Grain Variety Picks for Texas High Plains 2022-2023 Wheat Year & 2021-2022 Texas High Plains Wheat Production Summary

Dr. Jourdan M. Bell, Associate Professor and Agronomist, Texas A&M AgriLife Extension and Research, Amarillo, jourdan.bell@ag.tamu.edu, (806) 341-8925
Dr. Calvin Trostle, Professor and Agronomist, Texas A&M AgriLife Extension, Lubbock, ctrostle@ag.tamu.edu, (806) 746-6101

2021-2022 Cropping Season in Review

Variable rainfall and expanding drought conditions in fall 2021 resulted in poor planting conditions across the Texas High Plains. Timely planted fields benefited from early October 2021 rainfall, but warm windy conditions quickly dried out fields. Fields dusted in later (late-October-November) had poor stands. There was minimal winter precipitation through the Texas High Plains resulting in another dry winter. The few, dry snowfall events provided little moisture, and as a result, much of the region received less than one inch of moisture from October through mid-April. Like the winters of 2020 and 2021, prolonged winter drought conditions resulted in many producers pulling cattle off dryland wheat pasture early due to a lack of forage. But because of strong spring 2022 wheat prices, dual-purpose producers were less likely to graze irrigated fields past first hollow stem as in previous years.

The region continues to see high demands for winter wheat silage (wheatlage) and wheat hay. Because of the persistent drought conditions and forage shortages, strong silage and wheat hay prices resulted in a large percent of wheat acres being chopped. Hail and high winds accompanied late April rainfall, and many wheat acres were injured or hailed out. Late May was unseasonably cool. This was beneficial for late-maturing wheat varieties reaching flowering during this period, but hot and dry conditions resumed in June.

Wheat streak mosaic and barley yellow dwarf virus were heavy in many areas. Russian wheat aphid pressure was heavy across much of the Texas High Plains with reports from north of Lubbock to the Oklahoma line. There was an increase in failed dryland wheat acres in 2022 due drought, and most irrigated producers were not able to meet crop water demands due to declining well capacities. Regional yields were below the long-term average in most areas depending on variety, irrigation capacity, and precipitation timing and amount.

Wheat Grain Variety "Picks" for 2022-2023

Continuing a long-time tradition, ongoing Picks criteria include a minimum of three years of irrigated or dryland data in Texas A&M AgriLife regional variety trials across numerous annual locations. Furthermore, a "Pick" variety can be described as: "Varieties that we would choose to include and emphasize on our farm for wheat grain production given the 3-year performance and variety characteristics." It is important to note that this list only includes varieties designated for grain production evaluated in our trials. Varieties that are used primarily for grazing and forage are not listed on this "Grain Variety Picks" list.

Picks are not necessarily the numerical top yielders. The following criteria are also considered:

- Milling and baking quality
- Important disease resistance traits (leaf or stripe rust, wheat streak mosaic virus)
- Insect resistance (greenbugs, wheat curl mite, and Hessian fly)
- Standability.

These important varietal traits enable a producer to better manage potential risk.

Table 1. Texas A&M AgriLife wheat grain variety Picks for the 2022-2023 Texas High Plains wheat season. Picks are based on yield performance and consistency from 17 irrigated and dryland trials primarily in the Texas Panhandle (northern Texas High Plains) harvested from 2020-2022.

Wheat Variety "Picks", Texas High Plains. 2022-2023		
Full Irrigation‡	**Limited Irrigation**	**Dryland**
----	----	TAM 113
TAM 114	TAM 114	----
TAM 115	TAM 115	TAM 115
TAM 205	TAM 205	TAM 205
WB4792	WB4792	WB4792
Canvas	Canvas	----
CP 7869	CP 7869	----
SY Wolverine	----	----

‡Full irrigation in the Texas High Plains reflects a production system oriented to ample nitrogen fertilizer and likely fungicide application(s) for leaf rust and stripe rust even when infection is minimal or even preventative applications before infestation.

Notes about the High Plains Picks

Because of below average yields, the 2022-2023 Picks List does not include a Watch List.

TAM 112 was removed from the Picks list for the 2021-2022 wheat crop. **TAM 115**, a successor of TAM 112, replaced TAM 112. TAM 115 is a later maturing variety that is less susceptible to injury from late spring freezes. TAM 115 maintains the disease and insect package of 112 but with slightly improved grain yields under limited irrigated and dryland conditions. While TAM 112 is not on the Picks List, it remains competitive on very tough dryland acres. TAM 115 is a large-seeded variety added for the 2020-2021 Limited Irrigated and Dryland Picks Lists based on 3-year history in the AgriLife High Plains Uniform Variety trials under limited irrigated and dryland trials. Recent observations indicate that it maintains performance under good dryland and limited irrigated conditions. It does not have the tillering potential of TAM 113 under tough, water-stressed dryland conditions. It does not have the yield potential of **TAM 114** (a general replacement for TAM 111) under full irrigation. TAM 115 is a dual-purpose variety with very good milling and baking quality that is resistant to leaf rust, stripe rust, stem rust, green bug, and wheat curl mite with good drought tolerance. Wheat curl mite resistance

conveys resistance to wheat streak mosaic virus. **TAM 205** continues to demonstrate stable yields in the uniform variety trials. It is a dual-purpose variety with a high top-end yield potential, good test weights, very good end-use quality, and good fall forage production. It is resistant to leaf rust, stripe rust, and stem rust. It is also resistant to wheat streak mosaic virus and soil-borne wheat mosaic virus. It performed very well across all water regimes.

Croplan CP7869 graduated to the Picks List because of consistently solid performance in current and recent irrigated and dryland trials. It was on the 2021-2022 Watch List because it was not tested in 2020-2021, but it was tested in the two previous years. CP7869 is a late maturing variety with good stripe rust resistance and straw strength. **Canvas** from PlainsGold (Colorado State Univ.) has a good record of grain yield in the Texas High Plains. Favorable traits include resistance to WSMV, good tolerance to stripe rust, and good milling and baking qualities. **Syngenta Wolverine** also graduated to the Picks List. Wolverine is a 2019 AgriPro release previously evaluated in Texas A&M AgriLife trials as 08BC379-40-1. It has been a top yielder in the High Plains Uniform Variety irrigated trials for the last 3 years with good test weights. It is a high tillering variety noted for good drought tolerance. It was not evaluated in the 2020-2021 dryland trials, and 2021-2022 dryland performance was in-line with the trial average. It showed susceptibility to WSMV, so it should not be placed in a WSMV susceptible field. It shows high-end potential under well managed conditions. **Westbred WB4792** is added to the Picks List. It was a 2018 release that has been a top yielder in the High Plains Uniform Variety irrigated and dryland trials for the last three years with good test weights. It has very good tillering potential and upper end yield potential.

TAM 113 has been removed from the irrigated and limited irrigated lists, but it remains a dryland Pick because of solid grain performance, end use quality, forage potential, and ability to emerge and tiller under stressful conditions. It has resistance to stripe, leaf, and stem rusts. **TAM 114** has been removed from the dryland list, but it remains on the list because of solid grain performance, excellent milling and baking quality, and forage potential under irrigated conditions. It tolerates heavy grazing and is resistant to stripe, leaf, and stem rust. Long-time Pick **Winterhawk** (all conditions) from Westbred has not been entered in trials since 2019-2020. Though the variety likely remains a good performer in the Texas High Plains, AgriLife automatically removes varieties from any Pick category after two years past the last previous test.

TAM 204, the second most planted variety in Texas. It is not on the Picks List because it is an awnless bred variety for forage systems. However, TAM 204 is a solid variety for dual-purpose systems. It is known for good fall ground cover and strong yield potential especially under dryland conditions. It is resistant to the wheat curl mite and green bugs.

The 2022-2023 wheat grain variety “Picks” for the Texas High Plains have been designated based on performance of varieties in 17 different trials conducted from 2019-2022 under irrigated and dryland conditions. Picks are also designated for other Texas regions. Contact, Dr. Calvin Trostle (contact info. above) for a summary or Extension agronomy colleagues based at Centers in Vernon, San Angelo, Corpus Christi, or Commerce.

Table 2. Characteristics of 2022-2023 Picks varieties based on marketed traits and observations in Texas A&M AgriLife High Plains trials.

Variety	Leaf Rust	Stripe Rust	WSMV	Straw Strength	Maturity
TAM 113	Resistant	Resistant	Moderately Susceptible	Decent	Medium Early
TAM 114	Resistant	Resistant	Moderately Susceptible	Very Good	Medium
TAM 115	Resistant	Resistant	`	Very Good	Med-Late
TAM 205	Resistant	Resistant	Very Good[§]	Very Good	Medium
Canvas	Susceptible	Good tolerance	Very Good	Very Good	Medium
CP 7869	Good tolerance	Good tolerance	None	Very Good	Late
WB4792	Moderate tolerance	Moderate tolerance	None	Very Good	Med-Late
SY Wolverine	Good tolerance	Good tolerance	Moderate tolerance	Very Good	Med. Early

[‡] Resistant to the wheat curl mite which provides resistance to wheat streak mosaic virus (WSMV).
[§] Resistant to WSMV.

Additional Wheat Production Information

The wheat group for the Texas A&M High Plains region is preparing multi-year tables for grain yield and test weight, irrigated and dryland. These tables offer an excellent summary of Pick & Watch list performance and demonstrate the yield advantages of Pick varieties vs. all other wheat varieties (usually 5 to 8% higher).

For further AgriLife wheat information for the Texas High Plains and statewide visit the online wheat pages at:

- https://amarillo.tamu.edu/amarillo-center-programs/agronomy/wheat-publications/
- http://varietytesting.tamu.edu/wheat