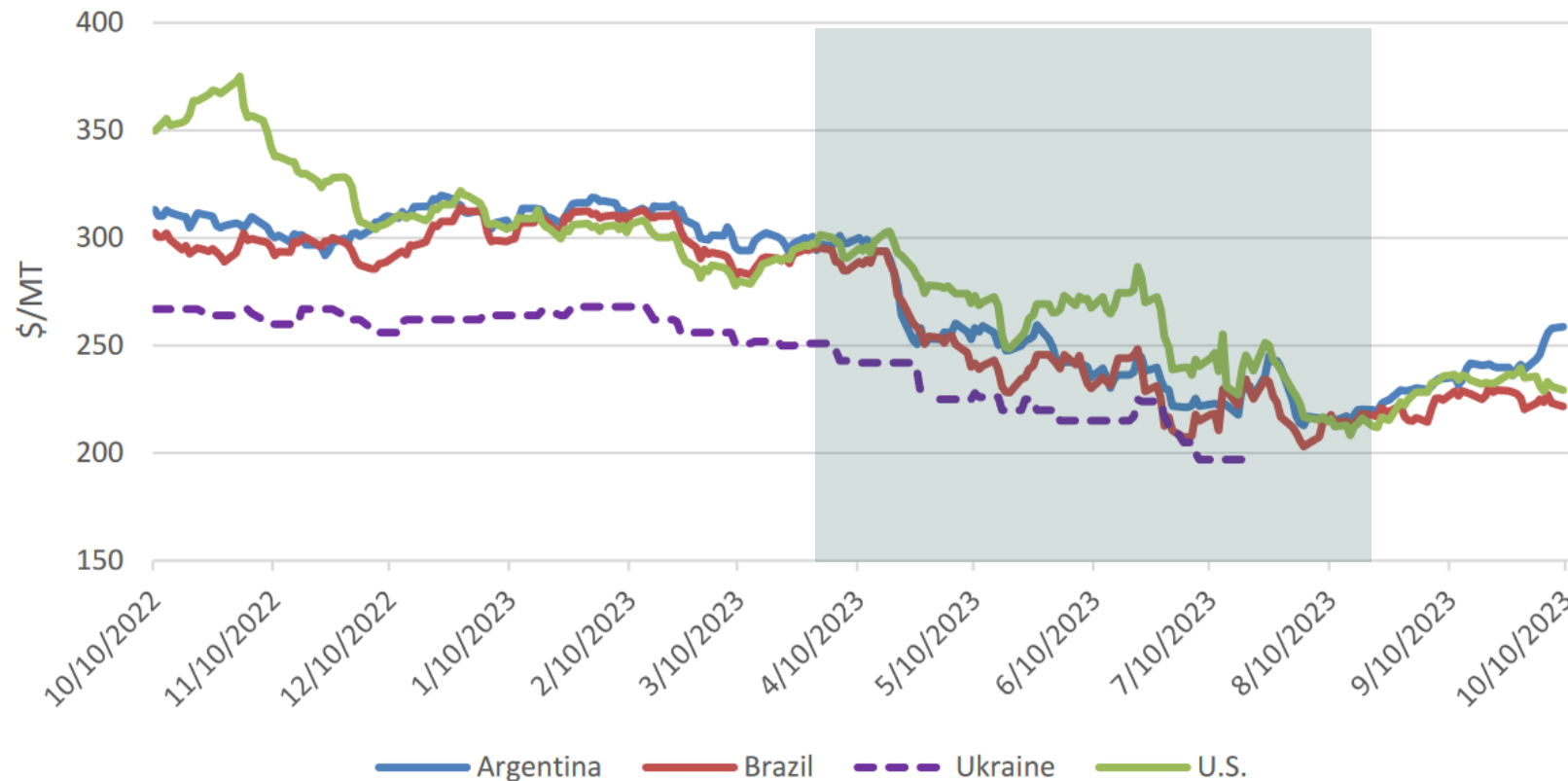
Addendum

Beginning stocks: Argentina & Brazil

	51.5	50.7	1.7	-1.7%
Imports: China	100.8	100.0	--	-0.8%

Price Competitiveness Matters

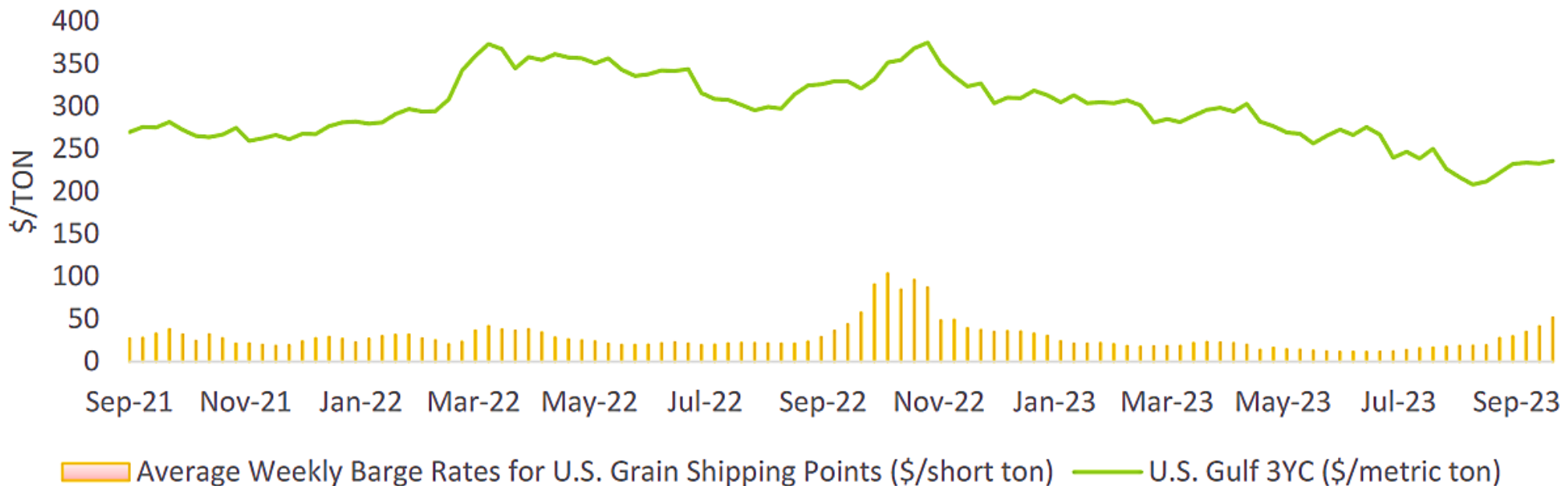
Selected Export Bids, FOB



- **Brazil's export bid is still lower than US's**
- Only 8.3% of US corn exports were made during the final five months (Apr-Aug) in the 22/23 market year

Low Mississippi River Levels and Corn Export

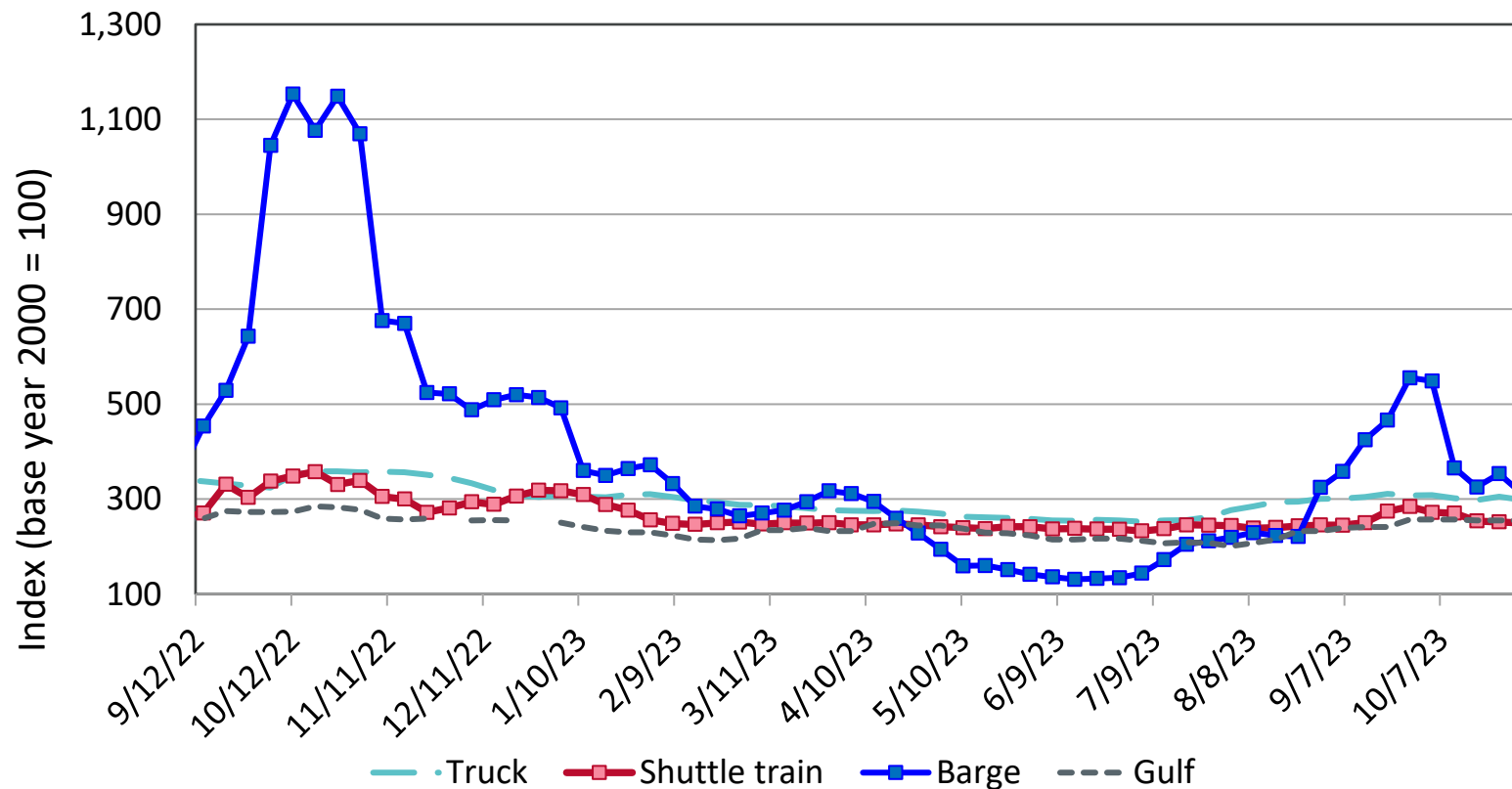
U.S. Corn Export Bids vs. Weekly Barge Rates



Sources: US Army Corps of Engineers Southbound Barge Freight Rates, Averaged; International Grains Council

Barge Rates Weekly Trend

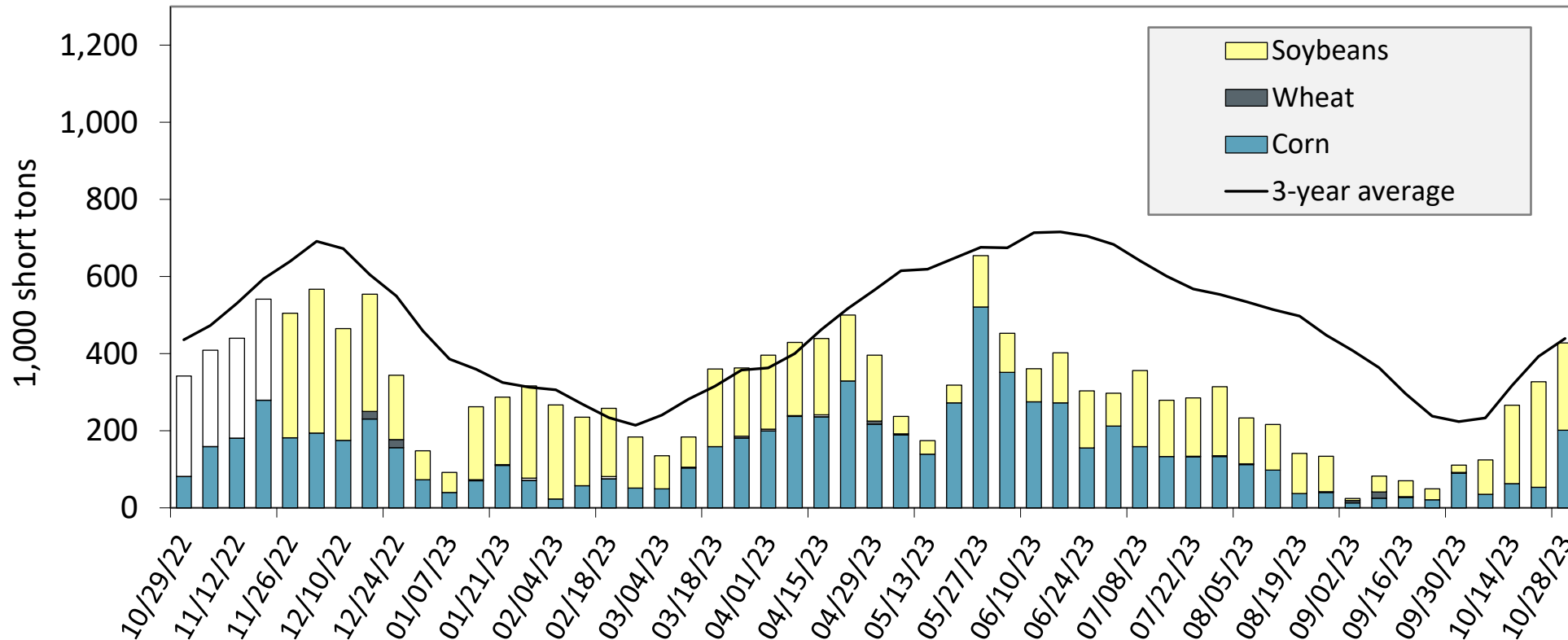
Are we going to repeat 2022?



- **Low river level issue continues**
- **Recent price stabilization:** Preemptive dredging and load restrictions seem to have worked out
- **Correlation between barge and shuttle train:**
 - 22-year history: 0.46
 - **Jul-Dec 2022: 0.90**

Sources: USDA Grain Transportation Report, November 2, 2023

Barge Movements on the Mississippi River (Locks 27-Granite City, IL)

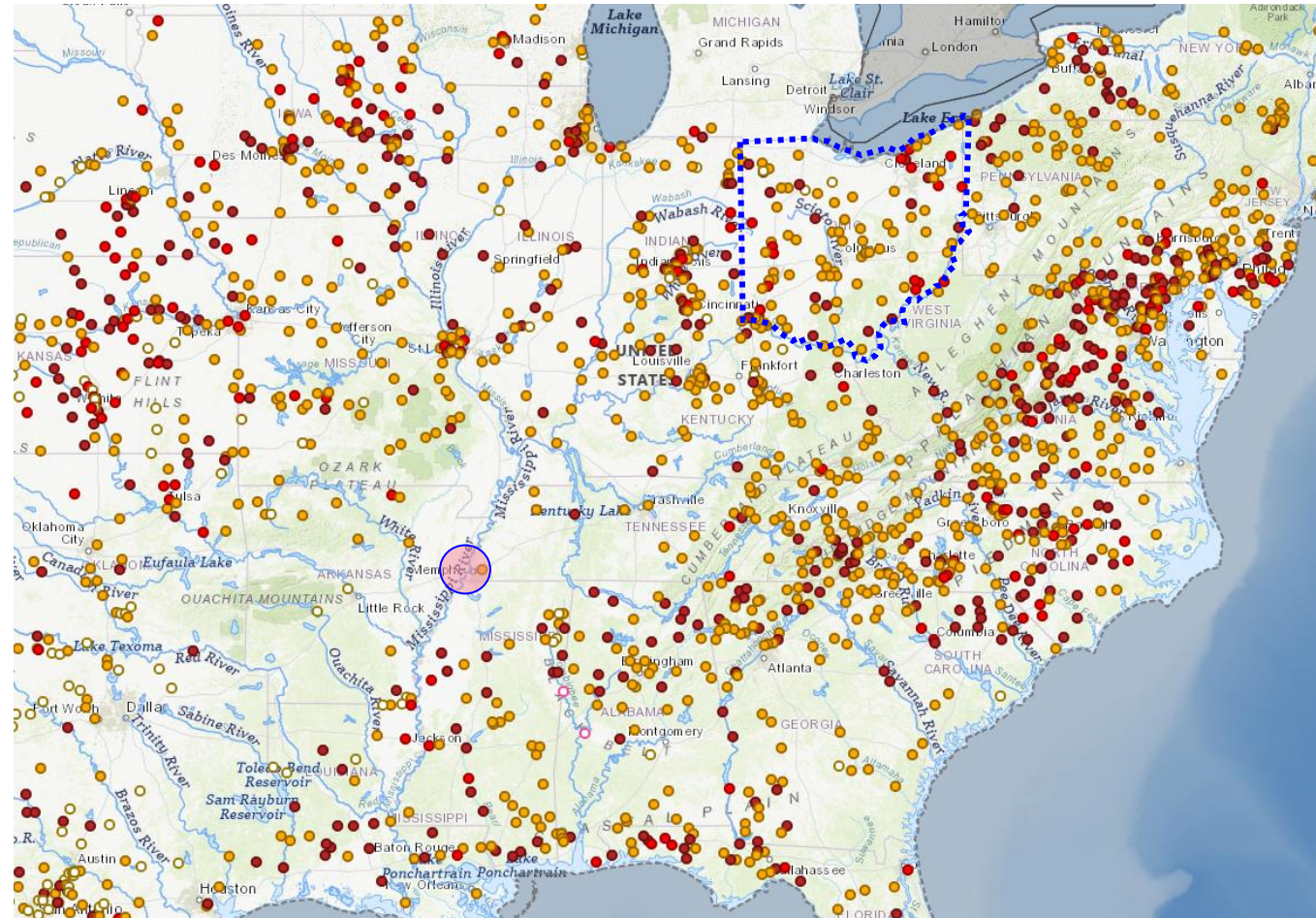


Week ending Oct 28

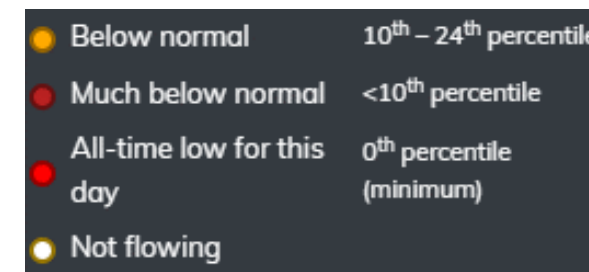
- 25.1% higher than last year
- 2.6% lower than the 3-yr average

Sources: U.S. Army Corps of Engineers

Recent River Level Status

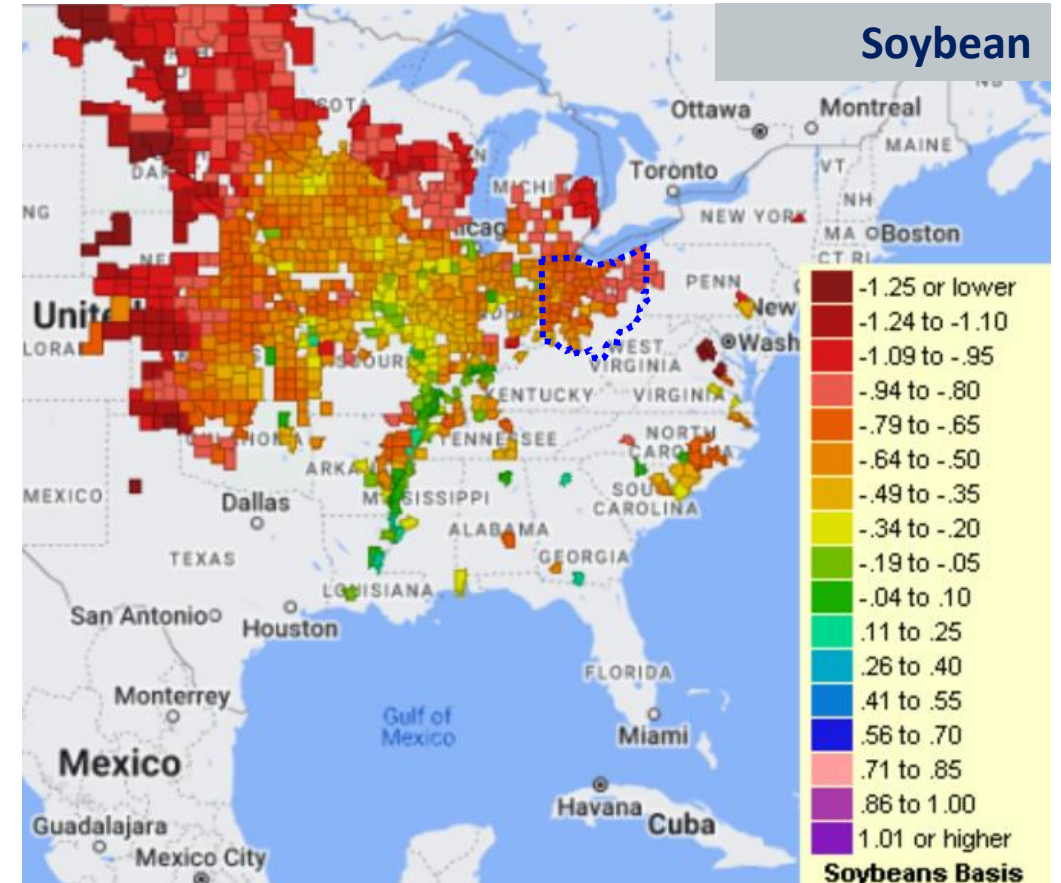
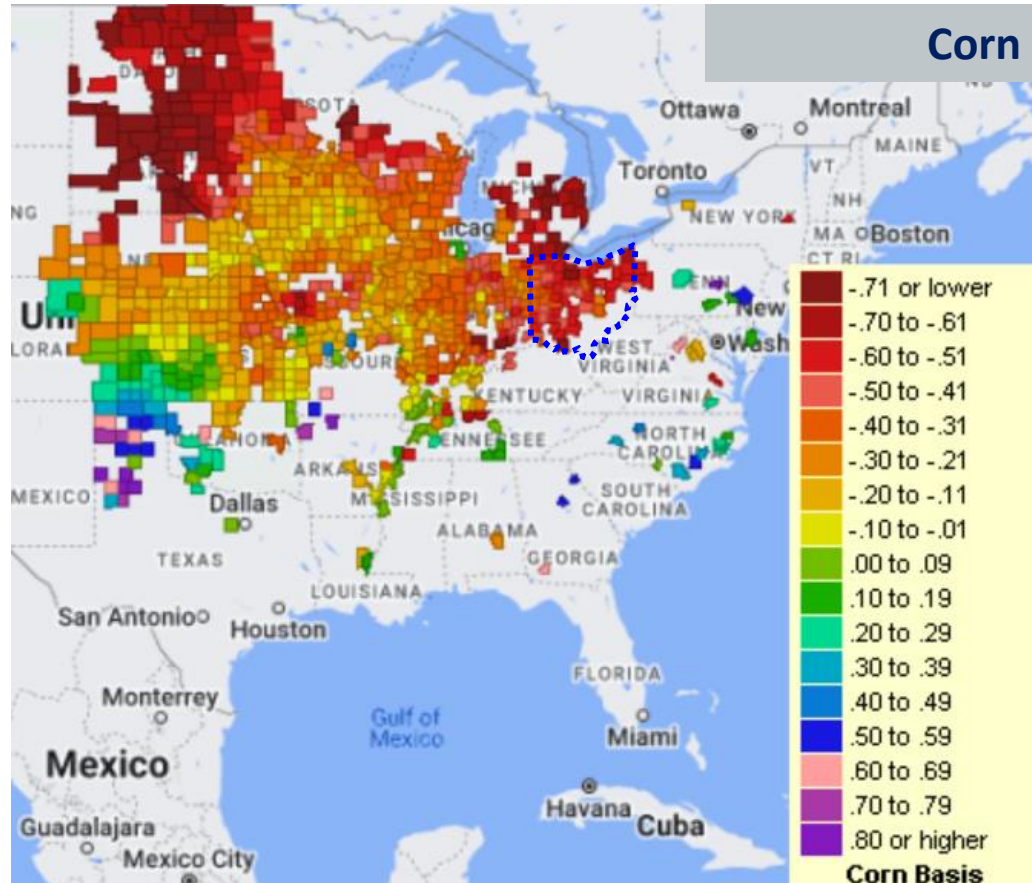


- Drought is bringing about unexpected costs to the growers
- Many spots are seeing the water level near the operational minimum (e.g., Memphis)



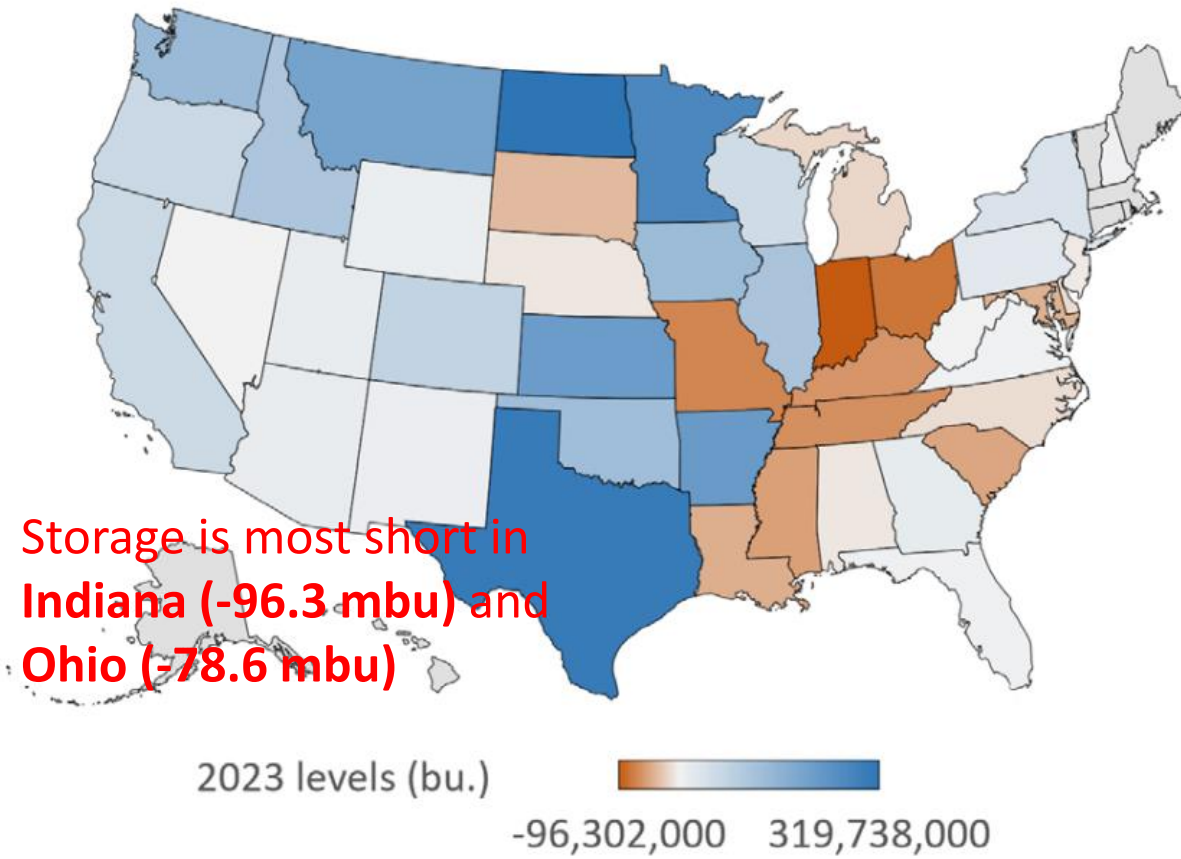
Sources: USGS – National Water Dashboard,
Accessed on Nov 11, 2023

Basis Reflects the Logistics Issue

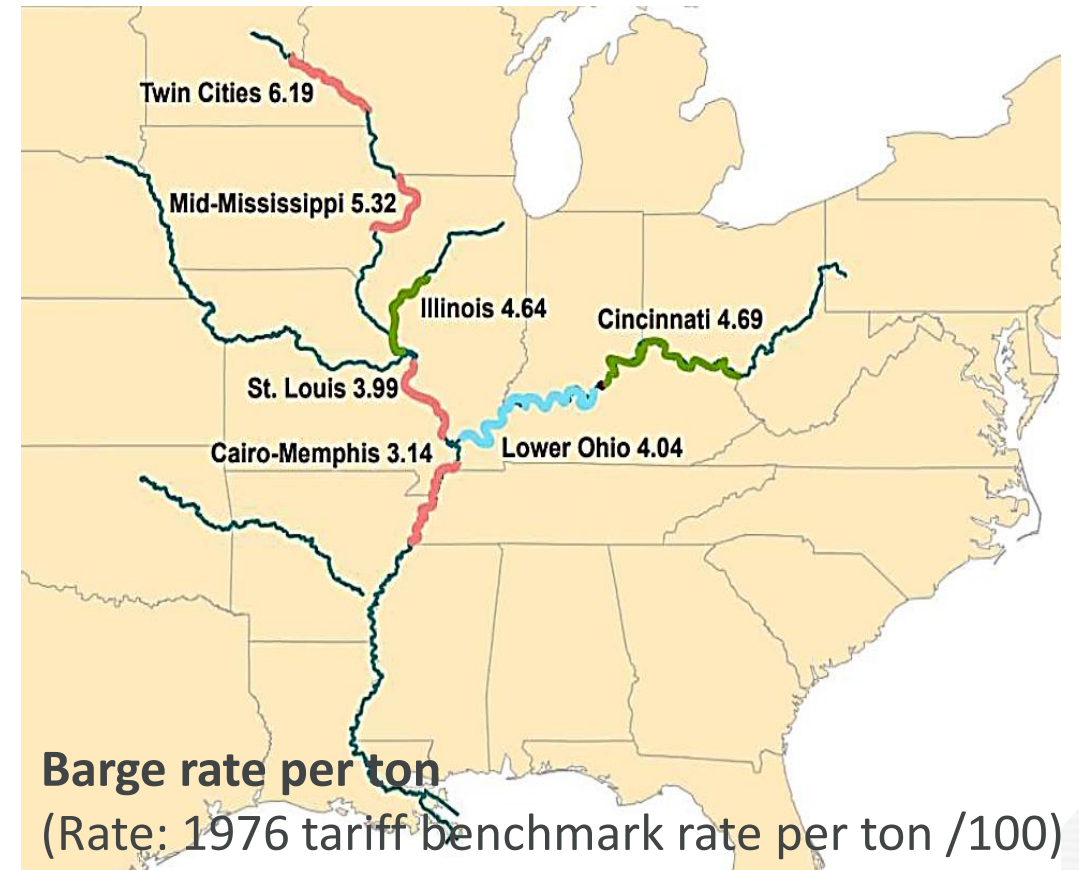


Source: DTN, Nov 9, 2023

Storage Surplus/deficit for 2023





Benchmark Tariff Rates



Quick Summary and Food for Thought

New crop estimates updated

	Crop	Total Supply	Season avg price	Stocks to use ratio
	Corn	16.6 bil bu (+9.9%)	\$4.85/bu (-25.8%)	14.9% (+50.5%)
	Soybean	4.4 bil bu (-3.1%)	\$12.9/bu (-9.2%)	5.9% (-4.8%)

Logistics need continuous attention



River level will be the key factor for grain transportation



Ohio and Indiana are especially short of storage

Others



Planting in Latin America

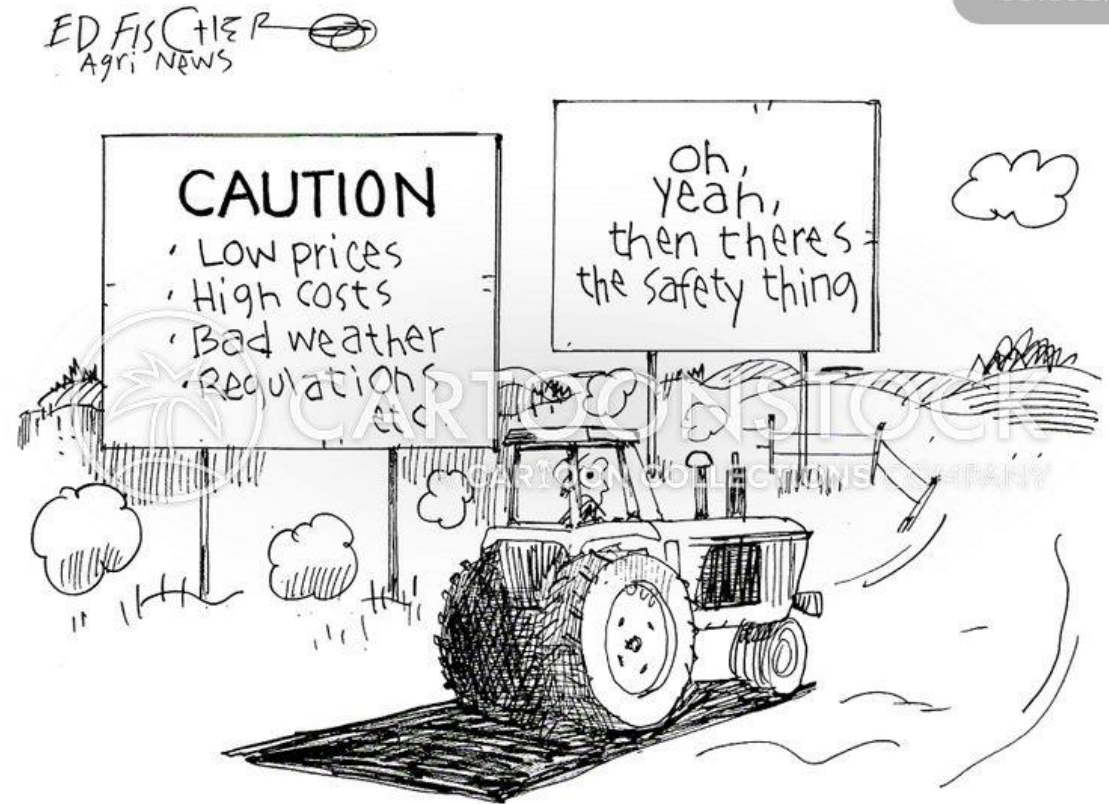


High cattle prices

Thank You!

Contact:

Seungki Lee.10168@osu.edu

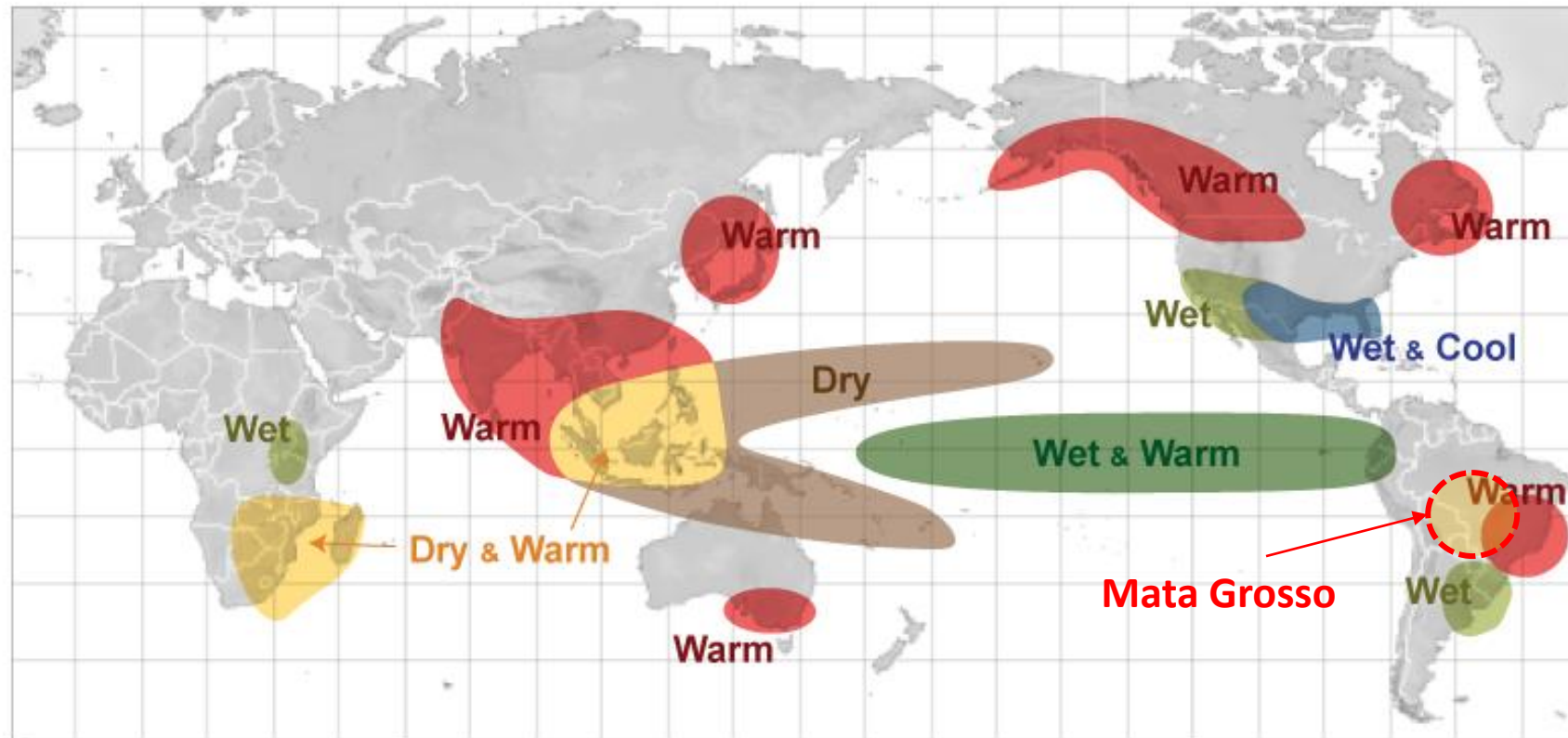


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Source: Agri News, Ed Fischer (6/4/2009)

El Niño – Another Factor of Brazilian Planting

El Niño effects from December through February

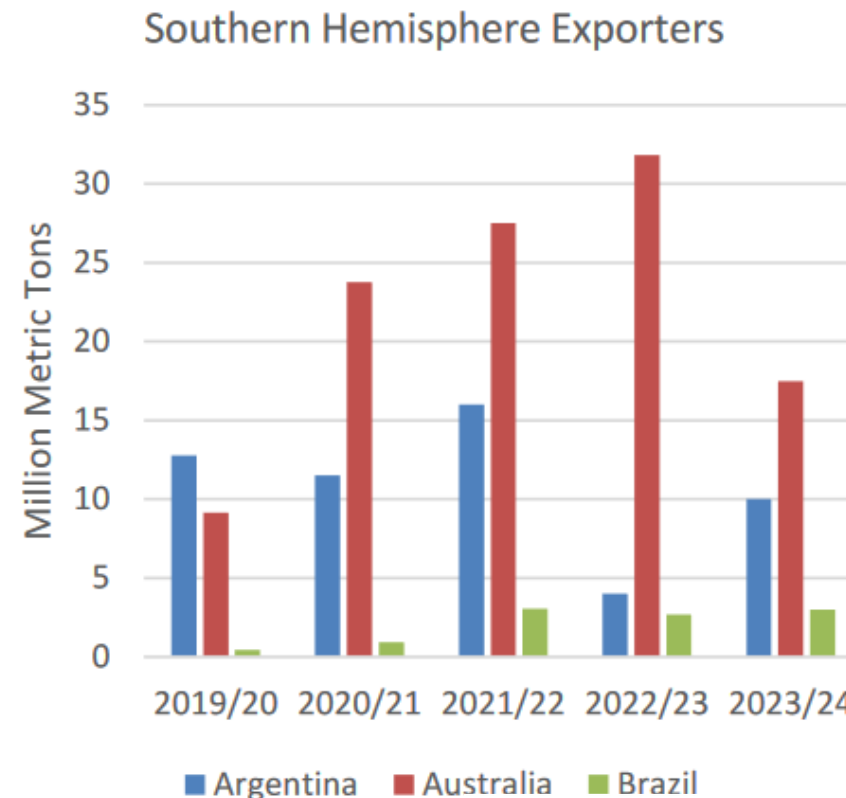
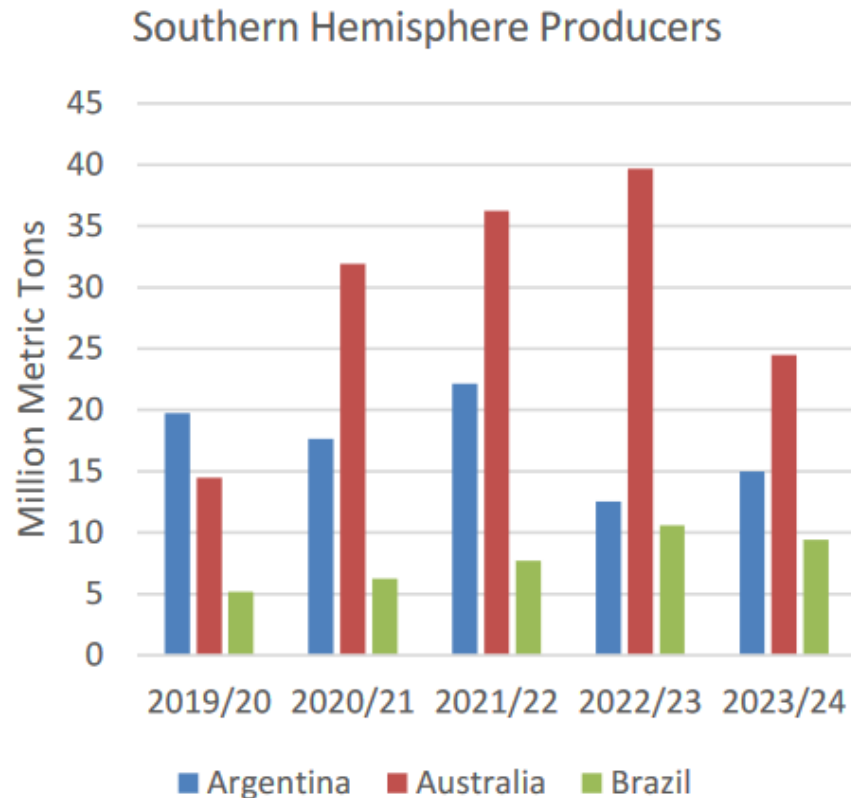


- **West-Central Region** (e.g., Mata Grosso) in Brazil will have a higher chance of drought with El Niño
- **The drought risk** is another reason that makes planting **corn less attractive**

Source: NOAA/ JetStream

Dry Weather Impacted Australian Wheat

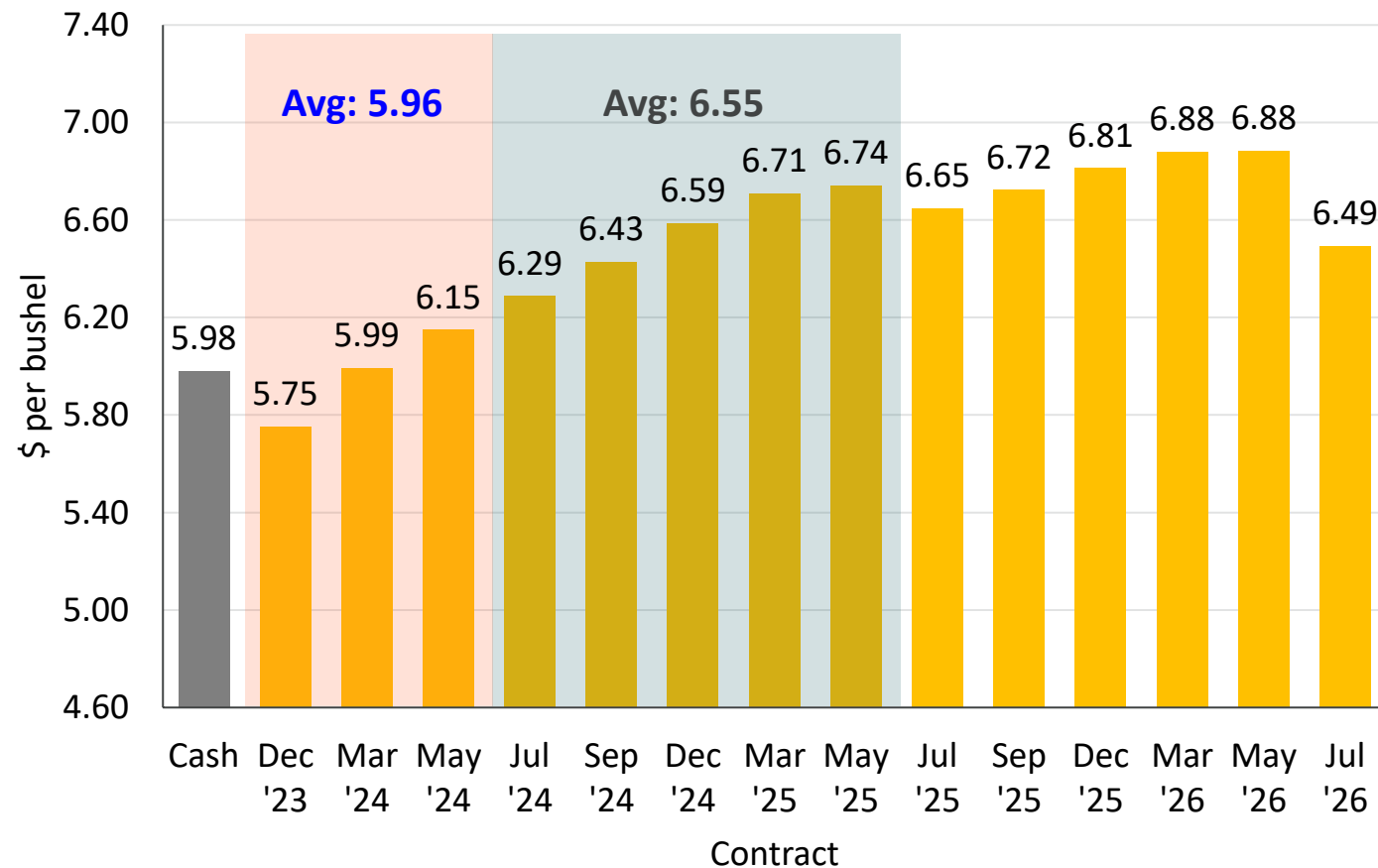
Oct-Jan is the wheat harvest season in Australia



- Australia, Argentina, and Brazil are the three key wheat producers in the Southern Hemisphere
- Australia experienced 3 consecutive years of record crops from 20/21 to 22/23
- El Nino has badly influenced Australian production this year

Source: World Markets and Trade, USDA FAS (Nov 9, 2023)

Wheat Future Price



- Both Canada and Australia experienced unfavorable weather
- Globally, the wheat ending is expected to stay low continuously, which makes the wheat keep the strong fundamentals in 24/25

Source: Barchart, Nov 12, 2023

Feeder Cattle Spot Price in CME Futures

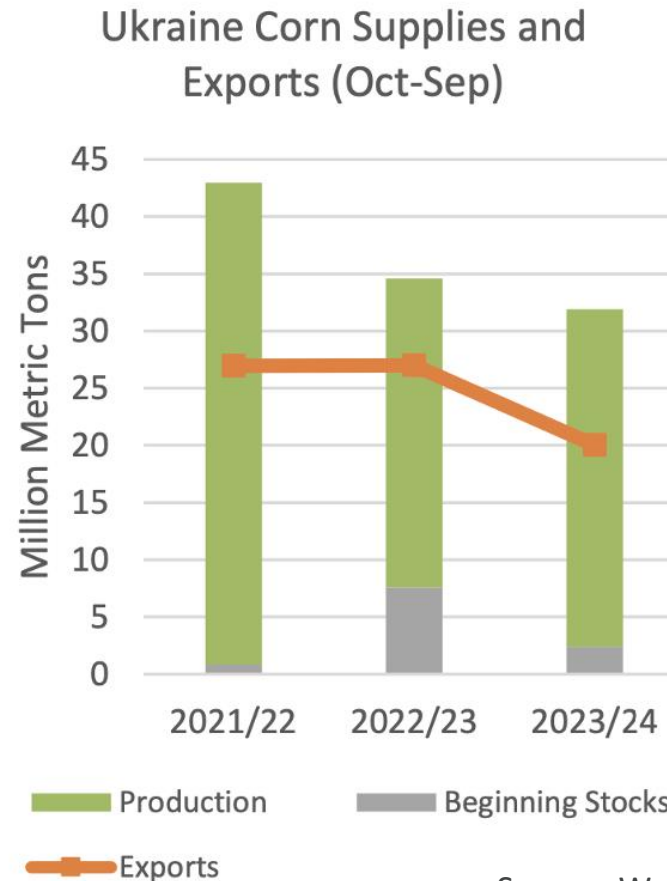
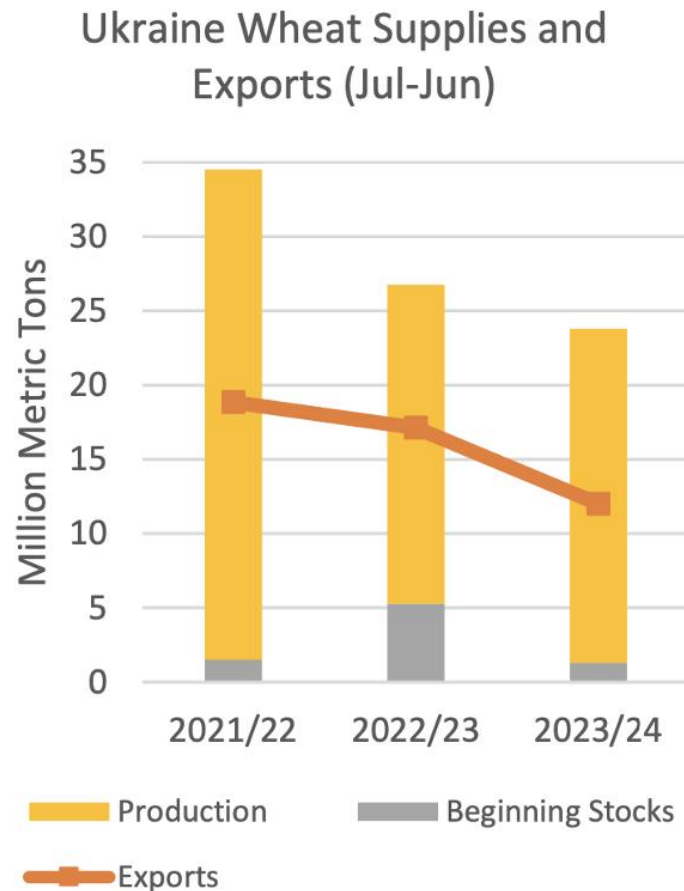


- Recently reached a historical high, mainly due to the low stock level
- How fast the cattle stock would go up will be the deciding factor

Note: 1 feeder cattle future contract represent 50,000 pounds of market ready cattle

Source: Barchart, Nov 12, 2023

Less Crop and More Difficult to Transport

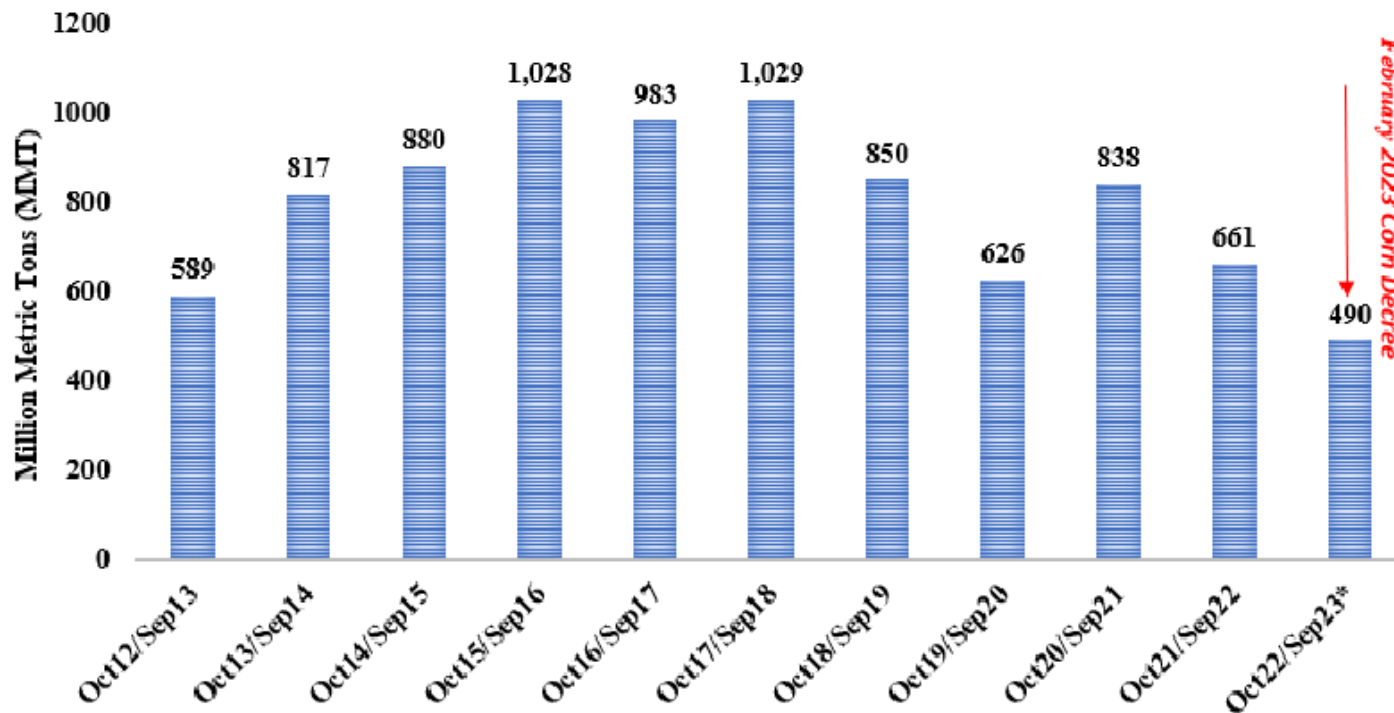


- On July 17, 2023, Russia terminated the Black Sea Grain Deal
- Ukraine's alternative Black Sea export corridor is operating, but it seems to be limitedly effective

Source: World Markets and Trade, USDA FAS (Nov 9, 2023)

GM White Corn Regulation in Mexico

Figure 6. Mexico White Corn Imports



- In Feb 2023, Mexico re-confirmed a decree that bans any GMO corn for human consumption by the end of Jan 2024
- White corn is taking about 4% of US corn exports to Mexico, but the escalated tension between the two countries can take a turn for the worse
- **Still, it looks unlikely that Mexico bans GMO yellow corn from US**