

PlainsGold

GENETICS YOU CAN TRUST

WHEAT VARIETY GUIDE



2023



A HIGH-YIELD PARTNERSHIP

HIGH PLAINS FARMERS & CWRF

Colorado Wheat Research Foundation (CWRF) works closely with farmers in partnership to keep the PlainsGold® brand at the forefront of performance in Colorado, Kansas, Nebraska, and other Western wheat growing states.

PlainsGold varieties are recognized for their unique combination of proven yields with sought-after production traits and quality characteristics. PlainsGold offers innovative new winter wheat varieties developed by one of the nation's leading public wheat breeding and research programs. Each PlainsGold winter wheat variety is developed with the High Plains region in mind. Farmers can expect the highest standards, including:



Consistently high
yields year after year.



High quality varieties with
optional premium programs.



Resistance to drought
and prevalent disease
problems.



Winter annual grass control through
the CoAXium® Wheat Production
System and the Clearfield®
Production System for Wheat.

MEET YOUR PLAINSGOLD PARTNERS



DR. ESTEN MASON | WHEAT BREEDER
COLORADO STATE UNIVERSITY

Dr. Esten Mason has led the CSU Wheat Breeding Program since August of 2020. His program focuses on breeding Hard Red Winter, Hard White Winter, CoAXium®, Clearfield®, and semi-solid wheat varieties for use across the PlainsGold marketing territory. Utilizing excellent facilities at CSU, he leads a dedicated team of researchers who run the Wheat Quality, Genotyping, and Doubled Haploid Labs, and coordinate field trials. Esten cooperates closely with PlainsGold to develop a pipeline of high performing wheat varieties for Colorado, Kansas, Nebraska, and other Western wheat growing states.

 **CONTACT** (970) 491-5787



BRAD ERKER | EXECUTIVE DIRECTOR
COLORADO WHEAT RESEARCH FOUNDATION

Brad Erker has served as Executive Director of CWRF since 2017. He comes from a wheat farming family and has over 25 years of experience in small grains. Brad manages partnerships with research organizations and commercialization activities for wheat varieties and traits owned by CWRF. He also serves as Chair of the CoAXium Executive Committee.

 **CONTACT** (970) 449-6994



TYLER BENNINGHOVEN | SEED & TRAIT SPECIALIST
COLORADO WHEAT RESEARCH FOUNDATION

Tyler Benninghoven manages the PlainsGold brand across the Central Plains and High Plains. Tyler is a Certified Crop Advisor, with expertise in seed, fertilizer, crop protection and seed treatments. He is an excellent resource to both seed growers and farmers for CoAXium and Clearfield technologies.

 **CONTACT** (970) 702-1460



Colorado State University

WHEAT BREEDING & GENETIC PROGRAM



COLORADO WHEAT RESEARCH FOUNDATION

The only farmer-governed organization in the U.S. that gets ownership of varieties and novel traits from a public wheat breeding program.

The unique partnership between Colorado State University's Wheat Breeding and Genetics Program and our outstanding seed growers is the backbone of the success of PlainsGold varieties.

PlainsGold royalties are reinvested in the research program to ensure continued excellence in future varieties. The Wheat Breeding and Genetics Program is based on a firm foundation of field testing, taking advantage of a network of 15 trial locations in eastern Colorado. In addition, the program features industry-leading adoption of advanced breeding technologies such as doubled haploid breeding, marker assisted selection and genomic selection.

Excellent facilities on the CSU campus, including state-of-the-art greenhouses, end-use quality testing, and molecular genetics/genomics laboratories, provide the necessary tools to develop improved varieties using the latest of new technologies.



TREATED DOWNY BROME
LATE IN THE SEASON

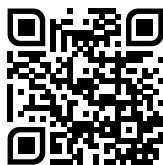


You know a technology is needed when farmers ask for it, help develop it, test it and join a team to launch it. The CoAXium® Wheat Production System combines a non-GMO herbicide tolerance trait with Aggressor AX® herbicides and takes simplicity and performance to the next level.

Wheat farmers who take advantage of the CoAXium® Wheat Production System can expect fields that are free from feral rye, jointed Goatgrass, downy brome, and cheatgrass. Aggressor AX® is a highly effective broad-spectrum Group 1 herbicide, which works fast to control crop debilitating winter and spring annual grasses. In the end, this wheat production system allows growers to produce more, higher quality wheat with less dockage and foreign matter. Just as important, it's the only system today that has limited soil residual providing growers with greater crop rotation flexibility. Every CoAXium® customer will be required to sign the CoAXium® WPS Stewardship Agreement or have one on file from fall 2022 to purchase seed.

THE GREATEST STORY OF
GROWER COLLABORATION
IN THE HISTORY OF FARMING

► LEARN MORE AT [COAXIUM.COM](https://coaxium.com)





TREATED DOWNY BROME
EARLY IN THE SEASON

A TOOL
WORTH USING
**IS WORTH
USING RIGHT**

Maximize your return on investment with Coaxium and Aggressor herbicide by controlling grassy weeds early, before they compete for nutrients, space and moisture.



**TIMING & MANAGEMENT
ARE EVERYTHING!**



HARD RED

WINTER WHEAT VARIETIES

PlainsGold varieties combine consistent yields with high performance and strong agronomics, driven by the unique relationship between CWRP and one of the best public wheat breeding programs in the country.



GUARDIAN

PEDIGREE ▶ ANTERO / SNOWMASS // BYRD



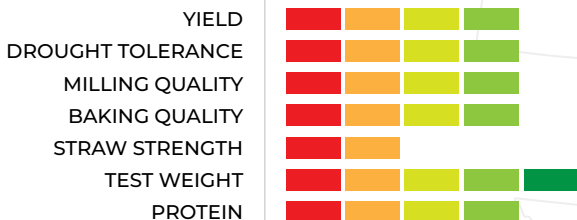
HARD RED

Released in 2019, Guardian is the first in its class to deliver superior resistance to wheat viruses, from stacking a gene for resistance to the Wheat Streak Mosaic Virus (Wsm-2) with a gene for resistance to the wheat curl mite which transmits WSMV, wheat mosaic virus, and Triticum mosaic virus. Guardian also carries leading resistance to all three predominant rusts (Stripe, Leaf, and Stem). This strong disease package, combined with very good yield potential, exceptional test weight, and strong ability to make grain protein provide the highest package of value in the market to maximize ROI year after year. Protect your wheat fields and pocketbook by investing in Guardian. PVP Protected, Certified Seed Only, Sunset June 30th, 2024 (savable harvest, 2024).

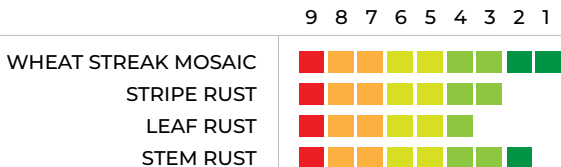


CHARACTERISTICS

MATURITY ▶ MEDIUM
HEIGHT ▶ MEDIUM-TALL
COLEOPTILE LENGTH ▶ MEDIUM



PEST & DISEASE PROFILE



RATING SCALE ▶ POOR FAIR GOOD VERY GOOD EXCELLENT

MANAGEMENT NOTES

- Use as your defensive tool against WSMV prone areas of your farm
- Great option for disease prone fields with heavy residue
- Manage for quality and yield will follow

CRESCENT AX

PEDIGREE ▶ AF28 / BYRD // AF10 / 2*BYRD



Released in 2018, Crescent AX is our flagship CoAXium variety proven to compete with many leading central and high plains HRW varieties from Oklahoma to South Dakota. Crescent AX is broadly adapted, providing excellent yield performance on difficult to manage acres. Crescent AX has early maturity, very good test weight, wheat curl mite resistance, and very good end-use quality. Best suited to be planted later in the fall (perhaps behind Cotton in the south, or later maturing Corn moving north). If you plan to graze, be mindful of first hollow stem and remove cows accordingly. PVP protected, Certified Seed Only, no saved seed allowed. Stewardship Agreement required.



CHARACTERISTICS

MATURITY ▶ EARLY

HEIGHT ▶ MEDIUM

COLEOPTILE LENGTH ▶ MEDIUM

YIELD	<div><div></div><div></div><div></div><div></div></div>
DROUGHT TOLERANCE	<div><div></div><div></div><div></div><div></div></div>
MILLING QUALITY	<div><div></div><div></div><div></div><div></div></div>
BAKING QUALITY	<div><div></div><div></div><div></div><div></div></div>
STRAW STRENGTH	<div><div></div><div></div><div></div><div></div></div>
TEST WEIGHT	<div><div></div><div></div><div></div><div></div></div>
PROTEIN	<div><div></div><div></div></div>



PEST & DISEASE PROFILE

	9	8	7	6	5	4	3	2	1
WHEAT STREAK MOSAIC	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>								
STRIPE RUST	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>								
LEAF RUST	<div><div></div><div></div><div></div><div></div></div>								

RATING SCALE ▶ POOR FAIR GOOD VERY GOOD EXCELLENT

MANAGEMENT NOTES

Use as a management tool for winter annual grassy weed control:

- Feral rye: 15 gal water, 1% MSO/vol, 10-12 oz/ac Aggressor®
- Cheatgrass: 10-15 gal water, NIS or MSO, 8-10 oz/ac Aggressor®
- Jointed Goatgrass: 15 gal water, 1% MSO/vol, 12 oz/ac Aggressor®



KIVARI AX

PEDIGREE ▶ (AF28 / BYRD) // (AF10 / 2*BYRD)

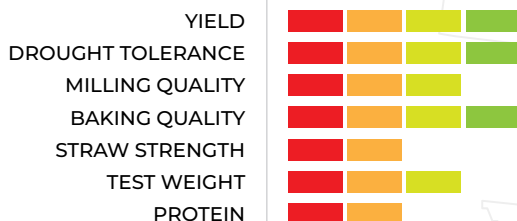


Released in 2020, Kivari AX is the newest CoAXium® variety in the PlainsGold lineup with slightly later maturity compared to Crescent AX. Kivari AX offers improved yield performance with very good spring frost and drought tolerance. Kivari AX has good test weight, good tolerance to lower pH, and wheat curl mite resistance. Due to its weaker straw in high moisture environments, it is recommended to be planted on dryland acres only. PVP protected, Certified Seed Only, no saved seed allowed. Stewardship Agreement required.

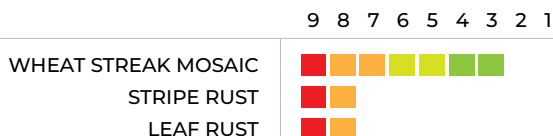


CHARACTERISTICS

MATURITY ▶ MEDIUM-EARLY
 HEIGHT ▶ MEDIUM
 COLEOPTILE LENGTH ▶ MEDIUM



PEST & DISEASE PROFILE



RATING SCALE ▶ POOR FAIR GOOD VERY GOOD EXCELLENT

MANAGEMENT NOTES

Use as a management tool for winter annual grassy weed control:

- Feral rye: 15 gal water, 1% MSO/vol, 10-12 oz/ac Aggressor®
- Cheatgrass: 10-15 gal water, NIS or MSO, 8-10 oz/ac Aggressor®
- Jointed Goatgrass: 15 gal water, 1% MSO/vol, 12 oz/ac Aggressor®



AMPLIFY SF

PEDIGREE ▶ BEARPAW / ANTERO // ANTERO



Released in the fall of 2021, Amplify SF is the newest HRW variety improving the options to combat the wheat stem sawfly specific to the high plains. This variety provides an improved pith rating of 17, getting closer to the sweet spot of Colorado yield performance and superior larval cutting resistance. Its maturity fits our environment, along with resilient test weight when faced with drought conditions during grain fill. Control volunteer wheat before planting, Amplify SF does not carry the wsm2 or curl mite gene for WSMV resistance. Amplify SF should be on your short list of tools to keep wheat viable on the farm. Planting Semi-solid varieties should always be a part of a diversified approach to managing sawfly on your farm. PVP Protected, Certified Seed Only. Sunset June 30th, 2026 (Savable Harvest, 2026).



TO LEARN MORE VISIT:

<https://webdoc.agsci.colostate.edu/csucrops/reports/winterwheat/2021/WSS2021.pdf>

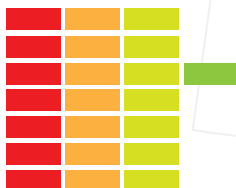
or reach out to our seed and trait specialist. Amplify SF is a PVP Protected, Certified Seed Only variety, no saved seed allowed.



CHARACTERISTICS

MATURITY	▶ MEDIUM
HEIGHT	▶ MEDIUM
COLEOPTILE LENGTH	▶ MEDIUM

YIELD
DROUGHT TOLERANCE
MILLING QUALITY
BAKING QUALITY
STRAW STRENGTH
TEST WEIGHT
PROTEIN



PEST & DISEASE PROFILE

9 8 7 6 5 4 3 2 1

WHEAT STREAK MOSAIC
STRIPE RUST
LEAF RUST



RATING SCALE ▶ POOR ■ FAIR ■ GOOD ■ VERY GOOD ■ EXCELLENT ■

MANAGEMENT NOTES

- Plant in areas most affected by Wheat Stem Sawfly
- Use in combination with early and late maturing varieties to spread out your harvest window.
- With light sawfly pressure, consider blending 70% with similar maturing varieties like Whistler, Canvas, or Avery.

FORTIFY SF

PEDIGREE ▶ BYRD / BEARPAW // BYRD



Released in 2019, Fortify SF is the first Colorado-bred semi-solid wheat to combat the wheat stem sawfly. This pest has been devastating to wheat production for decades, cutting production by nearly 50% in some cases. Fortify SF provides an increase in pith within the stem, which slows the feeding and internal migration of the wheat stem sawfly larvae to the crown of the plant where it girdles the stem before harvest. Other supporting attributes include a medium-early Colorado maturity, improved test weight over Byrd, and wheat curl mite resistance. Its yield performance is greatly improved over Montana semi-solid varieties grown in the high plains. PVP Protected, Certified Seed Only, Sunsets June 30th, 2024 (Savable Harvest 2024).

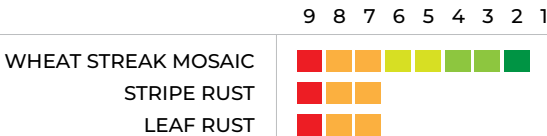


CHARACTERISTICS

MATURITY ▶ MEDIUM-EARLY
HEIGHT ▶ MEDIUM
COLEOPTILE LENGTH ▶ MEDIUM-SHORT



PEST & DISEASE PROFILE



RATING SCALE ▶ POOR FAIR GOOD VERY GOOD EXCELLENT

MANAGEMENT NOTES

- Target fields adjacent to last year's wheat stubble
- Use under mild to moderate sawfly pressure
- Consider a fungicide with wet springtime weather

CANVAS

PEDIGREE ▶ DENALI / ANTERO // BYRD



Released in 2018, Canvas has proven to be a great performer under stress and in high moisture environments. Its straw strength and upright structure allow for higher populations with intensive management, without risking the frustration of falling over. Its disease resistance protects you from yield robbing fungal diseases and mite transmitted viruses, and its grain quality lands it on many grain buyer preferred lists. Canvas is widely adapted, performing well in Oklahoma, Texas, New Mexico, Kansas, Colorado, to the panhandle of Nebraska. PVP Protected; to be sold by variety name only as a class of certified seed.



CHARACTERISTICS

MATURITY	▶ MEDIUM
HEIGHT	▶ MEDIUM-SHORT
COLEOPTILE LENGTH	▶ MEDIUM
YIELD	<div><div></div><div></div><div></div><div></div></div>
DROUGHT TOLERANCE	<div><div></div><div></div><div></div><div></div></div>
MILLING QUALITY	<div><div></div><div></div><div></div><div></div></div>
BAKING QUALITY	<div><div></div><div></div><div></div><div></div></div>
STRAW STRENGTH	<div><div></div><div></div><div></div><div></div><div></div></div>
TEST WEIGHT	<div><div></div><div></div><div></div><div></div></div>
PROTEIN	<div><div></div><div></div><div></div></div>



PEST & DISEASE PROFILE

	9 8 7 6 5 4 3 2 1
WHEAT STREAK MOSAIC	<div><div></div><div></div><div></div><div></div><div></div><div></div></div>
STRIPE RUST	<div><div></div><div></div><div></div><div></div><div></div><div></div></div>
LEAF RUST	<div><div></div><div></div><div></div><div></div></div>
STEM RUST	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>

RATING SCALE ▶ POOR ■ FAIR ■ GOOD ■ VERY GOOD ■ EXCELLENT ■

MANAGEMENT NOTES

- Responds well to soils and field topography that have good water holding capacity.
- Can handle higher nutrition and populations under irrigation.
- Tolerates acidic soil conditions

WHISTLER

PEDIGREE ▶ CO08W218 / SNOWMASS // BYRD



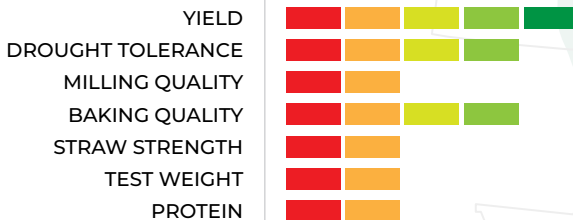
HARD RED

Released in 2018, Whistler is an attractive high yielding variety that is later maturing, with taller plant height. Whistler has proven exceptional against stripe rust, and stem rust, while providing solid resistance to WSMV and SBMV. Focus planting on dryland acres only, given this variety has marginal straw strength under high moisture. Considering its later maturity, plant in sequence with earlier maturing varieties to expand your harvest flexibility. PVP Protected; to be sold by variety name only as a class of certified seed.

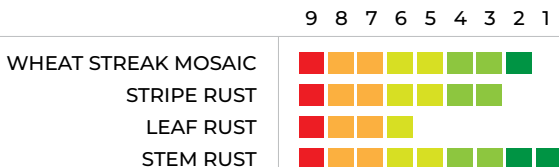


CHARACTERISTICS

MATURITY ▶ MEDIUM-LATE
HEIGHT ▶ MEDIUM-TALL
COLEOPTILE LENGTH ▶ MEDIUM



PEST & DISEASE PROFILE



RATING SCALE ▶ POOR (Red) FAIR (Orange) GOOD (Yellow) VERY GOOD (Light Green) EXCELLENT (Dark Green)

MANAGEMENT NOTES

- Carries wheat curl mite resistance gene from Byrd parent
- Plant seeds/acre and manage population with soil type (heavy soil, higher population, lighter soil, lower population)
- Use a plant growth regulator in high yield environments



BYRD CL PLUS

PEDIGREE ▶ CO06072 / 4*BYRD



Released in 2018, Byrd CL Plus is a two-gene Clearfield® version of Byrd. It includes the same agronomic benefits you've come to expect from Byrd, including drought stress tolerance and yield response to moisture. It is slightly taller than Byrd, with better straw strength. PVP Protected, Certified Seed Only, no saved seed allowed. Stewardship Agreement required.



CHARACTERISTICS

MATURITY	▶ MEDIUM
HEIGHT	▶ MEDIUM-TALL
COLEOPTILE LENGTH	▶ MEDIUM-SHORT

YIELD	<div><div></div><div></div><div></div><div></div></div>
DROUGHT TOLERANCE	<div><div></div><div></div><div></div><div></div></div>
MILLING QUALITY	<div><div></div><div></div><div></div><div></div></div>
BAKING QUALITY	<div><div></div><div></div><div></div><div></div></div>
STRAW STRENGTH	<div><div></div><div></div><div></div><div></div></div>
TEST WEIGHT	<div><div></div><div></div><div></div><div></div></div>
PROTEIN	<div><div></div><div></div></div>



PEST & DISEASE PROFILE

	9 8 7 6 5 4 3 2 1
WHEAT STREAK MOSAIC	<div><div></div><div></div><div></div><div></div><div></div></div>
STRIPE RUST	<div><div></div><div></div></div>
LEAF RUST	<div><div></div><div></div><div></div><div></div><div></div></div>

RATING SCALE ▶ POOR FAIR GOOD VERY GOOD EXCELLENT

MANAGEMENT NOTES

- Use in a rotation with the CoAXium® Wheat Production System to manage weed resistance on the farm
- 2-gene tolerance allows for addition of MSO to the tank mix
- Ensure 4 days above freezing (night and day) around application of Beyond

BRAWL CL PLUS

PEDIGREE ▶ TEAL 11A / ABOVE // CO99314



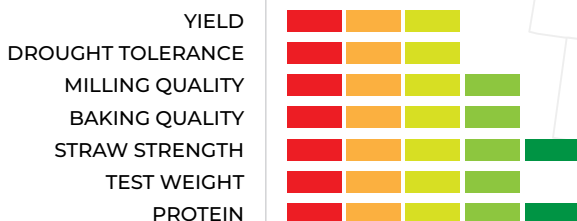
HARD RED

Released in 2011, Brawl CL Plus is a two-gene Clearfield® variety that has shown stable performance over a wide geography for several years. Two genes for tolerance to Beyond® herbicide allows growers to add methylated seed oil to the tank mix to increase effectiveness of the herbicide, especially on jointed goatgrass. Brawl CL Plus has demonstrated very good ability to maintain higher grain protein with increasing yield levels. PVP Protected, Certified Seed Only, no saved seed allowed. Stewardship Agreement required.

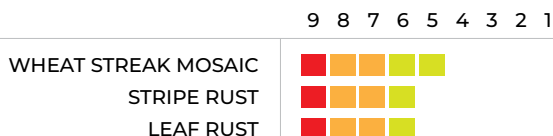


CHARACTERISTICS

MATURITY ▶ EARLY
HEIGHT ▶ MEDIUM-TALL
COLEOPTILE LENGTH ▶ MEDIUM-LONG



PEST & DISEASE PROFILE



RATING SCALE ▶ POOR ■ FAIR ■ GOOD ■ VERY GOOD ■ EXCELLENT ■

MANAGEMENT NOTES

- Plant later due to early heading
- Handles heat well
- Tolerates 6 ounces of Beyond™ herbicide with MSO and AMS or UAN
- Foliar fungicide advised under higher moisture conditions

LANGIN

PEDIGREE ▶ CO050270 / BYRD



Released in 2016, Langin is currently the most planted variety in Colorado. Langin is an early maturing, medium-short variety with excellent yield potential and excellent baking quality. Stripe rust resistance and acid soil tolerance are very good, winterhardiness and SBMV are excellent. Langin has shown strong adaptation across the High Plains. Straw strength is marginal for high yield environments. PVP Protected; to be sold by variety name only as a class of certified seed.



CHARACTERISTICS

MATURITY	▶ EARLY
HEIGHT	▶ MEDIUM-SHORT
COLEOPTILE LENGTH	▶ MEDIUM-SHORT

YIELD	<div><div></div><div></div><div></div><div></div><div></div></div>
DROUGHT TOLERANCE	<div><div></div><div></div><div></div><div></div><div></div></div>
MILLING QUALITY	<div><div></div><div></div><div></div><div></div></div>
BAKING QUALITY	<div><div></div><div></div><div></div><div></div><div></div></div>
STRAW STRENGTH	<div><div></div><div></div><div></div></div>
TEST WEIGHT	<div><div></div><div></div><div></div><div></div></div>
PROTEIN	<div><div></div><div></div></div>



PEST & DISEASE PROFILE

	9 8 7 6 5 4 3 2 1
WHEAT STREAK MOSAIC	<div><div></div><div></div><div></div><div></div></div>
STRIPE RUST	<div><div></div><div></div><div></div><div></div><div></div><div></div></div>
LEAF RUST	<div><div></div><div></div><div></div><div></div></div>

RATING SCALE ▶ POOR ■ FAIR ■ GOOD ■ VERY GOOD ■ EXCELLENT ■

MANAGEMENT NOTES

- Consider growth regulator in yield environments > 90 bushels
- Plant later due to early heading
- Good for acid soils

AVERY

PEDIGREE ▶ TAM112 / BYRD



HARD RED

Avery is a 2015 release that shares the drought tolerance and agronomics of Byrd, with slightly later maturity, larger kernel size, with improved straw strength and excellent SBMV resistance. Avery has proven yield across a wide geography, from Texas to South Dakota. From its parentage, Avery withstands WSMV pressure through wheat curl mite resistance. PVP Protected; to be sold by variety name only as a class of certified seed.



CHARACTERISTICS

MATURITY ▶ MEDIUM

HEIGHT ▶ MEDIUM-TALL

COLEOPTILE LENGTH ▶ MEDIUM

YIELD	<div><div></div><div></div><div></div><div></div><div></div></div>
DROUGHT TOLERANCE	<div><div></div><div></div><div></div><div></div><div></div></div>
MILLING QUALITY	<div><div></div><div></div><div></div><div></div><div></div></div>
BAKING QUALITY	<div><div></div><div></div><div></div><div></div><div></div></div>
STRAW STRENGTH	<div><div></div><div></div><div></div><div></div><div></div></div>
TEST WEIGHT	<div><div></div><div></div><div></div><div></div><div></div></div>
PROTEIN	<div><div></div><div></div><div></div><div></div><div></div></div>



PEST & DISEASE PROFILE

	9	8	7	6	5	4	3	2	1
WHEAT STREAK MOSAIC	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>								
STRIPE RUST	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>								
LEAF RUST	<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>								

RATING SCALE ▶ POOR FAIR GOOD VERY GOOD EXCELLENT

MANAGEMENT NOTES

- Good choice for fields with highly variable soils
- Foliar fungicide advised under higher moisture conditions

BYRD

PEDIGREE ▶ TAM 112 / CO970547-7



Released in 2011, Byrd has been planted across Colorado for many years, and has been a very useful parent in crossing for development of new varieties. Byrd is among the yield leaders, showing consistent performance under drought stress or high moisture conditions. Byrd has very good test weight, with very good end-use quality. Byrd established the use of the wheat curl mite resistance gene in the PlainsGold lineup, providing effective resistance to viral infections, including WSMV. PVP Protected; to be sold by variety name only as a class of certified seed.



CHARACTERISTICS

MATURITY ▶ MEDIUM-EARLY
 HEIGHT ▶ MEDIUM-TALL
 COLEOPTILE LENGTH ▶ MEDIUM

YIELD	■	■	■	■	■
DROUGHT TOLERANCE	■	■	■	■	■
MILLING QUALITY	■	■	■	■	■
BAKING QUALITY	■	■	■	■	■
STRAW STRENGTH	■	■	■	■	■
TEST WEIGHT	■	■	■	■	■
PROTEIN	■	■	■	■	■



PEST & DISEASE PROFILE

	9	8	7	6	5	4	3	2	1
WHEAT STREAK MOSAIC	■	■	■	■	■	■	■	■	■
STRIPE RUST	■	■	■	■	■	■	■	■	■
LEAF RUST	■	■	■	■	■	■	■	■	■

RATING SCALE ▶ POOR ■ FAIR ■ GOOD ■ VERY GOOD ■ EXCELLENT ■

MANAGEMENT NOTES

- Excellent for drought conditions
- Very good for Wheat Streak situations
- Foliar fungicide advised under higher moisture conditions
- Use growth regulator in yield environments > 80 bushels

RAY

PEDIGREE ▶ YELLOWSTONE*2 / 98X168E1



HARD RED

A true Dual Purpose hard red winter wheat that is winter hardy, late maturing, tall, awnless, and a delicious option for livestock feed. Compared to Willow Creek, Ray has similar forage yield and quality with a higher leaf-to-stem ratio, and superior grain yield. Compared to bread wheats, Ray has average to above average yield, good test weight and protein, very low PPO, and good milling and baking characteristics. A good option for grazing, hay, and haylage or harvesting for grain. Licensed by CWRF from Montana Agricultural Experiment Station. PVP Protected. Certified Seed Only, Sunsets June 30th, 2023 (Savable Harvest 2023).

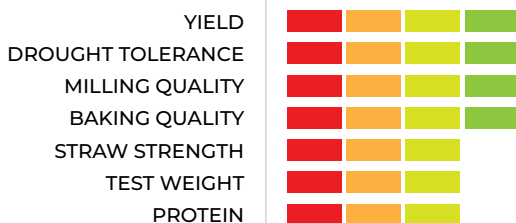


CHARACTERISTICS

MATURITY ▶ LATE

HEIGHT ▶ TALL

COLEOPTILE LENGTH ▶ MEDIUM-LONG



RATING SCALE ▶ POOR FAIR GOOD VERY GOOD EXCELLENT



DRY FORAGE ANALYSIS

VARIETY	FIELD ANALYSIS				FORAGE ANALYSIS	
	SEED YIELD lb / a	HEADING DATE Julian	PLANT HEIGHT in	DRY MATTER ton / a	PROTEIN %	TDN %
RAY	3896	164.5	35.6	3.45	11.2	66.7
WILLOW CREEK	2383	168.3	43.8	3.37	11.4	64.9
LSD (0.05)	388	0.9	2.4	31	NS	NS

MANAGEMENT NOTES

- Harvest from late boot to milk stage to maximize tonnage and forage quality.
- Plant where sawfly pressure is highest to kill larvae when crimped or chopped
- Use as a trap crop along field edges to capture sawfly



HARD WHITE

WINTER WHEAT VARIETIES

PlainsGold is a leader in marketing high-yielding hard white winter wheat varieties that are preferred for milling and baking.

PlainsGold hard white winter wheat varieties are sought-after in the U.S. and abroad to make whole grain food products with a look and texture similar to refined flour. Often these varieties are in such high demand that they come with guaranteed premium pricing options. Snowmass™ 2.0, Windom SF, Snowmass™, Breck, Thunder CL and Monarch, for example, are all eligible for the CWRP/Ardent Mills Ultragrain® Premium Program.

SNOWMASS™ 2.0

PEDIGREE ▶ CO07W22-F5 / SNOWMASS // BRAWL CL PLUS



HARD WHITE

Released in 2018, Snowmass 2.0 is a beautiful variety that is the main ingredient used to make Ardent Mills Ultragrain Flour. In the field it provides excellent yield potential, drought tolerance, strong disease resistance, tolerates lower pH soils, and very good test weight and protein. Used primarily on dryland acres, but farmers can do very well with it under irrigation with good management. To ensure you get the maximum premium and ROI, manage fertility and crop health to capitalize on environments favorable for higher quality. Exclusively contracted with Ardent Mills, must sign a contract before purchasing seed. PVP Protected, Certified Seed Only, No saved seed allowed.



CHARACTERISTICS

MATURITY	▶ MEDIUM-EARLY
HEIGHT	▶ MEDIUM-SHORT
COLEOPTILE LENGTH	▶ MEDIUM

YIELD	<div><div></div><div></div><div></div><div></div><div></div></div>
DROUGHT TOLERANCE	<div><div></div><div></div><div></div><div></div></div>
MILLING QUALITY	<div><div></div><div></div><div></div><div></div></div>
BAKING QUALITY	<div><div></div><div></div><div></div><div></div><div></div></div>
STRAW STRENGTH	<div><div></div><div></div><div></div><div></div></div>
TEST WEIGHT	<div><div></div><div></div><div></div><div></div></div>
PROTEIN	<div><div></div><div></div><div></div></div>



PEST & DISEASE PROFILE

	9	8	7	6	5	4	3	2	1
WHEAT STREAK MOSAIC	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
STRIPE RUST	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
LEAF RUST	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
STEM RUST	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>

RATING SCALE ▶ POOR FAIR GOOD VERY GOOD EXCELLENT

MANAGEMENT NOTES

- Connect with multiple delivery points before purchasing seed
- Signed contract with Ardent Mills required at seed purchase
- Manage agronomics by environment to maximize protein potential and ROI

MONARCH

PEDIGREE ▶ CO07W722-F5 / SNOWMASS // CO07W722-F5



Released in 2018, Monarch is an open market hard white variety with excellent straw strength and excellent irrigated yield potential. Monarch has very good stripe rust resistance and quality similar to Breck, but with very low polyphenol oxidase (PPO), a property desired by end users that reduces browning of baked goods, a benefit in whole grain applications. Manage for high yield with adequate fertility. PVP Protected, Certified Seed Only, Sunset June 30, 2023 (Savable Harvest 2023).



CHARACTERISTICS

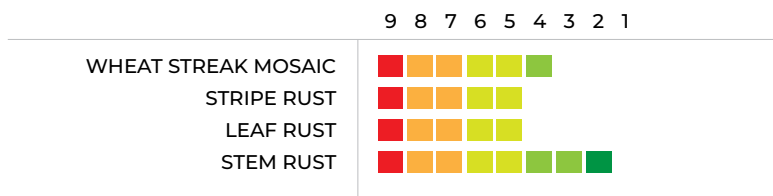
MATURITY ▶ MEDIUM

HEIGHT ▶ MEDIUM-SHORT

COLEOPTILE LENGTH ▶ MEDIUM-SHORT



PEST & DISEASE PROFILE



RATING SCALE ▶ POOR ■ FAIR ■ GOOD ■ VERY GOOD ■ EXCELLENT ■

MANAGEMENT NOTES

- Establish buyer or potential delivery point before seed purchase
- Does best under high moisture environments
- Great option under high management for entry into the national wheat yield contest

BRECK

PEDIGREE ▶ DENALI / HV9W07-482W // ANTERO



HARD WHITE

Released in 2017, Breck is an open market hard white variety included in the CWRP/Ardent Mills UltraGrain® Premium Program. Outside of contracting through Ardent Mills, Breck can be sold into other mills and markets. Breck has excellent test weight and lower polyphenol oxidase (PPO), providing opportunities in the Asian noodle market. Breck also offers very good yield, sprouting tolerance and very good resistance to stripe rust. PVP Protected, Certified Seed Only, Sunset June 30th, 2022 (Savable Harvest 2022)



CHARACTERISTICS

MATURITY	▶ MEDIUM-EARLY
HEIGHT	▶ MEDIUM
COLEOPTILE LENGTH	▶ MEDIUM-LONG

YIELD	<div><div></div><div></div><div></div><div></div></div>
DROUGHT TOLERANCE	<div><div></div><div></div><div></div><div></div></div>
MILLING QUALITY	<div><div></div><div></div><div></div><div></div><div></div></div>
BAKING QUALITY	<div><div></div><div></div><div></div><div></div></div>
STRAW STRENGTH	<div><div></div><div></div><div></div><div></div></div>
TEST WEIGHT	<div><div></div><div></div><div></div><div></div><div></div></div>
PROTEIN	<div><div></div><div></div><div></div><div></div></div>



PEST & DISEASE PROFILE

	9	8	7	6	5	4	3	2	1
WHEAT STREAK MOSAIC	■	■	■	■	■	■			
STRIPE RUST	■	■	■	■	■	■	■		
LEAF RUST	■	■	■	■	■				
STEM RUST	■	■	■	■	■	■	■	■	

RATING SCALE ▶ POOR ■ FAIR ■ GOOD ■ VERY GOOD ■ EXCELLENT ■

MANAGEMENT NOTES

- Premium pricing with protein scale available through Ardent Mills UltraGrain Contract. Proof of certified seed purchase required to contract.
- Also available as a non-exclusive variety in grain trade
- Apply proper nutrients to achieve desirable quality targets
- Marginal tolerance where Soilborne Mosaic Virus is a concern

WINDOM SF

PEDIGREE ▶ WARHORSE / BRECK // CO12D1028



Released in 2022, Windom SF is the next generation of the exclusive CWRP/Ardent Mills UltraGrain Premium Program. Wheat producers now have a unique opportunity to defend against the wheat stem sawfly while contracting their high-quality white wheat grain for delivery to Ardent Mills. Along with superior end-use quality, Windom SF provides resilient agronomics that make it a reliable choice. A few stand out characteristics include very good test weight, medium long coleoptile for deeper planting, very good frost tolerance, wsm2 for resistance to WSMV, stem solidness ratings averaging 16 over 12 locations, good resistance to hessian fly, excellent sprouting tolerance, and good tolerance to lower pH. PVP protected, Certified Seed Only, no saved seed allowed.



CHARACTERISTICS

MATURITY ▶ MEDIUM-EARLY

HEIGHT ▶ SHORT

COLEOPTILE LENGTH ▶ MEDIUM-LONG

YIELD	■	■	■	■	■
DROUGHT TOLERANCE	■	■	■	■	■
MILLING QUALITY	■	■	■	■	■
BAKING QUALITY	■	■	■	■	■
STRAW STRENGTH	■	■	■	■	■
TEST WEIGHT	■	■	■	■	■
PROTEIN	■	■	■	■	■



PEST & DISEASE PROFILE

	9	8	7	6	5	4	3	2	1
WHEAT STREAK MOSAIC	■	■	■	■	■	■	■	■	■
STRIPE RUST	■	■	■	■	■	■	■	■	■
LEAF RUST	■	■	■	■	■	■	■	■	■
STEM RUST	■	■	■	■	■	■	■	■	■

RATING SCALE ▶ POOR ■ FAIR ■ GOOD ■ VERY GOOD ■ EXCELLENT ■

MANAGEMENT NOTES

- Connect with multiple delivery points before purchasing seed
- Signed contract with Ardent Mills required at seed purchase
- Manage agronomics by environment to maximize protein potential and ROI
- Use a fungicide when wet conditions are planned or forecasted

OUR RESOURCES

LEARN, GROW & GET ANSWERS



PLAINSGOLD.COM

Information on PlainsGold varieties and where to buy.



WHEAT.AGSCI.COLOSTATE.EDU

Homepage for Colorado State University's Wheat Breeding and Genetics Program.



COAXIUM.COM

Information on how CoAxiUm® works, varieties, Aggressor® herbicide, and stewardship.



WHEATQUALITYCOUNCIL.ORG

Review the reports generated by the work of the Wheat Quality Council.



WHEATTRIALS.COM

Compare varieties, view trial data, and analyze agronomic and other characteristics of wheat varieties. Maintained by Colorado State University's Wheat Breeding and Genetics Program.



PLAINSGRAINS.ORG

Serving hard red winter (HRW) wheat producers through quality testing, timely reporting, enhanced marketing, and development of relationships with buyers of HRW.



CSUCROPS.COM

Crops variety performance trial results as conducted by Colorado State University's Crop Testing program.

CONNECT WITH US

WE'RE HERE TO ENSURE YOUR SUCCESS



COLORADO WHEAT RESEARCH FOUNDATION

coloradowheat.org
Office (970) 449-6994

BRAD ERKER
CWRWF EXECUTIVE DIRECTOR

brad.erker@coloradowheat.org

TYLER BENNINGHOVEN
CWRWF SEED & TRAIT SPECIALIST

Mobile (970) 702-1460
tbenninghoven@coloradowheat.org

PROTECT COAXIUM.COM
ANONYMOUS HOTLINE

1 (855) DO RIGHT
1 (800) 367 - 4448



COLORADO STATE UNIVERSITY

ESTEN MASON, PH.D.
WHEAT BREEDER

Office (970) 491-5787
esten.mason@colorstate.edu

SALLY JONES-DIAMOND
Director, Crops Testing Program

Office (970) 214-4611
sally.jones@colostate.edu



COLORADO SEED GROWERS ASSOCIATION

seeds.agsci.colostate.edu
Office (970) 491-6202

LAURA POTTORFF
DIRECTOR OF COLORADO SEED PROGRAMS

laura.pottorff@colostate.edu

LINDA MUNK
CERTIFICATION MANAGER

linda.munk@colostate.edu



@PLAINSGOLD
@COLORADOWHEAT



@PLAINSGOLD
@COLORADOWHEAT



4026 S. TIMBERLINE RD, STE 100
FORT COLLINS, CO 80525



(970) 449 - 6994
TOLL FREE (800) 943 - 2810



WWW.PLAINGOLD.COM
WWW.COLORADOWHEAT.ORG

