

Grains and Oilseeds Outlook: Focus on Corn and Soybeans

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August 2022

- **Final 2022 US Yields Still Carry Quite a Bit of Uncertainty** – Pro Farmer showed some lower prints along with lingering question of how good was finishing weather
- **Ukraine Corridor** – Does it stay open and how well does it run? What could this mean for US exports and global flows?
- **China Imports** – How much growth will we see year-over-year?
- **US Balance Sheets** – Corn and soybean carryouts flat to lower year-over-year with additional yield risk still ahead

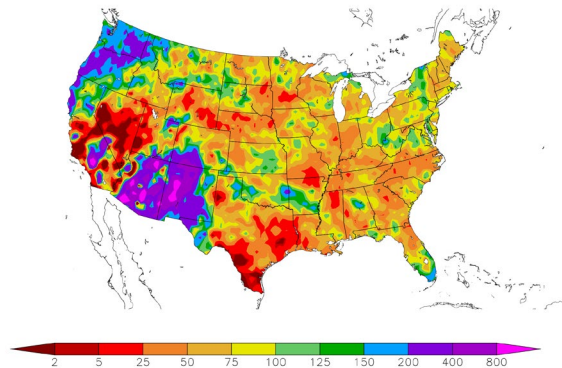
Early Season: Planting Delays, Dry June & July Weather Realizing Closer to Normal Than Forecast

Delayed Planting

	2017	2018	2019	2020	2021	2022	5-Year Average	Difference
IL	77	92	17	79	84	55	70	(15)
IN	59	77	9	66	60	40	54	(14)
IA	86	71	57	95	93	57	80	(23)
KS	61	72	52	70	65	60	64	(4)
KY	70	68	62	71	77	65	70	(5)
MI	35	39	11	53	67	31	41	(10)
MN	85	51	36	93	94	35	72	(37)
MO	88	92	56	78	82	65	79	(14)
NE	79	77	56	88	84	62	77	(15)
ND	61	43	24	16	59	4	41	(37)
OH	52	60	6	50	37	31	41	(10)
SD	79	34	10	62	83	31	54	(23)
TN	90	88	82	76	84	84	84	0
WI	50	37	23	75	74	34	52	(18)
US Total	73	67	38	76	78	49	67	(18)

June

Percent of Normal Precipitation (%)
6/1/2022 – 6/30/2022

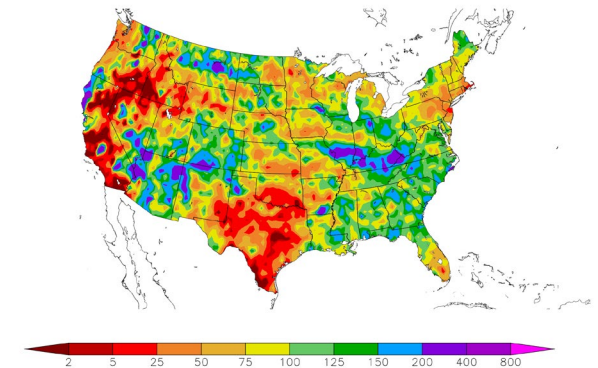


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July

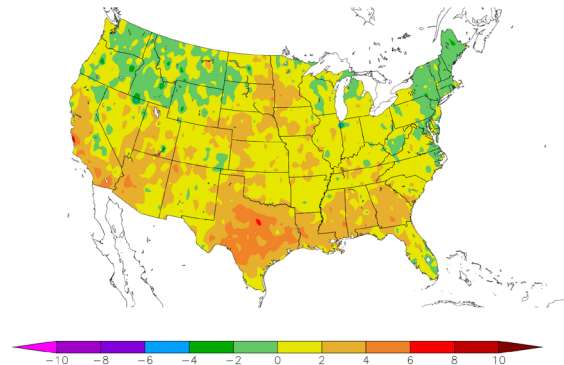
Percent of Normal Precipitation (%)
7/1/2022 – 7/31/2022



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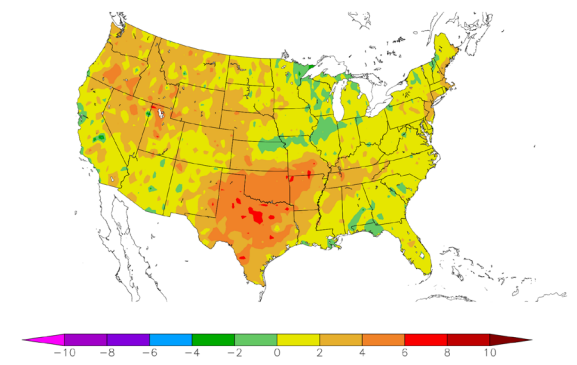
Departure from Normal Temperature (F)
6/1/2022 – 6/30/2022



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Departure from Normal Temperature (F)
7/1/2022 – 7/31/2022



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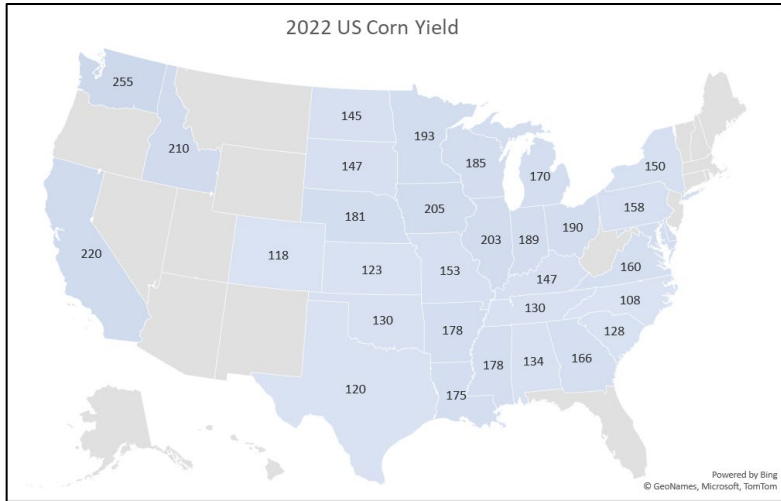
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- Not at all what you would consider the perfect setup to hit trend yields with delayed planting in quite a few states and a drier June
- Surprise came in the way of July with better precipitation than expected and temperatures ending up not as hot as forecast

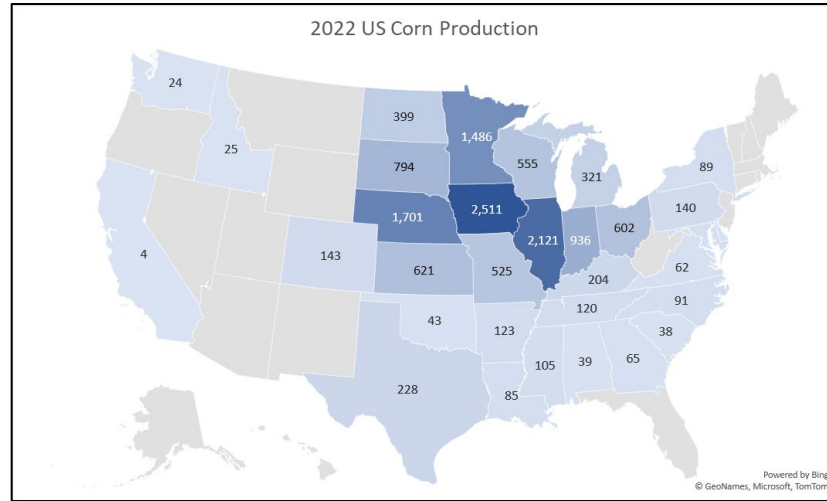
August Yield Estimates Realized Above Last Year's August, but do they stay that way for final?

- US corn yield estimated at 175.4 bushels per acre, Aug 2021: 174.6, Final 2021: 177

2022 US Corn Yield



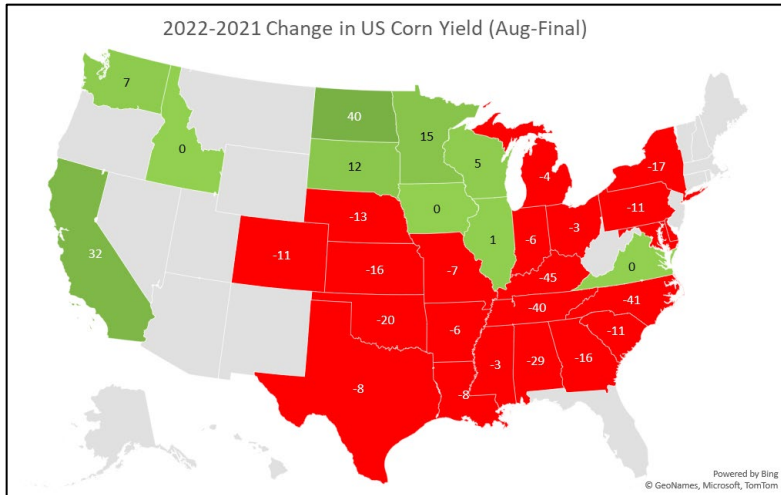
2022 US Corn Production



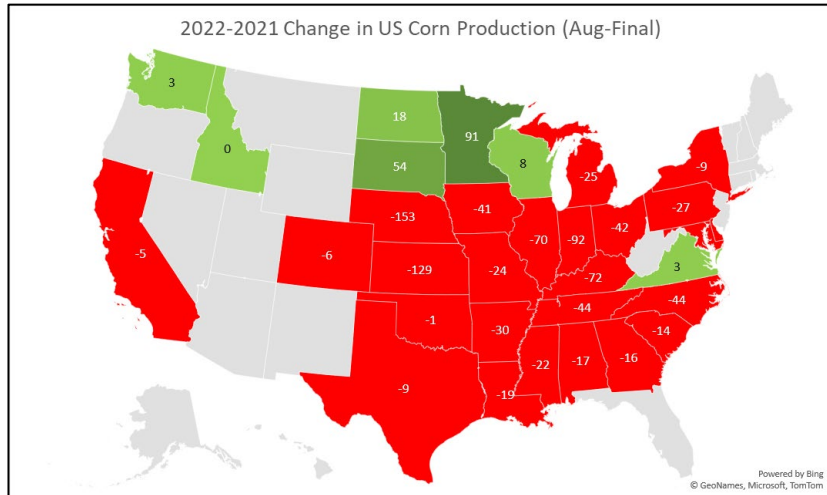
Corn Production (Million Bushels)

	2022	22 vs 21
AL	39	-17
AR	123	-30
CA	4	-5
CO	143	-6
DE	28	-4
GA	65	-16
ID	25	0
IL	2,121	-70
IN	936	-92
IA	2,511	-41
KS	621	-129
KY	204	-72
LA	85	-19
MD	71	-4
MI	321	-25
MN	1,486	91
MS	105	-22
MO	525	-24
NE	1,701	-153
NY	89	-9
NC	91	-44
ND	399	18
OH	602	-42
OK	43	-1
PA	140	-27
SC	38	-14
SD	794	54
TN	120	-44
TX	228	-9
VA	62	3
WA	24	3
WI	555	8
US	14,359	(756)

2022-2021 Change in US Corn Yield (Aug-Final)



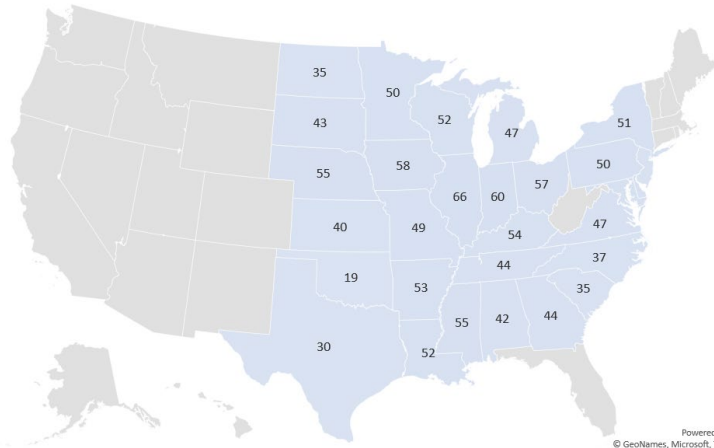
2022-2021 Change in US Corn Production (Aug-Final)



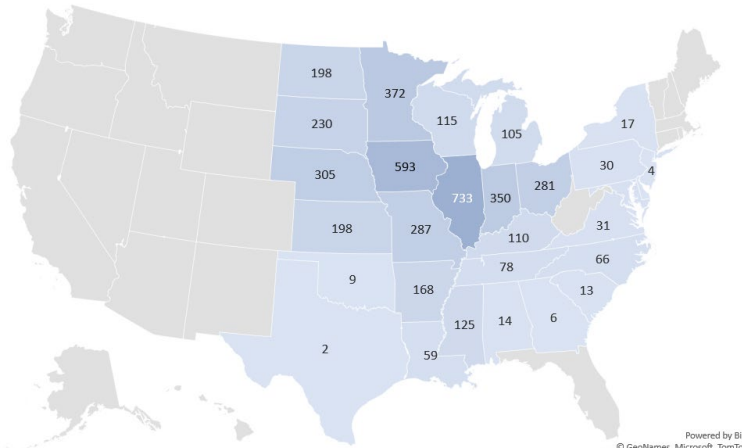
August Yield Estimates Realized Above Last Year's August, but do they stay that way for final?

- US soybean yield estimated at 51.9 bushels per acre, Aug 2021: 50, Final 2021: 51.4

2022 US Soybean Yield



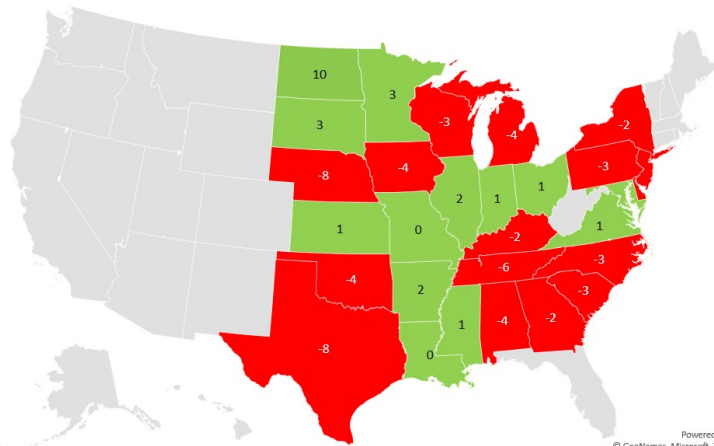
2022 US Soybean Production



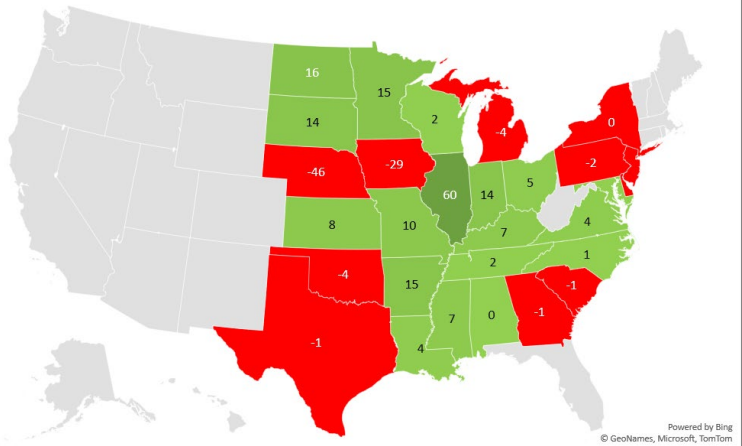
Soy Production (Million Bushels)

	2022	22 vs 21
AL	14	0
AR	168	15
DE	7	-1
GA	6	-1
IL	733	60
IN	350	14
IA	593	-29
KS	198	8
KY	110	7
LA	59	4
MD	26	0
MI	105	-4
MN	372	15
MS	125	7
MO	287	10
NE	305	-46
NJ	4	-1
NY	17	0
NC	66	1
ND	198	16
OH	281	5
OK	9	-4
PA	30	-2
SC	13	-1
SD	230	14
TN	78	2
TX	2	-1
VA	31	4
WI	115	2
US	4,531	95

2022-2021 Change in US Soybean Yield (Aug-Final)

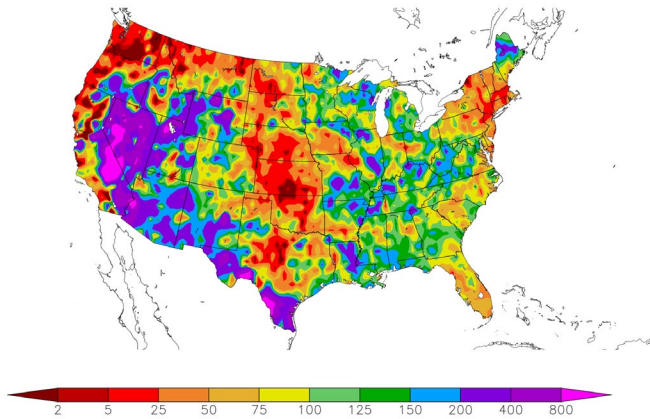


2022-2021 Change in US Soybean Production (Aug-Final)

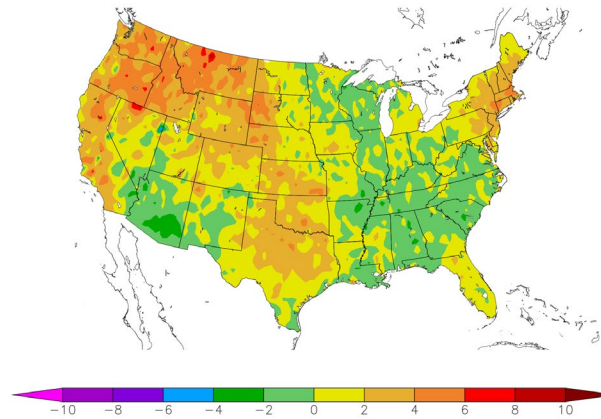


How is Finishing Weather Shaping Up?

Percent of Normal Precipitation (%)
8/1/2022 – 8/21/2022



Departure from Normal Temperature (F)
8/1/2022 – 8/21/2022



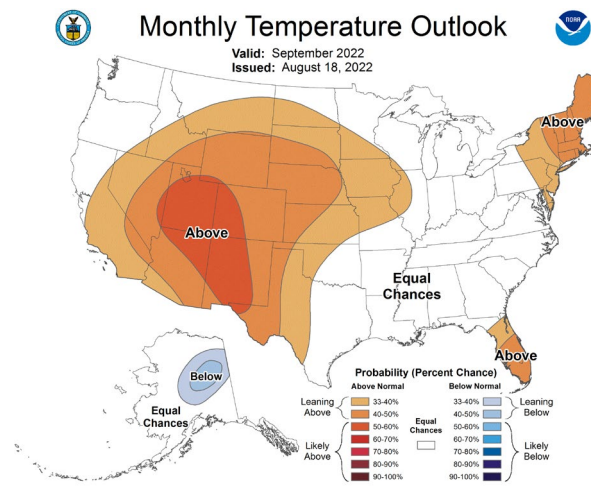
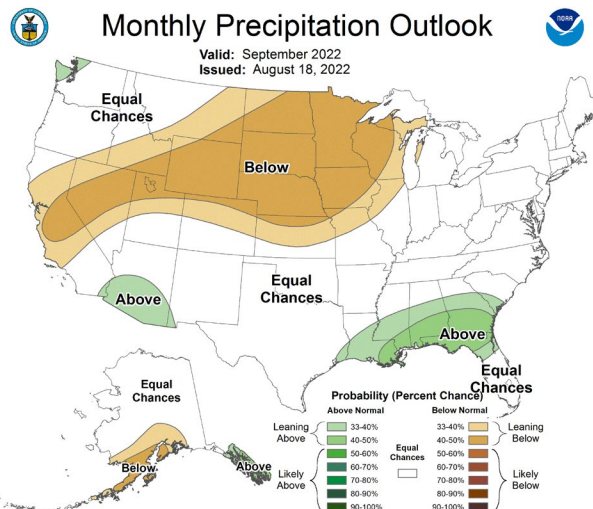
- Despite early expectations for warmer temperatures to continue into August, it has been relatively cooler especially east of the Mississippi...west has remained drier and closer to normal temperatures

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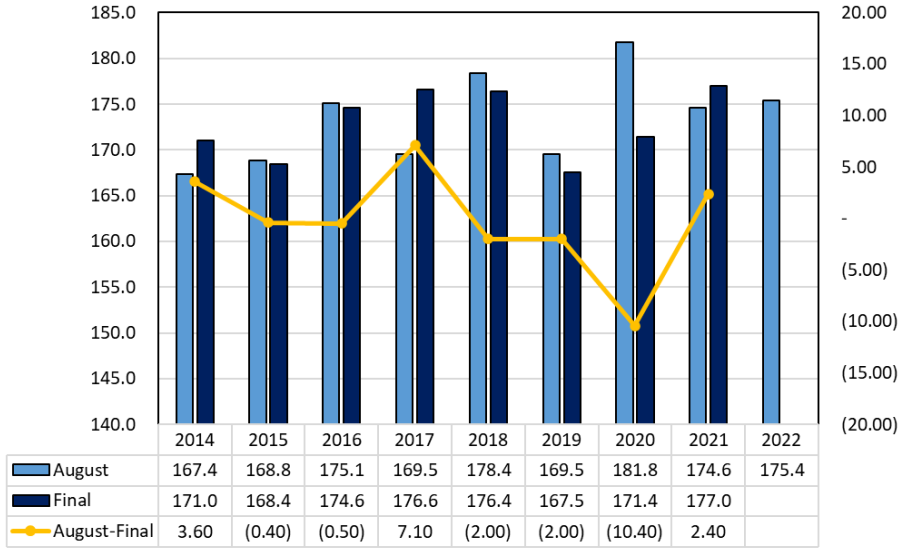
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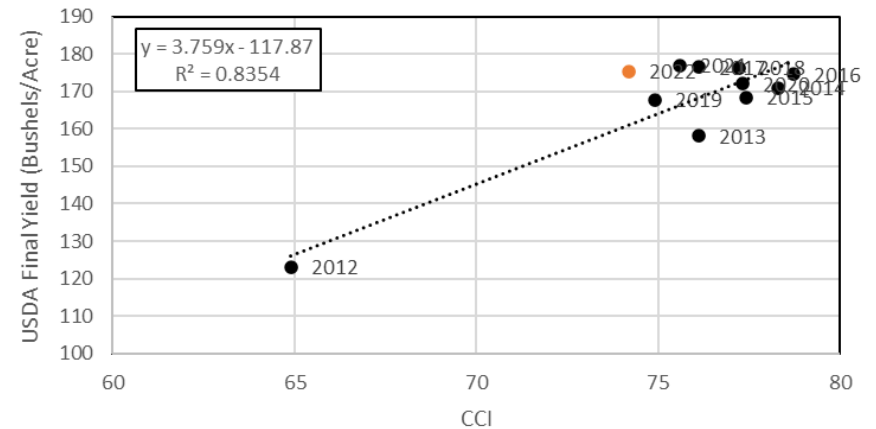


Where Could Final Yield End Up?

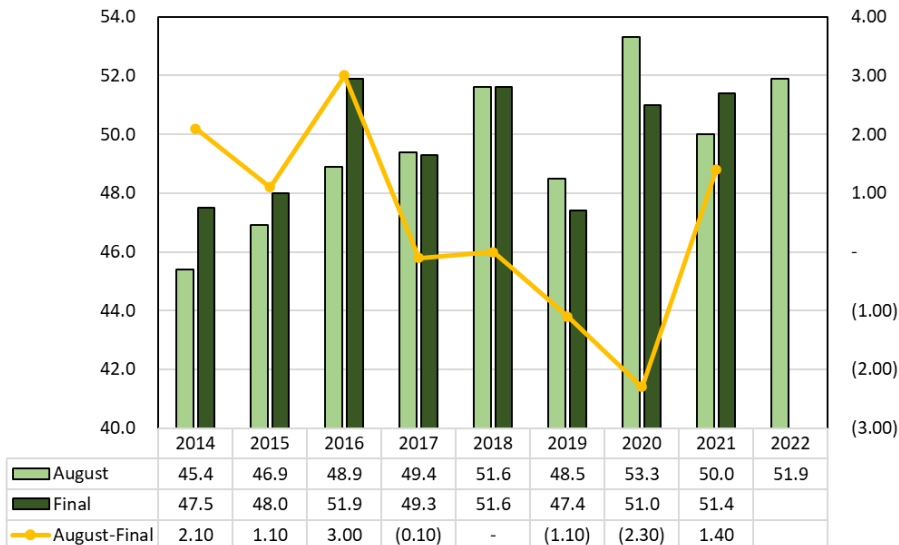
US Corn Yield (Bushels per Acre)



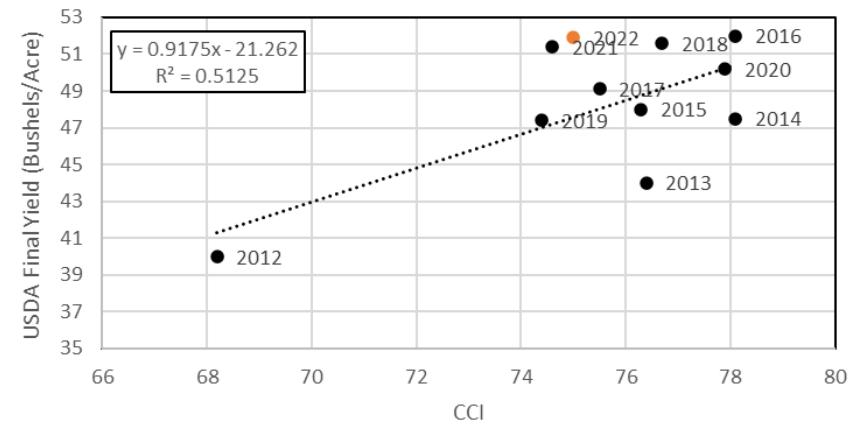
US Total Corn CCI WEEK #33 vs USDA Final Yield



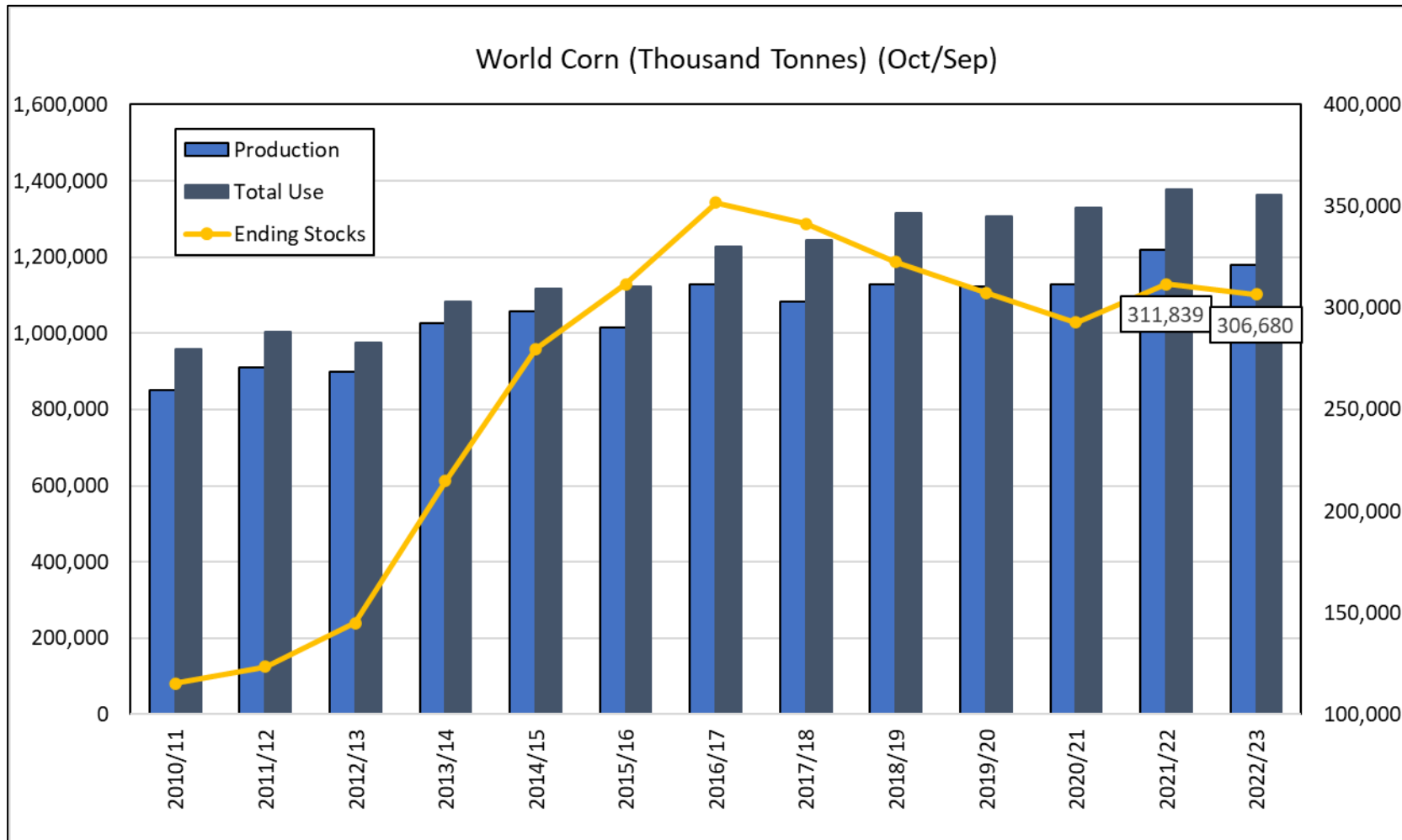
US Soy Yield (Bushels per Acre)



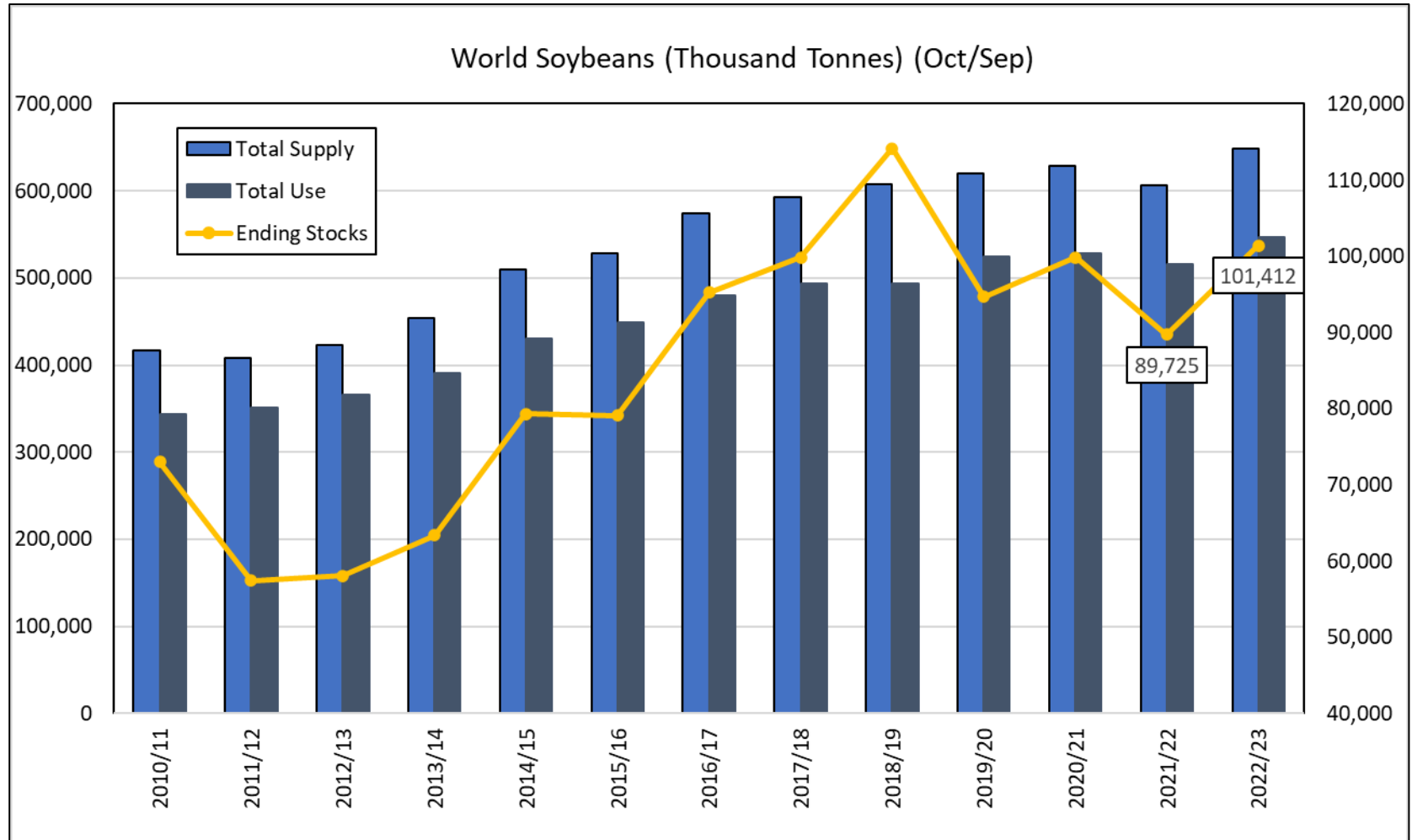
US Total Soybeans CCI WEEK #33 vs USDA Final Yield



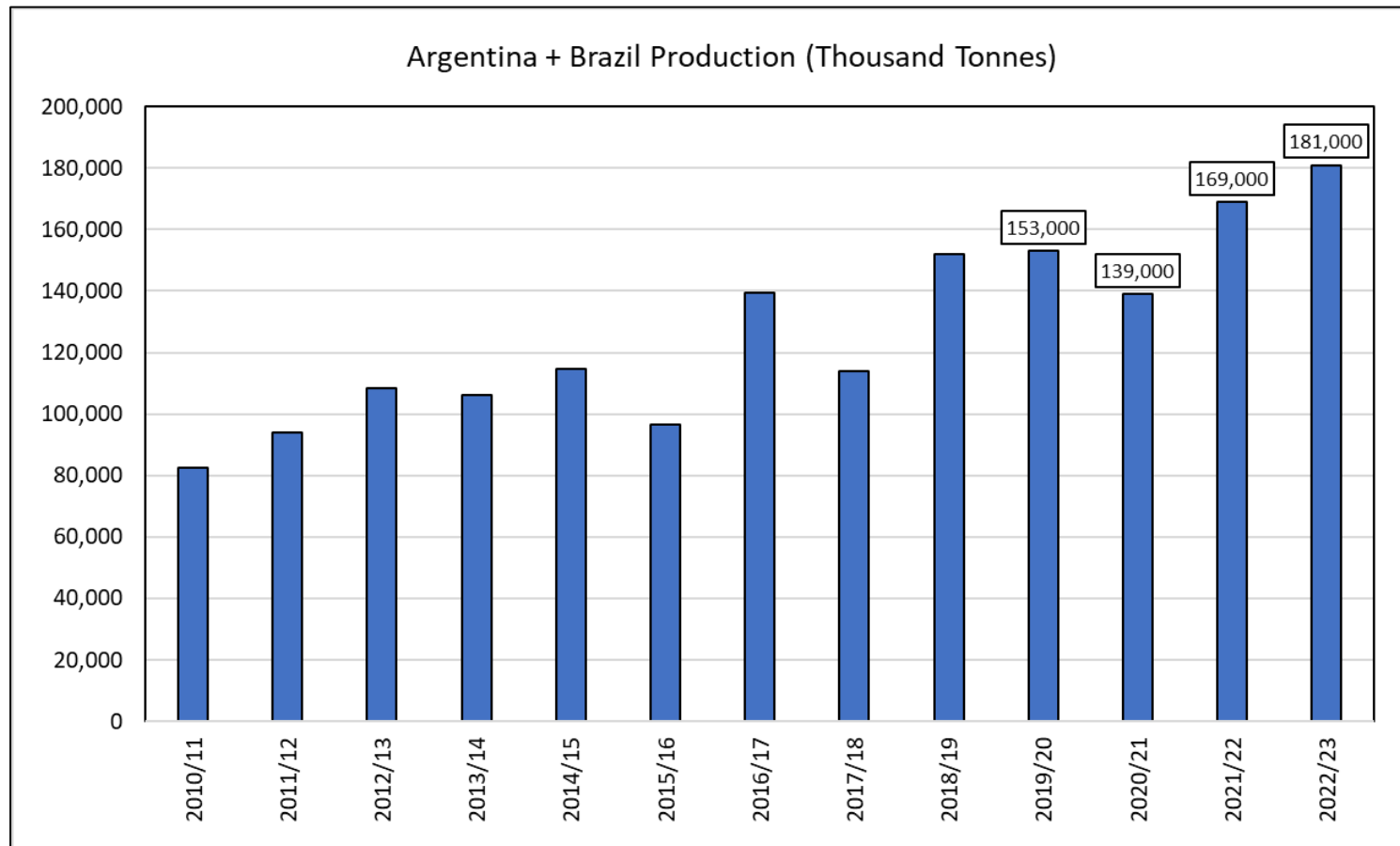
Corn: Global Production, Use & Ending Stocks Tightening, but Still in Line with Recent Years



Soybeans: Global Production, Use & Ending Stocks Loosening Driven by a Rebound in SAM Production



- Record production forecast for 2022/23 at 181 MMT with the growth mainly driven by Brazil on the back of area...yields still carry quite a bit of uncertainty

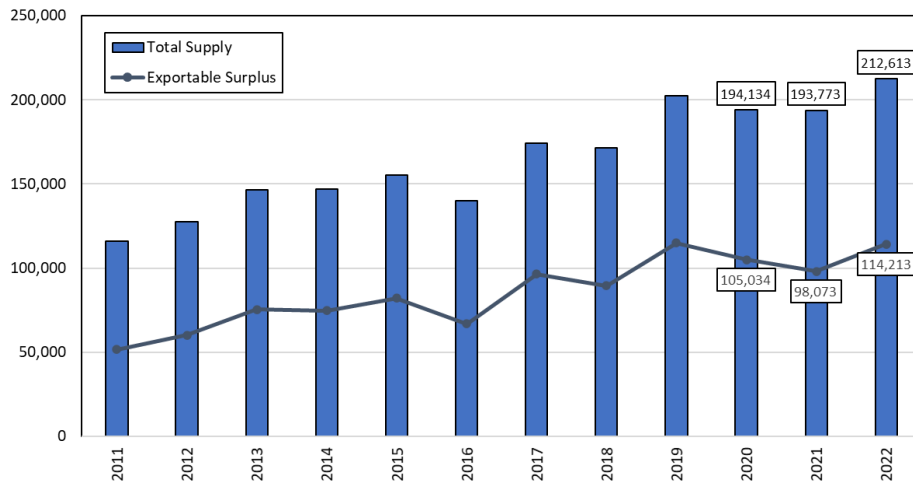


- USDA raised its corn export forecast in the August *WASDE* – if corridor runs smoothly how much more could be added to Ukraine exports?

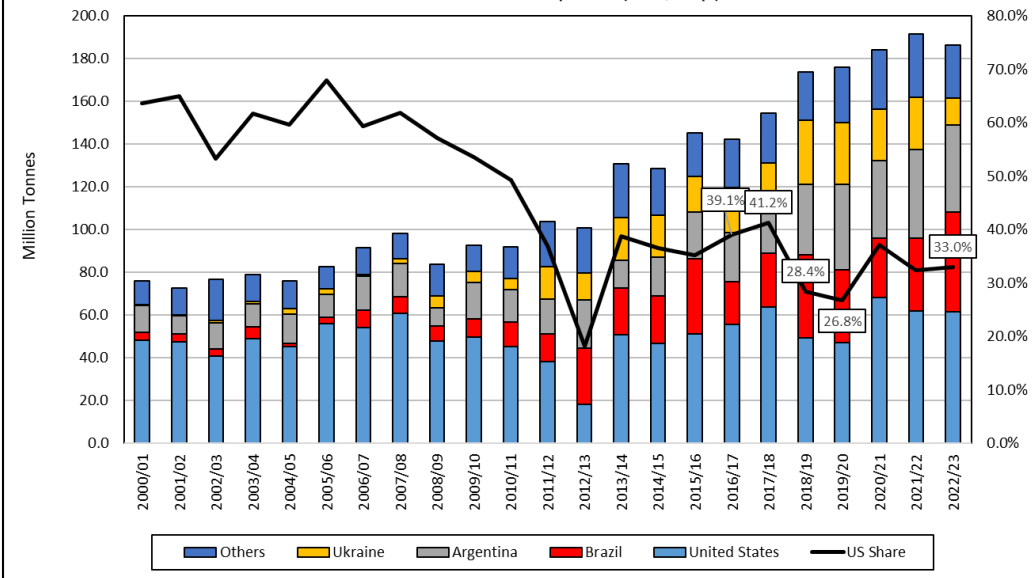
USDA Ukraine Corn Balance Sheet (Hectares/Thousand Tonnes)													
	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Area Harvested	2,648	3,544	4,370	4,825	4,625	4,085	4,239	4,433	4,567	4,991	5,395	5,486	4,500
Beginning Stocks	672	521	1,300	940	1,302	1,519	1,435	1,599	1,567	891	1,478	832	6,273
Production	11,919	22,838	20,922	30,900	28,450	23,333	27,969	24,115	35,805	35,887	30,297	42,126	30,000
Imports	38	49	44	66	28	28	29	39	40	29	21	15	0
Total Supply	12,629	23,408	22,266	31,906	29,780	24,880	29,433	25,753	37,412	36,807	31,796	42,973	36,273
Exports	5,008	15,208	12,726	20,004	19,661	16,595	21,334	18,036	30,321	28,929	23,864	24,500	12,500
Domestic Consumption	7,100	6,900	8,600	10,600	8,600	6,850	6,500	6,150	6,200	6,400	7,100	12,200	11,700
Ending Stocks	521	1,300	940	1,302	1,519	1,435	1,599	1,567	891	1,478	832	6,273	12,073
Stocks-to-Use	4.3%	5.9%	4.4%	4.3%	5.4%	6.1%	5.7%	6.5%	2.4%	4.2%	2.7%	17.1%	49.9%

- Despite larger exportable surplus for Argentina, Brazil and Ukraine, US share of exports is projected to rebound in 2022/23 to 33% with Ukraine exports forecast at 12.5 MMT, 21/22: 24.5 MMT

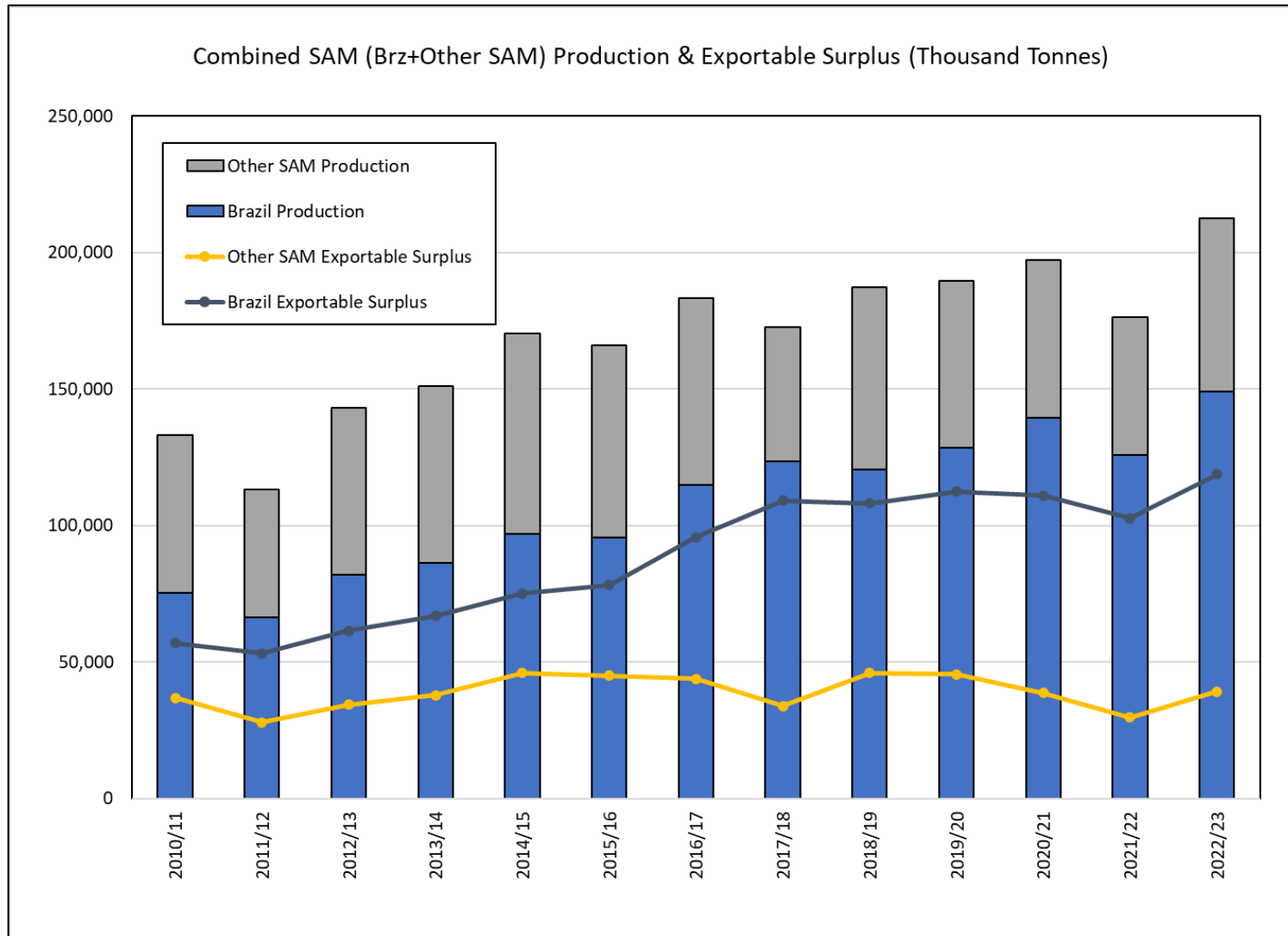
Combined Arg+Brz+Ukr Supply & Exportable Surplus (Thousand Tonnes) (Jan/Dec)



World Corn Exports (Oct/Sep)

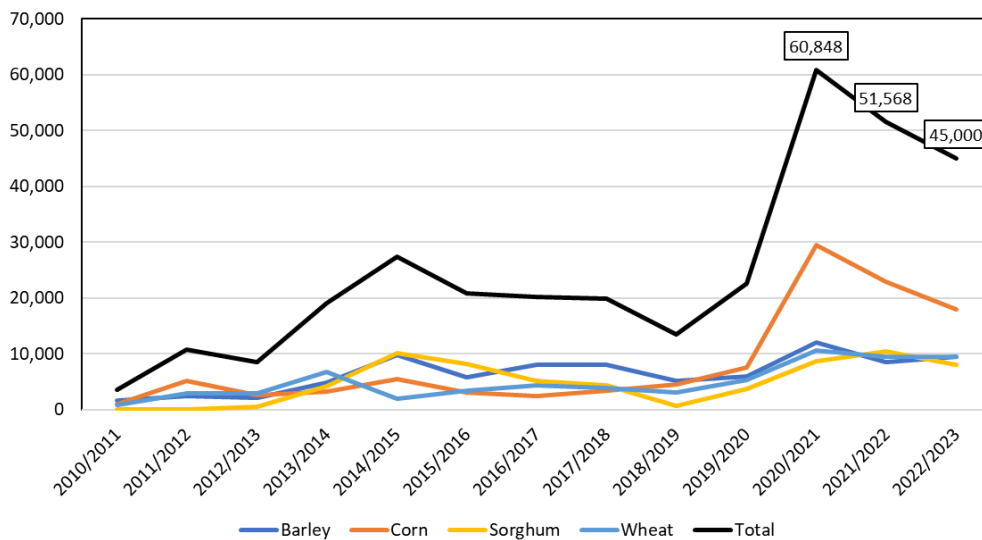


- SAM exportable surplus is expected to rebound on the back of larger production

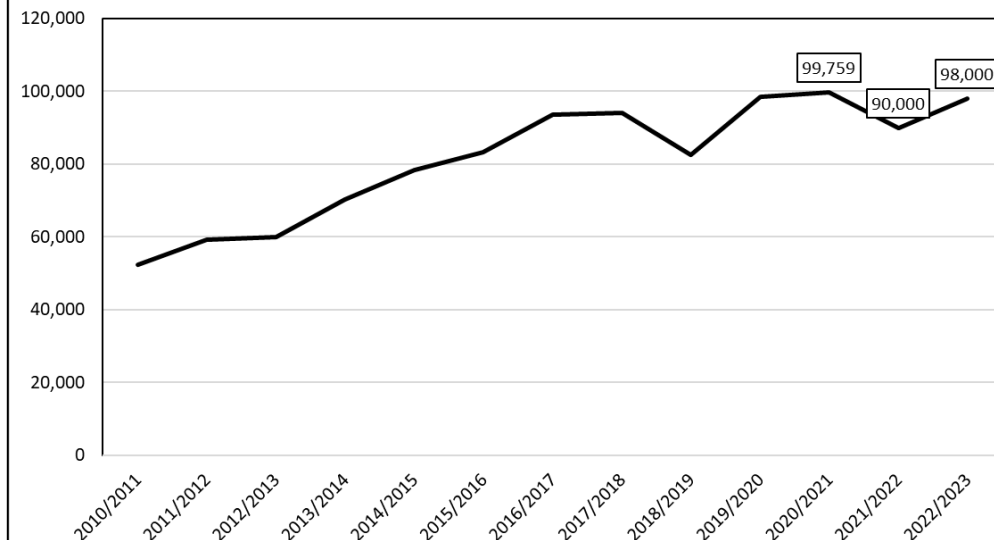


- Post record grains and oilseeds imports in 2020/21, total imports have fallen off driven by grains, primarily corn...could we see a rebound from USDA's forecast? What are China's needs?

China Grain Imports (Thousand Tonnes)



China Soybean Imports (Thousand Tonnes)



Balance Sheet Overview: US Corn

USDA US Corn Balance Sheet (Million Bushels/Million Acres)

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Aug WASDE 2021/22	Aug WASDE 2022/23
Planted Acres	91.9	97.3	95.4	90.6	88.0	94.0	90.2	88.9	89.7	90.7	93.4	89.8
Harvested Acres	83.9	87.4	87.5	83.1	80.8	86.7	82.7	81.3	81.3	82.3	85.4	81.8
Yield	146.8	123.1	158.1	171	168.4	174.6	176.6	176.4	167.5	171.4	177.0	175.4
Beginning Stocks	1,128	989	821	1,232	1,731	1,737	2,293	2,140	2,221	1,919	1,235	1,530
Production	12,314	10,755	13,831	14,217	13,602	15,148	14,609	14,340	13,620	14,111	15,115	14,359
Imports	29	160	36	32	68	57	36	28	42	24	25	25
Total Supply	13,471	11,904	14,688	15,481	15,401	16,942	16,939	16,509	15,883	16,055	16,375	15,913
Feed and Residual Use	4,512	4,309	5,004	5,287	5,118	5,468	5,304	5,427	5,900	5,597	5,600	5,325
Food, Seed & Industrial Use	6,431	6,044	6,531	6,595	6,647	6,885	7,057	6,793	6,286	6,471	6,795	6,825
Ethanol Corn Grind	5,000	4,641	5,124	5,200	5,224	5,432	5,605	5,378	4,857	5,033	5,350	5,375
Total Domestic Use	10,943	10,353	11,535	11,883	11,765	12,353	12,361	12,220	12,187	12,068	12,395	12,150
Exports	1,539	730	1,921	1,867	1,899	2,296	2,437	2,068	1,777	2,753	2,450	2,375
Total Use	12,482	11,083	13,456	13,750	13,664	14,649	14,798	14,288	13,964	14,821	14,845	14,525
Ending Stocks	989	821	1,232	1,731	1,737	2,293	2,140	2,221	1,919	1,235	1,530	1,388
Stocks-to-Use	7.9%	7.4%	9.2%	12.6%	12.7%	15.7%	14.5%	15.5%	13.7%	8.3%	10.3%	9.6%

- 2022/23 carryout forecast has grown tighter on the back of a smaller production forecast
- How much tighter could the carryout go? Could we see production losses be partially offset by lower exports?

Balance Sheet Overview: US Soybeans

USDA (WASDE) US Soybean Balance Sheet (Million Bushels/Million Acres)

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	Aug WASDE 2021/22	Aug WASDE 2022/23
Planted Acres	75.0	77.2	76.8	83.3	82.7	83.5	90.2	89.2	76.1	83.4	87.2	88.0
Harvested Acres	73.8	76.1	76.2	82.6	81.7	82.7	89.5	87.6	74.9	82.6	86.3	87.2
Yield	41.9808	39.9512	44.0361	47.5	48.0387	51.949	49.3	50.6	47.4	51.0	51.4	51.9
Beginning Stocks	215	169	141	92	191	197	302	438	909	525	257	225
Production	3,097	3,042	3,357	3,928	3,927	4,296	4,412	4,428	3,552	4,216	4,435	4,531
Imports	16	41	72	33	24	22	22	14	15	20	15	15
Total Supply	3,328	3,252	3,569	4,053	4,141	4,515	4,735	4,880	4,476	4,761	4,707	4,771
Crush	1,703	1,689	1,734	1,873	1,886	1,901	2,055	2,092	2,165	2,141	2,205	2,245
Exports	1,365	1,328	1,639	1,842	1,943	2,167	2,134	1,748	1,682	2,266	2,160	2,155
Seed, Feed and Residual Use	91	95	105	147	115	146	108	132	104	97	117	126
Total Use	3,159	3,111	3,477	3,863	3,944	4,214	4,297	3,971	3,951	4,504	4,482	4,526
Ending Stocks	169	141	92	191	197	302	438	909	525	257	225	245
Stocks-to-Use	5.4%	4.5%	2.6%	4.9%	5.0%	7.2%	10.2%	22.9%	13.3%	5.7%	5.0%	5.4%

- 2022/23 carryout forecast at 245 million bushels, which is up slightly from 2021/22, but stocks-to-use holding on the tighter side
- Initial yield estimate from USDA NASS was well above what we saw last year, but August weather remaining dry in the west and seems forecast to stay into September
- Tendency is for USDA to reduce exports on the back of smaller production...lingering question as well of could Brazil production be even larger than 149 MMT?

Questions?