



Caring for You and Your Farm®

Professional Services for Farmland Owners and Investors:

- **Professional Farm Management**
- **Farmland Sales & Acquisitions**
- **Farmland Auctions**
- **Trusted Farmland Appraisals**





Caring for You and Your Farm®

**Landowner Educational Seminar
Winter 2024**

Grain Markets



Marketing Decisions

- Today's Markets
- Weather
- Supply/Demand
- Corn
- Soybeans
- Brazil
- China
- Outlook

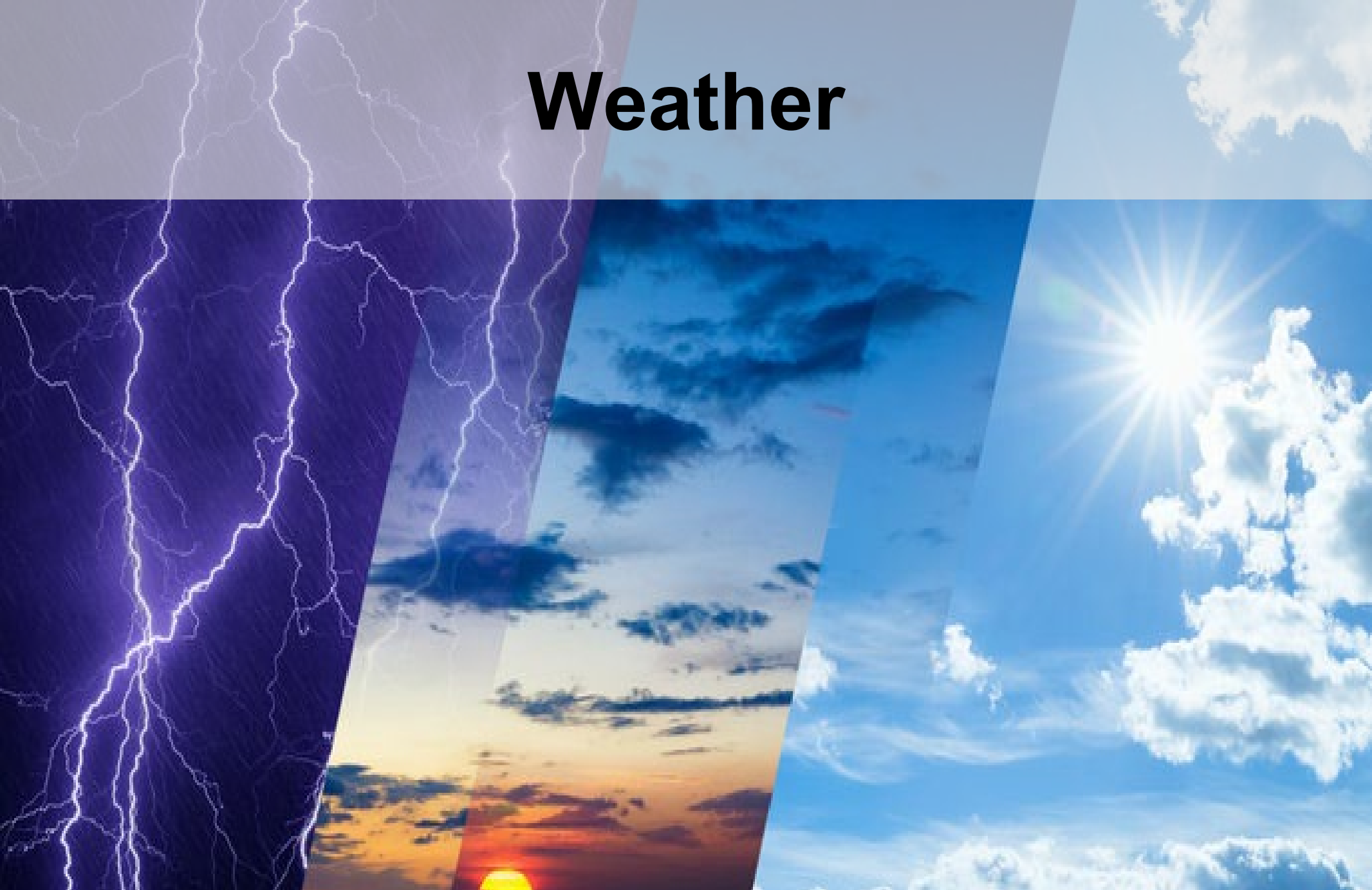


Today's Price

Corn		Soybeans	
	2024		2024
Cash		Cash	
October		October	
December		December	

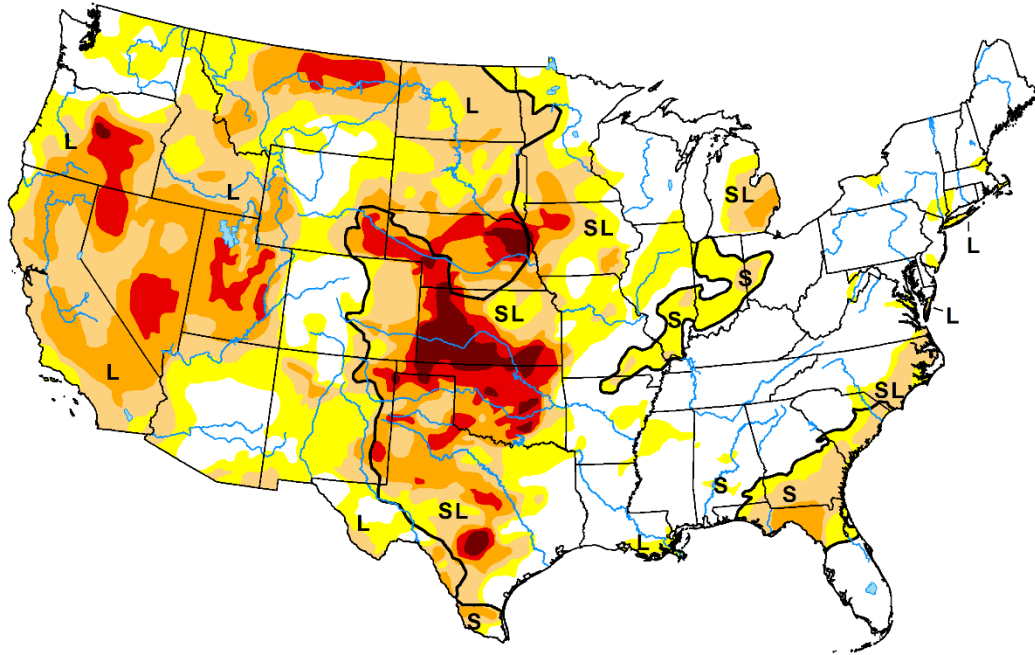


Weather



U.S. Drought Monitor

January 17, 2023



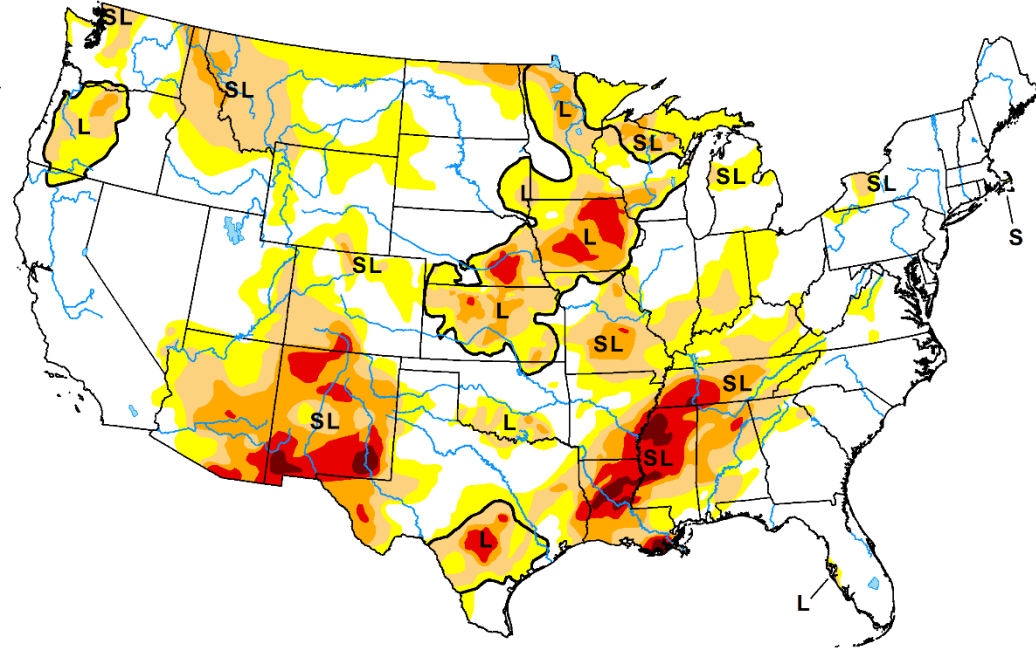
Drought Impact Types:

~ Delineates dominant impacts

S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

January 16, 2024



Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought



Source: <http://droughtmonitor.unl.edu/>

www.Hertz.ag

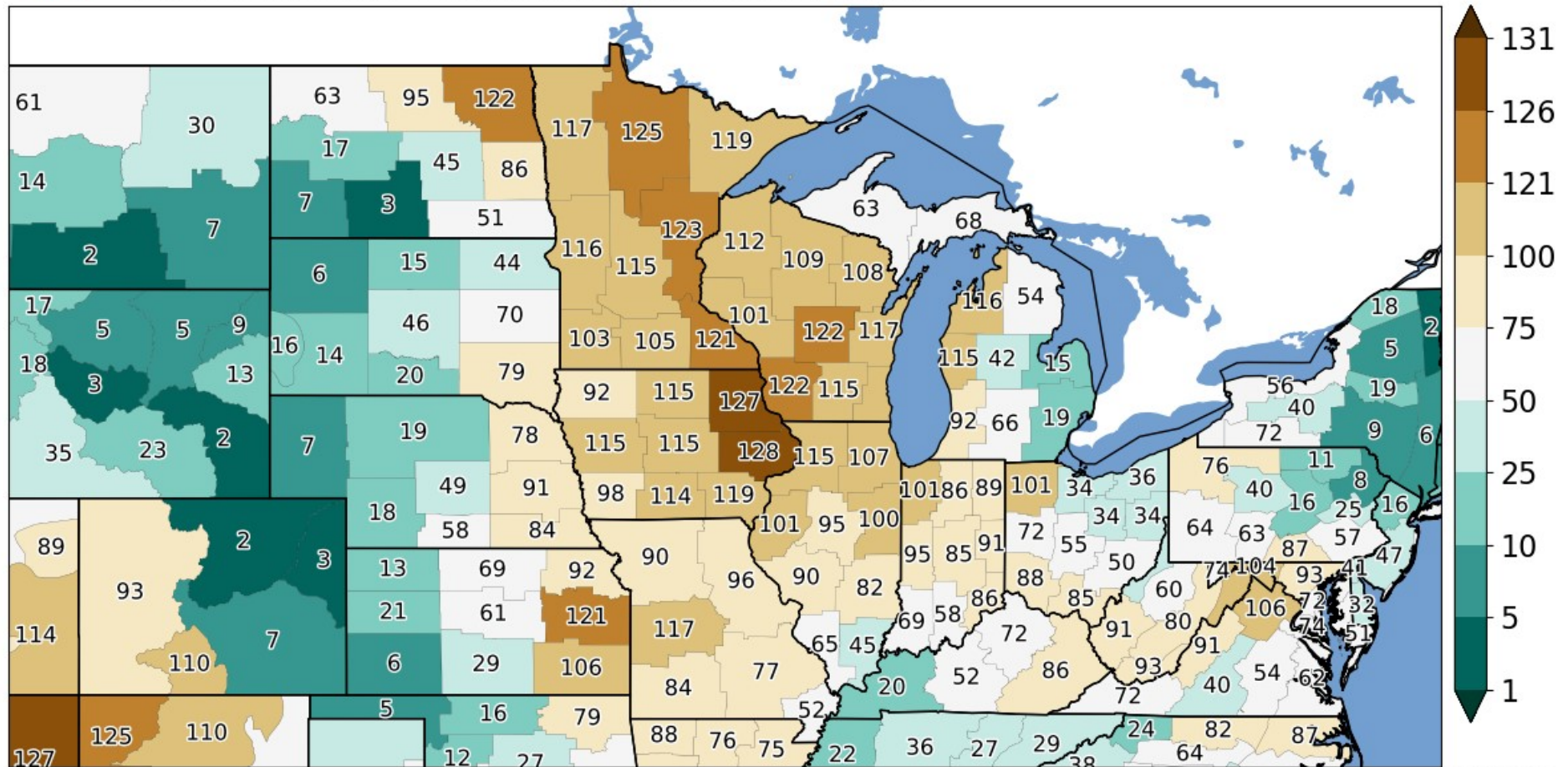


Total Precipitation Ranks by Climate District

April 15 – September 1, 2023



15 Apr 2023 ~7 AM till 1 Sep 2023 ~7 AM Total Precipitation Ranks by Climate District
Based on IEM Estimates, 1 is wettest out of 131 total years (1893-2023)



Generated at 15 Sep 2023 11:30 AM CDT in 65.57s

data units ::
IEM Autoplot App #24

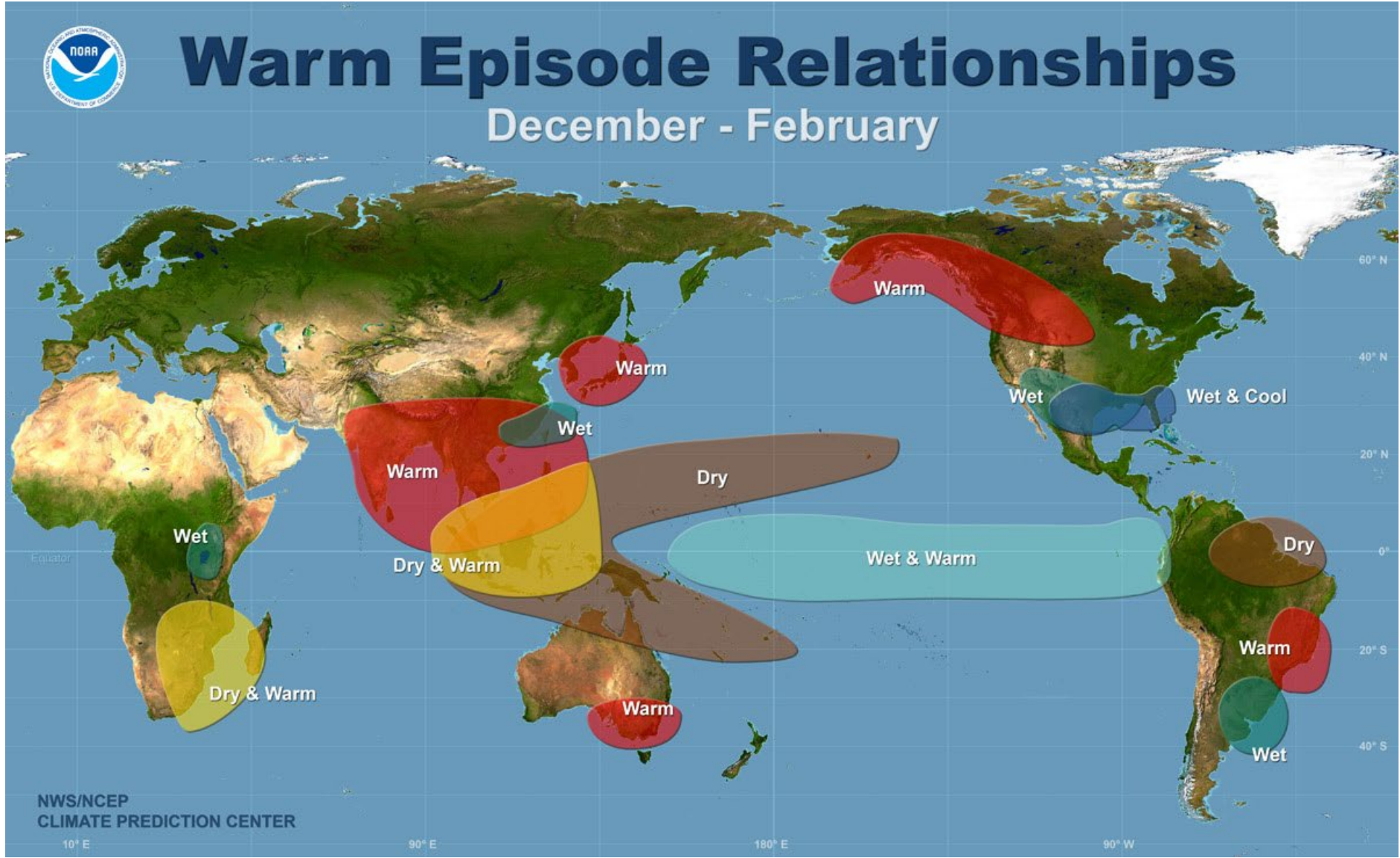


Source: IEM

www.Hertz.ag



El Niño



Source: National Center for Atmospheric Research

www.Hertz.ag



Agricultural Trade

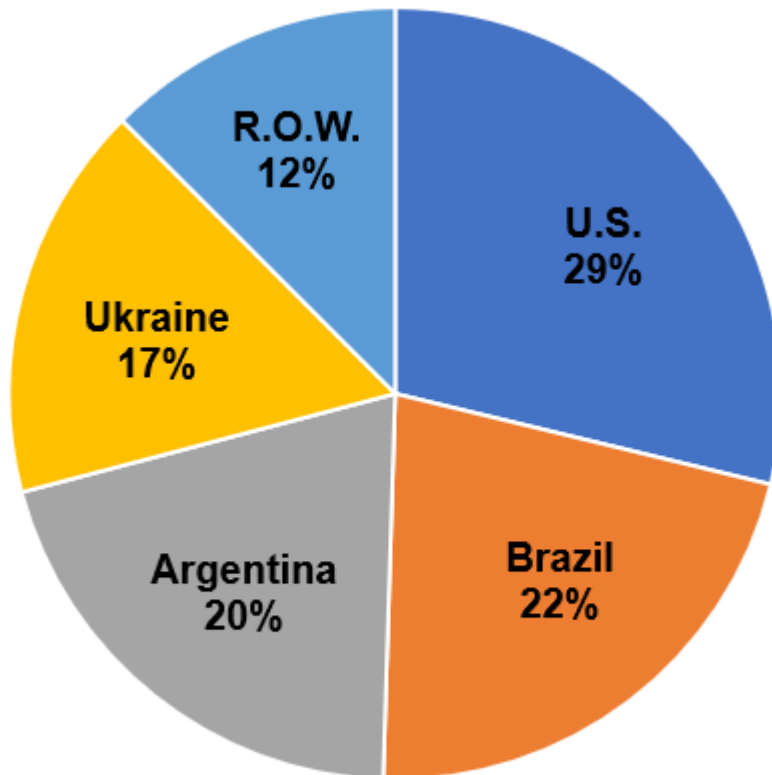


www.Hertz.ag

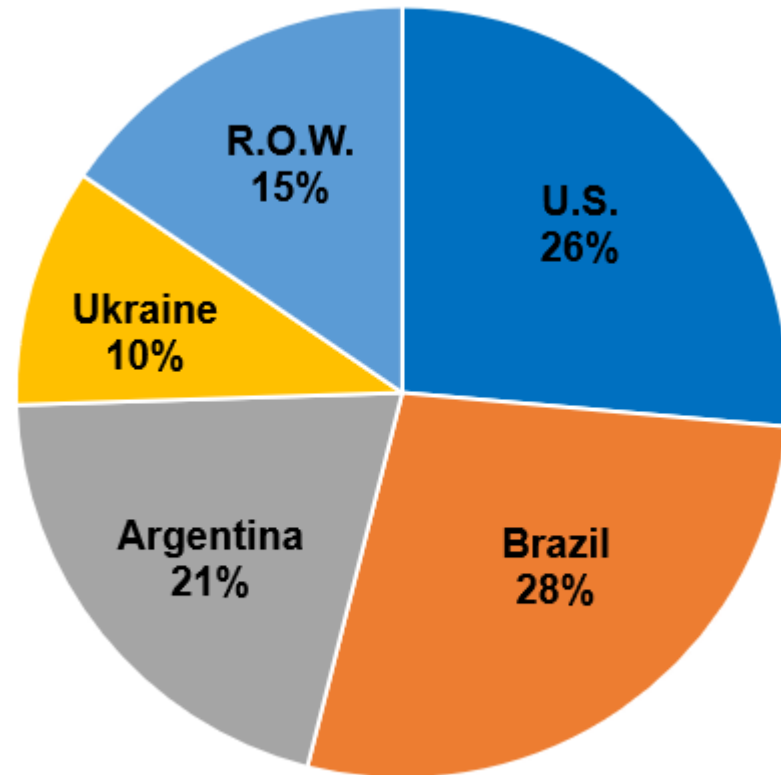


World Corn Export Share

2018/19



Projected 2023/24



Source USDA, November 2023

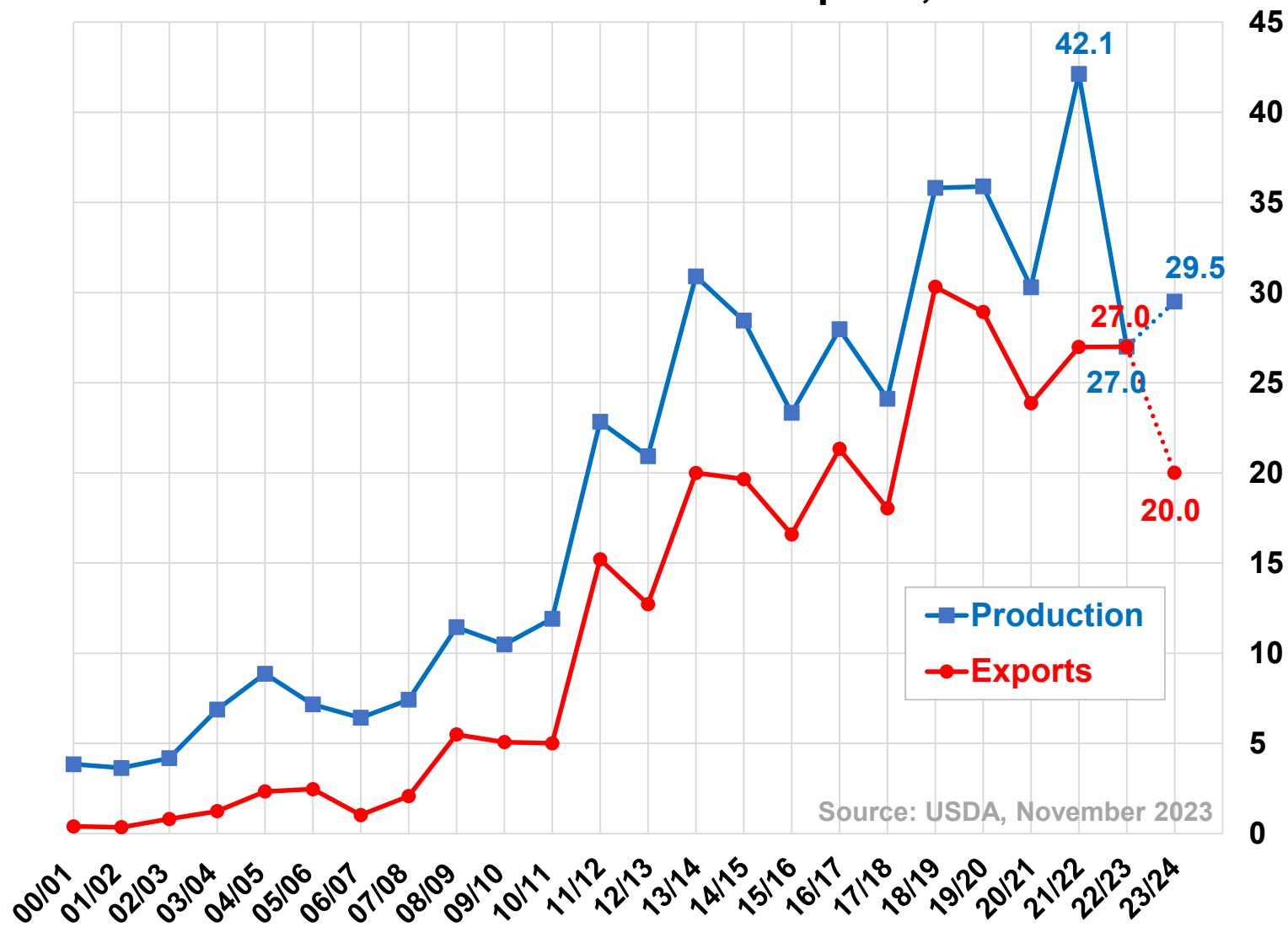


Source: Brock Associates

www.Hertz.ag



Ukraine Corn Production and Exports, million metric tons



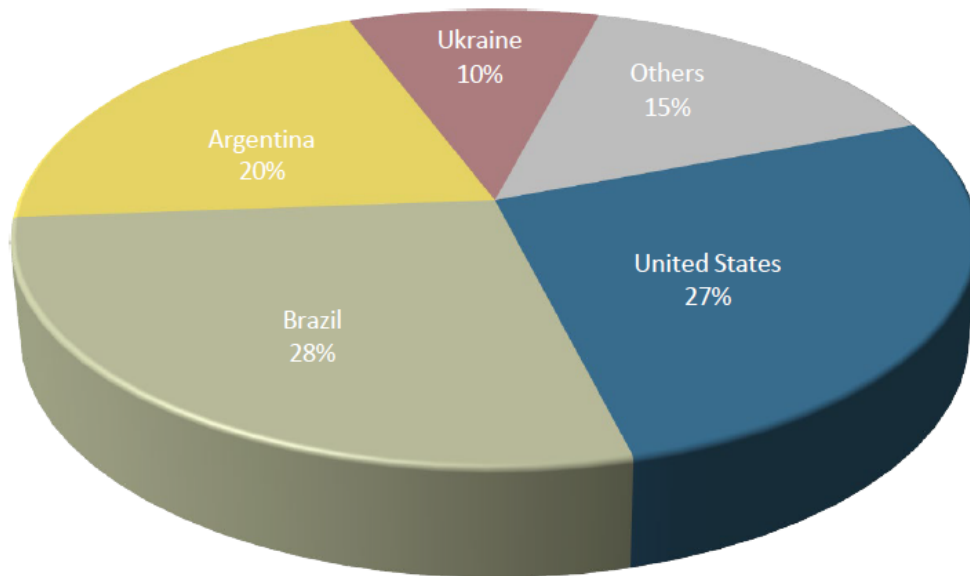
Source: Brock Associates

www.Hertz.ag



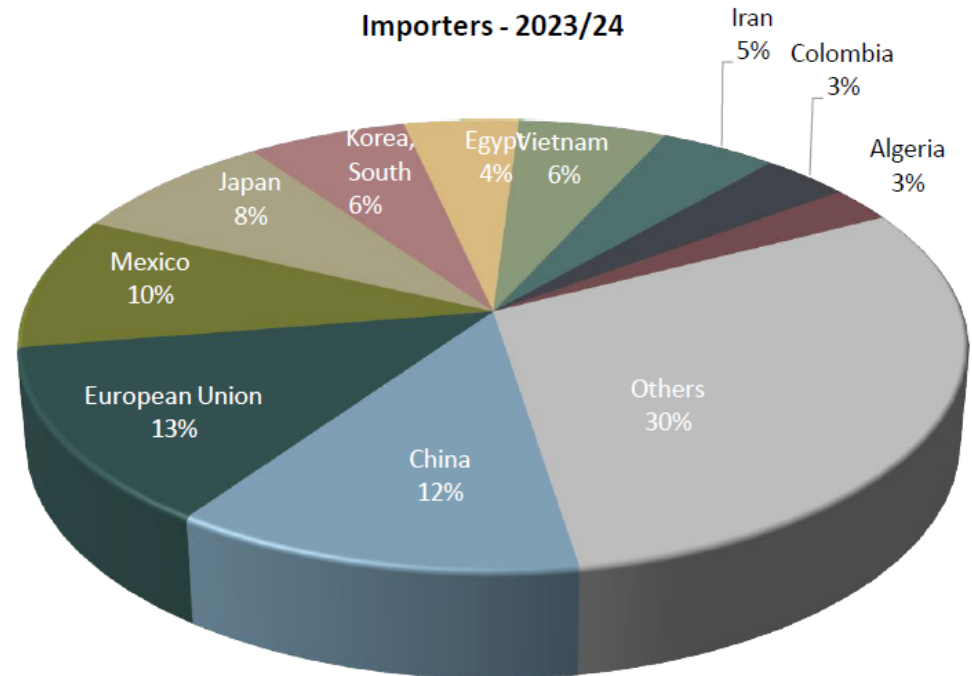
World Corn Trade

Exporters - 2023/24



Major Exporters (MMT)	2021/22	2022/23	2023/24
Brazil	48.3	56.0	55.0
United States	62.8	41.9	53.3
Argentina	34.7	22.0	40.5
Ukraine	27.0	28.0	19.5
World	206.5	176.6	198.3

Importers - 2023/24



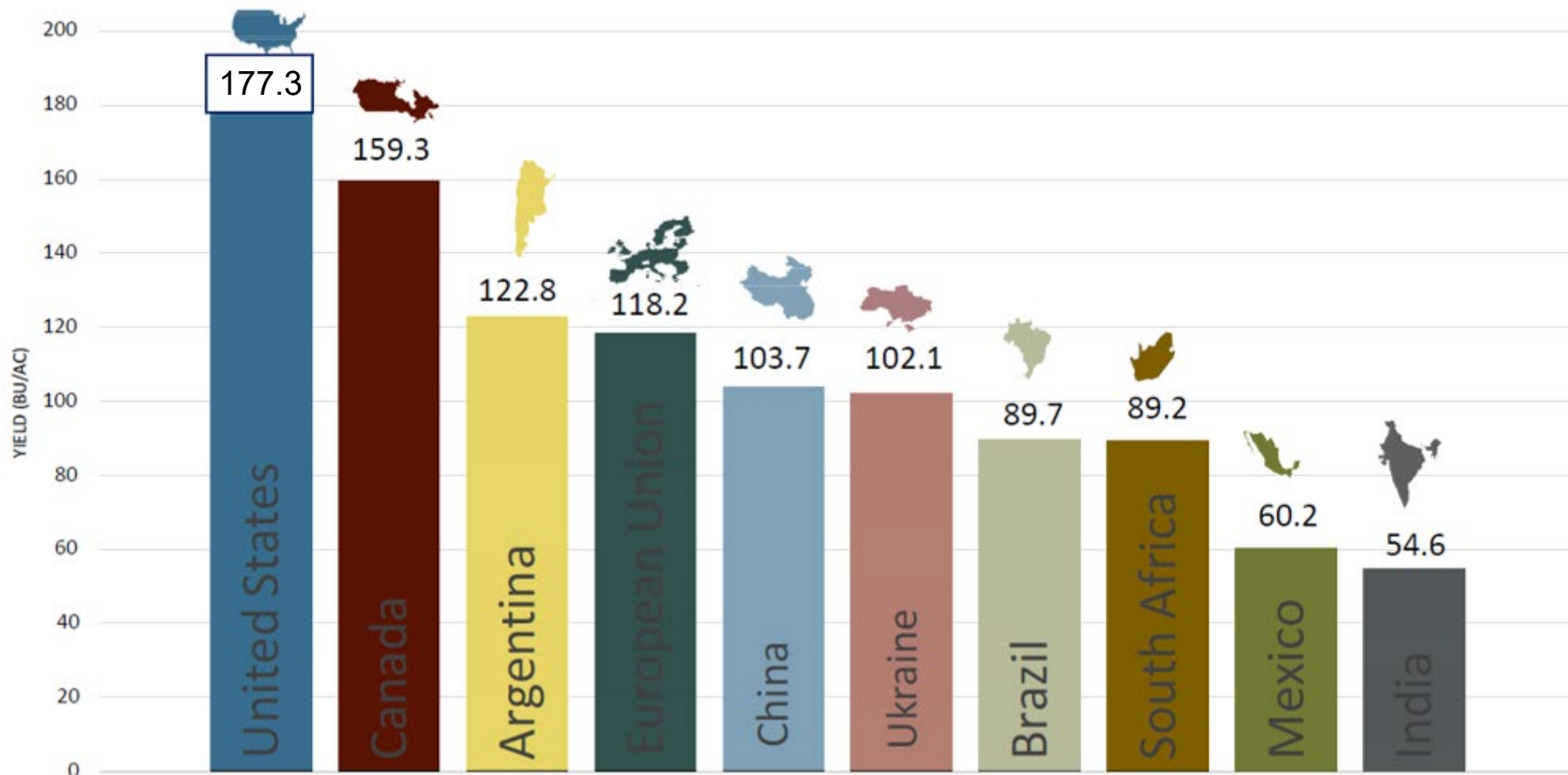
Major Importers (MMT)	2021/22	2022/23	2023/24
China	19.7	24.5	24.0
European Union	21.9	18.0	23.0
Mexico	17.6	17.2	18.0
Japan	15.0	15.0	15.5
World	184.5	175.1	188.4



Source: USDA

www.Hertz.ag

World Corn Top Yield – 2023/24

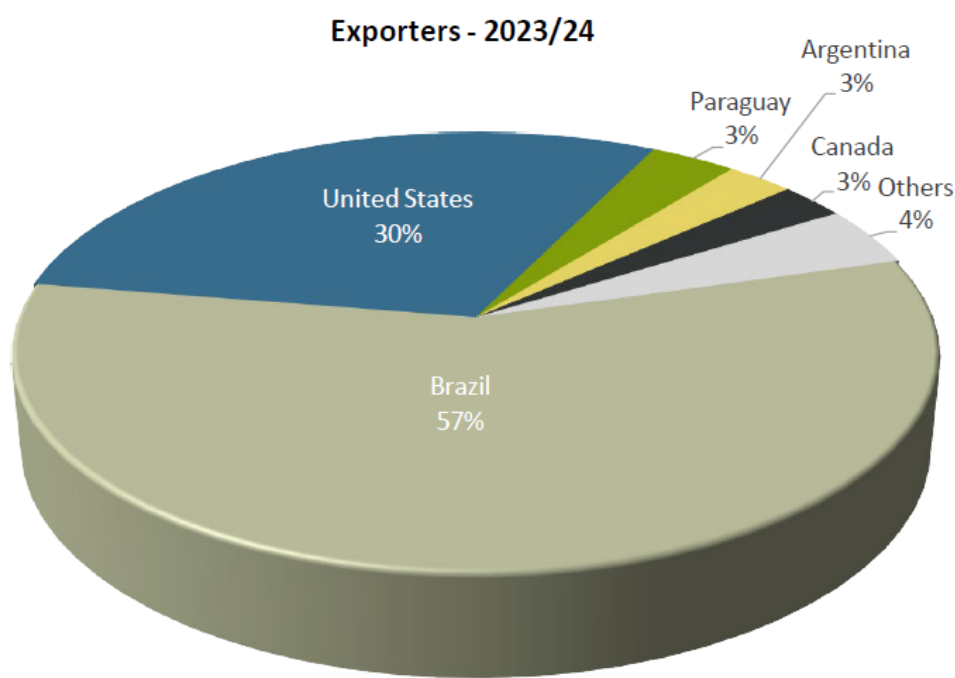


Source: USDA

www.Hertz.ag

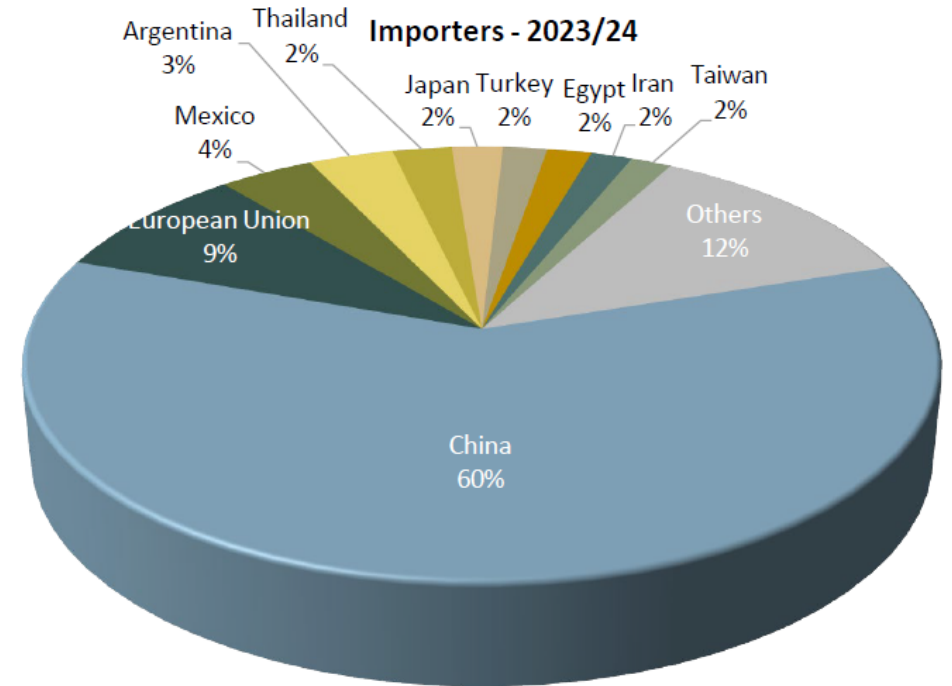
World Soybean Trade

Exporters - 2023/24



Major Exporters (MMT)	2021/22	2022/23	2023/24
Brazil	79.1	94.0	96.5
United States	58.6	53.9	50.3
Paraguay	2.3	5.7	5.9
Argentina	2.9	3.8	4.6
World	153.9	168.9	169.3

Importers - 2023/24



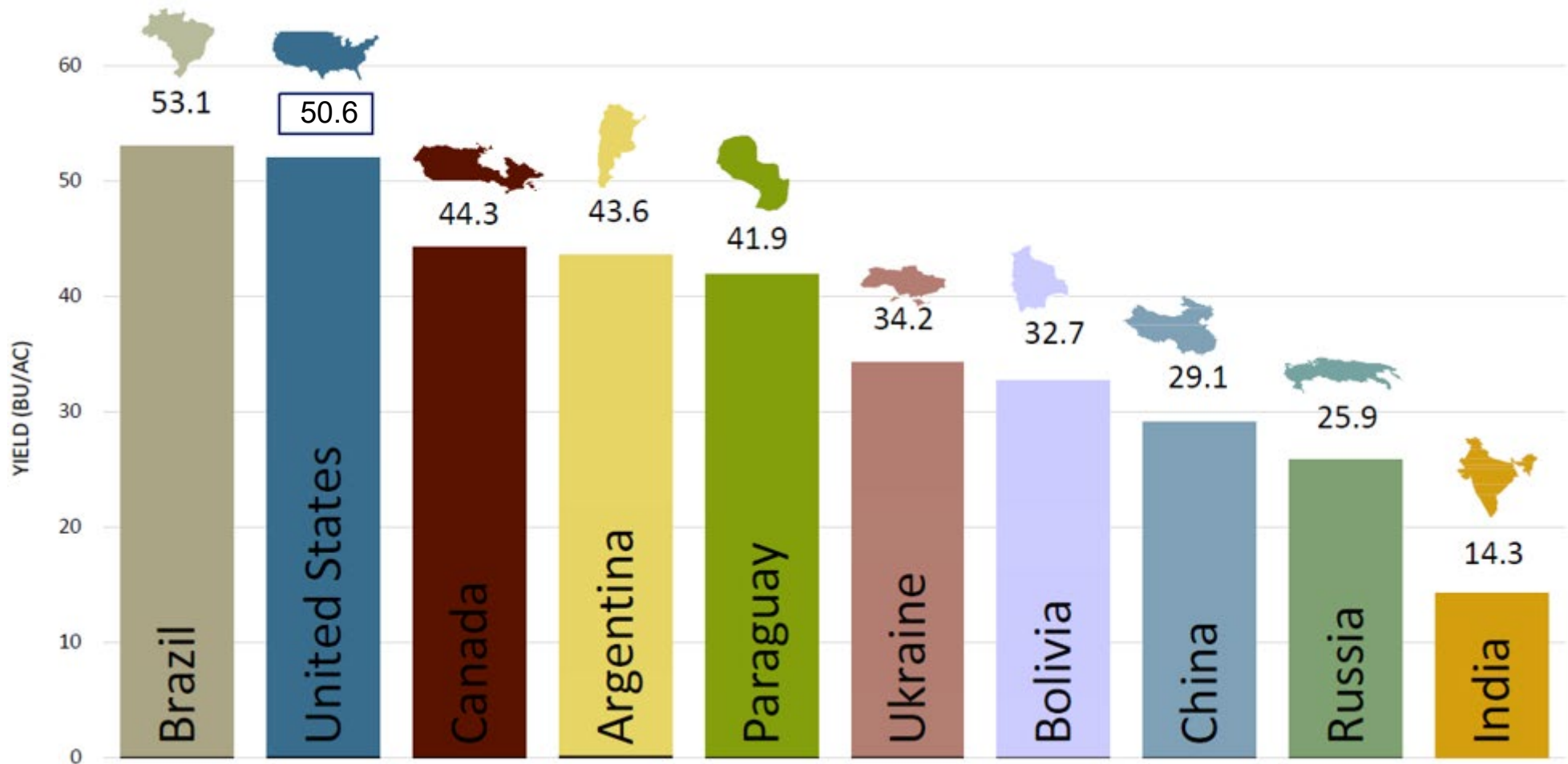
Major Importers (MMT)	2021/22	2022/23	2023/24
China	91.6	99.0	99.0
European Union	14.5	13.9	14.0
Mexico	6.0	6.4	6.4
Argentina	3.8	8.7	5.7
World	156.6	165.8	166.6



Source: USDA

www.Hertz.ag

World Soybean Top Yield – 2023/24



Source: USDA

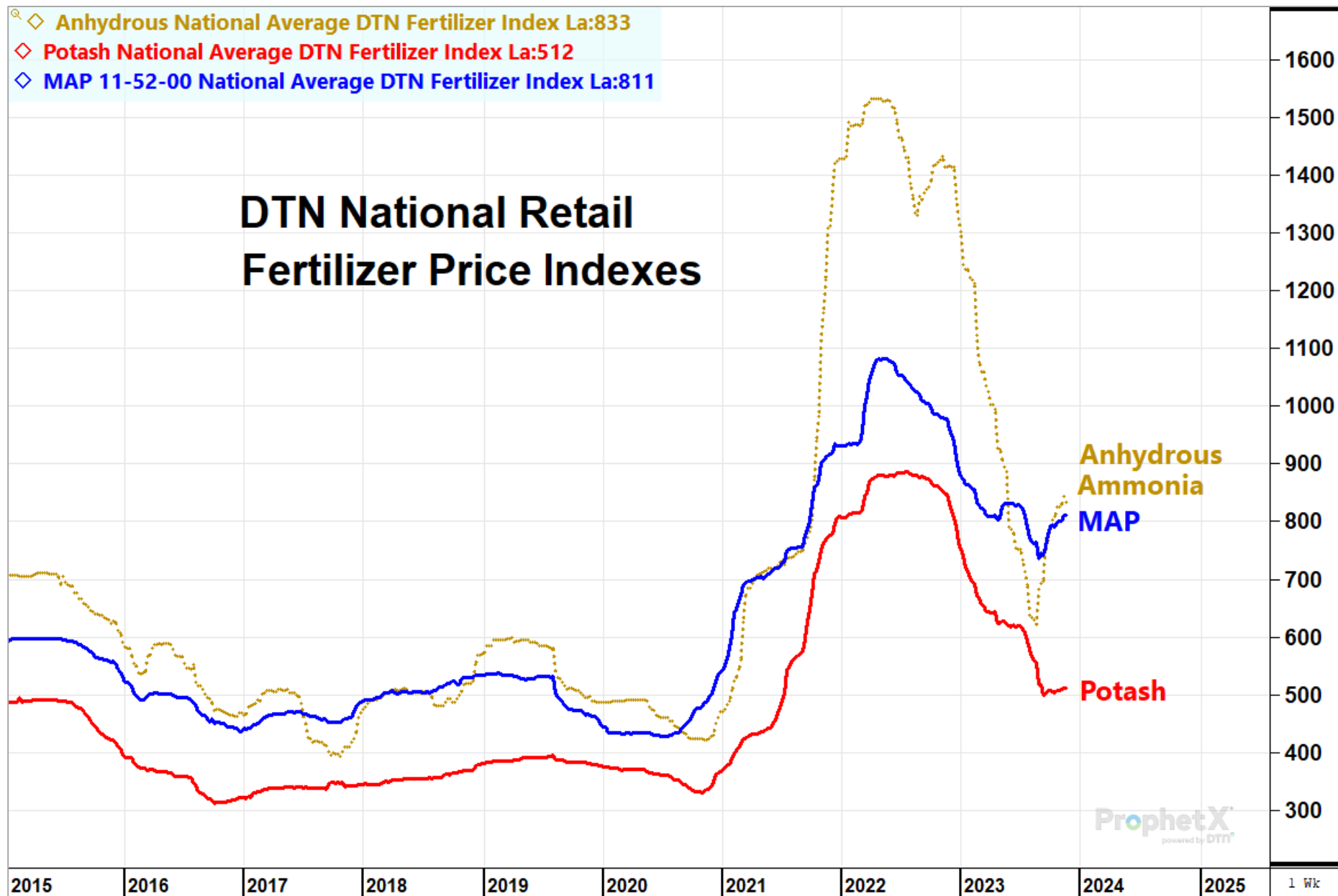
www.Hertz.ag

Corn Market



www.Hertz.ag





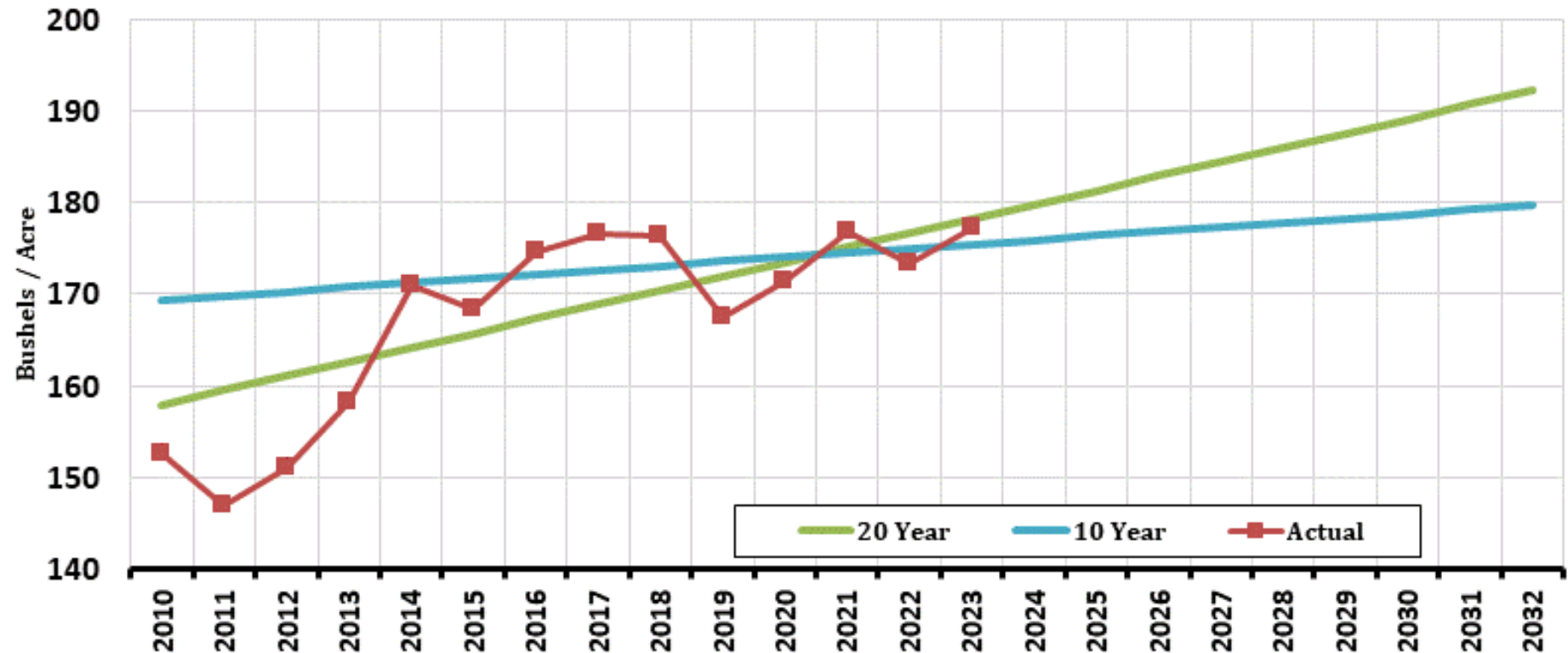
Source: Brock Associates

www.Hertz.ag



U.S. Corn Yield Actual vs. Trend Line

*177.3 as
of 01/12/24



Updated: 01/12/2024

The Hightower Report



Source: CME Group

www.Hertz.ag



U.S. Corn Supply and Use

Marketing Year (2022 = 9/1/22 to 8/31/23)		2019	2020	2021	2022	2023
Area Planted	(mil. acres)	89.7	90.7	93.3	88.2	94.6
Yield	(bu./acre)	167.5	171.4	176.7	173.4	177.3
Production	(mil. bu.)	13,620	14,111	15,074	13,657	15,342
Beg. Stocks	(mil. bu.)	2,221	1,919	1,235	1,377	1,360
Imports	(mil. bu.)	42	24	24	39	25
Total Supply	(mil. bu.)	15,883	16,055	16,333	15,066	16,727
Feed & Residual	(mil. bu.)	5,897	5,607	5,718	5,486	5,675
Ethanol	(mil. bu.)	4,857	5,028	5,275	5,176	5,375
Food, Seed, & Other	(mil. bu.)	1,430	1,439	1,440	1,383	1,415
Exports	(mil. bu.)	1,778	2,747	2,471	1,661	2,100
Total Use	(mil. bu.)	13,963	14,821	14,956	13,706	14,565
Ending Stocks	(mil. bu.)	1,919	1,235	1,377	1,360	2,162
Season-Average Price	(\$/bu.)	3.56	4.53	6.00	6.54	4.80

Sources: USDA-WAOB and USDA-OCE

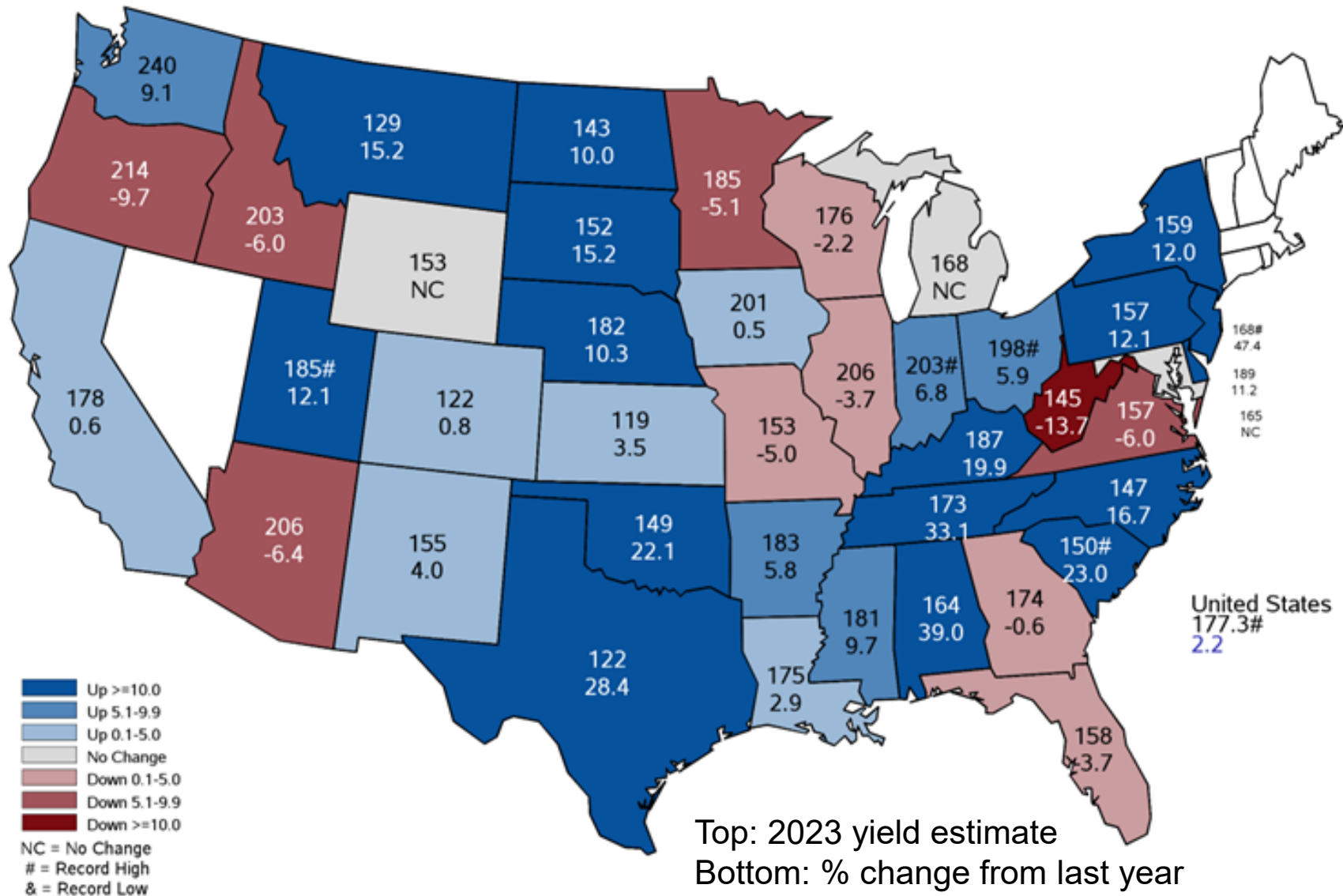


Source: Chad E. Hart

www.Hertz.ag



U.S. Corn Yield Estimates



Top: 2023 yield estimate
Bottom: % change from last year

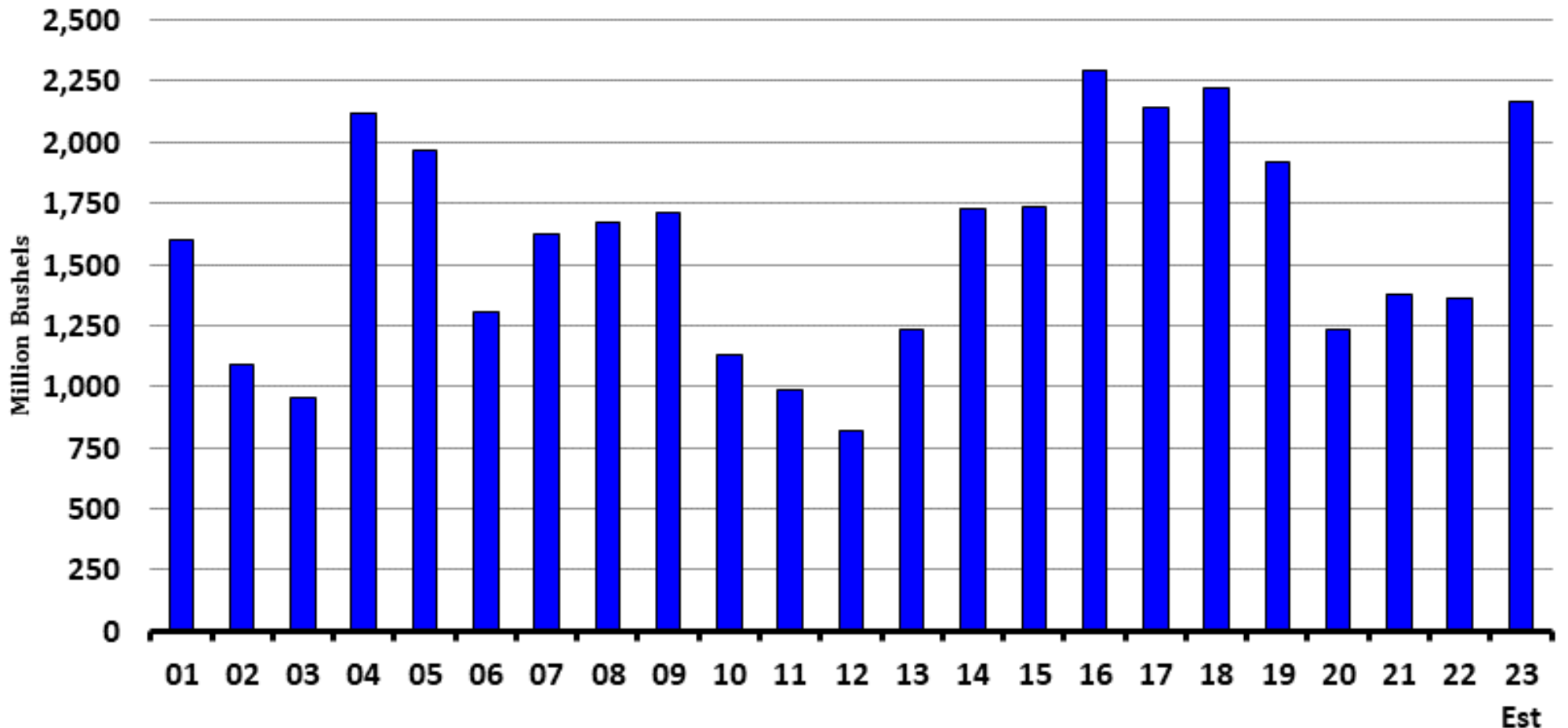
Source: USDA National Agricultural Statistics Service

www.Hertz.ag



U.S. Corn Ending Stocks

*2,162 as
of 01/12/24



Most Recent: 2,162 As Of 01/12/2024



Source: CME Group

www.Hertz.ag



Corn Demand



U.S. Corn Exports

*2,100 as
of 01/12/24



Most Recent: 2,100 As Of 01/12/2024

The Hightower Report



Source: CME Group

www.Hertz.ag



Renewable Fuels



BIODIESEL

Developed by Rudolph Diesel in 1890



Transesterification of vegetable oils & animal fats



Require separate storage & handling due to cold-weather properties



20% maximum blend (B20)



Higher cloud point (can gel in cold temps)



RENEWABLE DIESEL

Chemically identical to petroleum diesel

Hydrotreating process utilizing a variety of feedstocks

Can use existing pipelines & infrastructure

A 'drop-in' fuel that can be used as 1-for-1 replacement

Very low cloud point (won't gel)

Source: Energy Information Administration

@SusanNOBULL



Source: Energy Information Administration

www.Hertz.ag

Renewable Diesel



Source: Energy Information Administration

www.Hertz.ag

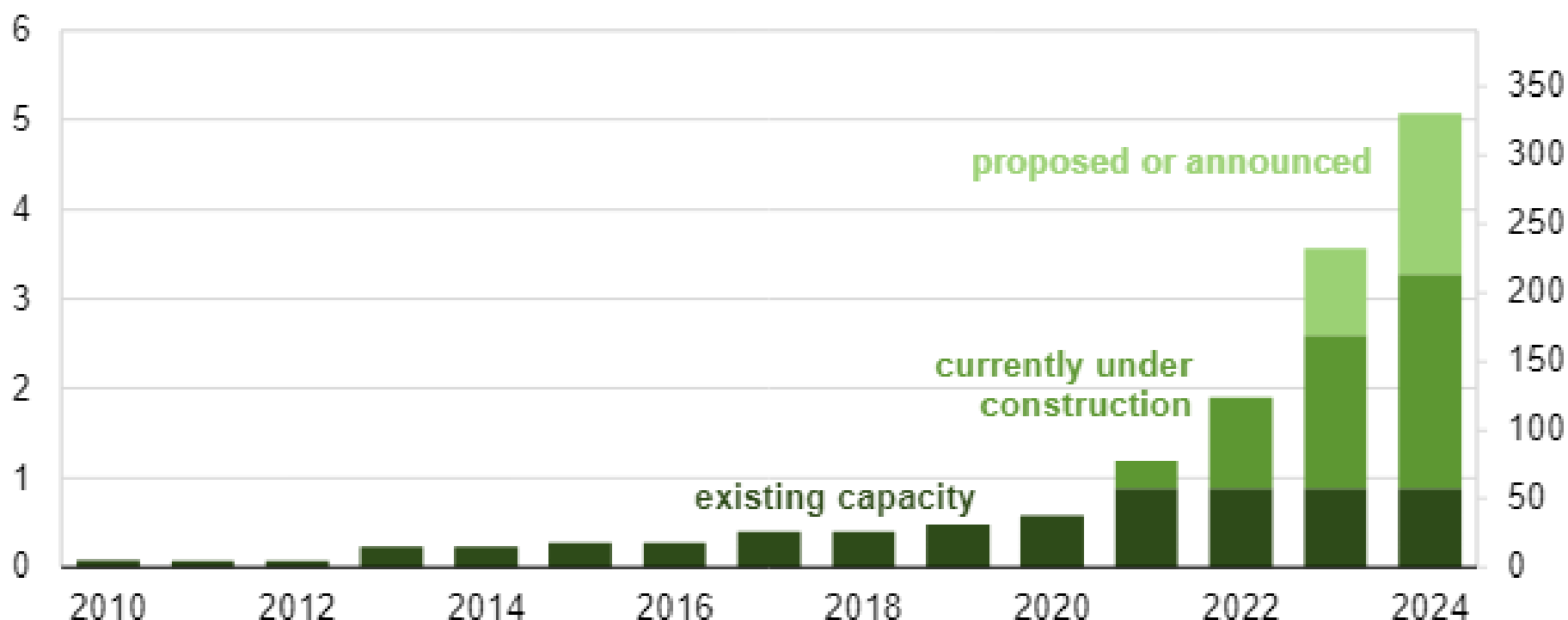
Renewable Diesel Push

Existing and expected U.S. renewable diesel production capacity (2010–2024)



billion gallons per year

thousand barrels per day



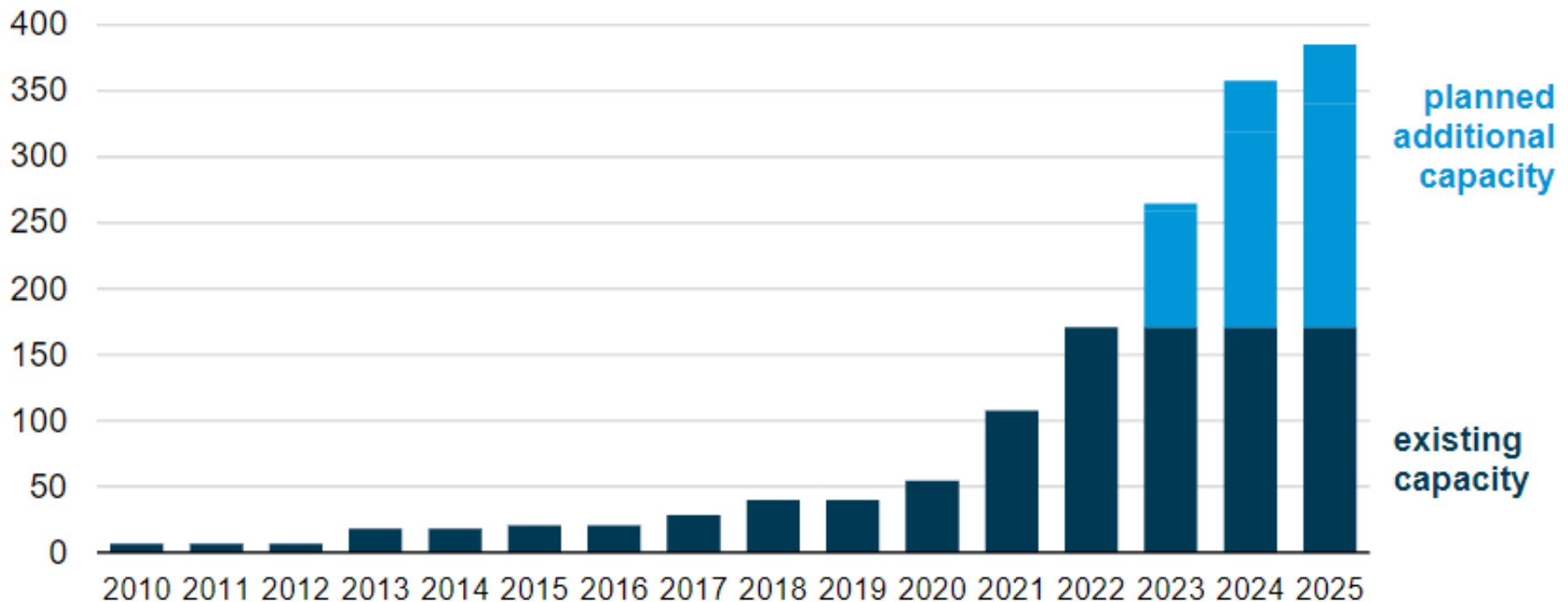
Source: Chad E. Hart

www.Hertz.ag



U.S. Renewable Diesel Production

Annual existing and expected U.S. renewable diesel production capacity (2010–2025)
thousand barrels per day



Source: Energy Information Administration

www.Hertz.ag



Sustainable Aviation Fuel – SAF

FUELING THE FUTURE FOR CLEANER SKIES

Honeywell

Take off with UOP's ethanol to jet (ETJ) process technology. The next generation of renewable fuels.

BENEFITS OF ETJ



High jet yield output



Lower CAPEX & OPEX



Reduced GHG emissions



Higher profit margins



5. SUSTAINABLE AVIATION FUEL (SAF)



4. SUSTAINABLE AVIATION FUEL (SAF) BLEND



2. ETHANOL PLANT



3. ETHANOL TO JET

1. FEEDSTOCK SUPPLY



Source: Honeywell

www.Hertz.ag

Sustainable Aviation Fuel – SAF

- Over 450,000 flights using **SAF – 50 airlines test**
- 26.5M gallons produced in 2021-22
- \$17B in purchases planned for 2023
- **SAF reduces emissions by 75-90% reducing the carbon footprint of the airlines.**
- Honeywell has pioneered with ecofining and carbon capture technology and will license to Oil companies for mass distribution.
- The WH wants 3B gallons by 2030 and a full 35B gallons by 2050.
- Today, we take 5B bushels of corn to make 17B gallons of ethanol. To meet 35B gallons an **ADDITIONAL 10B bushels of corn** would be needed to meet this demand if all the technology comes together on this.
- **Could be huge boom for farmers.**



Source: The TEN SPOT

www.Hertz.ag

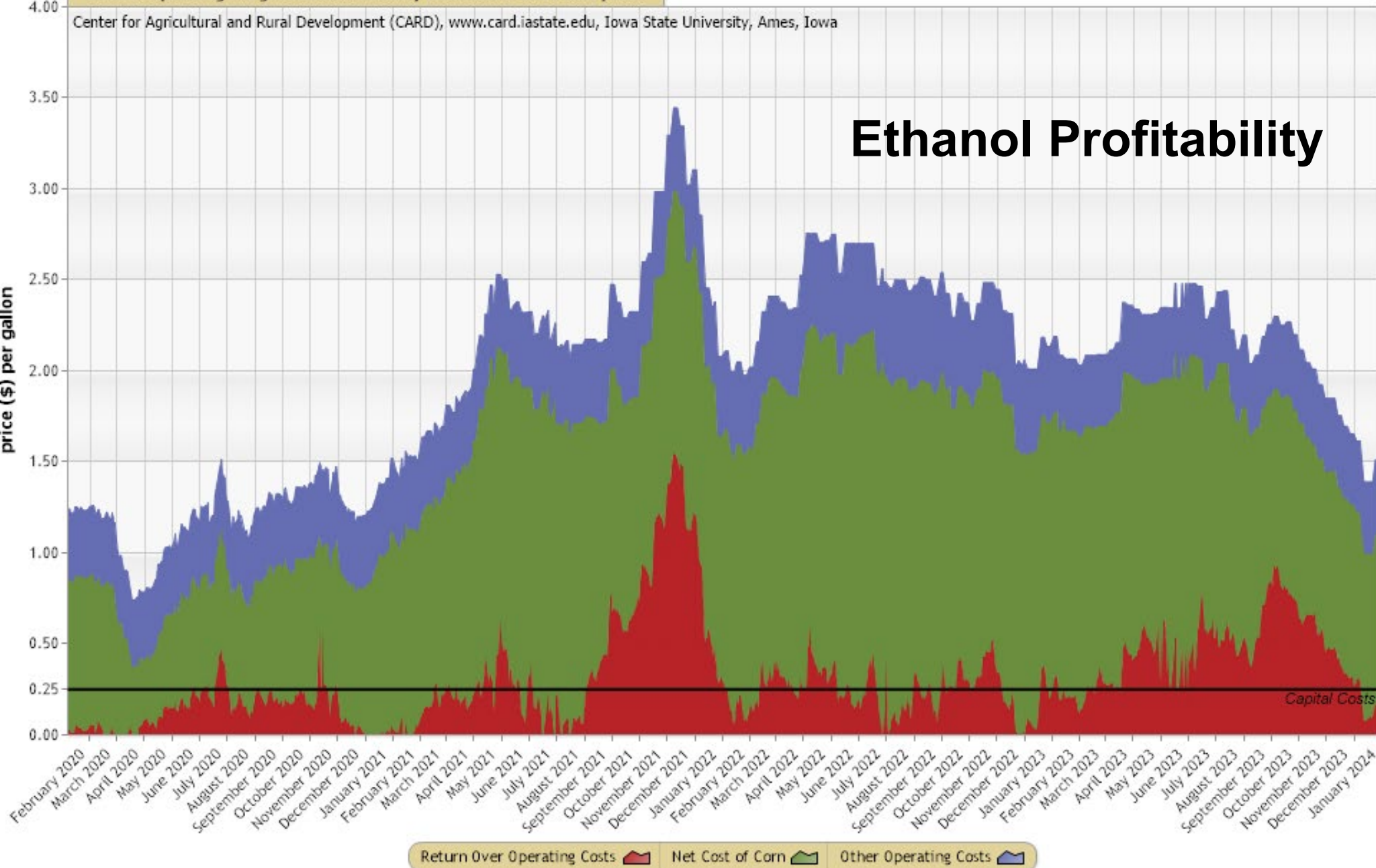


Ethanol Operating Margins based on nearby futures and Iowa corn prices

Center for Agricultural and Rural Development (CARD), www.card.iastate.edu, Iowa State University, Ames, Iowa

price (\$ per gallon

Ethanol Profitability

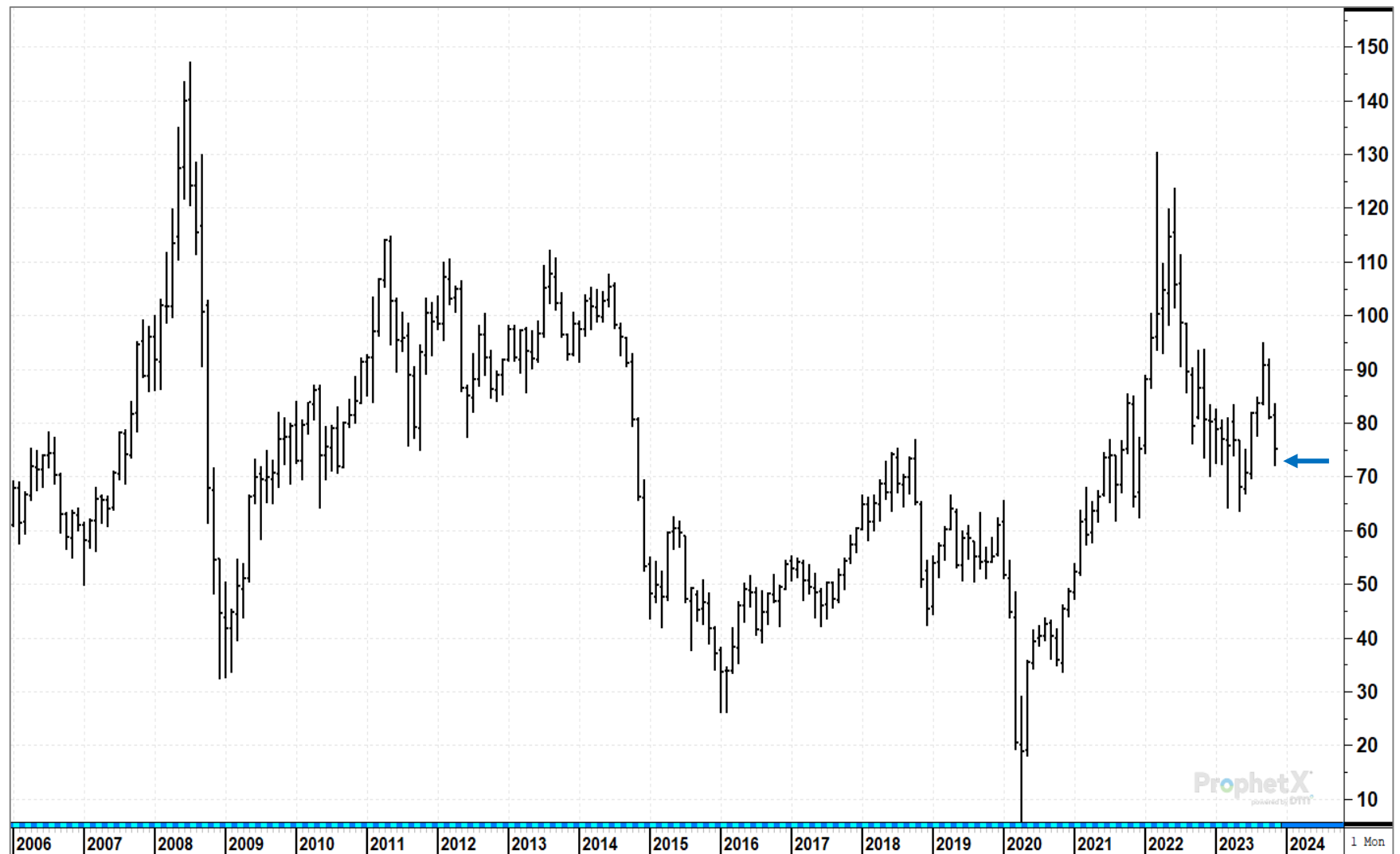


Source: ISU CARD

www.Hertz.ag



Monthly Continuous Crude Oil



Source: Brock Associates

www.Hertz.ag



25%

Corn Seasonality Percent Highs

1970/71 to 2022/23
Central Illinois



BROCK ASSOCIATES

19%

17%

'23/24												
'13/14												
'12/13												
'08/09												
'02/03												
'96/97												
'88/89												
'84/85												
'83/84												
'81/82												
'76/77												
'75/76	2%	2%	2%	4%	2%	4%	2%	8%				
'74/75	'97/98	'80/81	'00/01	'93/94	'06/07	'91/92	'03/04	'20/21	'86/87	'04/05	'79/80	
								'17/18	'85/86	'95/96	'73/74	
								'99/00	'78/79	'94/95	'72/73	
								'77/78	'70/71	'92/93	'71/72	
Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	

Source: Brock Associates

www.Hertz.ag



25%

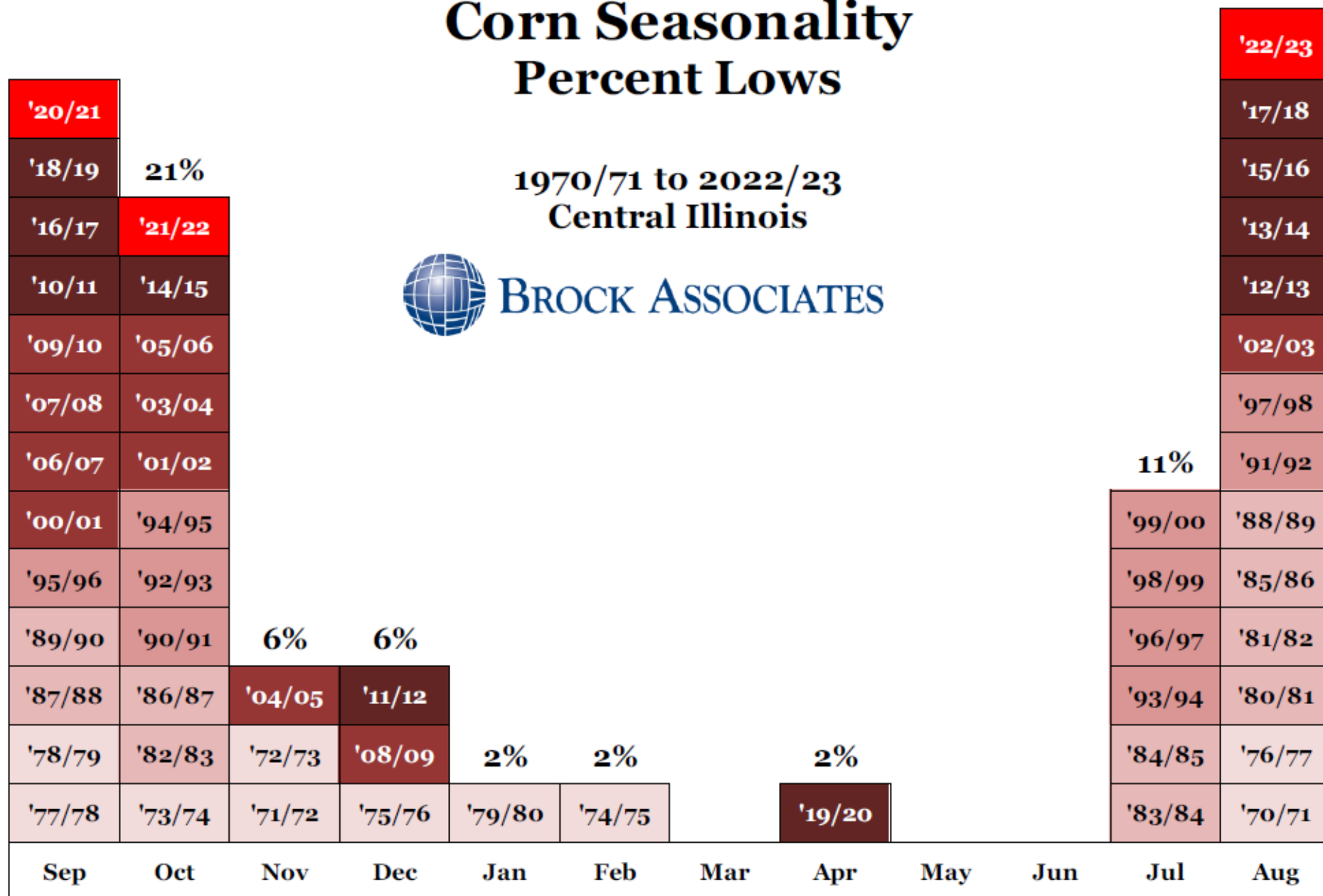
26%

Corn Seasonality Percent Lows

1970/71 to 2022/23
Central Illinois



BROCK ASSOCIATES

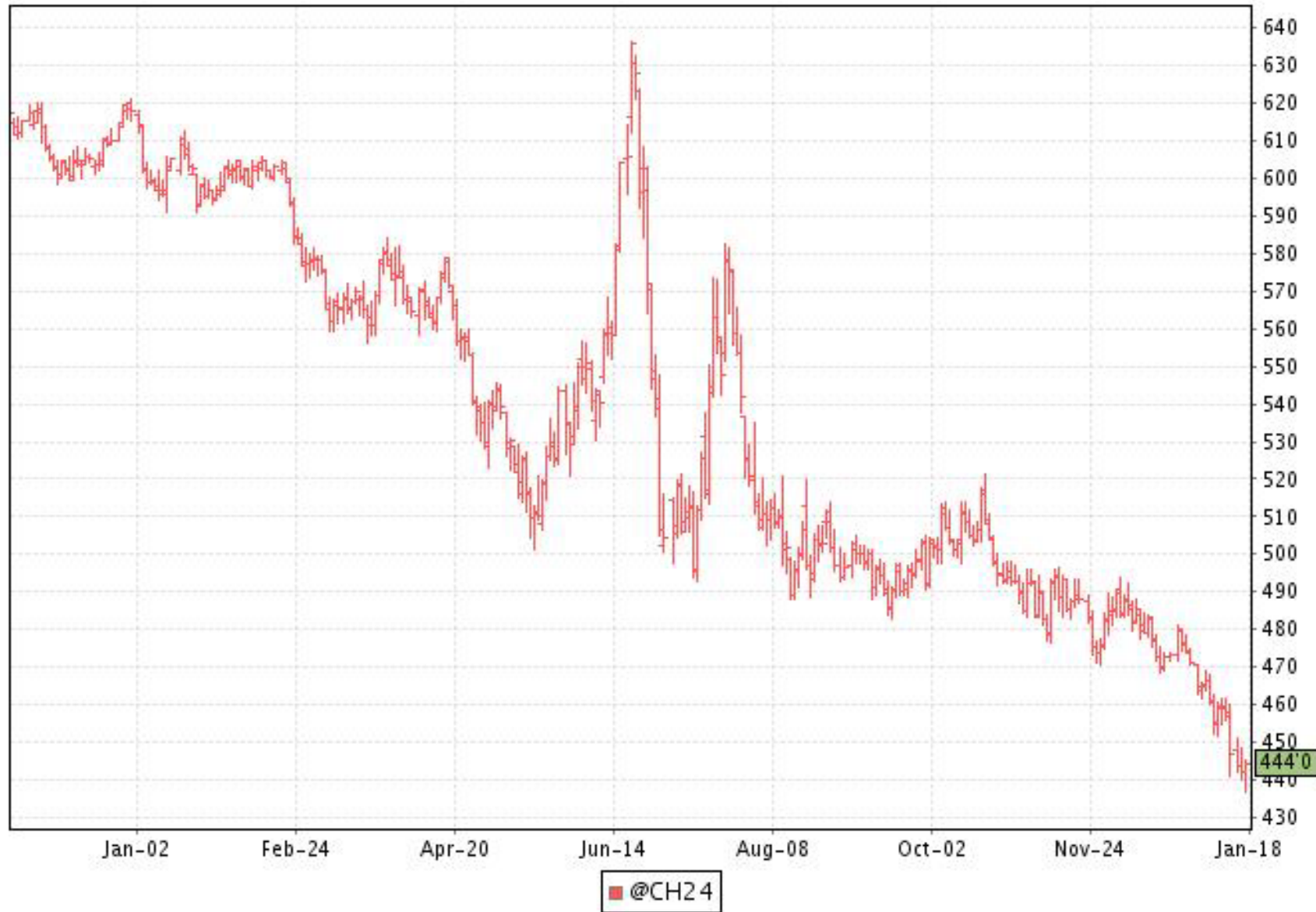


Source: Brock Associates

www.Hertz.ag



March 2024 Corn Chart

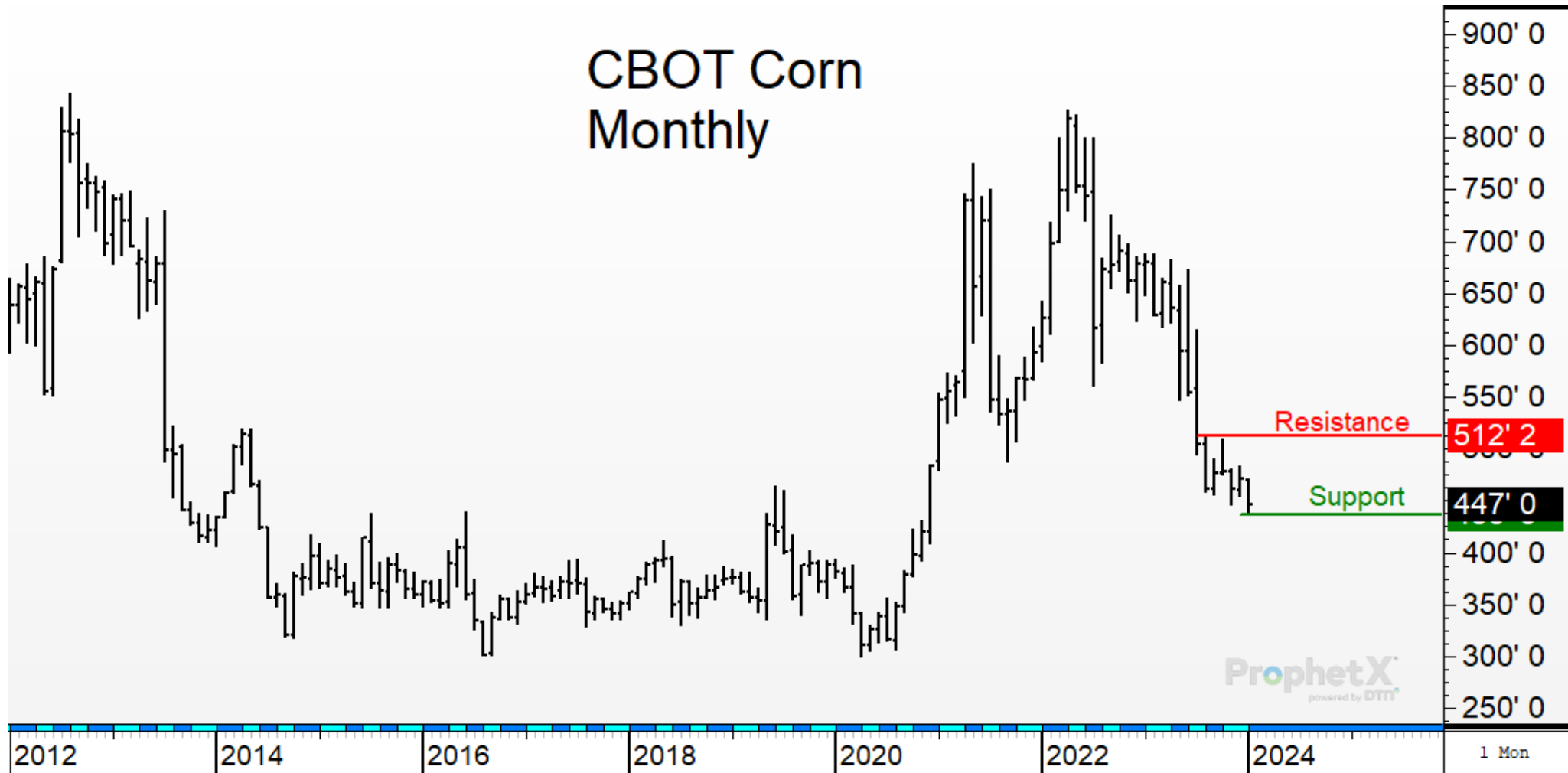


Source: DTN

www.Hertz.ag



Corn Continuous Monthly Chart



Source: DTN

www.Hertz.ag

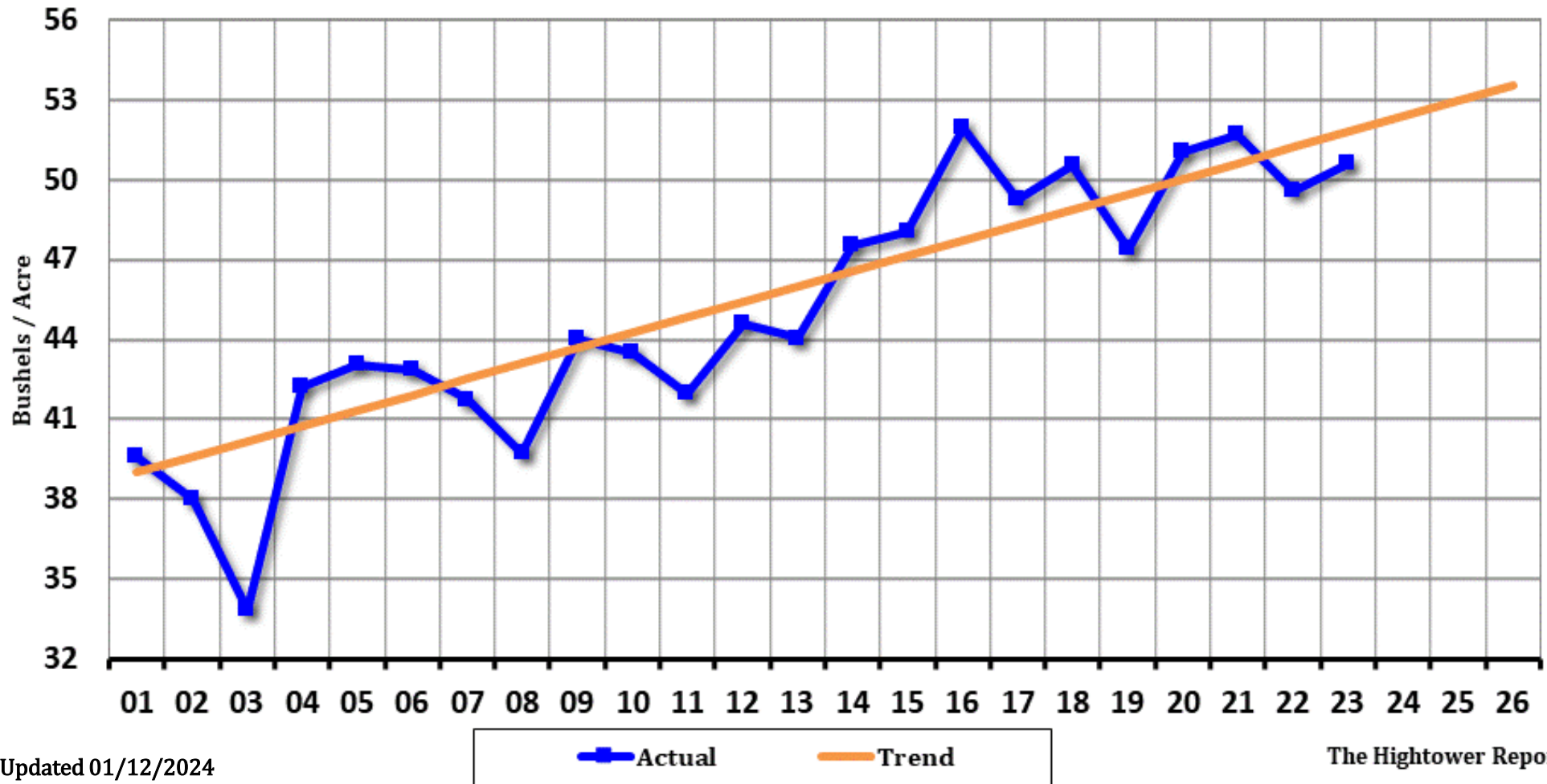


Soybean Market



U.S. Soybean Yield Actual vs. Trendline

*50.6 as
of 01/12/24



Source: CME Group

www.Hertz.ag



U.S. Soybean Supply and Use

Marketing Year (2022 = 9/1/22 to 8/31/23)		2019	2020	2021	2022	2023
Area Planted	(mil. acres)	76.1	83.4	87.2	87.5	83.6
Yield	(bu./acre)	47.4	51.0	51.7	49.6	50.6
Production	(mil. bu.)	3,552	4,216	4,465	4,270	4,165
Beg. Stocks	(mil. bu.)	909	525	257	274	264
Imports	(mil. bu.)	15	20	16	25	30
Total Supply	(mil. bu.)	4,476	4,761	4,738	4,569	4,459
Crush	(mil. bu.)	2,165	2,141	2,204	2,212	2,300
Seed & Residual	(mil. bu.)	105	97	103	101	124
Exports	(mil. bu.)	1,682	2,265	2,158	1,992	1,755
Total Use	(mil. bu.)	3,952	4,504	4,464	4,305	4,179
Ending Stocks	(mil. bu.)	525	257	274	264	280
Season-Average Price	(\$/bu.)	8.57	10.80	13.30	14.20	12.75

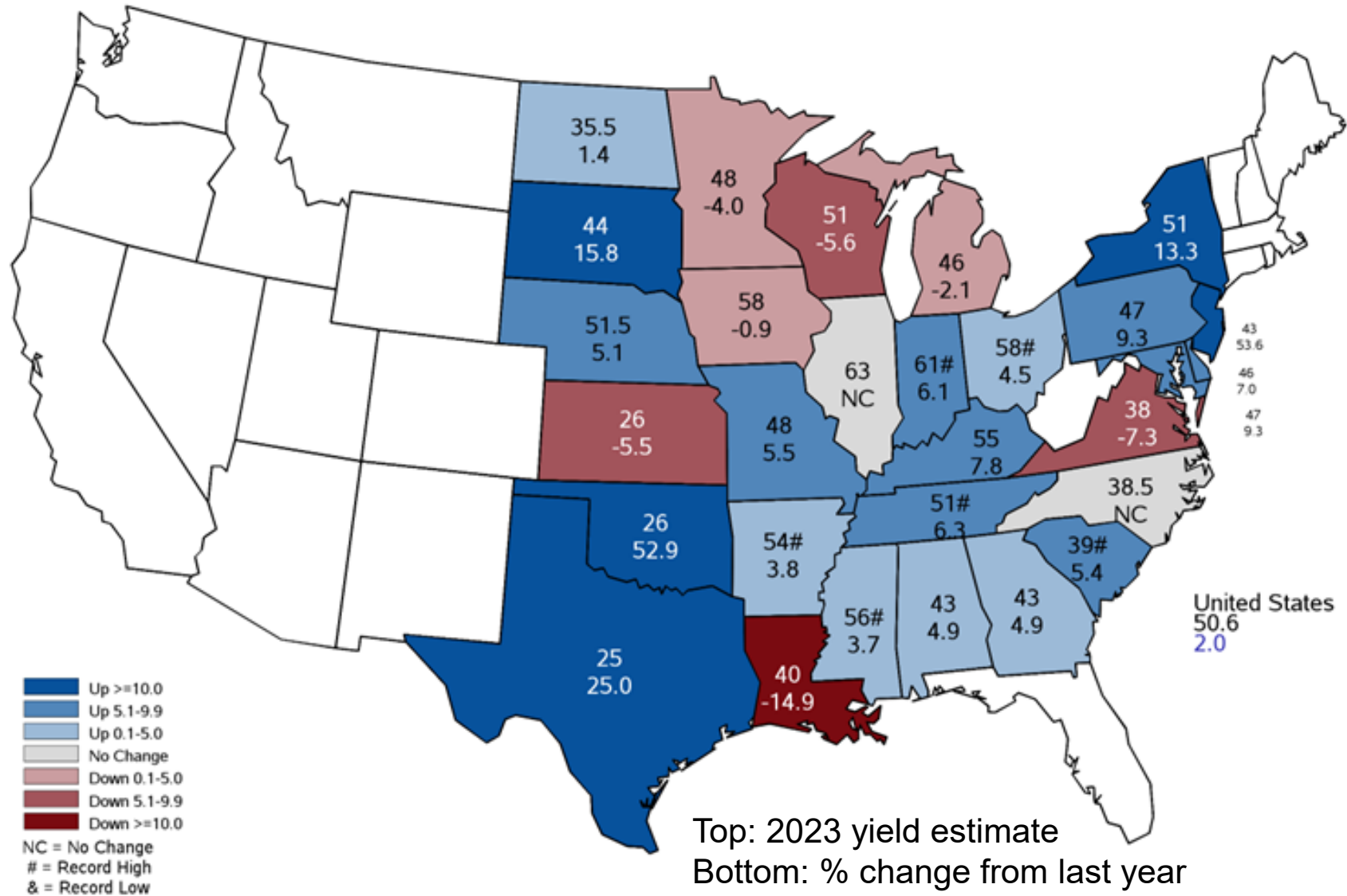


Source: Chad E. Hart

www.Hertz.ag



U.S. Soybean Yield Estimates



Top: 2023 yield estimate
Bottom: % change from last year



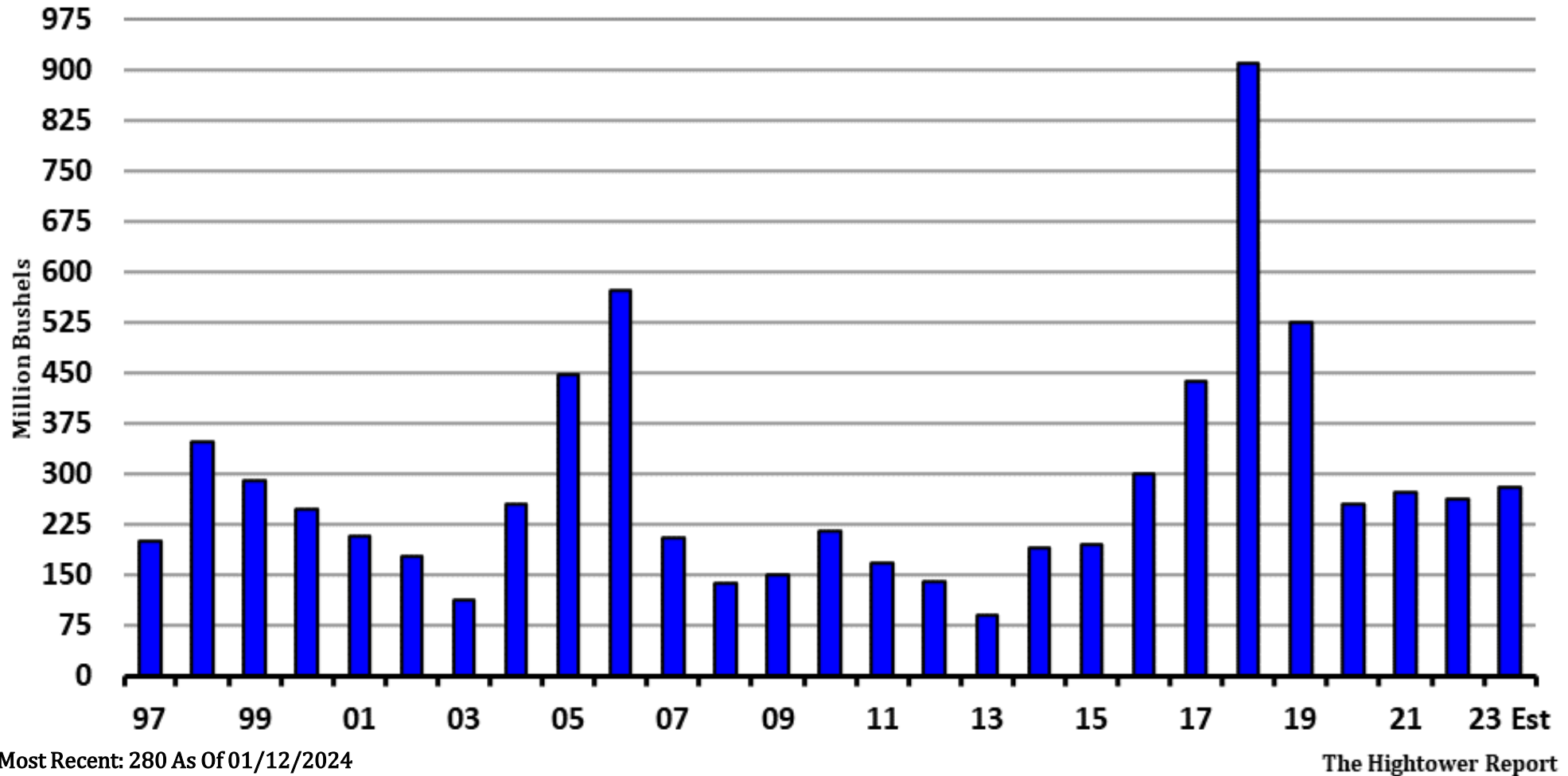
Source: USDA National Agricultural Statistics Service

www.Hertz.ag



U.S. Soybean Ending Stocks

*280 as
of 01/12/24



Source: CME Group

www.Hertz.ag



U.S. Soybean Exports

*1,755 as
of 01/12/24



Most Recent: 1,755 As Of 01/12/2024

The Hightower Report



Source: CME Group

www.Hertz.ag



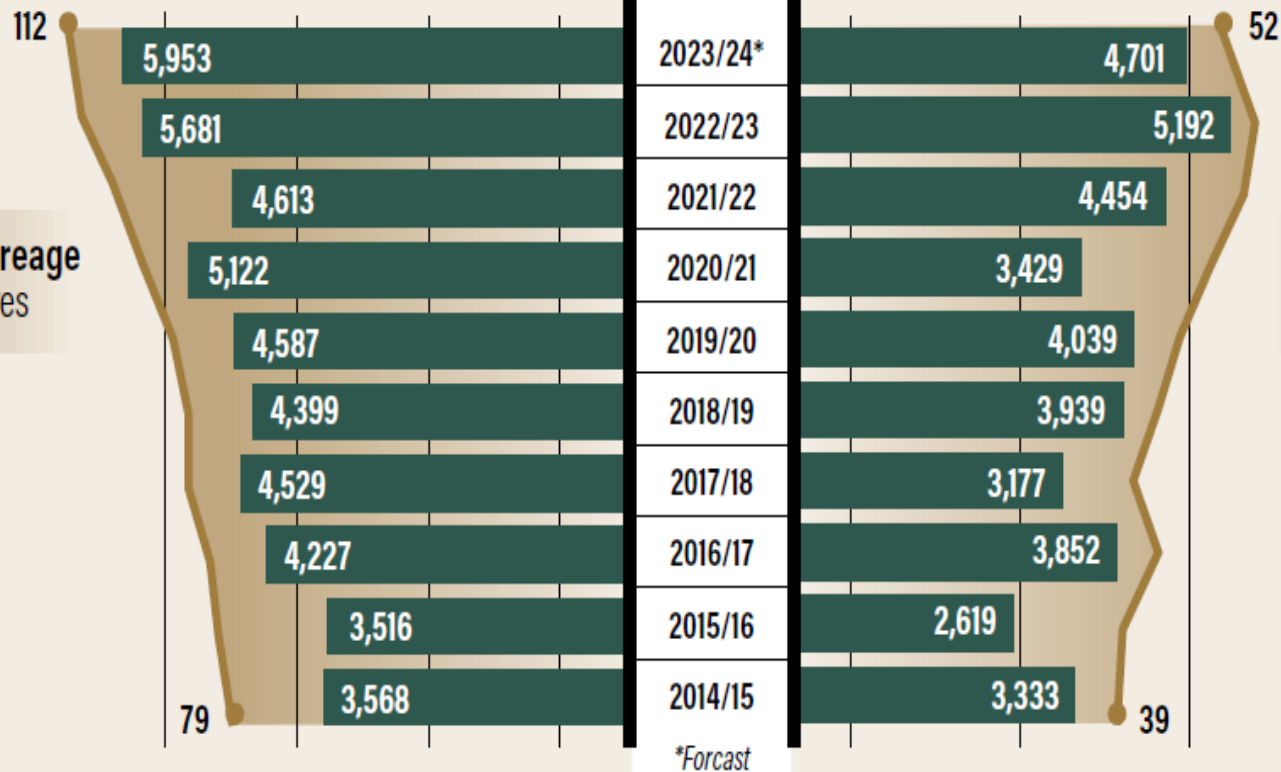


BRAZIL PRODUCTION

Soybeans

Corn

in Million Bushels



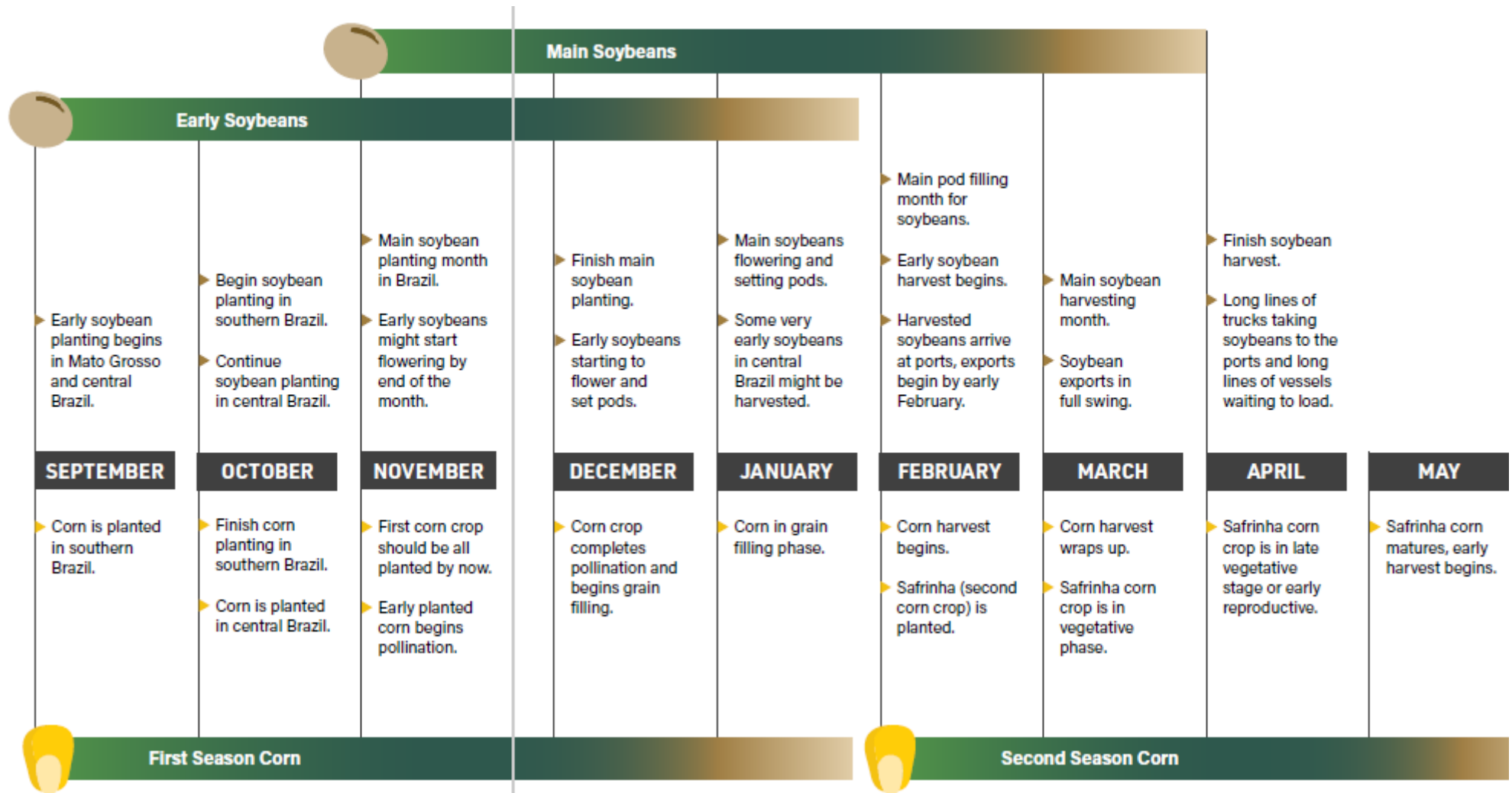
Soybean Acreage
in Million Acres

Corn Acreage
in Million Acres

Source: Farm Journal December 2023

www.Hertz.ag

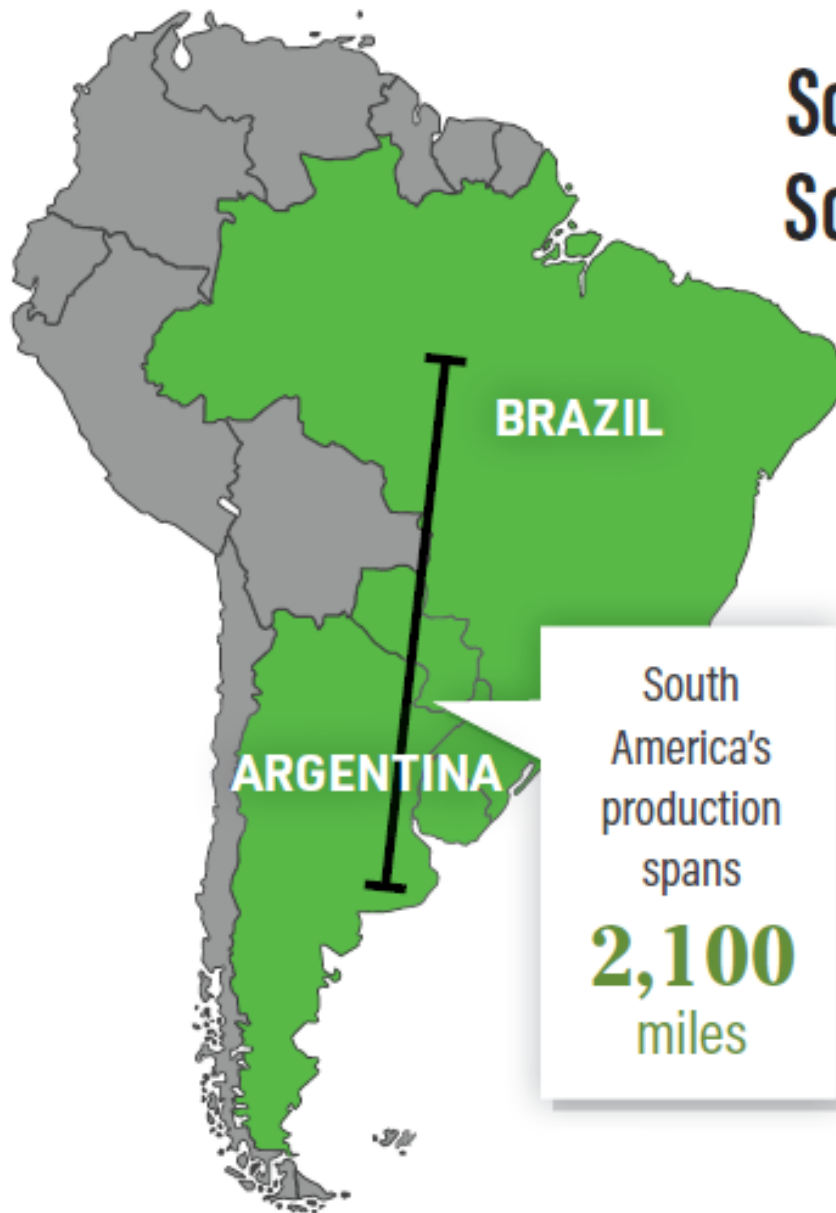
Brazil Corn & Soybean Production



Source: Farm Journal November 2023

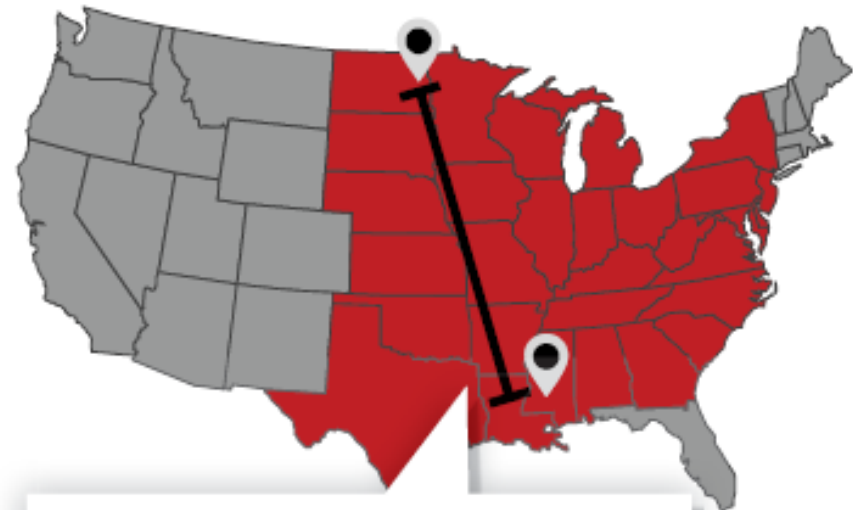
www.Hertz.ag

South America Versus U.S. Soybean Growing Regions



South
America's
production
spans

2,100
miles



The growing region in the U.S. spans

1,000 miles

from Fargo, N.D. to Jackson, Miss.

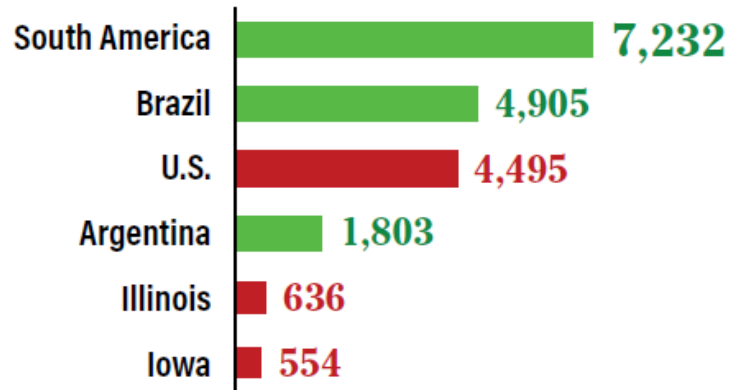


Source: Farm Journal November 2023

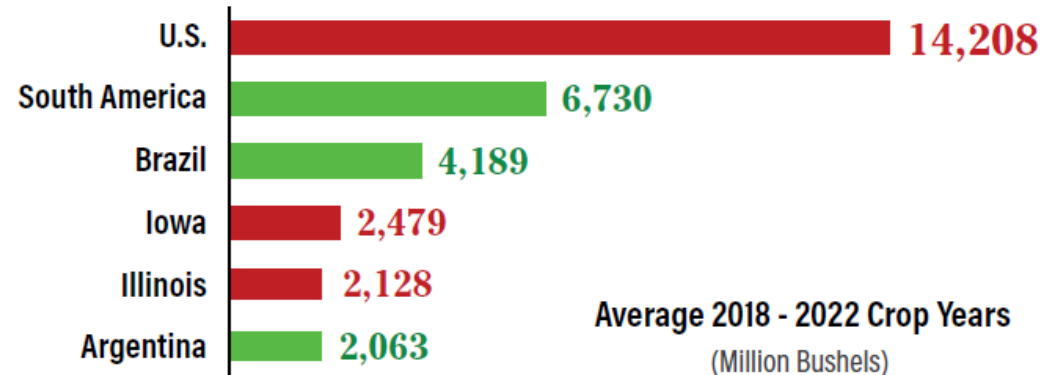
www.Hertz.ag

Brazil Corn & Soybean Production

Soybean Production



Corn Production



Average 2018 - 2022 Crop Years
(Million Bushels)

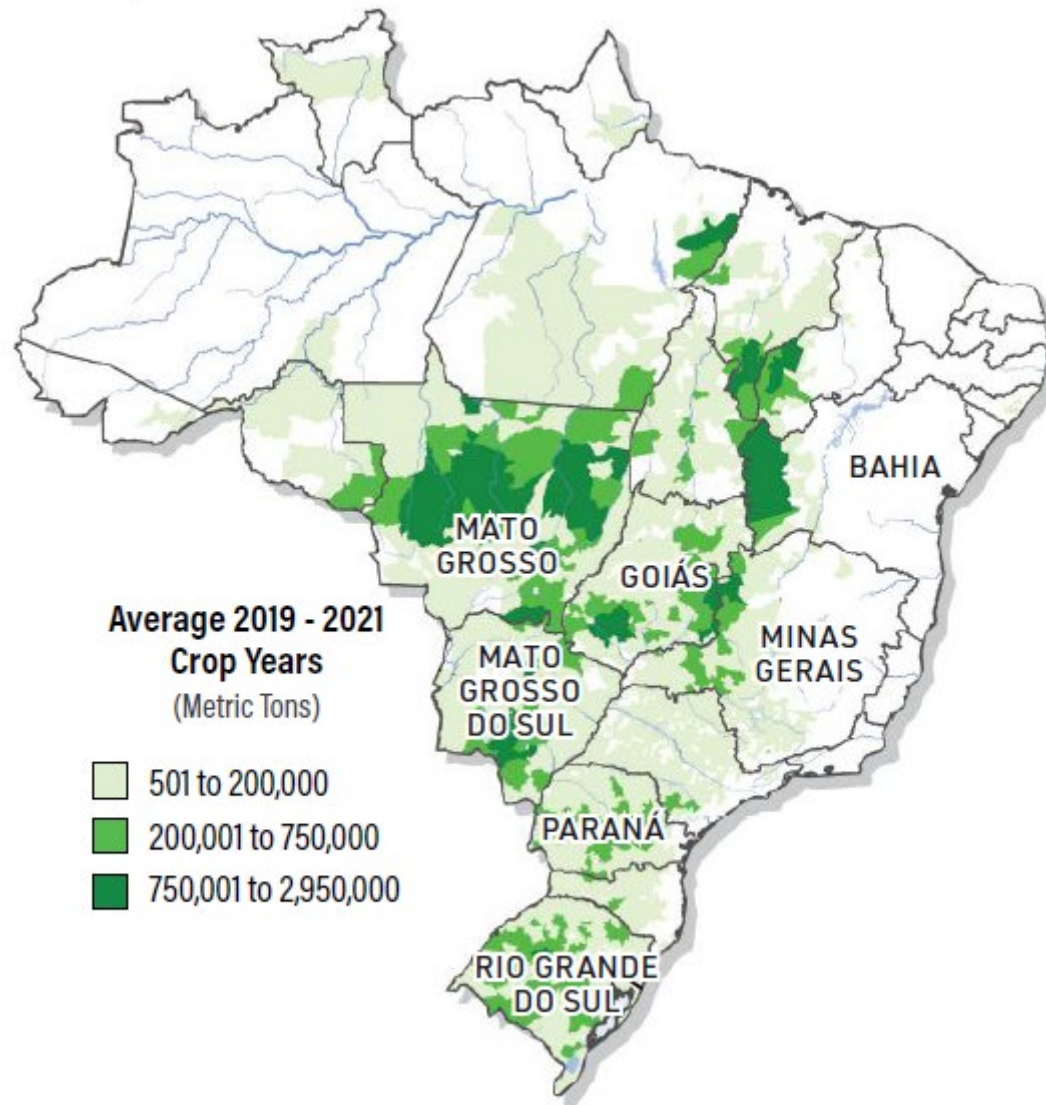


Source: Farm Journal November 2023

www.Hertz.ag



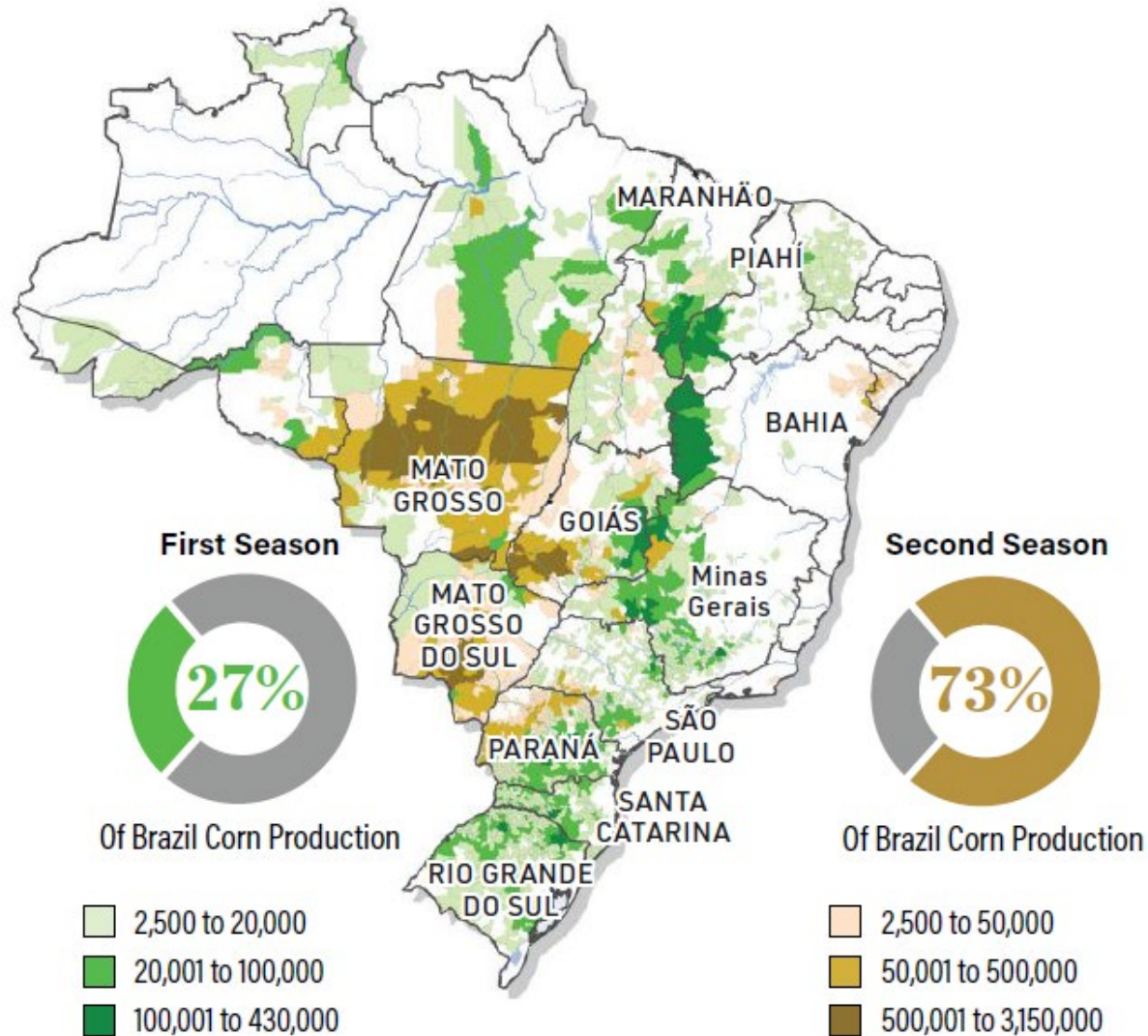
Brazil Soybean Production



Source: Farm Journal November 2023

www.Hertz.ag

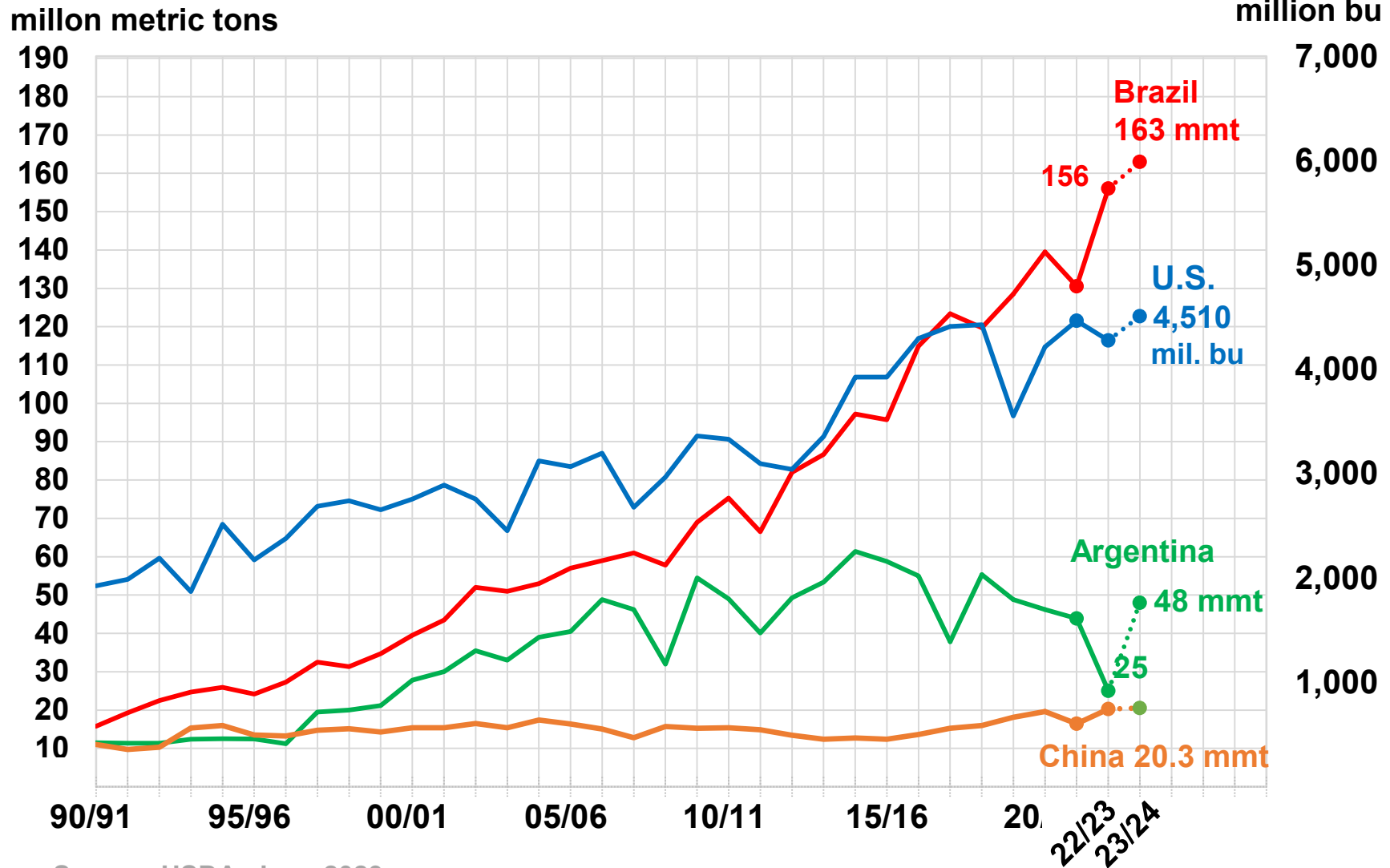
Brazil Corn Production



Source: Farm Journal November 2023

www.Hertz.ag

Soybean Production



Source: Brock Associates

www.Hertz.ag



BROCK ASSOCIATES

Soybean Seasonality Percent Highs 1970/71 - 2022/23 Central Illinois  BROCK ASSOCIATES											
21%										23%	
'22/23										'18/19	
'14/15										'07/08	
'12/13										'06/07	
'09/10										'00/01	
'08/09										'95/96	
'97/98								13%	15%	'94/95	
'90/91								'20/21	'21/22	'92/93	11%
'88/89								'13/14	'04/05	'89/90	'19/20
'84/85								'02/03	'91/92	'87/88	'11/12
'83/84								'99/00	'87/88	'79/80	'10/11
'81/82								'96/97	'86/87	'75/76	'01/02
		4%		4%		4%	4%	'93/94	'78/79	'73/74	'82/83
	2%	'98/99		'16/17		'17/18	'85/86	'96/97	'86/87	'75/76	'01/02
	'74/75	'80/81		'05/06		'03/04	'76/77	'93/94	'78/79	'73/74	'82/83
								'77/78	'72/73	70/71	'71/72
Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug



Source: Brock Associates

www.Hertz.ag



Soybean Seasonality

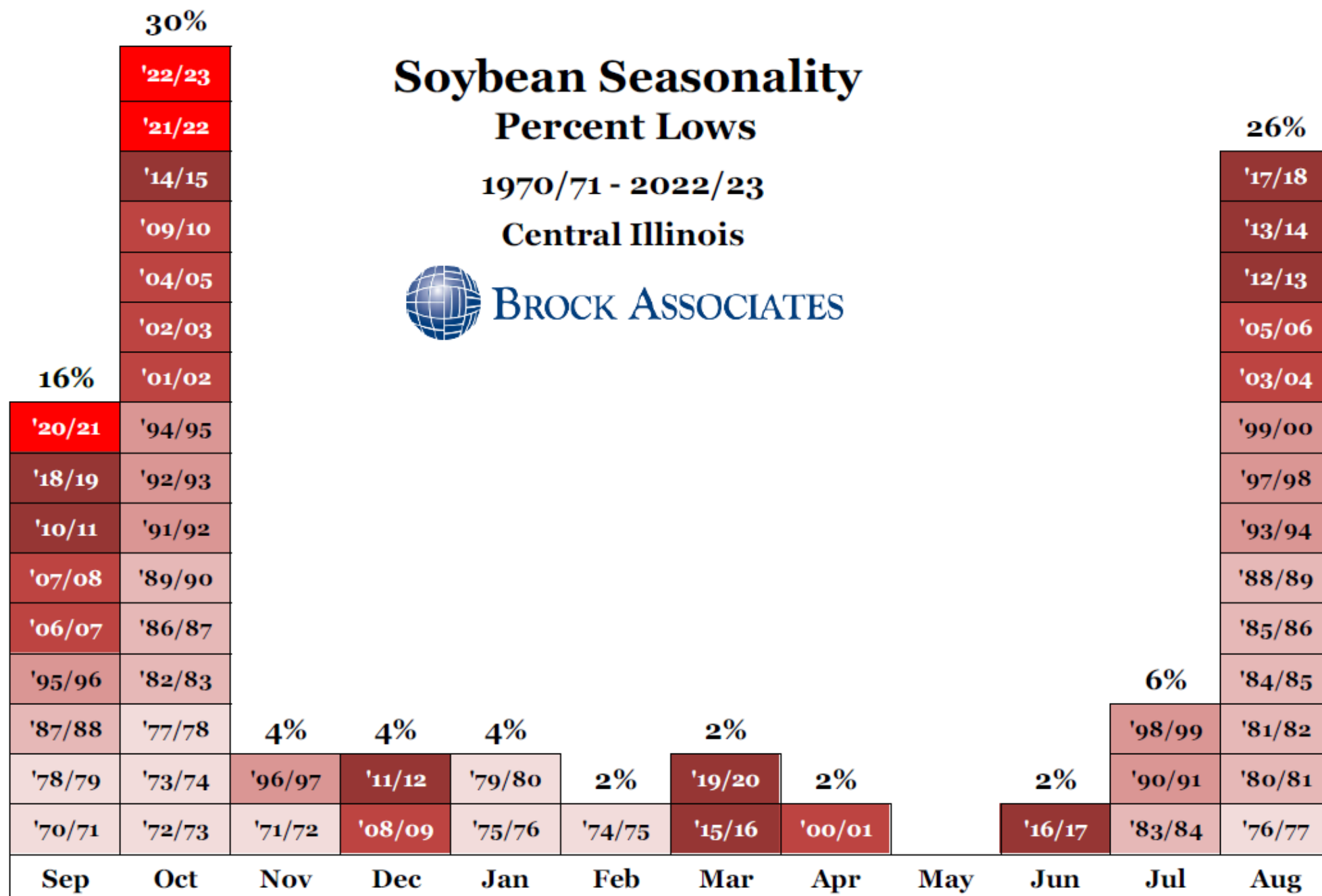
Percent Lows

1970/71 - 2022/23

Central Illinois



BROCK ASSOCIATES

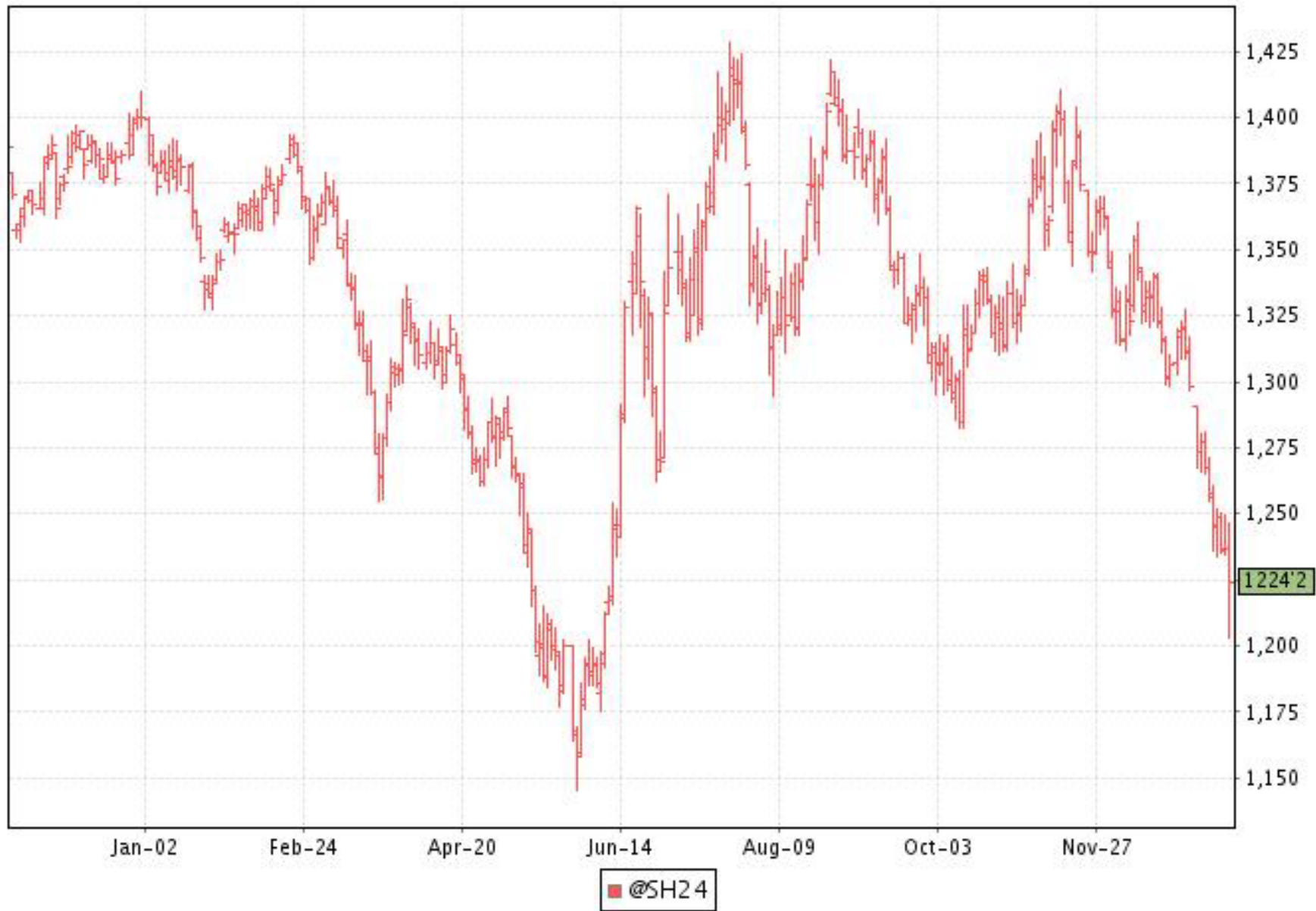


Source: Brock Associates

www.Hertz.ag



March 2024 Soybean Chart

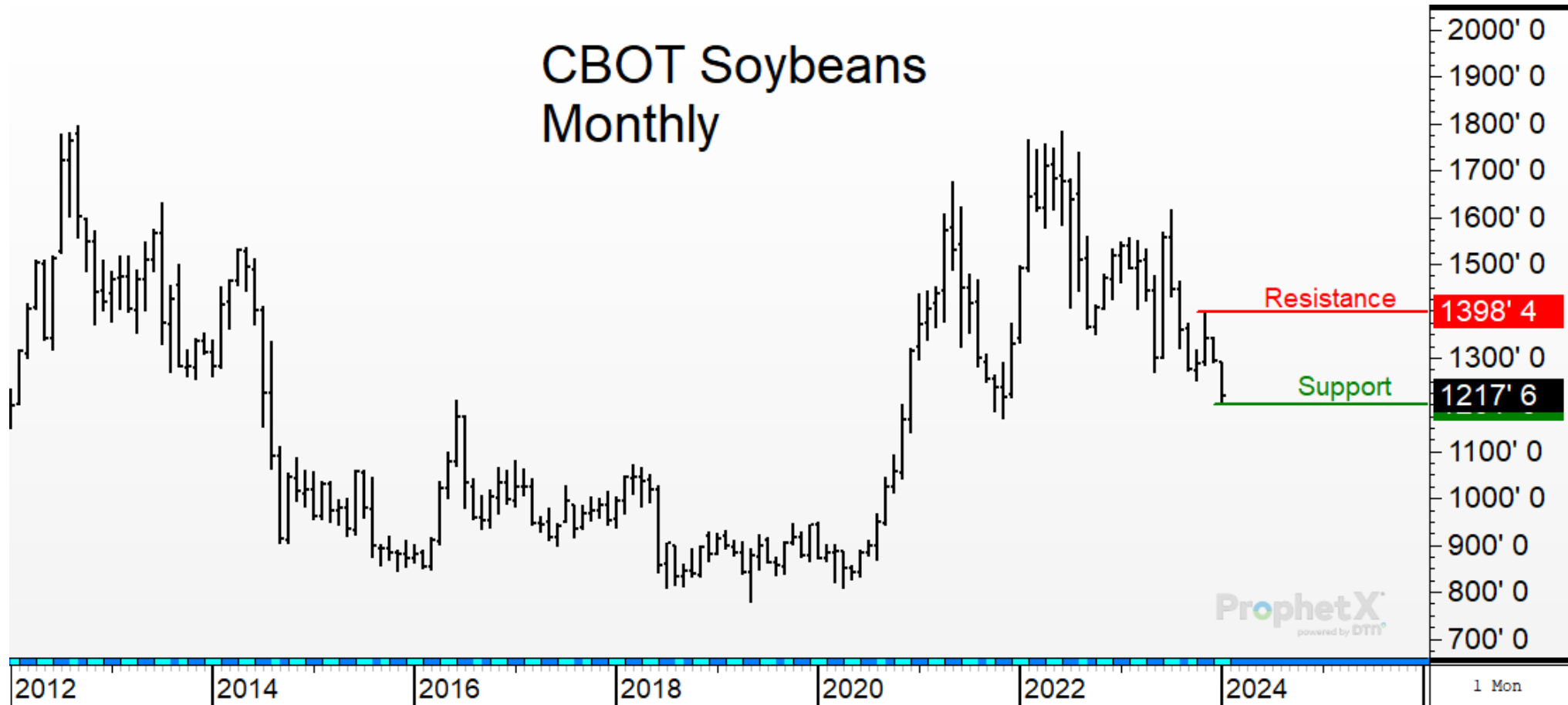


Source: DTN

www.Hertz.ag



Soybean Continuous Monthly Chart



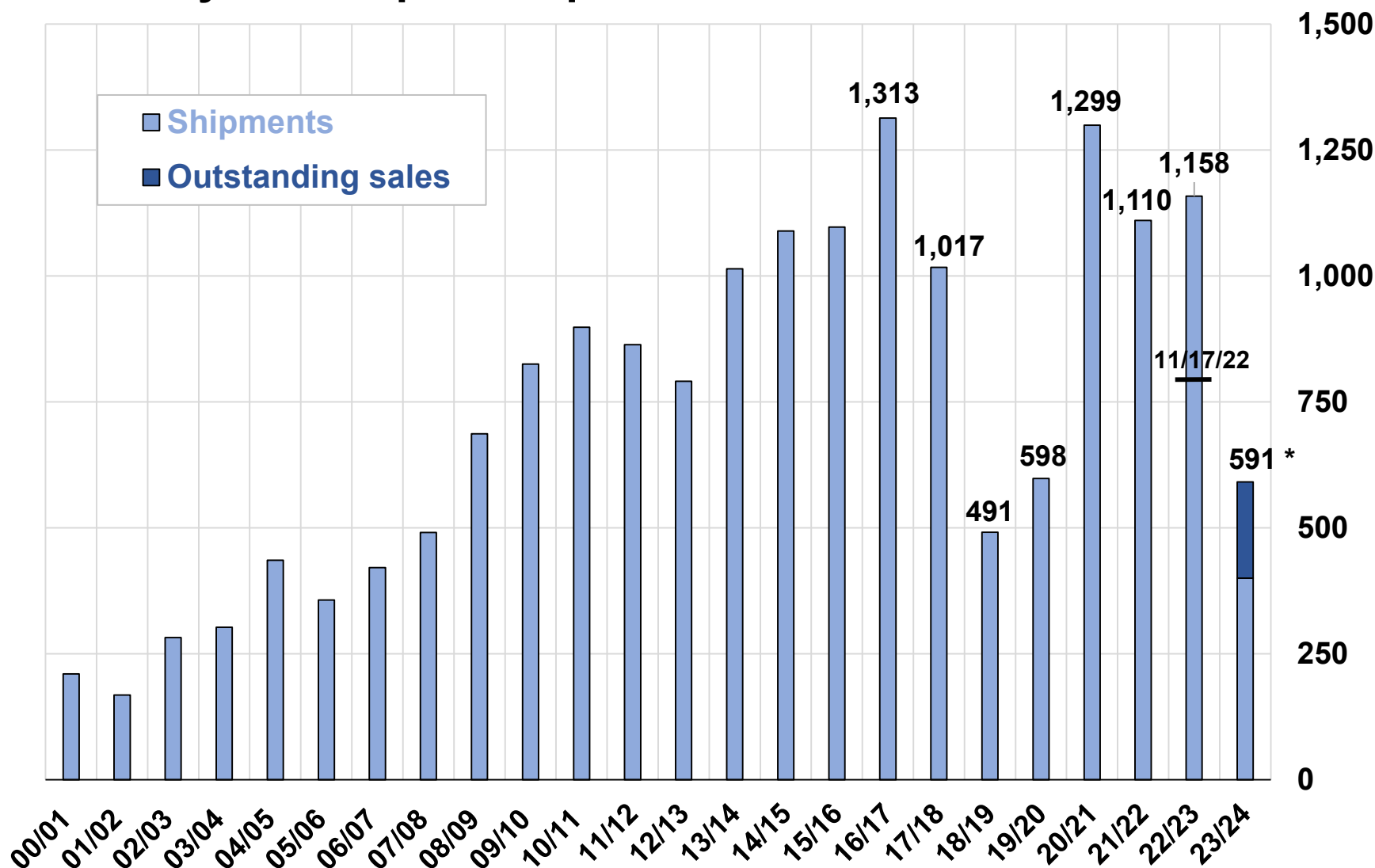
Source: DTN

www.Hertz.ag





U.S. Soybean Export Shipments & Sales to China, million bu.



Source: USDA FAS * 591 mil bu as of November 16, 2023 vs. 796 mil bu same week last year

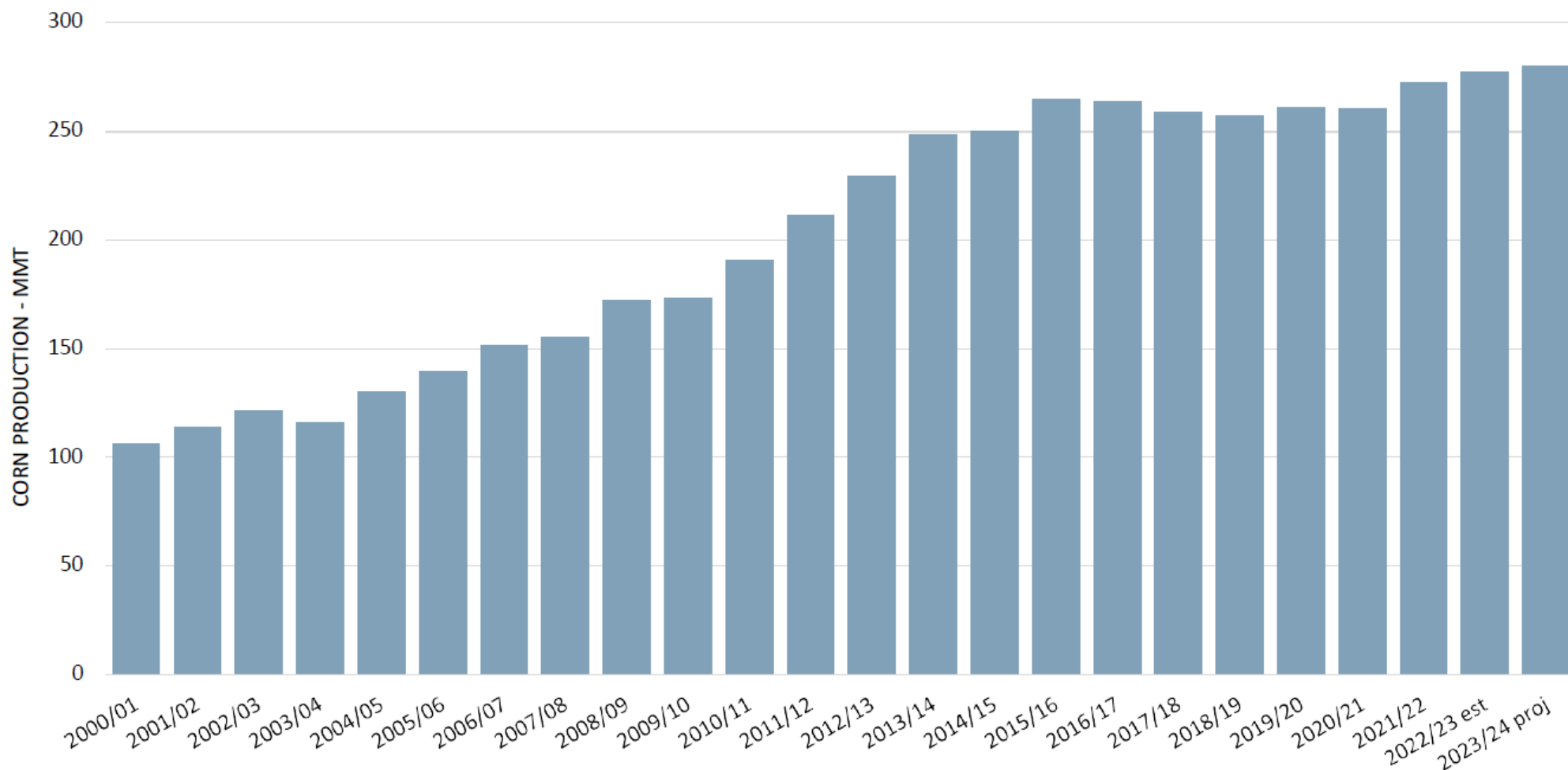


Source: USDA

www.Hertz.ag



China Corn Production



Source: USDA

www.Hertz.ag





Outlook



Key Influences

- Inflation
- Interest Rates
- Economic growth vs. recession
- Shift of acreage
- Asset prices
 - Equities due for a correction
- Population Growth
 - *Population of 9 billion by 2050*
- End of the Ukraine war (?)



Source: Brock Associates

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