

2023 SMALL GRAINS



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THANKS FOR CHOOSING ECS.

Eastern Colorado Seeds, LLC, is a full-service seed company with facilities in Burlington, Colorado; Dumas, Texas; and Clovis, New Mexico. Our complete portfolio of quality grain, forage, reclamation and specialty seeds meets the needs of today's producer, both on the High Plains and across the country.



Our commitment to our customers goes far beyond being a seed provider. We support and serve our producers with a staff of agriculturalists including Certified Crop Advisors, precision tech specialists and dairy and beef nutritionists. Our strategically located facilities allow us to logistically support growers with weekly and daily delivery schedules to their farm gates.

In an effort to bring added value to our customers' crops, the ECS origination program allows growers to maximize product value through our association with many

of the world's largest end users in the food grade, livestock feed and companion pet industries. With seed products ranging from corn and wheat to specialty crops including pulses, millets and sunflowers, our producers can diversify their programs while at the same time providing a consistent supply for our end users.

With more than 25 years in the seed business, ECS offers superior service from a knowledgeable staff and the ability to serve every order, from a few bags of seed to delivery by rail. Stop by one of our locations, give us a call, or visit our website at ecseeds.com — we are ready to show you the ECS difference.

AVERY

AVERY



Avery is a 2015 release derived from a cross between TAM 112 and Byrd.

Avery is similar to Byrd in drought tolerance and other agronomic characteristics, with slightly later maturity, larger kernel size, and improved straw strength. 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.

Avery is PVP Protected and is to be sold by variety name only as a class of certified seed.

Management

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

WHEAT

HARD RED WINTER WHEAT

Maturity	Medium
Height.....	Medium
Yield	Very High
Drought Tolerance.....	Excellent
Milling Quality.....	Very Good
Baking Quality.....	Very Good
Straw Strength	Good
Test Weight	Good
Protein	Good
Coleoptile Length	Medium
Pedigree	TAM112/Byrd

BYRD

BYRD



Released in 2011, Byrd is still the most widely planted variety in Colorado. Byrd is among the yield leaders, showing consistent performance under both drought stress and high moisture conditions. Byrd has 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.

Byrd is PVP Protected and is to be sold by variety name only as a class of certified seed.

Management

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

WHEAT

HARD RED WINTER WHEAT

Maturity	Medium-Early
Height	Medium
Yield	Very High
Drought Tolerance	Excellent
Milling Quality	Very Good
Baking Quality	Very Good
Straw Strength	Fair
Test Weight	Good
Protein	Good
Coleoptile Length	Medium-Long
Pedigree	TAM112/C0970547-7

BYRD CL PLUS

BYRD CL PLUS



Released in 2018, Byrd CL Plus is a two-gene Clearfield version of Byrd bred by crossing the tolerance genes into Byrd and developing a new line with nearly all of the same agronomic benefits you've come to expect from Byrd, including drought stress tolerance and yield responsiveness to moisture. It is slightly taller than Byrd, with better straw strength.

Certified Seed Only

Byrd CL Plus is a Certified Seed Only variety. By purchasing seed, grower agrees to use seed of the variety only for the production of a commercial grain or forage crop. Using certified seed every season ensures the best stewardship, end use functionality, and opportunity to maximize yield potential of the variety. Resale of this seed, or supply of saved seed derived from this seed, to anyone including purchaser for planting is prohibited.

WHEAT

HARD RED WINTER WHEAT

Maturity	Medium
Height.....	Medium-Tall
Yield	Very High
Drought Tolerance.....	Very Good
Milling Quality.....	Good
Baking Quality.....	Good
Straw Strength	Good
Test Weight	Good
Protein	Fair
Coleoptile Length	Medium-Short
Pedigree	C006072/4*Byrd

CANVAS

CANVAS



Released in 2018, Canvas is a Denali/Antero//Byrd cross providing strong dryland and leading high moisture performance in agronomics and yield.

Stripe and stem rust resistance is excellent with good resistance to WSMV and SBMV. Canvas maintains excellent test weight and makes protein very well.

End-use quality is very good. Canvas stands well under high fertility and moisture, making it a good candidate for intensive management.

Canvas is PVP Protected and is to be sold by variety name only as a class of certified seed.

Management

- Focus planting on soils and field topography with good water-holding capacity
- Candidate for high fertility and good management
- Always plant with population in mind (seeds/acre)

WHEAT

HARD RED WINTER WHEAT

Maturity	Medium
Height	Medium-Short
Yield	Very High
Drought Tolerance	Very Good
Milling Quality	Very Good
Baking Quality	Very Good
Straw Strength	Excellent
Test Weight	Excellent
Protein	Very Good
Coleoptile Length	Medium
Pedigree	Denali/Antero//Byrd

LANGIN

LANGIN



Released in 2016, Langin is an early maturing, medium-short variety with very high yield potential and excellent baking quality. Stripe rust resistance and acid soil tolerance are very good, and winterhardiness is excellent. Langin has shown strong adaptation across the High Plains. Straw strength is marginal for high yield environments.

Langin is PVP Protected and is to be sold by variety name only as a class of certified seed.

Management

- Consider growth regulator in yield environments greater than 90 bushels
- Plant later because of early heading
- Good for acid soils

HARD RED WINTER WHEAT

Maturity Early
Height.....Medium-Short
Yield Very High
Drought Tolerance.....Excellent
Milling Quality..... Good
Baking Quality.....Very Good
Straw Strength Fair
Test WeightVery Good
Protein Good
Coleoptile LengthMedium-Short
Pedigree CO050270/Byrd

PEST AND DISEASE PROFILE

Wheat Streak MosaicGood
Stripe Rust Very Good
Leaf Rust.....Good
Soilborne Mosaic..... Excellent

WHEAT

FORTIFY SF

FORTIFY SF



Released in 2019, Fortify SF is the first Colorado-bred semi-solid wheat to combat the wheat stem sawfly in the central High Plains. This pest has been devastating to wheat production for decades, cutting production by nearly 50% in some cases. Fortify SF provides a thickened 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 lines grown in the central High Plains.

Certified Seed Only

Fortify SF is a Certified Seed Only variety. By purchasing seed, grower agrees to use seed of the variety only for the production of a commercial grain or forage crop. Using certified seed every season ensures the best stewardship, end use functionality, and opportunity to maximize yield potential of the variety. Resale of this seed, or supply of saved seed derived from this seed, to anyone including purchaser for planting is prohibited.

Management

- Target fields adjacent to last year's wheat stubble
- Plant as border for susceptible varieties
- Consider a fungicide with wet springtime weather

HARD RED WINTER WHEAT

Maturity	Medium-Early
Height	Medium
Yield	High
Drought Tolerance	Very Good
Milling Quality	Very Good
Baking Quality	Good
Straw Strength	Fair
Test Weight	Very Good
Protein	Fair
Coleoptile Length	Medium-Short
Pedigree	Byrd/Bearpaw//Byrd

PEST AND DISEASE PROFILE

Wheat Streak Mosaic	Excellent
Stripe Rust	Fair
Leaf Rust	Fair

WB4422

WB4422



Key Attributes

- Excellent yield potential and test weight
- Broad adaptability from the Southern to Northern Plains
- Very good standability
- Good drought tolerance
- Single-use license variety
- WB4422 is PVP Protected and is to be sold by variety name only as a class of certified seed. A limited use licence agreement is required.

HARD RED WINTER WHEAT

Maturity	Medium
Height	Medium
Yield	Excellent
Drought Tolerance	Good
Milling Quality	Good
Baking Quality	Good
Test Weight	Excellent
Protein	Very Good
Planting Rate	Medium-High
Tillering Potential	Very Good
Standability	Very Good
Winter Hardiness	Excellent

PEST AND DISEASE PROFILE

Fusarium Head Blight	Fair
Leaf Rust	Good
Powdery Mildew	Fair
Wheat Stem Sawfly	Good
Yellow (Stripe) Rust	Good
Barley Yellow Dwarf	Very Good
Hessian Fly	Fair
Soil-Borne Mosaic	Good
Tan Spot	Good
Wheat Streak Mosaic	Very Good

WHEAT

WB4792

WB4792



Key Attributes

- Excellent yield potential
- Strong western adaptation
- Very good Wheat Streak Mosaic Virus resistance
- Very good Yellow (Stripe) Rust resistance
- Single-use license variety
- WB4792 is PVP Protected and is to be sold by variety name only as a class of certified seed. A limited use licence agreement is required.

WHEAT

HARD RED WINTER WHEAT

Maturity	Medium-Late
Height	Medium-Tall
Yield	Excellent
Milling Quality	Very Good
Baking Quality	Very Good
Test Weight	Excellent
Protein	Very Good
Planting Rate	Medium-High
Tillering Potential	Very Good
Standability	Very Good
Winter Hardiness	Very Good

PEST AND DISEASE PROFILE

Fusarium Head Blight	Fair
Leaf Rust	Very Good
Powdery Mildew	Fair
Wheat Stem Sawfly	Good
Yellow (Stripe) Rust	Very Good
Barley Yellow Dwarf	Very Good
Hessian Fly	Fair
Soil-Borne Mosaic	Good
Cephalosporium Stripe	Good
Strawbreaker Foot Rot ...	Very Good

MONARCH

MONARCH



Released in 2018, Monarch is an open market variety with excellent straw strength and very high 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.

Certified Seed Only

Monarch is a Certified Seed Only variety. By purchasing seed, grower agrees to use seed of the variety only for the production of a commercial grain or forage crop. Using certified seed every season ensures the best stewardship, end use functionality, and opportunity to maximize yield potential of the variety. Resale of this seed, or supply of saved seed derived from this seed, to anyone including purchaser for planting is prohibited.

WHEAT

HARD WHITE WINTER WHEAT

Maturity	Medium
Height.....	Medium-Short
Yield	Excellent
Drought Tolerance.....	Good
Milling Quality.....	Good
Baking Quality.....	Very Good
Straw Strength	Excellent
Test Weight	Very Good
Protein	Fair
Coleoptile Length	Medium
Pedigree	C007W722-F5/Snowmass// C007W722-F5

AMPLIFY SF

AMPLIFY SF

Released in the fall of 2021, Amplify SF is the newest Colorado bred 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 with superior larval cutting resistance. Its maturity fits the Colorado High Plains environment, along with resilient test weight when faced with grain fill drought conditions.

Amplify SF should be on a 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.

WHEAT

HARD RED WINTER WHEAT

Maturity	Medium
Height	Medium
Yield	Good
Drought Tolerance	Good
Milling Quality	Very Good
Baking Quality	Good
Straw Strength	Good
Test Weight	Very Good
Protein	Good
Coleoptile Length	Medium
Pedigree	Bearpaw/Antero//Antero

WILLOW CREEK

WILLOW CREEK BEARDLESS WHEAT

Willow Creek winter wheat is an improved hard red forage variety with many desirable forage features. It grows tall, matures later than other winter wheats, and expresses a fine stemmed morphology. Willow Creek produces abundant forage under dryland and irrigated conditions. It has good winter hardiness, is beardless, and is highly palatable to cattle. Willow Creek is frequently fall planted to provide a nutritious pasture source the following spring. This also allows for delayed turnout onto native or slower growing perennial pastures.

Willow Creek is extremely winter hardy. If planted early in the fall it can provide fall grazing, early spring grazing, and one or more high-tonnage summer cuttings. Under irrigation, regrowth can provide multiple cuttings or additional pasture. Compared to haybet barley, Willow Creek produces higher tonnage and a wider flag leaf. Forage quality is somewhat lower than for forage barleys but beneficially, nitrates are also significantly lower.

Willow Creek was released by the Montana Agricultural Experiment Station in 2005.

BEARDLESS WHEAT

HARD RED WINTER WHEAT

Maturity	Annual
Seeds Per Pound	1,500
Growth Habit	Upright
Root Depth	Medium Fibrous
Dry Matter Potential	3 to 6 Tons Per Acre
Seed Depth	1 to 2 inches
Minimum Germination Temp	32°F
Drill Seed Rate	60 to 120 Pounds Per Acre
Broadcast Rate	90 to 150 Pounds Per Acre

RAY

RAY

Ray is a hard red winter wheat developed by the Montana Agricultural Experiment Station and available to certified seed growers beginning in fall 2018. Ray is a late maturing, tall, awnless variety developed for forage production as a possible replacement (or supplement to) Willow Creek (MT, 2005).

Compared to Willow Creek, Ray has similar forage yield and forage quality, but superior seed yield. Compared to conventional bread wheats, Ray has average to above average yield, below average test weight, and average protein. Ray is resistant to stripe rust and susceptible to stem rust. Ray has low PPO and average milling and baking characteristics.

Ray is PVP Protected and is to be sold by variety name only as a class of certified seed. Title V will be applied for.

Key Attributes

- High tonnage potential
- Awnless variety ideal for grazing
- Tiller plant stature with long, thin leaves
- Excellent tolerance to leaf rust

HARD RED WINTER WHEAT

Maturity	Medium
Height	Tall
Yield	Good
Drought Tolerance	Good
Milling Quality	Average
Baking Quality	Average
Straw Strength	Excellent
Test Weight	Fair
Protein	Fair
Coleoptile Length	Medium

813 TRITICALE

813 WINTER TRITICALE



Key Attributes

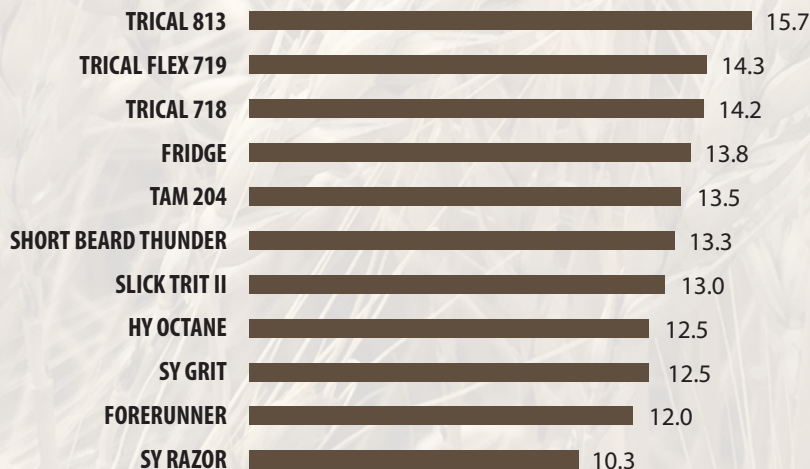
- Awnletted (very short beards)
- Semi-erect fall growth habit
- Very good fall seedling vigor
- Good winterhardiness
- Medium maturity
- Good straw strength
- Tolerant of rust
- Tolerant of Wheat Streak Mosaic Virus
- High silage yields
- Adapted to the Southern and Central Great Plains

WINTER TRITICALE

Silage Quality	Very Good
Silage Yield	Very Good
Forage Yield	Very Good
Seed Yield	Very Good
Leaf and Stripe Rust Tolerance	Excellent
Straw Strength	Very Good
Height	Tall

Silage Yield Trial

Tons per acre at 65% moisture at a Scott City, Kansas, trial.



TRITICALE

GUNNER

GUNNER



Key Attributes

- Later maturity in a dual spring/fall planting window
- Completely awnless (beardless)
- High leaf-to-stem ratio
- Tolerant of rust
- Very good fall seedling vigor
- Good winterhardiness
- Excellent grazer
- Adapted to a large area including Central and Northern Plains

WINTER TRITICALE

Silage Quality	Very Good
Silage Yield.....	Very Good
Forage Yield	Excellent
Seed Yield.....	Excellent
Stripe Rust Tolerance	Very Good
Leaf Rust Tolerance	Excellent
Straw Strength	Excellent
Winterhardiness	Excellent
Height.....	Tall

Silage Yield Trial

Tons per acre at 65% moisture at a Garden City, Kansas, trial.



CEREAL RYE

CEREAL RYE

Cereal Rye has an excellent fibrous root system that alleviates surface compaction. Rye can be successfully planted later than almost any other cover crop because of its low germination and growth temperature requirements.

Cereal rye is known for being the best cereal crop at retaining residual nitrogen. It's typical for a fall-planted cereal rye crop to scavenge on average 25 to 50 pounds of nitrogen, with some cases in excess of 100 pounds of nitrogen.

The vigorous spring growth has successful weed suppression through competition and allelopathic chemicals. Rye can be terminated in the spring through the alternative methods of rolling, mowing, or crimping after boot stage.

Rye will out-yield any other cereal crop when planted in droughty, infertile, or sandy soils.

CEREAL RYE

RYE

Life Cycle.....	Annual
Seeds Per Pound	22,000
Growth Habit.....	Upright
Root Depth.....	Deep Fibrous
Dry Matter Potential.....	3 to 5 Tons Per Acre
Seed Depth	1 to 2 inches
Minimum Germination Temp	32°F
Drill Seed Rate.....	60 to 120 Pounds Per Acre
Broadcast Rate.....	90 to 150 Pounds Per Acre

CALYPSO

CALYPSO



Calypso, a malting barley variety brand new to the U.S. market, shows promising across-the-board performance with above-average winter hardiness and a strong disease resistance package.

- Two-row winter variety
- 90 bushel-per-acre two-year average yield across Atlantic locations
- Lower levels of beta-glucan
- Good winter hardiness

MALTING BARLEY

TWO-ROW WINTER MALTING BARLEY

Location	Calypso Yield	Trial Average	Protein
Atlantic Coast	87.4 bu/ac	72.2 bu/ac	121% of mean
Virginia	100.1 bu/ac	73.7 bu/ac	136% of mean
North Carolina	86.8 bu/ac	77.8 bu/ac	112% of mean
Maryland	128.2 bu/ac	91.8 bu/ac	140% of mean
Massachusetts	72.5 bu/ac	60.6 bu/ac	120% of mean
West Appalachia	93.0 bu/ac	80.5 bu/ac	116% of mean
New York	69.5 bu/ac	68.0 bu/ac	102% of mean
Pennsylvania	125.5 bu/ac	99.6 bu/ac	126% of mean
Ohio	100.6 bu/ac	84.3 bu/ac	119% of mean
Kentucky	42.8 bu/ac	47.9 bu/ac	89% of mean

VIOLETTA

VIOLETTA



Violetta, a two-row winter malting barley, is bred for the craft spectrum. With excellent adaptation to the Eastern U.S., it is grown as far west as Oklahoma and Kansas. Violetta offers a combination of superior yield and a strong craft beer profile.

- Excellent test weight
- No. 1 choice for double cropping
- Consistent extract 80+% d.b. (FG)

MALTING BARLEY

TWO-ROW WINTER MALTING BARLEY

Location	Calypso Yield	Trial Average	Protein
Atlantic Coast.....	79.3 bu/ac	76.1 bu/ac	104% of mean
Virginia.....	115.2 bu/ac	90.2 bu/ac	128% of mean
North Carolina.....	86.6 bu/ac	92.7 bu/ac	93% of mean
West Appalachia ..	82.3 bu/ac	68.6 bu/ac	120% of mean
New York	44.4 bu/ac	48.0 bu/ac	93% of mean
Pennsylvania	120.3 bu/ac	108.8 bu/ac	111% of mean
Ohio	91.4 bu/ac	69.8 bu/ac	131% of mean
Kentucky.....	73.2 bu/ac	47.9 bu/ac	153% of mean
Upper Midwest ..	77.3 bu/ac	54.1 bu/ac	143% of mean

P919 BARLEY

P919 WINTER BARLEY

Compared to other cereals, winter barley is more tolerant of high pH soils, including both calcareous and salty or saline-sodic soils.

P919 Barley is a six-row winter barley variety that has high yield potential and high test weight. It is resistant to all of the prevalent diseases except Fusarium Head Blight. P919 Barley heads moderately early and is short in stature but has good winterhardiness.

Winter barley has spikes that are erect and slightly waxy and have short beards. It is often used for its good forage quality, but it is also used for grazing and grain production. Winter barley makes for an excellent feed option as it can be harvested two to three weeks earlier than wheat, which allows for doublecropping sooner.

Management

- Plant early enough that it can produce a good root system before a freeze
- Plant in well-drained soil for optimal results
- Planting too early in wet, cool soils or planting in hot and high humidity will result in a greater chance of disease

SIX-ROW WINTER BARLEY

Life Cycle.....	Annual
Seeds Per Pound	15,000
Environment	Full Sun
Leaf Color	Green
Planting Season	Fall
Seed Depth	$\frac{3}{4}$ to 2 inches
Seeding Rate	60 to 90 Pounds Per Acre

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**CROP PROTECTION
PRODUCTS** including
chemicals
and fertilizers.



WINTER PEAS

AUSTRIAN WINTER PEAS

Peas' rapid spring growth can be very effective at suppressing weeds. With a nitrogen content of 3% to 4%, peas produce 90 to 150 pounds of nitrogen per acre with some results as high as 300 pounds of nitrogen per acre. The residue breaks down rapidly, releasing the N quickly. Once established, peas can withstand heavy frosts but can easily be killed by herbicide at all growth stages. With this, combined with having no hard seed, peas don't pose any weed threat. Pest cycles can be broken with peas in your rotation and have been documented to be very effective at reducing take-all disease in wheat.

PEA COVER CROP

WINTER PEAS

Maturity	Biennial
Seeds Per Pound	4,000
Growth Habit	Vining
Root Depth	Medium Fibrous
Dry Matter Potential	2 to 2.5 Tons Per Acre
N Fix Potential	90 to 150 pounds per acre
Plant Depth	1 inch to 3 inches
Minimum Germination Temp	40°F
Drill Seed Rate	50 to 65 Pounds Per Acre
Broadcast Rate	70 to 80 Pounds Per Acre

FORAGE BLENDS

ECS offers forage grass mixes for baling, grazing and ensiling in both dryland and irrigated applications. Learn more at ecseeds.com/forage-seed or call 866-655-7380.



EPIC ITALIAN RYEGRASS BLEND

Epic Italian Ryegrass Blend combines tetraploid and diploid varieties provide high dry matter production, crown rust resistance, high palatability, persistence under grazing and traffic tolerance. The varieties in Epic Italian Ryegrass Blend require prolonged periods of cold weather for vernalization, thus delaying the ability to produce seed heads and resulting loss of forage quality. Epic Italian Ryegrass Blend is ideal as silage or green-chop for high-producing dairy cattle, producing 6 to 8 tons of dry matter per acre.

HAY MAX FORAGE GRASS MIXTURE

Hay Max Forage Grass Mixture is 65% late-maturing, soft-leaved tall fescues and 35% late-maturing orchardgrass. In areas with extreme summers, fall seeding is recommended. It can be no-till drilled into an existing alfalfa stand. ECS's elite tall fescues maintain high forage quality through the summer months, resulting in high forage quality hay at every cutting. Hay Max Forage Grass Mixture exhibits winter-hardiness as well as heat and drought tolerance.

BPG CATTLE FORAGE MIXTURE

BPG Cattle Forage Mixture is formulated for raising stocker cattle, beef cows and calves. It contains edophyte-free soft-leaved tall fescues for palatability and digestibility, and its orchardgrass varieties are late-maturing and grazing tolerant. Remington, a perennial ryegrass, combines the yield and disease resistance of a tetraploid with the density, winterhardiness, and persistence of a diploid. The clover is Alice, a proven, grazing tolerant, large-leaved white clover.

SPG MULTIPURPOSE FORAGE MIXTURE

SPG MultiPurpose Forage Mixture is a palatable, digestible forage mixture that is ideal for cattle, sheep, goats, llamas, alpacas and horses. Formulated with endophyte-free perennial ryegrass, tall fescue and orchardgrass, it is also suited for high-moisture cutting and hay production.

DRYLAND PASTURE MIX

Dryland Pasture Mix is a blend of annual ryegrass, soft-leaf tall fescue, orchardgrass, smooth brome and intermediate wheat grass seeds coated with Yellow Jacket to improve germination. Supplemental irrigation will be required. Dryland Pasture Mix is formulated for both horse and cattle pastures.

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