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More than 30 years of grain industry experience Cargill Foster Farms General Mills Columbia Grain



Montana: Diverse Growing Region

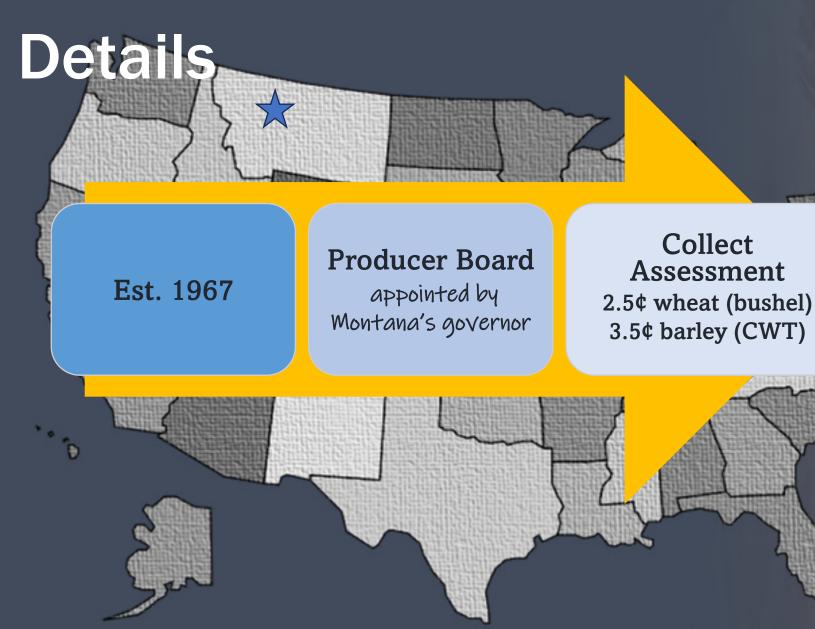






WORKING FOR THE BEST







Funds Allocation

\$4 to \$5 Million Annual Budget

50% Research

- Varietal Development
- Agronomic Practices

Research
Marketing
Education
Operations

50% Marketing, Education, and Operations

• International Organizations

BreedingProgramOther



Wheat Market Volatility

- **O** Worldwide Covid Pandemic
- **O** Supply Chain Disruptions
- **O** Global Production Issues Looming
 - Canada -2.0 mmt
 - Australia -3.0 mmt
 - Argentina -1.0 mmt
 - U.S. Corn Yields
- **O** Inflationary Pressures impacting most commodities
- **O** Russian Invasion of Ukraine



World Wheat Fundamentals

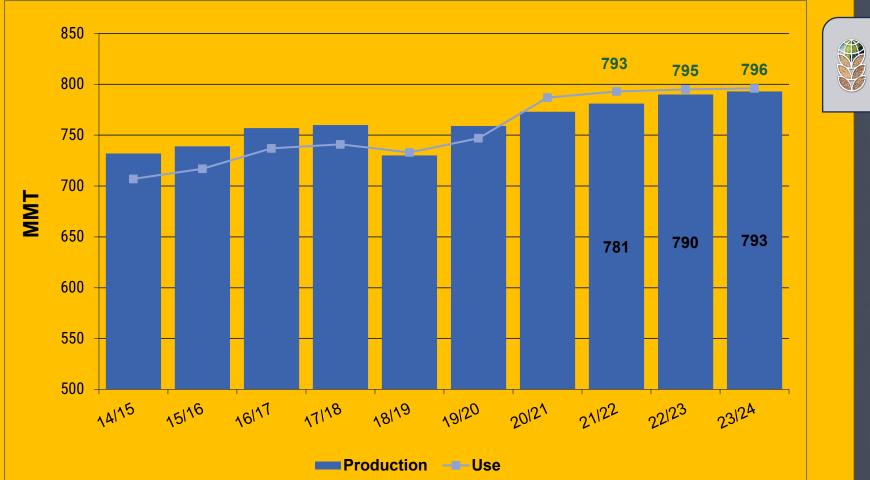


World Wheat Fundamentals

- **O** Focus on Big Picture Trends
- **O** Beginning and Ending Stocks
- **O** Production & Use
- **O** Global Stocks-to-Use Ratio
- O Exporters, Importers & China
- **O** Black Sea Situation & Exports
- **O** US Wheat Fundamentals



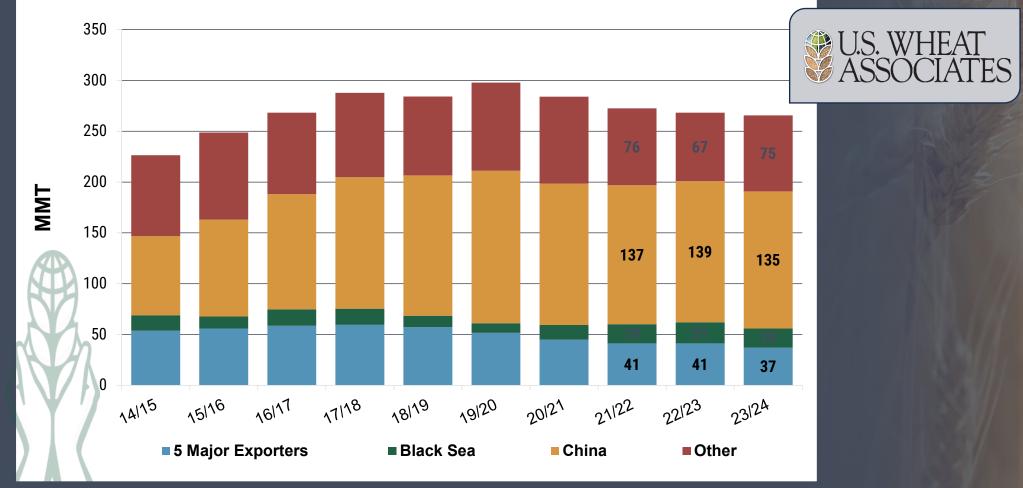
World Production & Use







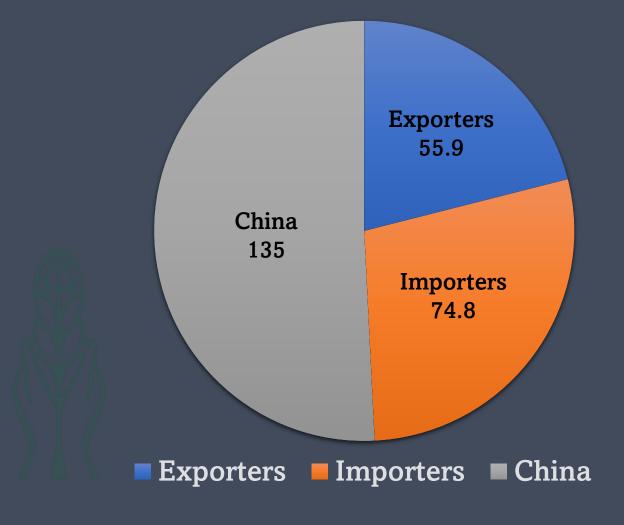
World Ending Stocks





Historical Five Major Exporters include U.S., Canada, Australia, Argentina and EU. Black Sea includes Russia, Ukraine and Kazakhstan.

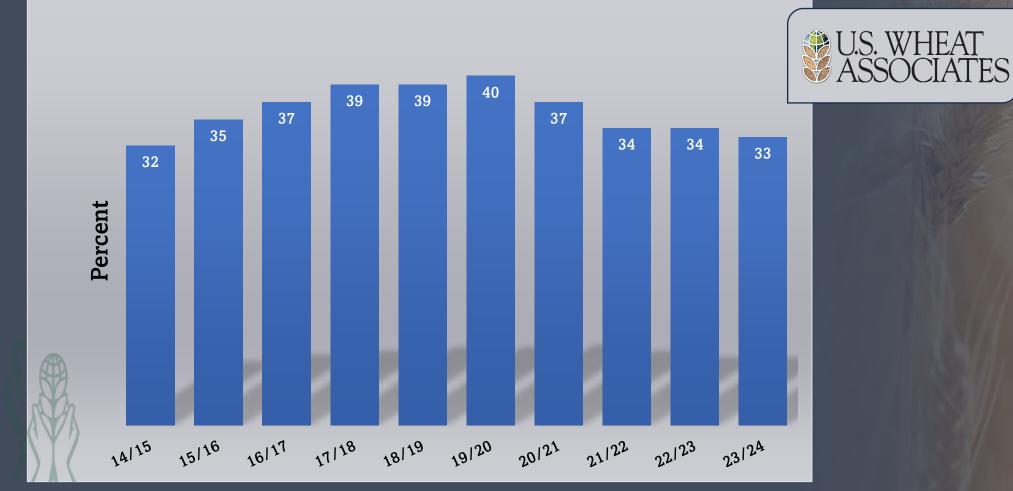
World Ending Stocks by Position







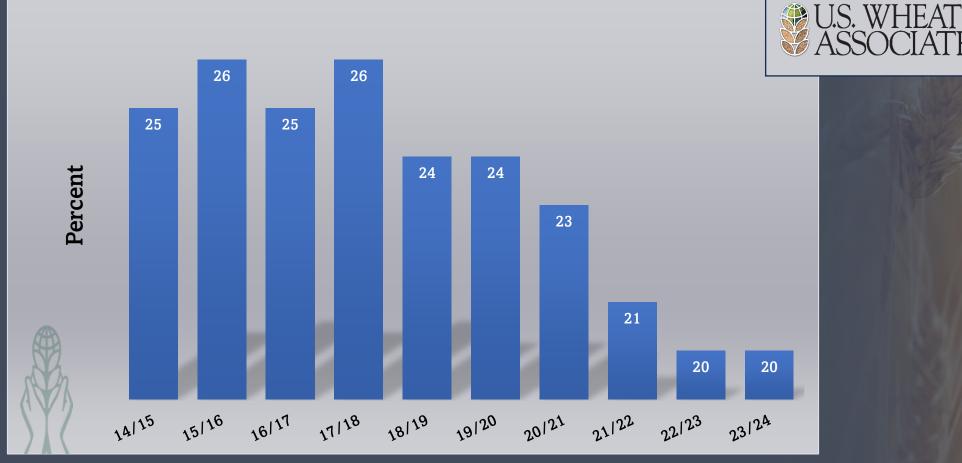
Global Stocks^{*}**To-Use Ratio**





*Ending stocks

Global Stocks-To-Use Ratio w/China



TES



*Ending stocks

Russia will be the world's largest wheat exporter for 2023-24, with nearly 22% of world wheat exports.





We Are Witnessing Historic Events

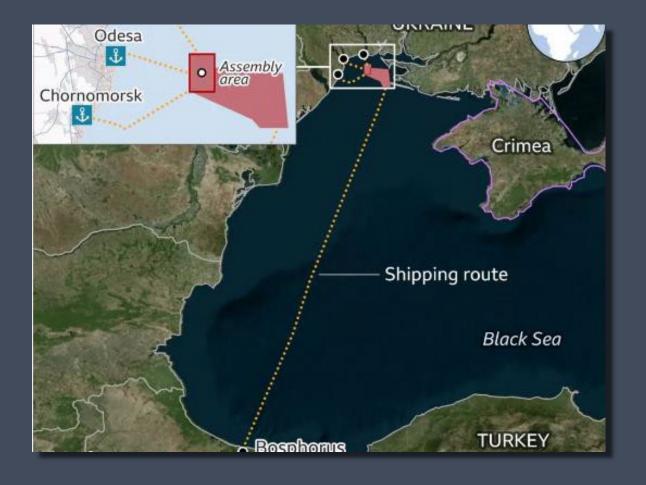
Global event, 74 weeks ongoing with uncertainty





- July 18: Russia rejects renewal of the grain corridor, halting shipments out of Odessa.
- Following days, Russian missile and drone strikes hit grain facilities in Odessa.
- Russia warns that any vessels in the area will be considered possible threats.
- Ukraine responds with threats in kind.
- July 23: Russian drones strike grain facilities on Danube River, Ukraine's other outlet that is near Romania...a NATO member.
- Russia comments that they have enough wheat to supply importers without Ukraine.
- July 24: Clear intent to strike grain infrastructure in Ukraine as the war escalates, wheat futures move limit up
- August 4: Ukrainian drone boat damages a Russian tanker sparking concerns about foreign-flag ships. Russian oil exports nearly halted Aug 14-20.
- Russian officials warn the incident could have "long-lasting consequences for the global grain market"

Black Sea Grain Corridor Suspended



- July 2022 agreement between Russia and Ukraine –brokered by Turkey & the UN - allowing cargo ships to sail safely from Ukrainian ports through the Black Sea to export millions of tons of grain.
- Russia pulled out of deal threatening safe passage for Black Sea grain shipments.
- Ukraine's grain facilities targeted in Odessa and along the Danube River.
- Russian grain industry welcomed the end of Black Sea grain due to high costs.
- Odesa reported strikes destroying 60,000+ tonnes of grain with considerable damage to grain export infrastructure.
- Russia is targeting Danube export assets which are the outlets for Ukrainian grain in the absence of a deal. Attack in Reni was less than 400 meters from Romania and hit grain storage facilities.



What to be Watching

- High demand for Russian wheat in the Middle East, Africa and South America
- Any disruptions to Russian wheat exports. Currently exporting at a feverish pace of 4+ mmt/mo
- Maritime military action against civilian vessels, by Russia or Ukraine
- Wavering by shipping insurance companies due to escalation in military activity
- Russia actively meeting with African nations & leveraging wheat dependency
- World anticipation of 5.5+ mmt of wheat/mo exported from Black Sea ports
- Russian wheat shipments anticipated to be 49 mmt
- Russian August exports @5.3 mmt: a 29% increase over last year
- Ukrainian wheat movement...EU agreements to move by land, but only to certain locations
- War-displaced wheat moving into Eastern Europe will continue; priced at a discount



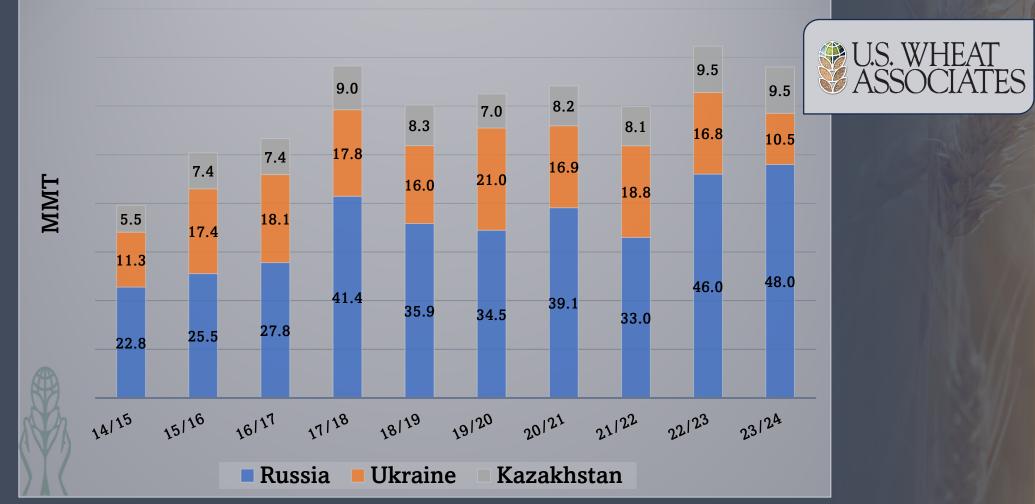
Black Sea Region Situation





Russia, Ukraine and Kazakhstan are the most important wheat producers in the Black Sea Region.

Black Sea Exports



Russia, Ukraine and Kazakhstan are the most important wheat producers in the Black Sea Region.



U.S. Wheat Fundamentals



U.S. Hard Red Winter & Spring Wheat

- Beginning and ending stocks \bigcirc
- **Production trends & forecasts** \bigcirc
- **Domestic Use** ()
- **Export Demand** \bigcirc
- HRW harvested acres & harvest-to-planted ratio \bigcirc
- Yields versus last year \bigcirc
- Export trends & sales volumes by class \bigcirc



U.S. Hard Red Winter Update

- O Planted area increased 13% (26.0 million acres or 10.5 million hectares)
- Production forecast increased as season progressed: 15.9 MMT or 585 million bushels
- **O** Highest abandonment in Southern Plains since 2002
- **O** Southern Plains multi-year drought conditions & late season rains
- Northern Plains & PNW received precipitation over winter and early spring helping to alleviate lingering drought conditions
- O Mid-season rains boosted crops in CO, NE & MT





U.S. Hard Red Spring Update

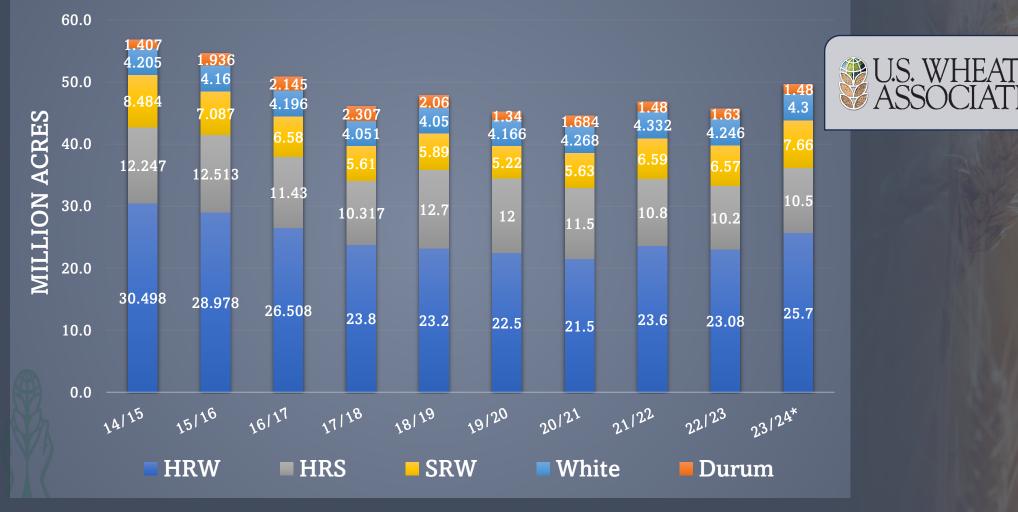
- Planted area up moderately from 2022 (10.8 million acres or 4.37 million hectares)
- Slightly delayed planting due to cold temperatures & snowpack
- 45% of the crop planted May 21-28!
- Crop was one week behind but caught up after hot weather
- O US & Canadian conditions & production potential declined starting mid-July
- August 28 Final Ratings: 37% good to excellent, 39% fair & 24% poor to very poor
- O Harvest slower than normal across N. Plains
- O 87% Harvested (SD 99%, ND 82%, MN 94%, MT 90% & ID 76%)
- Average yields 41.8 bushels/acre, down 4.4 bushels from 2022
- O Production forecast: 413 million bushels, down 7% from 2022





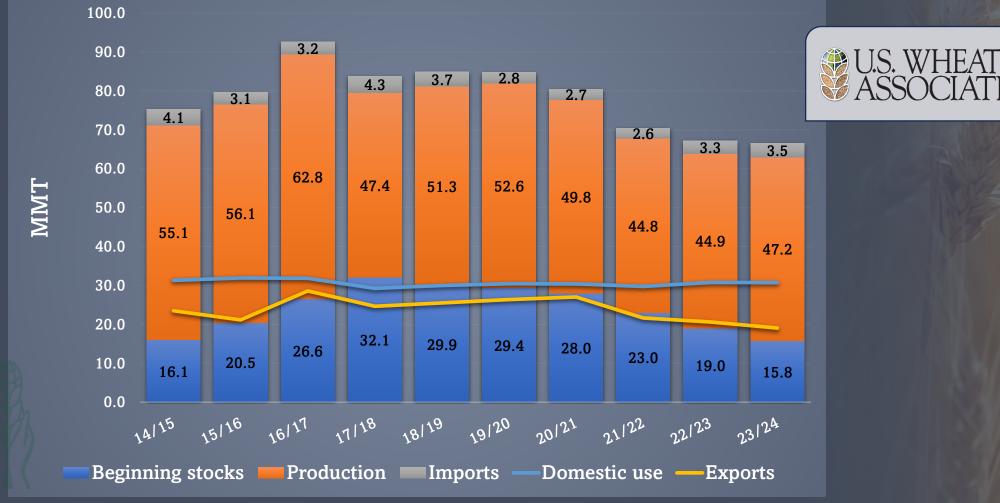


US Wheat Planted Area



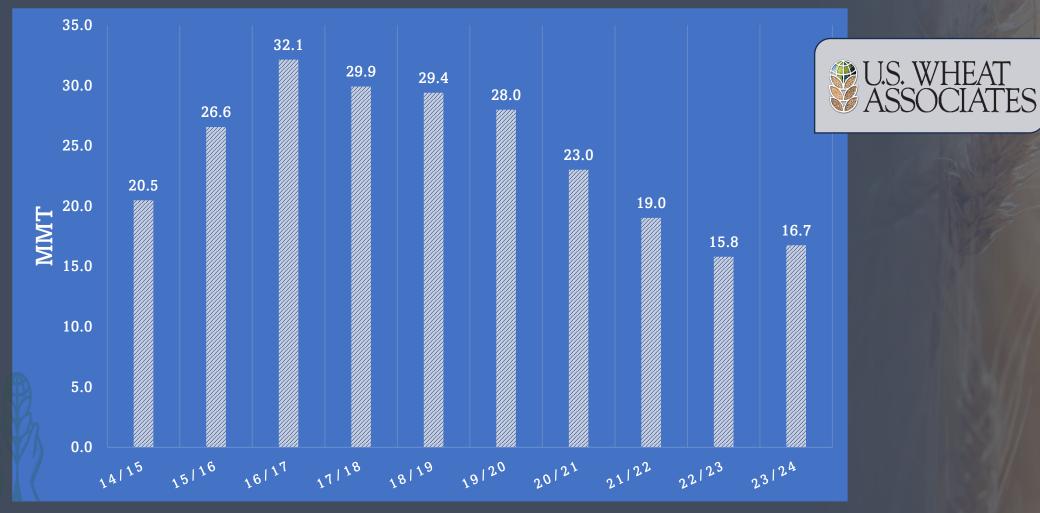


US Situation



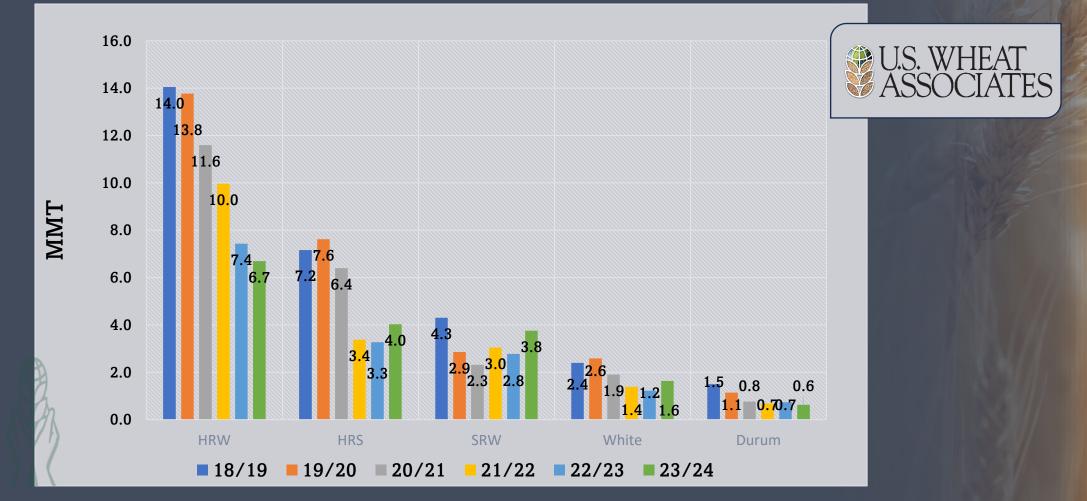


US Ending Stocks





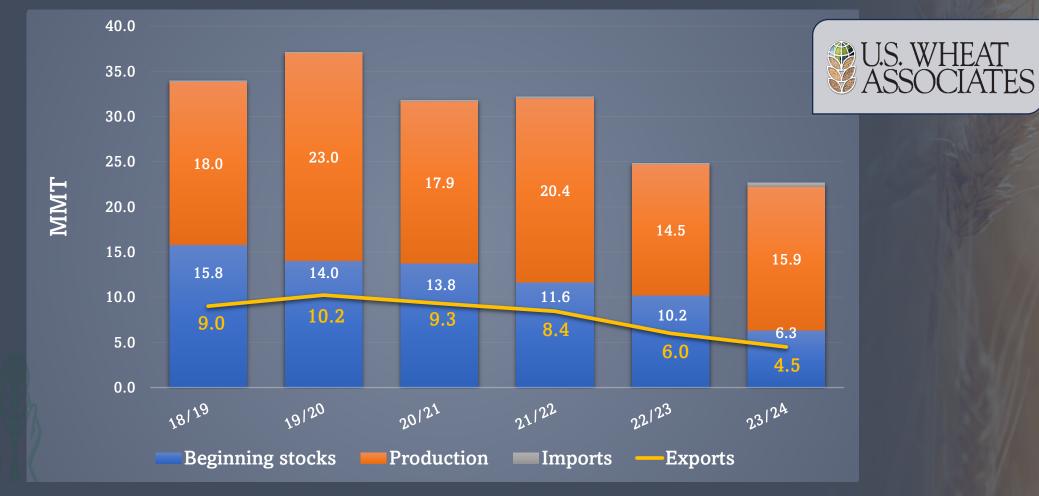
US Ending Stocks by Class







US Hard Red Winter

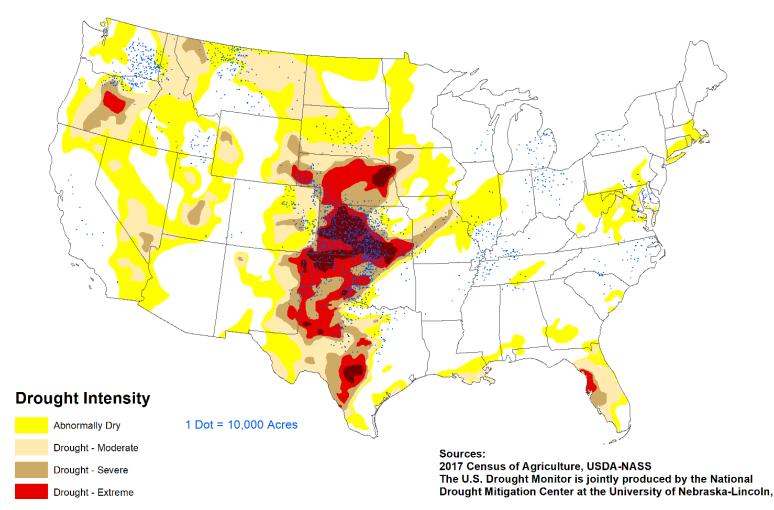






United States Drought Intensity for May 2, 2023 Compared with Winter Wheat Acres





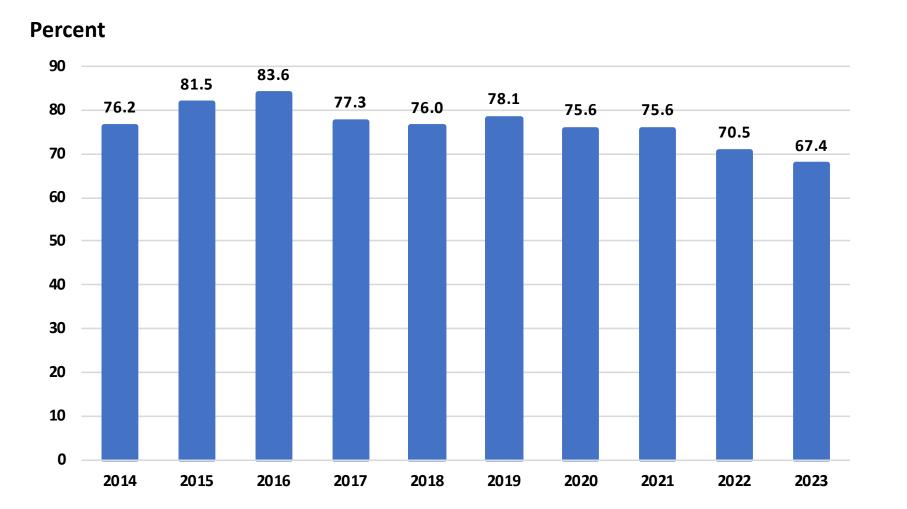
United States Department of Agriculture National Agricultural Statistics Service

May 12, 2023



Winter Wheat Harvested-to-Planted Ratio United States





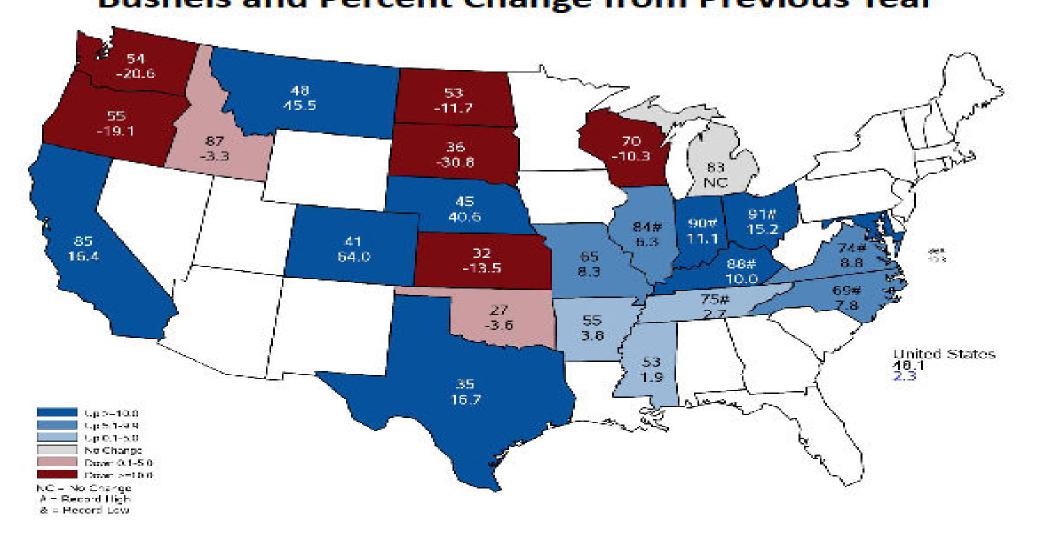
United States Department of Agriculture National Agricultural Statistics Service

May 12, 2023





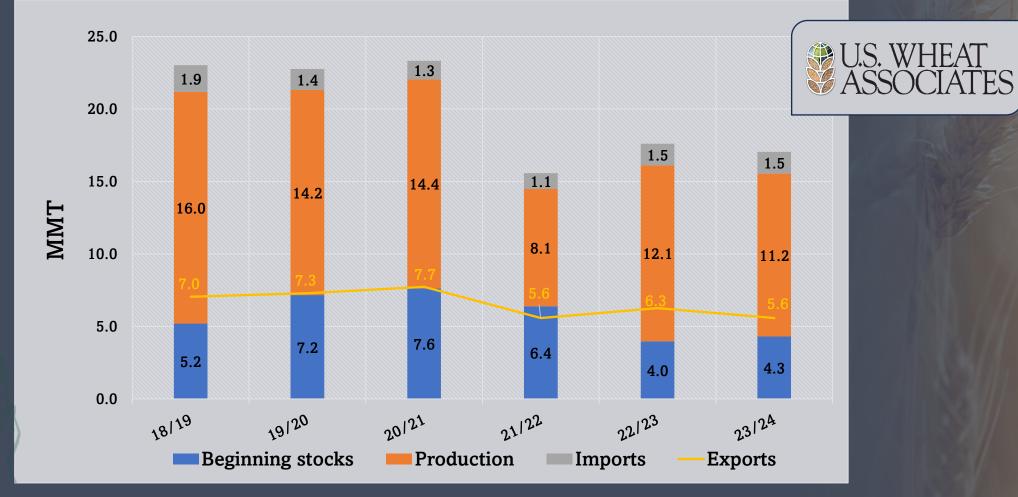
August 2023 Winter Wheat Yield Bushels and Percent Change from Previous Year



United States Department of Agriculture National Agricultural Statistics Service

August 11, 2023

US Hard Red Spring



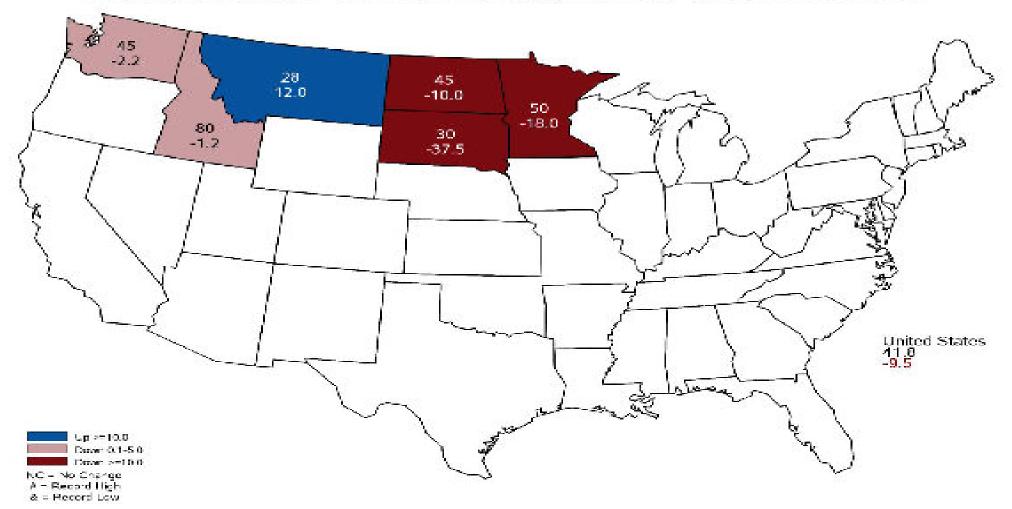




August 2023 Other Spring Wheat Yield



Bushels and Percent Change from Previous Year



United States Department of Agriculture National Agricultural Statistics Service

August 11, 2023

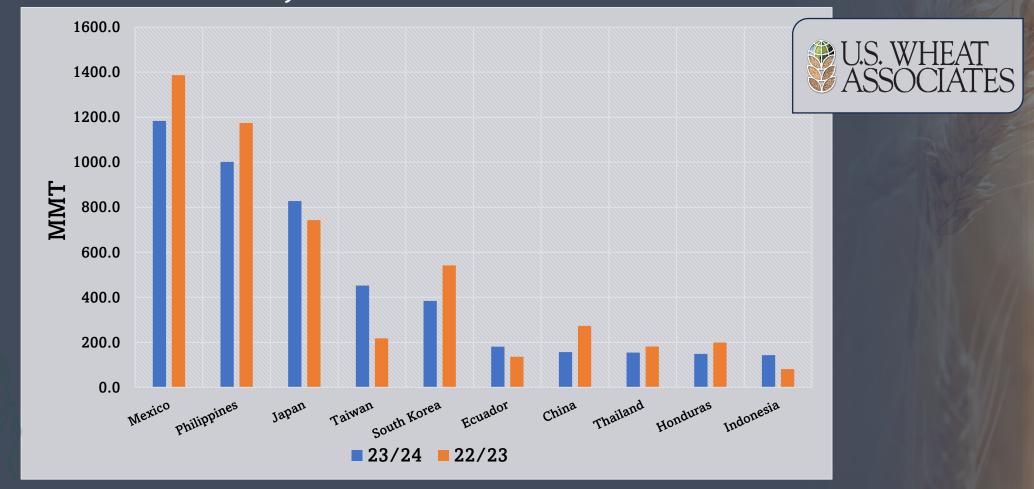
US Wheat Sales by Class (year-to-date sales for current marketing year delivery)





Source: USDA FAS export sales data as of August 3, 2023

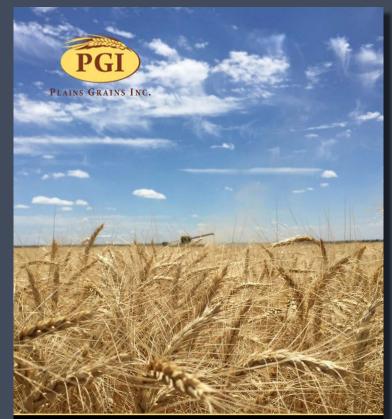
Top 10 Customers for US Wheat (year-to-date sales for current marketing year delivery)



wheat & barley

Source: USDA FAS export sales data as of August 3, 2023

Winter Wheat



Hard Red Winter Wheat 2022 Regional Quality Survey

- O Plaines Grains, Inc. facilitates
- **O** NASS collects samples
- O TX, OK, KS, NE, CO, WY, SD, MT
- **O** 522 Samples from elevators



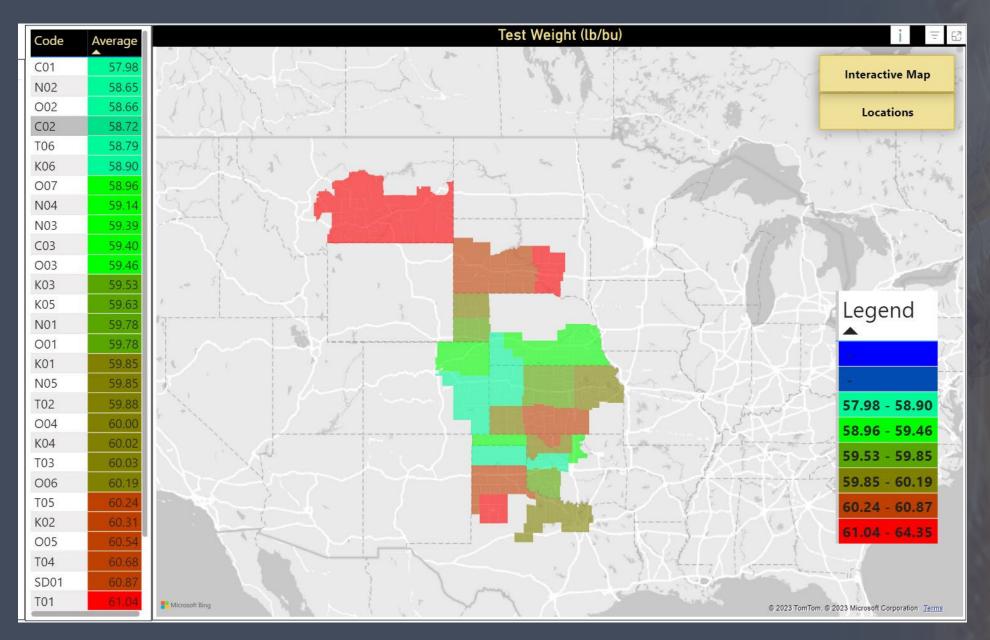
Winter Wheat

	Winter Wheat													
	NIR Protein (12% mb) Indv Wheat Ash (12%mb) Falling Number (sec) Moisture (%)													
Colorado	11.3	1.5	369.6	11.0										
Kansas	13.2	1.6	372.1	11.8										
Montana	11.8	1.4	365.6	9.8										
Nebraska	12.2	1.6	369.5	12.1										
Oklahoma	13.4	1.6	360.6	11.9										
South Dakota	14.0	1.6	352.3	12.0										
Texas	12.6	1.6	342.2	11.3										
Wyoming	11.9	1.5	357.8	13.4										

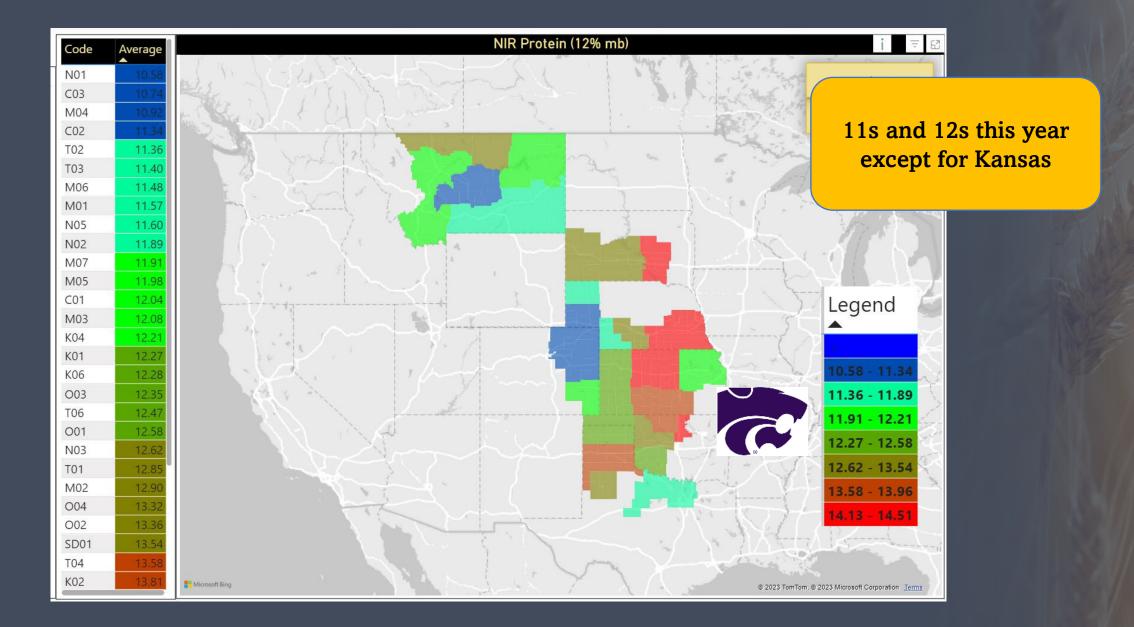
Southern Plains HRW Crop Higher Protein

Variable Test Weights











8.9 (avg) 2022

Stability

Winter Wheat														
	ALVEO P (mm)	ALVEO L (mm)	ALVEO W (10-4 J)	ALVEO P/L Ratio	FARINO Abs (14% mb)	FARINO Devlopmt Time (min)	FARINO Stability (min)	FARINO MTI (BU)						
Colorado	68.6	111.4	235.6	0.6	55.8	3.9	8.1	29.2						
Kansas	81.8	112.5	310.4	0.8	58.2	5.5	10.5	27.2						
Montana	90.3	106.4	309.6	0.9	59.6	5.2	9.2	34.9						
Nebraska	74.0	105.9	250.4	0.7	57.7	4.9	8.8	33.6						
Oklahoma	79.4	120.9	294.6	0.7	59.0	5.5	9.7	31.5						
South Dakota	76.3	125.8	281.0	0.7	58.2	5.4	7.7	38.0						
Texas	82.1	98.1	253.1	0.9	58.6	4.5	7.9	33.5						

Farinograph stability higher in the southern plains



Spring Wheat

2022

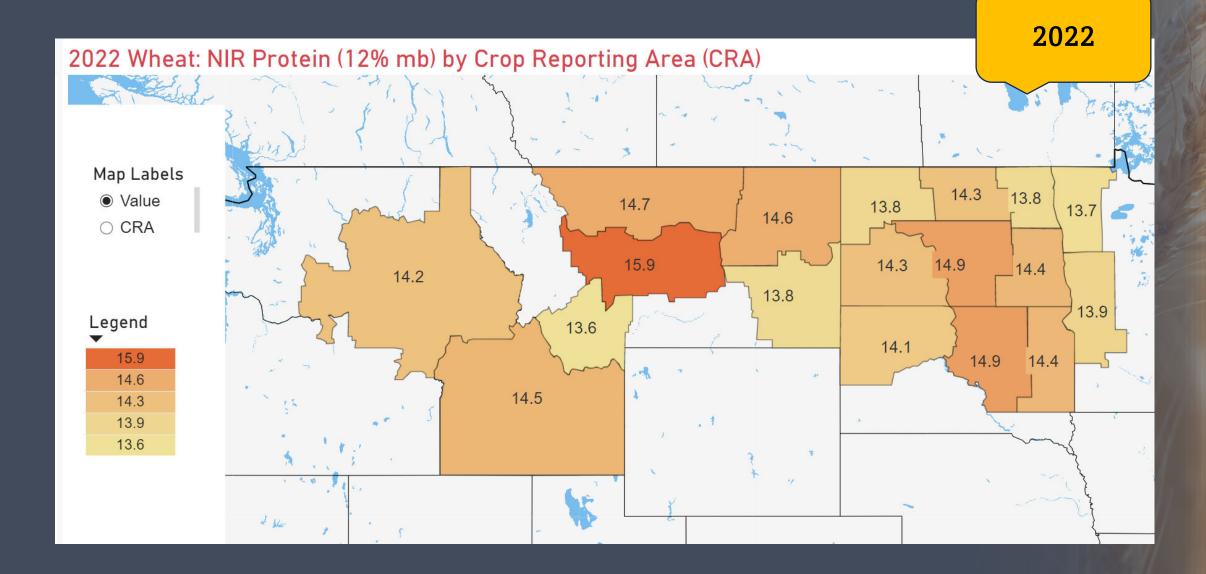
U.S. HARD RED SPRING WHEAT

Regional Quality Report



- 800 Samples Collected, MT, ND, SD, MN
- **O** Farm Bin, Field, Elevator
- **O** NDSU completes quality analysis







Slightly lower protein

38% of samples collected

2023 HARD RED SPRING WHEAT QUALITY SURVEY

WEEKLY HARVEST UPDATE: September 8th, 2023

	Samples		Moisture %	Protein %	DryBasis Protein	Dockage %	TKW gm	FN sec	Grade	Test Weight		FM	Damage	S&B	Defects	DHV
	Tested Expected	lb/bu								kg/hl	%	%	%	%	%	
This week	170	449	12.3	14.1	16.0	0.7	33.8	410	1 NS	60.7	79.8	0.0	0.2	0.8	1.0	54
Last week	82	445	12.4	14.1	16.0	0.6	34.9	416	1 NS	61.0	80.2	0.0	0.4	0.6	1.0	55
2022 Final Average			11.6	14.3	16.2	0.6	30.4	386	1 NS	62.1	81.6	0.0	0.2	1.0	1.2	74
Comments:																
		Approxi	mately 389	6 of the H	RS sample	s have beer	n collected	and analy	zed for this	weekly qu	ality repor	t. Test we	ight average	e is		
		60.7 lb/	bu (79.8 kg	/hl) dowr	n slightly fr	rom last we	ek average	of 61.0 lb	/bu (80.2 kg	g/hl). Avei	rage protei	n content	held steady	at		
		14.1% s	imilar to la	st week.	Falling nur	mber averag	ge is over 4	00 second	ls. Average	vitreous k	ernel conte	ent (DHV)	is 54% to ma	ake		
		the aver	rage grade	of the cro	p at this t	ime No. 1 N	orthern Sp	oring (1 NS	5).						-	

#1

NS

REGIONAL AVERAGE

Closely monitoring DHV after late season rains



Thank You!

To receive our newsletter:

Montanawbc.com

Latest grain news Staff-written articles Real time crop conditions reports Research insights Weather insights Producer videos



Will Mother Nature Fuel Spring Wheat Market Volatility?

There is a quiet and currently subdued bullisl factor lurking just below the surface of the spring wheat market. It is likely to start reari its head in a more pronounced way and exerting more influence in the coming weeks



Tucked away in the National Agricultural Statistics Service office in Helena Montana

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Montona Department of Agriculture

BARLEY AND OATS VARIETIES



Desert Necessities... Montan Plant Breeding in Arizona

Despite the snow and cold in the Treasure State, wheat breeding programs at Montar State University (MSU) remain hard at wor



d in the Treasure

Buckwheat: A hazard to Montana's export markets

