



Forage Product Guide

2026

From tough conditions to unpredictable situations.

Grass has a lot to contend against. From droughts to diseases, grazing pressure to weed competition, the odds might seem stacked against you. **That's why we work so hard at producing the absolute best forage products for you and your livestock.**

We work hard because we know you're out there getting important work done.

Central to the progress of Barenbrug USA is working with you to understand your changing needs and solving the challenges you face.



Long term development and breeding

Ongoing investment in new grass cultivars and products to improvements in the qualities of your forages.



In depth consulting and guidance

Collaboration in product design, development, and trialing enables you to experience the greatest possible success.



Continent-wide service and support

Field expertise and technical help is always available to help you find immediate solutions to your grass needs on site.

Before we were a company, we were a family.

Founded in 1904, Barenbrug continues to be family-owned and ran to this day. The development of new and innovative cultivars and varieties is in our roots. Through research and development, breeding, and working with farmers, ranchers, and you, we are able to develop specific seeds that meet your specific needs. In addition, we share our knowledge and experience to help you and your team excel at your craft.



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The Story of Grass

Each cultivar is the product of a long and rigorous cycle of breeding, selection, and testing to identify the grasses that will fill the world's great needs.

Years 1-3 Searching for candidates

Every new grass story begins at one of our breeding stations across North America. To develop a new grass cultivar, we cross plants of an existing cultivar with plants isolated from unique traits, the wild, or from a particular environment that offers interesting potential.

Years 7 The first pick

We pick out the best plants and group them based on similarities, allowing them to cross-pollinate within each group. The resulting "synthetic line" is the basis for a new cultivar. It is important to remember that a cultivar always exists as a population of genetically different individual plants that are very similar (but not identical) to one another.

Years 8-10 Proving performance

Each new line is tested against other elite lines and existing cultivars from Barenbrug's and competitors' global breeding programs. They may be stress tested under simulated stressful conditions. Further trials or laboratory testing might test tolerance to a particular disease or sustained drought conditions. This takes place at multiple locations, including our U.S. research station to ensure reliable results for wide-ranging end-user markets.

Years 4-6 Selection process

Once these crosses have been seeded, a detailed selection process identifies those with the strongest potential to perform. Individual, unmown plants in a large nursery are scrutinized for a broad range of characteristics, removing those with weaknesses to disease, heat, cold, etc. and selecting only the very best to continue on the journey. We are looking for a range of characteristics that customers tell us matter most to them, such as disease resistance, climate tolerance, soil preference, and growth qualities. This three-year process may whittle down 10,000 plants to as few as a dozen or more.

Years 11 Multiplication

The results of the performance tests indicate which lines should be multiplied to become new cultivars. Barenbrug product development teams decide on the line, based on performance data, and where it meets the range of needs of customers in our very different markets. The multiplication process is a costly one, creating the breeder's seed stock, which will become the foundation for commercial production.

Years 12-15 Final assessment

Each cultivar, based on its intended market, is submitted to official trials across the globe. In parallel, it is necessary for a cultivar to be examined under legislative protocols to ensure it is eligible for sale. Aspects such as distinction (different from existing material), uniformity (individuals within the population must be very similar) and stability (no reversion to parental wild-type) are scrutinized over a fixed period (typically three years or longer).

Yellow Jacket® & Nature Jacket® Seed Coatings

Yellow Jacket® Enhanced Seed Coating

Better Forage with Less Input

Yellow Jacket is a proprietary seed coating technology containing a natural water-absorbent material made from corn starch. This enhanced coating can hold up to 600 times its weight in water. Research at the University of New Mexico, North Carolina State University, and Texas A & M University proved conclusively that seed coated with Yellow Jacket established faster and required less water. Our products, from grasses to legumes, are available with our Yellow Jacket seed enhancement.



Discover what's inside Yellow Jacket enhanced seed coating:

Nutrient package for rapid establishment

Inoculant to assist in fast germination

Absorbent to reduce water inputs

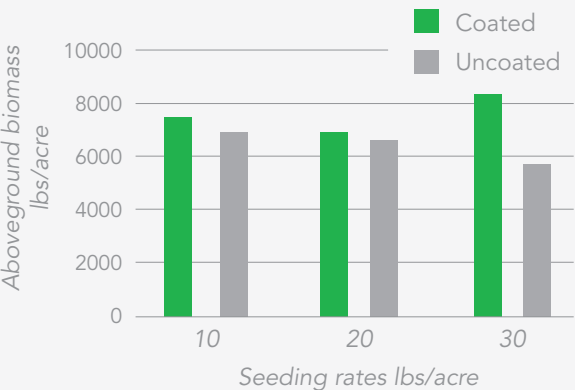


Yellow Jacket Advantage

- 600x** With Yellow Jacket technology, each seed can hold up to 600 times its weight in water.
- 30%** With Yellow Jacket technology, up to 30% less water is needed for establishment.

Yellow Jacket® Coated Tall Fescue

Under reduced irrigation, seed with our Yellow Jacket seed coating produced significantly more biomass per acre at three different seeding rates.



Coated Uncoated
Sample taken 60 days after seeding

Nature Jacket® Organic Seed Coating The Proof is in the Coating



As consumer demands for organic products continue to rise, we recognize the need to deliver industry-leading organic seed technologies to the professional agriculture industry. As a recognized leader in innovative grass seed coating, we have been providing the professional seed industry with quality coated seeds for over 14 years! Since this time, we have sold millions of pounds of enhanced seeds across the United States and now, for the first time, this same proven coating is available as a certified organic coating.

Nature Jacket Benefits

- OMRI approved
- Surrounds each seed with a natural, micronutrient rich environment, stimulating vigorous growth.
- Hygroscopic nature helps pull and hold moisture to the seed, aiding in germination



Get Plus®

Forages with Beneficial Endophytes

"The initial thing I noticed was that the first time I turned cattle in on BarOptima® E34® | Get Plus®, the cows ate right down the rows. There was no doubt they were selecting it, even over the wheat!"



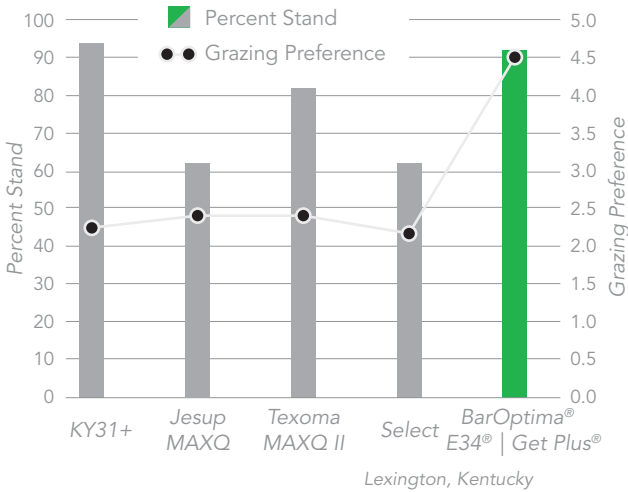
Traditionally, forage grasses have been defined by two traits: yield and persistence. We also place a strong emphasis on a third trait, **forage quality**, because **forage quality** directly affects animal performance and your profitability.



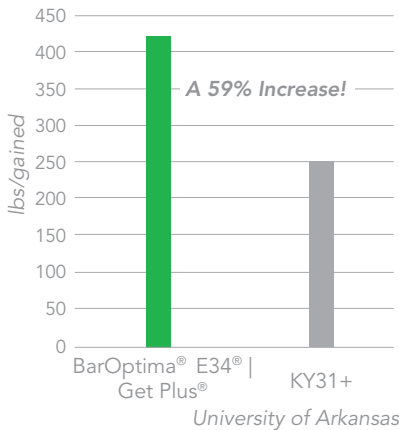
After many years of research, we were able to incorporate all three of these traits into select varieties. The technologies bringing all of this together are E34 and NEA2, beneficial, non-toxic, fungal endophytes.

Products powered by Get Plus®	
BarOptima® E34® Get Plus®	p.20
Remington NEA2 Get Plus®	p.24

The Percent of Original Stand Remaining after Four Years of Continuous Grazing
Tested over four years, BarOptima® E34® | Get Plus® displayed significant persistence and was preferred by the cattle over the other present varieties.



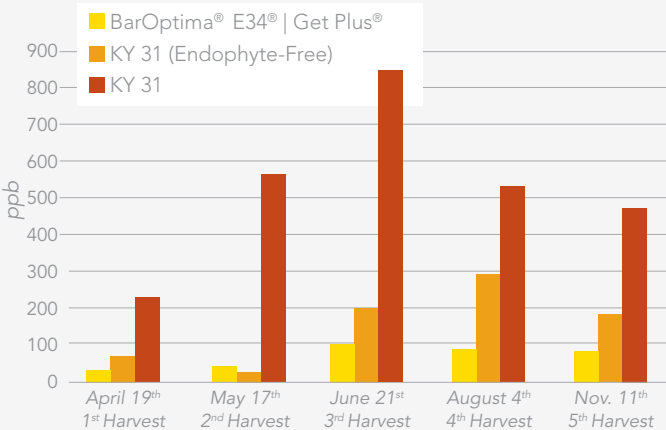
Total Live Weight Gain per Acre
Over the course of two years, the University of Arkansas tracked live weight gain per acre when fed BarOptima® E34® | Get Plus® versus traditional Kentucky 31. They found that cattle grazing BarOptima® E34® | Get Plus® had a 59% greater increase in weight over K31.



8 Year Old BarOptima® E34® | Get Plus® field persisting

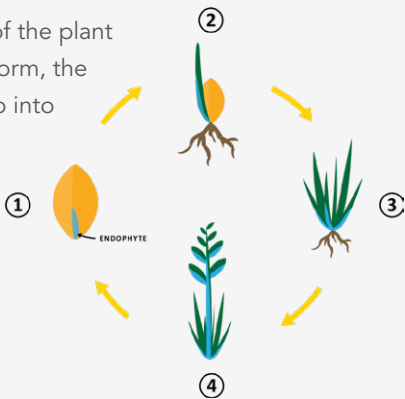
Beneficial Endophyte
Our researchers examined alkaloid profiles of numerous endophytes collected from around the world. These selected endophytes were inoculated into different seed germplasm. From this research, we were able to select two beneficial endophytes, "E34" & "NEA2".

Average Ergovaline Levels Over all Plots for Each Variety at Each Harvest



Endophyte Life Cycle
Plants with endophytes can only pass the endophyte through their seed. The endophyte is not passed from plant to plant in a pasture.

1. Endophyte is a fungus found in seed
2. As the seed germinates, the endophyte grows into the emerging shoot
3. It stays in the base of the plant
4. In spring, as stems form, the endophyte grows up into new seed



Pinpoint™ Forage Delivery System

Filling the Forage Gaps

Pinpoint is the cost-effective solution for seasonal feed supply challenges. It increases profitability by lowering feed costs and reducing stress on your operation. Pinpoint products help producers achieve the goal of grazing 300+ days of the year.

Pinpoint Products Fill Forage Season Gaps

Pinpoint products can provide a solution for timely forage needs. Even with ideal pasture and livestock management, periods of feed deficit still exist. Base forages have distinct growth curves that cannot meet the feed demand of grazing animals during every season of the year. Managers can plan for seasonal forage deficits. Pinpoint products can help fill these deficits. As an example below, a producer could utilize Mojo™ and Barsica™ to fill the forage deficit that would be experienced during mid-summer and late fall if just BarOptima® E34® | Get Plus were grown.



Production records regularly indicate that winter feed costs are the *single largest expense*. Keeping feeding costs low is key to a profitable operation.

Forage Delivery System

Over a wide region of the United States, cows average only seven months of grazing a year. Put another way, the average cattleman, from Mississippi to Wisconsin, utilizes supplemental feeds five months out of the year despite the differences in climate and grass bases. Pinpoint products will allow you to reduce your dependency on stored feed by increasing your grazing. In addition, with continued production, feed can be stockpiled for later winter months.

Bridging the Gaps

We know that as livestock producers, you have to manage feed demand and feed supply - no matter what class of livestock or level of grazing management. So we have developed Pinpoint to bridge the forage gaps you experience every year. Because we know that winter feed costs are the single largest expense, and by keeping these costs low, your operation can be profitable.

Pinpoint Products

- Jumbo™ - ARG* p.22
- Maximus™ - ARG* p.22
- Ribeye™ - ARG* p.22
- Green Spirit® - IRG** p.23
- Grit™ - Bermudagrass Blend p.28
- Mojo™ - Crabgrass Blend p.29
- Forb Feast™ - Chicory p.31

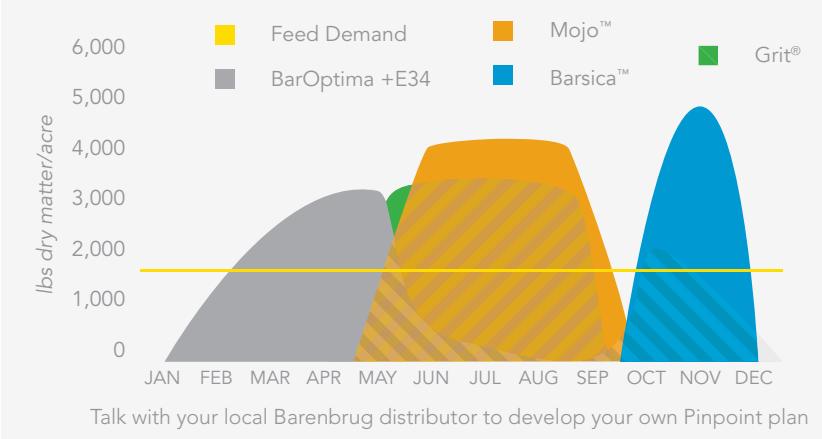
*ARG- Annual Ryegrass
**IRG- Italian Ryegrass

Monthly Savings Compared to Hay

With proper implementation, our Pinpoint forage delivery system is able to reduce your yearly feed costs and save you as much as **\$48.60 per cow or more!**

	Hay	Pinpoint Forage
Cost/pound	\$0.02-\$0.07	\$0.1
Daily Consumption	24 lbs	24 lbs
Cost/Day/Cow	\$0.54-\$1.89	\$0.27
Cost/Month/Cow	\$16.20-\$56.70	\$8.10

To learn more, visit: www.barusa.com



"Hay is costing me 3 cents a pound to produce, and I have to haul it to the cattle. Brassicas are costing me less than a cent to plant, and the cattle harvest it. I can't afford NOT to plant it!"



NutriFiber®

The Highly Digestible, Effective Fiber for Dairy Rations

"NutriFiber-powered grasses have been developed to have higher fiber digestibility than alfalfa, corn silage, and other grasses."

Today's high-producing dairy cows require both Non-Fiber Carbohydrate (NFC) and Neutral Detergent Fiber (NDF). Properly balancing NFC and NDF is critical for animal health and profitable production.

The NutriFiber Advantage

- 17% increase in milk fat
- Supports high milk production
- Promote rumen health
- Reduce acidosis
- 25-40% increase in digestible fiber
- Proven in university trials

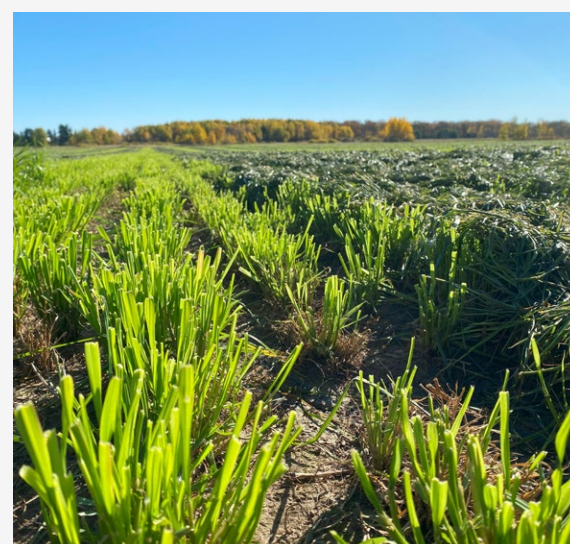
To learn more, visit: www.barusa.com

Higher digestibility & similar NDF

	NDF Range %	TTNDFd % of NDF
NutriFiber*-Powered Grasses	46-56	59.5
Other Grasses†	46-56	48.3

Forage samples submitted to Rock River Labs, Watertown, WI in 2012

*Values from 9 samples
†Values from 448 samples



Green Spirit® cut in early October in Grantsburg, WI.

Balanced High Energy Rations

Rations frequently contain too much NFC and too little highly-digestible, physically-effective fiber. Unlike commonly utilized feedstuffs, NutriFiber is ideally composed to properly balance high energy rations for today's high-producing dairy cows. Forages like mature alfalfa and grasses are low in Neutral Detergent Fiber Digestibility (NDFd), and corn stalks or wheat straw will provide fiber but can limit feed intake due to slow passage rate.

Increase Milkfat and Maintain Milk Production

A study conducted at the University of Wisconsin replaced equal portions of corn silage and alfalfa silage with NutriFiber-powered silage. The resulting treatment ration contained 2% more NDF and 2% less NFC of the ration dry matter. Small changes can produce big results! During the first period of the test, cows on the treatment diet produced milk with a 0.5% higher fat test. After 2 months, the treatment and control groups were switched with pronounced effects. Adding NutriFiber-powered silage increased fat test by 0.35%, a clear demonstration of the value of products powered by NutriFiber!

Improve Long Term Health

Acidosis is the most important nutritional problem that feedlots and dairies face daily. It is caused by a rapid production and absorption of acids from the rumen when cattle consume too much starch (primarily grain) or sugar in a short period of time. Acidosis causes cattle to be stressed. As long as cattle are finished on grain, acidosis will be an important problem. Feeding NutriFiber powered forages with more digestible and physically-effective fiber than wheat straw, can help reduce acidosis and make your operation more profitable.

Fiber Guidelines for High-Producing Cows

	NFC % of DM	NDF % of DM	peNDF* % of NDF	TTNDFd % of NDF
Ration Guidelines	≤ 40	28 - 30	75	≥ 43

Feedstuffs Used to Add Fiber to Lower NFC

	NDF % of DM	TTNDFd % of NDF	NFC % of DM
Ration Guidelines	73	24	12
Corn Gluten Feed	35	51	31
Beet Pulp	46	70	36
Soy Hulls	60	75	18
NutriFiber Forages	40-50	45-60	18-25

Acronyms:

NDF	Neutral Detergent Fiber
NDFd	NDF Digestibility
TTNDFd	Total Tract NDFd
NFC	Non-fibrous Carbohydrate
peNDF	Physically Effective NDF

Products Powered by NutriFiber

STF-43™ - Tall Fescue	p.20
HDR™ - Meadow Fescue	p.21
Milkway™ - Fescue Mix	p.21
Green Spirit® - Italian Ryegrass	p.23

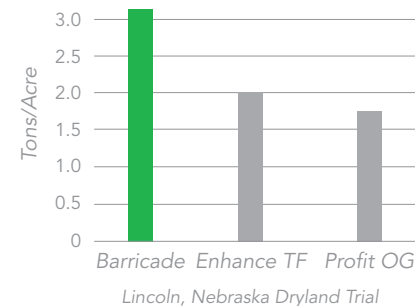
Range Shield™ Dryland Pasture Mixes

We know rainfall across the United States is not consistent. This is why we developed Range Shield, products designed for new planting or interseeding into rangeland and dryland pastures in low rainfall areas.

These Yellow Jacket® powered seed blends contain the latest varieties selected for germination, establishment, persistence, and drought tolerance all under low rainfall conditions.

Forage Dry Matter Yield

Over the course of three years in Lincoln, Nebraska, Barricaide™ consistently yielded more dry matter per acre than other varieties, averaging three tons per acre.



Hamann Hybrid Wheatgrass at Montana State University



Receiving no irrigation beyond rainfall in a year with below average precipitation and snowfall, Hamann produced a substantial amount of biomass.

Scan to download the Barenbrug
Range Shield Management Guide



Range Shield Products



Increase Grazing



Extreme Drought
Tolerance



Engineered for
Dryland

Stockaide™: Dryland Mix for extremely low rainfall areas

Stockaide™ is designed for new planting or inter-seeding into range and extreme dryland pastures in low rainfall areas (7-12" annual precipitation). Stockaide™ consists of Hybrid Wheatgrass, premium varieties of Crested Wheatgrass, Siberian Wheatgrass, and Russian wildrye. Exclusive to Barenbrug USA, Hamann™ exhibits extreme drought tolerance and persistence.

Seeding Rate: 25-30lbs/acre



Drought Tolerant



High Producing



Reduces Feed
Costs

Barricaide™: Dryland Mix for low rainfall areas

Barricaide™ is designed for new planting or interseeding into rangeland and dryland pastures with low rainfall (12-18" annual precipitation) and it also works in areas that have limited irrigation, such as spring runoff irrigation common in many areas. Barricaide™ consists of Meadow brome and Smooth brome which were developed in collaboration with USDA-ARS, as well as a drought tolerant Tall fescue and Hybrid wheatgrass.

Seeding Rate: 25-30lbs/acre



Drought Tolerant



High Producing



Extend Grazing
Season

Renegaide™: Dryland Mix for low-mid rainfall areas

Renegaide™ has been specially formulated for new planting or inter-seeding into range and dryland pastures in low-mid rainfall areas (18-30" annual precipitation) and also works in areas that have limited irrigation such as spring runoff irrigation. This mixture consists of Orchardgrass, Meadow brome, Smooth brome, a highly drought tolerant variety of Tall Fescue, and Hybrid wheatgrass which were all developed in collaboration with USDA-ARS.

Seeding Rate: 25-30lbs/acre

Barricaide™ Field



Master Series™ Premium Pasture Mixes

Our Master Series products are specially formulated to offer your animals the ideal mixture of forage species. These blends have been put together by our forage breeding specialists so when you plant Master Series products, you are able to plant with confidence.

The Get Plus® Advantage

- Get more calves from the cows you already have
- Get more pounds of beef from the acres you already have
- Get heavier weaning weights



StockMaster® Pro | Get Plus®



This formulation contains a late maturing orchardgrass, our continental tall fescue, a Get Plus® powered soft leaf tall fescue, and a Get Plus® powered perennial ryegrass. This multi-purpose mixture enables StockMaster® Pro | Get Plus® to be used in, and even under, less than ideal conditions. It is a perfect mixture for larger or smaller acreage fields that require a long lasting, high quality pasture and can also be used for hay fields after establishment. *Seeding Rate: 25-30lbs/acre*

Rapid Establishment

Beneficial Endophyte

Improved Yields

BeefMaster® Pro | Get Plus® | Yellow Jacket®



A formulation of forage grasses and white clover that includes grasses powered by Get Plus®. Along with the added value of the beneficial endophytes, BeefMaster® Pro | Get Plus® | Yellow Jacket® contains a late maturing, winter hardy orchardgrass variety that maintains its productivity even under close grazing. The white clover allows for extra gains and benefits the stand by fixing nitrogen. This blend delivers highly productive, high energy forages, enabling rapid weight gains. *Seeding Rate: 25-30lbs/acre*

Extremely Persistent

Beneficial Endophyte

Highly Palatable

Includes Clover

High Fiber Digestibility

Beneficial Endophyte

Highly Palatable

Quick Dry Down

Drought Tolerant

High Yields

Increased Durability

Comprehensive Mixture

Highly Palatable

Highly Digestible

Improves Milk Production

Increase Protein

DairyMaster® Pro | Get Plus®



Formulated to provide a quality pasture ideal for all dairy applications, DairyMaster® Pro | Get Plus® contains the best of all species: high-energy meadow fescue, late-maturing orchardgrass, a soft leaf tall fescue powered by Get Plus®, and a perennial ryegrass powered by Get Plus®. It also contains coated red and white clover, which fixes nitrogen and improves protein and energy levels of the stand. *Seeding Rate: 25-30lbs/acre*

HayMaster® Pro

HayMaster® Pro is formulated for either a straight grass hay field or for mixing with a legume crop to produce a high quality, high performing hay. The varieties in HayMaster® Pro are selected for their quick, dry-down, ensuring the quality of your crop. To learn more talk with your local Barenbrug distributor. *Seeding Rate: 25-30lbs/acre*

HorseMaster® Pro

We understand that horses and cattle graze differently. With this in mind, we developed HorseMaster® Pro, a mixture specifically formulated for horse pastures. This formulation contains late maturing orchardgrass, a newly developed endophyte free continental tall fescue, diploid perennial ryegrass, timothy, and Kentucky bluegrass. HorseMaster® Pro mix is a comprehensive mixture for all horses, from broodmares to the studs. *Seeding Rate: 25-30lbs/acre*

BrowseMaster® Pro | Yellow Jacket®



A seed mixture specifically formulated for browsing animals, BrowseMaster® Pro | Yellow Jacket® has the optimal combination of browse, forbes, and grasses to improve their meat and milk production. Regionally adapted, this mixture is available for the transition zone and southern United States. It is primarily composed of high-quality chicory, alfalfa, and red, and white clover. BrowseMaster® Pro | Yellow Jacket® gives you a highly digestible stand packed with protein. *Seeding Rate: 25-30lbs/acre*

	Soft Leaf Tall Fescue	Perennial Ryegrass	Orchardgrass	Meadow Fescue	Kentucky Bluegrass	Timothy	Chicory	Alfalfa	Red Clover	White Clover
StockMaster® Pro Get Plus®	✓	✓	✓							
BeefMaster® Pro Get Plus® Yellow Jacket®	✓	✓	✓							✓
DairyMaster® Pro Get Plus®	✓	✓	✓	✓					✓	✓
HorseMaster® Pro	✓	✓	✓		✓	✓				
BrowseMaster® Pro Yellow Jacket®	✓						✓	✓	✓	✓
HayMaster® Pro	Regional blends of select grasses									

CoverGraze™

Your Cover Crop Solution

Cover crops are an important and useful tool to combat issues such as soil erosion, nutrient runoff, and moisture conservation. Multiple species are used for cover crops including brassicas, legumes, and grasses. Recently, there has been an increasing movement toward grazing cover crops as part of the rotation.

In addition to soil conservation and nutrient management, the nutritional values of most cover crops will meet the needs of grazing livestock. The ability to utilize annuals with grazing livestock allows longer rest periods for pastures, and the ability to grow more forage for longer grazing, reducing the amount of feed needed.



Increasing Soil Biological Activity

Utilizing livestock on a cropland field can also be advantageous for increasing biological activity due to the recycling of nutrients through the animal. The majority of nutrients that run through a ruminant animal are placed right back onto the ground from where they came!

We are proud to offer CoverGraze specific products for cover cropping. Not only are these products perfect for non-grazing cover crop systems, but they also offer superior forage production, digestibility, and quality for the grazing animal. If CoverGraze is in your cover crop plans, choose the products for performance that match your application.

CoverGraze Family of Products

Ribeye™ - ARG*	p.22
Green Spirit® - IRG**	p.23
Barsica™ - Forage Rape	p.30
Barkant™ - Forage Turnip	p.30
T-Raptor™ - Hybrid Brassica	p.30
Forb Feast™ - Chicory	p.31
Super 10 Yellow Jacket® - Berseem	p.32

*ARG- Annual Ryegrass

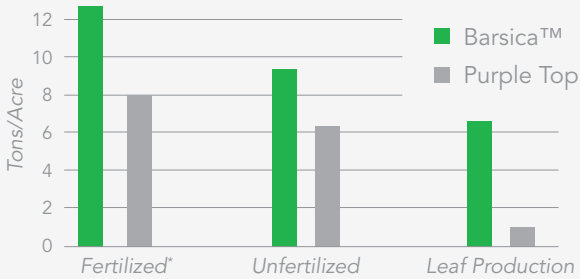
**IRG- Italian Ryegrass



A CoverGraze product interseeded into Green Spirit®, Southern Missouri

Performance that Pays

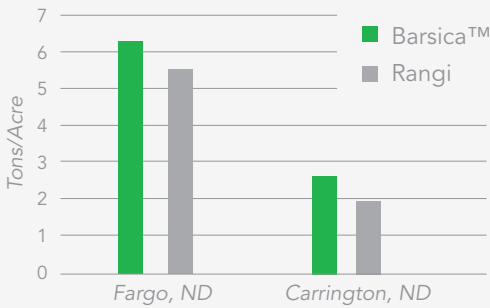
This figure shows how a CoverGraze product performs significantly better than other varieties, with Barsica™ producing 540% more leaf material per acre than Purple Top!



*Ammonium Sulphate (21-0-0) at 300lbs./Acre; 60 days after planting

Increased Tons per Acre

This figure shows dry matter yield tested at Fargo and Carrington, North Dakota in 2012. Barsica™ outperformed all other varieties and averaged 4.4 tons per acre.



North Dakota State University, 2012

Soft Leaf Tall Fescue

-  Beneficial Endophyte
-  Soft Leaf Tall Fescue
-  Extremely Persistent

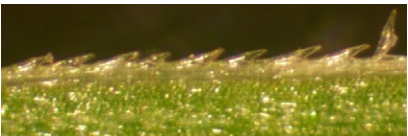
BarOptima® E34® | Get Plus®
A soft leaf tall fescue that is powered by the beneficial endophyte, E34, this revolutionary tall fescue has improved palatability with the soft leaf, all while eliminating toxicity and increasing animal productivity. As a soft leaf tall fescue, BarOptima® E34® | Get Plus® has three highly desirable traits: a high-quality forage, yield, and persistence. BarOptima® E34® | Get Plus® is safe, sustainable, profitable, and proven for over 15 years. *Seeding Rate: 25lbs/acre*



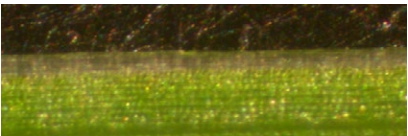
Under the Microscope

One Year Yield Results in Starkville, Mississippi

	5/30/18	7/19/18	Total
BarOptima® E34® Get Plus®	3,392	672	4,064
Texoma MaxQ	3,264	530	3,794



Common Tall Fescue



Soft Leaf Tall Fescue

-  Soft Leaf Tall Fescue
-  Highly Digestible
-  Late Maturing

STF-43 | Get Plus®
A premium blend of late maturing soft leaf tall fescues, STF-43 | Get Plus® is composed of varieties that provide exceptional levels of dry matter and digestible fiber. Powered by NutriFiber®, STF-43 | Get Plus® promotes rumen health and productivity. STF-43 | Get Plus® is also well suited for cutting systems and is an excellent selection for planting with alfalfa and other legumes. *Seeding Rate: 25lbs/acre*



Meadow Fescue

-  Highly Digestible
-  Winter Hardy
-  Increase Milk Production

HDR™
HDR™ (High yielding, Digestible, and disease Resistant) is a blend of late maturing meadow fescues that was developed so dairy and beef producers could provide high energy grass for their livestock. HDR™ varieties were selected for high yields, digestibility, and high energy. This blend thrives in the continental climate of North America that is characterized by warm to hot summers and very cold winters. HDR™ contains the most disease resistant meadow fescues varieties on the market. These varieties establish quickly, and are a great companion for alfalfa, red clover, and white clover. *Seeding Rate: 25lbs/acre*

Meadow Fescue (cont.)

-  High Energy
-  Improve Butterfat
-  Widely Adapted

Milkway™
As a mixture of meadow fescue varieties and late maturing soft leaf tall fescues, Milkway™ performs well as a standalone hay crop or as an excellent companion with alfalfa. Combining high yielding meadow fescues with extremely digestible soft leaf tall fescues, Milkway™ provides exceptionally high NDFd and thus an improved rate of digestion, while the soft leaf tall fescues provide stable NDF and NDFd throughout the season. Milkway™ in a dairy TMR can improve milk production by 5% to 15% over traditional wheat straw diets. Milkway™ brings increased production and high quality forage to your hay and pasture fields. *Seeding Rate: 25lbs/acre*

BarOptima® E34® | Get Plus®, Stockton Missouri





Annual Ryegrass

 High Dry Matter

 Rust Resistant

 Late Maturing

 Disease Resistant

 Winter Hardy

 High Dry Matter

 Late Maturing

 Winter Hardy

 Increased Forage Quality

 Early Maturing

 Deep-Rooting

Jumbo™
A late maturing tetraploid annual ryegrass developed at the University of Florida, Jumbo™ exhibits superior rust resistance in varied environments. It has consistently performed well in forage trials throughout the annual ryegrass growing regions of the United States, as well as displaying vigorous growth habit, and high forage yields. This variety is well suited for mechanical harvesting (silage) as well as grazing. *Seeding Rate: 25-35lbs/acre*

Maximus™
A medium maturing tetraploid annual ryegrass, Maximus™ exhibits a vertical growth habit with large leaves making it ideally suited for mechanical harvesting. Maximus™ also exhibits good winter hardiness and rust resistance, making it suitable not only in the Gulf Coast states and California, but in the northern states as well. *Seeding Rate: 25-35lbs/acre*

Hercules™
A late maturing tetraploid annual ryegrass, Hercules™ outperforms other popular cultivars in the transition zone where winter hardiness is critical. Hercules™ is very leafy, making it suitable for greenchop and grazing. If spring planted, it does not form seed until later in the season, providing you with better forage quality compared to other varieties. *Seeding Rate: 25-35lbs/acre*

Ribeye™
An early maturing diploid annual ryegrass, Ribeye™ is excellent for overseeding bermudagrass pastures in the southern United States. Ribeye™ can be used as a deep-rooted cover crop, and overseeded into crop fields to provide winter feed for cattle. Earlier production allows for excellent grazing early, and Ribeye's™ earlier maturity allows for earlier termination prior to spring planting. *Seeding Rate: 25-35lbs/acre*

Italian Ryegrass

Green Spirit®
As a perfect blend of diploid and tetraploid Italian ryegrasses, Green Spirit® provides excellent quality forage for up to two years, depending on climate and available moisture. Due to its quick regrowth, very early development in spring, and prolonged growing period in the fall, this species usually has greater overall productivity than other cool season grasses. To ensure you receive true Italian cultivars instead of annual, Green Spirit® offers the best genetic purity on the market. A true Italian ryegrass needs a period of cold temperatures to vernalize, and once vernalized, the plant can produce seed heads. Green Spirit® is the perfect rotation crop for plow down or emergency feed. *Seeding Rate: 30-40lbs/acre*

 Superior Forage Quality

 Multiple Manure Applications

Forage Quality of Green Spirit® Compared to Conventional Rotational Options

	Protein % DM	NDF % DM	NDFd % DM	lbs milk/ton
Green Spirit® 25 Day Cut	21.7	43.9	77.0	3,615
Green Spirit® 35 Day Cut	16.9	46.8	71.7	3,468
Alfalfa	27.2	26.7	59.9	3,975
Soybean	18.9	36.6	55.4	3,697
Corn Silage	7.0	48.3	59.9	3,249
LSD	0.4	1.5	1.9	46

University of Wisconsin, Arlington Research Station

“The dairy quality feed produced by Green Spirit® is significant to our dairy nutrition program. We have seen better water retention and an increase in soil organic matter following Green Spirit® ”





Perennial Ryegrass

-  **Extremely Persistent**
-  **Beneficial Endophyte**
-  **High Yields**
-  **Disease Resistant**

Remington NEA2 | Get Plus®



We combined our proven tetraploid perennial ryegrass with the beneficial endophyte, NEA2, to bring you a high yielding, high quality ryegrass sharing many attributes of diploid types. We selected Remington™ for its sward density, high yields, heat tolerance, excellent disease resistance, and improved winter tolerance compared to traditional cultivars. Remington™ produces longer into the summer months and is well suited for grazing and high moisture cutting systems. Its exceptional palatability promotes high dry matter intake, while simultaneously providing extremely nutritious and digestible forage. The addition of the NEA2 beneficial endophyte expands this area of adaptation, allowing Remington NEA2 | Get Plus® to persist in regions where perennial ryegrasses typically die out due to summer stress. *Seeding Rate: 25-30lbs/acre*

-  **High Yielding**
-  **Increased Palatability**
-  **Disease Resistant**

BG®-24T | Get Plus®



A blend of early and intermediate maturing diploid and tetraploid perennial ryegrass varieties, BG®-24T | Get Plus® provides additional heat and cold tolerance with better disease resistance. It can perform in areas of extreme environmental conditions such as the cooler regions of the United States. Under high summer temperatures, these varieties will perform better than later maturing varieties. The diploid perennial ryegrass varieties provide stand density, whereas the tetraploids improve the overall palatability and productivity of the grass field. BG®-24T | Get Plus® is fast germinating and has strong seedling vigor, leading to high yields and high palatability. *Seeding Rate: 25-30lbs/acre*

Perennial Ryegrass (cont.)

-  **Fast Establishment**
-  **High Yielding**
-  **Disease Resistant**

BG®-34

A blend of intermediate and late maturing, diploid perennial ryegrass varieties, BG®-34 was developed for high yields, exceptional palatability, rapid establishment, excellent re-growth, and nutritive value with long leaves and short stems. BG®-34 is the standard of high-quality pastures and hay fields throughout the northern United States, and brings with it excellent winter hardiness, disease resistance, and traffic tolerance. *Seeding Rate: 25-30lbs/acre*





Timothy

-  Winter Hardy
-  Improved Grazing Tolerance
-  Intermediate Maturing

Barfleo™
An intermediate maturing timothy, Barfleo™ has excellent spring production and is well suited for dry hay production. With improved grazing tolerance, winter hardiness, and exceptional performance in horse grazing trials, Barfleo™ is the perfect choice for pastures in the high mountain regions and in areas with snow cover. Barfleo™ is an excellent choice for the export hay market.
Seeding Rate: 10-15lbs/acre

Orchardgrass

-  Drought Tolerant
-  Disease Resistant
-  Winter Hardy

HLR™
As a blend of Barenbrug's elite intermediate to late maturing orchardgrass varieties, HLR™'s varieties have been selected for **high leaf-to-stem ratio**, meaning more leaves for improved digestibility and energy, with fewer stems that reduce the palatability of your pasture. These varieties have been selected for rust and foliar disease tolerance, drought tolerance, and winter hardiness. The intermediate to late heading varieties in HLR™ are ideal for interplanting with alfalfa as well as for pasture and pure grass hay.
Seeding Rate: 10-15lbs/acre





Bermudagrass

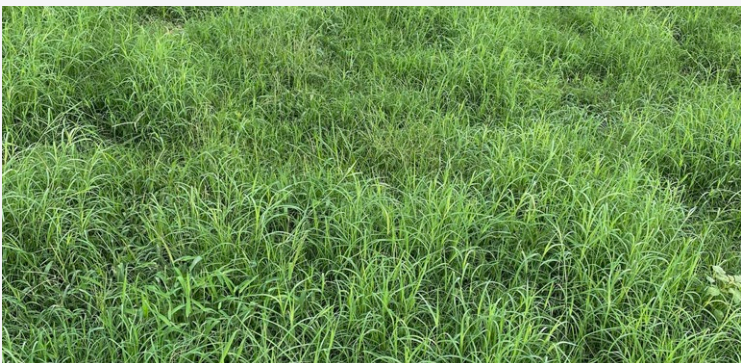
- Quick Establishment
- Early Production
- Decreased Costs

Grit® | Yellow Jacket® 

New to the Barenbrug portfolio, Grit® | Yellow Jacket® brings a combination of superior varieties and is further enhanced with our Yellow Jacket seed enhancement technology. With quick establishment and early production, Grit® | Yellow Jacket® will bring added profitability to your acres. Seeded bermudagrass possesses several advantages compared to cuttings or sprigs:

- Early Production
- Multiple Cuttings
- Decreased Costs
- Increased Ease of Use

Seeding Rate: 12-15lbs/acre



Grit® | Yellow Jacket® in Tennessee



Forage Crabgrass

Mojo® | Yellow Jacket® 

Mojo® | Yellow Jacket® is our coated improved crabgrass that works like magic during the hot dry months and now includes Impact™, a variety released from the Noble Research Institute for forage livestock producers needing a later-maturing cultivar than Red River. Crabgrass is a high quality, high yielding, summer annual forage that is excellent for grazing and haying. Mojo® | Yellow Jacket® produces a highly digestible forage (up to 73% NDFd) and high crude protein content (25-30% early season; 15-20% mid-summer; 10% late season). Mojo® | Yellow Jacket® produces excellent average daily gains, and it is an ideal summer annual forage crop following winter annuals. It works well as a cover crop, displays good reseeding ability, and is drought tolerant. The Mojo® | Yellow Jacket® area of adaptation extends from the northern regions of the southern and eastern United States to the Gulf and Atlantic coasts.

Seeding Rate: 5-8lbs/acre

- Drought Tolerant
- Easy to Establish
- High Yielding

Maturity Difference: Red River v. Impact™



Mojo® | Yellow Jacket® now contains Impact™ (far right), a variety released from the Noble Research Institute that heads out 14+ days later than Red River (Far Left).

Ardmore, OK 2012. Plots sown on the same day

Teff Grass

- Drought Tolerant
- Highly Palatable
- Increased Yield

Moxie | Yellow Jacket® 

Moxie | Yellow Jacket® is a coated blend of warm season annual Teff grasses that can be harvested multiple times during the summer growing season as dry hay. Moxie | Yellow Jacket®'s fast growth allows for excellent forage quality and high yield during a relatively short growing season. This makes it a great option for livestock and hay producers. Moxie | Yellow Jacket® also is an excellent cover crop and is drought tolerant.

Seeding Rate: 8-10lbs/acre





Forage Brassicas

- Highly Palatable
- Extended Grazing
- Deep Rooted

Barsica™: Forage Rape
A forage rape suitable for either grazing by livestock or cutting and feeding, Barsica™ possesses high energy and has high digestible crude protein (up to 30% in the leaves). Barsica™ is a tall, leafy variety with high yields and is resistant to lodging and powdery mildew, making it highly palatable. *Seeding Rate: 3-5lbs/acre*

- High Energy Feed
- Multiple Harvests
- Increased Dry Matter

Barkant™: Forage Turnip
An improved diploid forage turnip, Barkant™ has a purple tankard root with 50% of the bulb on top of the ground. Barkant™ has good tolerance to bolting and, under a correct grazing management system, it can provide multiple harvests with up to 4-6 tons/acre of dry matter production in 60-90 days. It has high bulb yield with excellent top growth. The high sugar content in Barkant™ provides winter hardiness and increased palatability. It is also suitable for stockpiling or strip grazing with sheep and cattle. *Seeding Rate: 3-5lbs/acre*

- Rapid Re-Growth
- High Yielding
- Exceptional Plant Vigor

T-Raptor™: Hybrid Brassica
An early maturing hybrid brassica, T-Raptor™ is a cross between a forage turnip and a forage rape with 50-70 day crop duration. It exhibits a leafy growth habit (higher leaf-to-bulb ratio) and is well suited for grazing. Under ideal management, T-Raptor™ can be grazed once a month. It is an excellent late summer feed source, and a good supplement for late summer periods when cool season forage grasses slow in production. T-Raptor™ can be sown in spring to be grazed through summer or sown in late summer to be grazed through early winter. *Seeding Rate: 3-5lbs/acre*

Forage Chicory

- Drought Tolerant
- Deep Rooting
- Highly Palatable

Forb Feast™: Forage Chicory
Forb Feast™ is a reduced bolting blend, meaning high feed value for your animals. It has impressive leafiness and is an excellent source of digestible energy, protein, and minerals. In addition, chicory has been shown to have key anti-parasitic properties in small ruminants. Forb Feast™ has deep taproots that lend persistence and production in extreme heat and moisture, Forb Feast™ also displays good winter hardiness. Forb Feast™ is ideal as a component in a mixture with both warm and cool season grasses and legumes and is adapted for everything from the northern to southern United States. *Seeding Rate: 3-5lbs/acre*

Red Clover

- Mildew Resistant
- Increased Persistence
- Winter Hardy

Freedom MR | Yellow Jacket®
Freedom MR | Yellow Jacket® has all the benefits of Freedom™ with the added benefit of increased mildew resistance (MR). Mildew can be an issue in the upper-transition zone, midwestern, and northeastern United States. Freedom MR | Yellow Jacket® is well adapted to grazing and silage and displays improved winter hardiness and persistence. *Seeding Rate: 8-12lbs/acre*



- Drought Tolerant
- Fixes Nitrogen
- Large Leaves

Barduro | Yellow Jacket® A mid-dormancy red clover, Barduro™ was developed at the University of Florida for high resistance to root knot nematode. It is also drought and heat tolerant, and clearly displayed this during three years of drought trials in the southeastern United States where no other red clover survived. Barduro | Yellow Jacket® is competitive in stands of fescue, orchardgrass, and bermudagrass, making it an excellent choice for overseeding pastures. *Seeding Rate: 8-12lbs/acre*



White Clover

 Large Leaves

 Winter Hardy

 Fixes Nitrogen

Alice | Yellow Jacket®

A large-leaf intermediate white clover that grows to medium height, Alice | Yellow Jacket® exhibits tremendous nitrogen-fixing capacity, benefiting its companion forage varieties. Alice | Yellow Jacket® is persistent and winter hardy, making it the perfect companion for pastures in the northern United States and Canada. It also has greater stolon density, allowing for more persistence under intense grazing and traffic.

Seeding Rate: 3-5lbs/acre



 High Yields

 Increased Grazing Tolerance

Regal Graze | Yellow Jacket®

Regal Graze | Yellow Jacket® is a large-leaf ladino clover developed at the University of Georgia. Trials at UGA showed that it has superior forage yield with more grazing tolerance other ladino clovers. Regal Graze | Yellow Jacket® can be planted or seeded as a component of a pasture mixture with perennial grasses, or overseeded into established grass stands.

Seeding Rate: 3-5lbs/acre



Berseem Clover

 Increased Production

 Fixes Nitrogen

 Faster Growth

Super 10 | Yellow Jacket®

With early forage production, Super 10 | Yellow Jacket® has remarkable potential for providing a high quality, low bloat forage, that also improves your soil conditions. It works great as a green manure crop because of its fast growth characteristics and capacity to fix nitrogen in the soil, benefiting the following crop.

Seeding Rate: 8-12lbs/acre



Varieties Utilized in Blends & Mixtures

Orchardgrass *Dactylis glomerata*

BARLEGRO™

Barlegro™ is the latest release from Barenbrug's breeding program and is a very late maturing orchardgrass. In preliminary trials, it has shown very good winter hardiness and forage yield. Barlegro™ is extremely leafy and highly suited for interplanting with alfalfa.

INTENSIV™

Intensiv™ is a late maturing orchardgrass. It is winter hardy and has excellent disease tolerance (fusarium and leaf spot), making it quite persistent. Intensiv™ has a high leaf-to-stem ratio and the hay produced from Intensiv™ has excellent digestibility. With a late heading and high dry matter yields, Intensiv™ is highly suited for planting with alfalfa in mixed stands.

BARAULA™

A late maturing orchardgrass, Baraula™ is a high yielding variety with a high leaf-to-stem ratio, high palatability and digestibility. With its late maturity, Baraula™ is the orchardgrass of choice to grow with alfalfa, for either a new planting or to extend the life of an existing field.

AMMO™

The newest release of Orchardgrass, Ammo™ is an early maturing variety that stands up to summer stress. Tested in the South Central US, Ammo™ was selected for its increased drought tolerance and its adaptation to the dryland of the American West. Suited for areas that receive 18"-30" of annual precipitation.

Bromegrass *Bromus sp.*

ARTILLERY™ *Bromus inermis*

Artillery™ is an early maturing smooth brome that is rhizomatous and very productive. It is exceptionally drought tolerant and was selected in high stress conditions that included no-irrigation with low nitrogen input in the south central US. Artillery™ does well at 12-18 inches of precipitation. It is a southern type cultivar that performs well in colder temps of the northern US.

ARSENAL™ *Bromus biebersteinii*

Arsenal™ is a meadow brome with drought tolerance and high yields even with 18 inches of precipitation. It establishes rapidly with early spring growth and has high nutritional quality. It is exceptionally winter hardy for those cold areas of the northern US. Arsenal™ does not need a high fertilization rate in the dryland areas.

Bromegrass Continued *Bromus sp.*

MATUA™

Matua™ is a widely adapted prairie brome grass that thrives in grazing under irrigation in the southern United States, allowing for a long growing season. Matua™ is a palatable, heat tolerant, high quality forage that performs great as a grass companion in hay fields in the northern regions of North America. Matua™ is able to absorb high levels of nutrients and is an excellent choice in a wastewater management system.

HAKARI™

Hakari™ is a late maturing Alaska brome and is considered the "Matua™" for the colder climates of North America. Hakari™ establishes fast and quickly regrows, providing you a grass that is not only high yielding, but also high quality. A great companion for alfalfa and other grasses, Hakari™ exhibits tall, upright growth, and is sparsely tillering and erect rather than creeping. Hakari™ is a great choice for hay as it dries quickly and is not susceptible to smut.



Varieties Utilized in Blends & Mixtures

Tall Fescue

Festuca arundinacea

BARIANE™

Bariane™ is a soft leaf tall fescue with extremely high palatability and digestibility. Bariane™ is very late maturing, making it highly suitable for planting with alfalfa. It matures at the same time alfalfa is ready to cut in summer. Planting Bariane™ with alfalfa results in higher tonnage and the hay produced is ideal for dairies due to its easily digestible fiber and high energy.

BARELITE™

BarElite™ was selected in the US after multiple screening trials. It has a unique combination of high forage yield and impressive digestibility. BarElite™ is highly suited for producers who seek to produce and utilize high RFQ value forages.

ARMORY™

The newest release of endophyte free, continental, early maturing tall fescue, Armory™ was tested in the South Central US and selected for its exceptional drought and heat tolerance. It performs well under low nitrogen input conditions and possesses excellent forage quality. It is the best choice over orchardgrass in the transition zone where orchardgrass has poor persistence. It is well suited for areas with 11-18 inches of rain, but is able to tolerate up to 60 inches. Armory™ performs well in Southeastern United States.

BARFLEXA™

Barflexa™ is a newer soft-leafed variety in the Barenbrug lineup. It has very good ratings in animal preference and palatability. Its late maturity makes it an excellent fit for inclusion into Barenbrug's STF-43 soft leaf tall fescue blend. With Barflexa™/STF-43's late maturity, it makes this an excellent choice to plant with alfalfa for higher tonnage, high energy, and higher digestible fiber.

BAROPTIMA® E34® | GET PLUS®

BarOptima® E34® | Get Plus® is a soft leaf tall fescue powered by a beneficial fungal endophyte for high energy, high yield, and unmatched persistence. It is highly palatable and late heading, maintaining pasture quality into late spring. Unlike toxic Kentucky 31, it keeps cattle healthier and grazing longer, improving reproductive rates and weaning weights, with a 59% increase in live weight gain per acre.



BARNOVA™

Barnova™ is the newest endophyte-free soft leaf variety in the Barenbrug portfolio. It combines excellent yields with late maturity, keeping pastures productive later into the season. Its soft leaf texture drives excellent animal preference, making it a highly palatable choice for grazing operations.

Crabgrass

Digitaria sp.

IMPACT™

Impact™ is the newest late maturing annual crabgrass. Developed by the Noble Research Institute in Ardmore, OK, Impact™ is widely adapted and establishes easy. It is 10-14 days later, which improves forage quality and allows for later grazing days into the late summer months. Producers can achieve higher ADG during the summer months grazing Impact™.

Meadow Fescue

Festuca pratensis

DRIFTLESS®

Driftless® is the newest release of intermediate maturing meadow fescue. It is winter-hardy, disease resistant, high yielding, and has friendly endophytes. Powered by Nutrifiber, Driftless® is high in TTNDFd and NDF over the standard meadow fescues.

PRADEL™

Pradel™ is an impressive, high-yielding meadow fescue. It is late-maturing and exhibits excellent winter-hardiness. Pradel™ produces a taller, denser sward than traditional meadow fescue. Pradel™ excels under cool, moist conditions, and tolerates wet soils. Pradel™ will also tolerate the hot, dry conditions of mid-summer. Pradel™ is highly palatable and highly nutritious. It is ideal for grazing or cutting and with its rapid establishment is a great selection for overseeding.

Perennial Ryegrass

Lolium perenne

MARA™

Mara™ is the standard for winter-hardy perennial ryegrass. Mara™ is a very high yielding, extremely grazing tolerant, and persistent variety. It performs well from the transition zone with its hot, dry summers to upper Midwest with its extremely harsh winters. Mara™ is a component of BG®-24T and BG®-34.

BARSPRINTER™

Barsprinter™ is a diploid intermediate perennial ryegrass that was commercialized after superb performance in screening trials throughout the US. Barsprinter™ has very good winter hardiness along with excellent rust tolerance. It is noteworthy for stand density and is earlier heading.

Varieties Utilized in Blends & Mixtures

Perennial Ryegrass Continued

Lolium perenne

REMINGTON NEA2 | GET PLUS®



Remington™ is a tetraploid perennial ryegrass selected for its dense sward, high yields, heat tolerance, and improved winter hardiness. It produces longer into the summer than traditional cultivars and is highly palatable, driving strong dry matter intake. Paired with the NEA2™ beneficial endophyte, it persists in regions where perennial ryegrasses typically fail from summer stress. University of Kentucky trials showed 98% stand, leading all varieties tested.

REMINGTON™

Remington™ is a high yielding, high quality tetraploid ryegrass that shares many attributes of a diploid type. Remington™ was selected in the U.S. for its sward density, high yields, and excellent disease resistance. Remington™ has improved winter tolerance compared to traditional cultivars. It exhibits improved tolerance to heat and produces longer into the summer. Remington™ is suited to grazing and high-moisture cutting systems. Its exceptional palatability and digestibility promote high dry matter intake in a grazing situation. Seeding Rate: 25-30lbs/acre

Italian Ryegrass

Lolium multiflorum

BARPRISMA™

A diploid Italian ryegrass, Barprisma™ strengthens the Barenbrug tradition of breeding varieties that typically do not head out in the summer after sowing in spring. Barprisma™ was selected for improved rust resistance, lower lodging, winter hardiness, high dry matter yield, digestibility, and drought tolerance.

BAREXTRA™

Barextra™ is a late heading tetraploid Italian ryegrass. Barextra™ has shown impressive performance in university trials throughout the Midwest. It is a high yielding, winter-hardy tetraploid variety with superior rust resistance. It is more persistent than other Italian ryegrasses, making it suitable for both mechanical harvesting and grazing.

BARMULTRA II™

A very leafy tetraploid Italian ryegrass with good winter hardiness, Barmultra II™ has outstanding initial growth and excellent regrowth after cutting. Barmultra II is extremely rust resistant and offers high dry matter yields.



Characteristics

	Scientific Name	Establishment	Minimum Precipitation	Drought Tolerance	Winter Hardiness
<i>Alaska Brome</i>	<i>Bromus sitchensis</i>	Fast	16"	Moderate	High
<i>Alfalfa</i>	<i>Medicago sativa</i>	Medium	17"	High	Moderate
<i>Annual Ryegrass</i>	<i>Lolium multiflorum</i>	Fast	14"	Moderate	Low
<i>Bermudagrass</i>	<i>Cynodon dactylon</i>	Medium	18"	High	Moderate
<i>Chicory</i>	<i>Cichorium intybus</i>	Medium	16"	High	Moderate
<i>Crabgrass</i>	<i>Digitaria sanguinalis</i>	Medium	18"	High	None
<i>Italian Ryegrass</i>	<i>Lolium multiforum</i>	Fast	14"	Moderate	Moderate
<i>Kentucky Bluegrass</i>	<i>Poa pratensis</i>	Slow	18"	Low	High
<i>Meadow Brome</i>	<i>Bromus biebersteinii</i>	Fast	14"	High	High
<i>Meadow Fescue</i>	<i>Festuca pratensis</i>	Fast	20"	Moderate	High
<i>Orchardgrass</i>	<i>Dactylis glomerata</i>	Slow	16"	Moderate	High
<i>Perennial Ryegrass</i>	<i>Lolium perenne</i>	Fast	20"	Low	Moderate
<i>Prairie Brome</i>	<i>Bromus catharticus</i>	Fast	14"	Moderate	Low
<i>Rape</i>	<i>Brassica napus</i>	Fast	12"	Moderate	Low
<i>Red Clover</i>	<i>Trifoloum pratense</i>	Medium	19"	Moderate	High
<i>Smooth Brome</i>	<i>Bromus inermis</i>	Fast	14"	High	High
<i>Tall Fescue</i>	<i>Festuca arundinacea</i>	Medium	16"	High	High
<i>Teff</i>	<i>Eragrostis tef</i>	Fast	18"	High	None
<i>Timothy</i>	<i>Phleum pratense</i>	Slow	22"	Low	High
<i>Turnip</i>	<i>Brassica rapa</i>	Fast	12"	Moderate	Low
<i>White Clover</i>	<i>Trifolium repens</i>	Medium	19"	Moderate	Moderate

Characteristics (cont.)

	Persistence	Yield	Digestibility	Palatability	Seeding Rate	Seed/Lb.
<i>Alaska Brome</i>	Moderate	Moderate	High	High	35 lbs/acre	70,000
<i>Alfalfa</i>	Moderate	High	Moderate	Moderate	15-20lbs/acre	200,000
<i>Annual Ryegrass</i>	Low	High	High	High	30lbs/acre	225,000
<i>Bermudagrass</i>	Moderate	High	High	Moderate	10-12lbs/acre	1,800,000
<i>Chicory</i>	Moderate	Moderate	High	Moderate	1-2lbs/acre	426,000
<i>Crabgrass</i>	Low	High	Moderate	High	5-8lbs/acre	825,000
<i>Italian Ryegrass</i>	Moderate	High	High	High	35lbs/acre	190,000
<i>Kentucky Bluegrass</i>	High	Low	Moderate	Moderate	5lbs/acre	2,177,000
<i>Meadow Brome</i>	Moderate	High	High	High	20-25lbs/acre	87,000
<i>Meadow Fescue</i>	Moderate	Moderate	High	High	25lbs/acre	277,000
<i>Orchardgrass</i>	High	High	Moderate	Moderate	10-12lbs/acre	654,000
<i>Perennial Ryegrass</i>	Moderate	Moderate	High	High	25lbs/acre	277,000
<i>Prairie Brome</i>	Low	High	High	High	35lbs/acre	70,000
<i>Rape</i>	Low	Moderate	High	High	3-5lbs/acre	157,000
<i>Red Clover</i>	Moderate	High	Moderate	Moderate	15-20lbs/acre	272,000
<i>Smooth Brome</i>	High	Moderate	High	High	15-20lbs/acre	136,000
<i>Tall Fescue</i>	High	High	Moderate	Moderate	25lbs/acre	277,000
<i>Teff</i>	Low	High	High	High	8-10lbs/acre	1,300,000
<i>Timothy</i>	Moderate	Moderate	High	High	10-15lbs/acre	1,300,000
<i>Turnip</i>	Low	Moderate	High	High	3-5lbs/acre	200,000
<i>White Clover</i>	Moderate	Low	High	High	2-3lbs/acre	800,000

Forage Analysis Glossary

<i>ADF:</i>	Acid Detergent Fiber; the fraction of the feedstuffs not soluble by acid detergent; roughly comparable to a crude fiber plus lignin.
<i>Carbohydrate:</i>	Organic substances containing C, H, and O, with H and O present in the same proportions as in water.
<i>CP:</i>	Crude Protein; the total ammoniacal nitrogen X 6.25, based on the fact that feed protein contains 16 percent nitrogen; many nonprotein nitrogen compounds may be included.
<i>DM:</i>	Dry Matter; the portion of a feed or tissue remaining after water is removed by drying in an oven.
<i>Kcal:</i>	Kilocalorie; 1,000 calories.
<i>Lignin:</i>	A biologically unavailable polymer that is a major structural component of the cell walls of plants.
<i>Mcal:</i>	Mega calorie; 1,000 kcal or 1 million calories.
<i>ME:</i>	Metabolized Energy; digestible energy minus the energy of the urine and combustible gases from the gastrointestinal tract.
<i>NDF:</i>	Neutral Detergent Fiber; the fraction containing mostly cell wall constituents of low biological availability.
<i>NE:</i>	Net Energy; metabolizable energy minus the heat increment.
<i>NEl:</i>	Net Energy for lactation.
<i>NEp:</i>	Net Energy for production.
<i>NEm:</i>	Net Energy for maintenance.
<i>NFE:</i>	Nitrogen Free Extract; consists primarily of readily available carbohydrates such as sugars and starches.
<i>NPN:</i>	Non-protein Nitrogen; any one of a group of N-containing compounds that are not true proteins that can be precipitated to form a solution. Ammonia and urea are examples.
<i>RFQ:</i>	Relative Forage Quality; relative forage value including digestible fiber.
<i>RFV:</i>	Relative Feed Value; the estimated digestibility calculated from the estimations of ADF and NDF.
<i>TDN:</i>	Total Digestible Nutrients; values that indicate the relative energy value of a feed for an animal.
<i>TMR:</i>	Total Mixed Ration; the practice of weighing and blending all feedstuffs into a complex nutritional ration.
<i>NDFd:</i>	Neutral Detergent Fiber Digestibility.
<i>TTNDFd:</i>	Total Tract Neutral Detergent Fiber Digestibility.



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