

INTRODUCTION TO ALFALFA FORAGES

Premium alfalfa seed has long been a pillar in the Star Seed forage lineup. Alfalfa varieties are carefully chosen to meet the growers needs and management system. From premium quality dairy forage to high-management Round-Up Ready® production options, Star Seed can provide the best alfalfa seed for YOU!

VARIETY	VNS	A-100	SLINGSHOT	L-446RR
DESCRIPTION	A blend of alfalfa varieties. Known to many as "Common" Alfalfa.	Conventional alfalfa with exclusive blended varietal genetics. Well adapted to a wide range of agronomic conditions.	High-yielding, high-quality, excellent digestibility. Exclusive genetics. Top production across a wide range of agronomic conditions.	Round-Up Ready®, high-yielding, high-quality, alfalfa. Top production over a wide range of soil conditions.
APPLICATION(S)	A low cost common alfalfa with excellent stand longevity potential.	Multipurpose, value forage, general beef production.	Dairy, high performance equine, beef production. High-value forage markets, maximum return on investment.	Beef, dairy markets. Round-Up management systems, areas with heavy weed pressure.



A-100

CONVENTIONAL ALFALFA

A-100 is a brand of alfalfa that works very well in our region. A-100 is a persistent brand that will give very good production for the more economically minded grower.

A-100 CHARACTERISTICS	
Fall Dormancy	4.0
WSI	2.2
DRI	30/30
Forage Quality	Very Good
Persistence	Excellent
Leaf-type	Trifoliate
Recovery after cutting	Fast
Hay	Excellent
Haylage	Excellent
Pre-inoculated	Yes
Treated with Fungicide	Yes
Seeding Rate	12-20 lbs drilled

A-100 DISEASE AND PEST RESISTANCE*	
Bacterial Wilt	R
Fusarium Wilt	R
Anthracnose	R
Phytophthora Root Rot	HR
Aphanomyces Root Rot (Race 1)	R
Aphanomyces Root Rot (Race 2)	NR
Verticillium Root Rot	R
Pea Aphid	NR
Potato Leafhopper	NR

NR = Not Rated

R = Resistant; HR = Highly Resistant



SLINGSHOT

STAR PREMIUM ALFALFA

Slingshot is a high-yielding brand of alfalfa with a perfect score for winterhardiness. Packing an excellent disease and pest resistance package, this alfalfa stands out with the best of them. Slingshot's ability to handle an aggressive multi-cut regiment takes this alfalfa to the next level.

SLINGSHOT CHARACTERISTICS	
Fall Dormancy	5.2
WSI	2.0
DRI	30/30
Forage Quality	Excellent
Leaf-type	Multifoliate
Recovery After Cutting	Fast
Hay	Excellent
Haylage	Excellent
Pre-inoculated	Yes
Treated with Fungicide	Yes
Seeding Rate	12-20 lbs drilled

SLINGSHOT DISEASE AND PEST RESISTANCE	
Bacterial Wilt	R
Fusarium Wilt	HR
Anthracoese	HR
Phytophthora Root Rot	HR
Aphanomyces Root Rot (Race 1)	HR
Aphanomyces Root Rot (Race 2)	NR
Verticillium Root Rot	HR
Pea Aphid	HR
Potato Leafhopper	NR

NR = Not Rated

R = Resistant; HR = Highly Resistant



L-446RR

GENUITY® ROUNDUP READY® ALFALFA



L-446RR is a very high-yielding and high-quality alfalfa. L-446RR was selected to be a top Roundup Ready® variety for the cash hay and dairy market. L-446RR has an excellent agronomic package that provides a very persistent and healthy plant for top production over a broad range of soils.

L-446RR CHARACTERISTICS	
Fall Dormancy	4.3
WSI	1.8
DRI	30/30
Forage Quality	Excellent
Leaf-type	Multifoliate
Recovery After Cutting	Very Fast
Hay	Excellent
Haylage	Excellent
Pre-inoculated	Yes
Treated with Fungicide	Yes
Seeding Rate	15-20 lbs drilled

L-446RR DISEASE AND PEST RESISTANCE*	
Bacterial Wilt	HR
Fusarium Wilt	HR
Anthrachnose	HR
Phytophthora Root Rot	HR
Aphanomyces Root Rot (Race 1)	HR
Aphanomyces Root Rot (Race 2)	NR
Verticillium Root Rot	HR
Pea Aphid	HR
Potato Leafhopper	SR

NR = Not Rated

R = Resistant; HR = Highly Resistant; SR = Somewhat Resistant

**Minimum Resistance for A-100*





Exceed^{SAR} and other legume inoculants manufactured by Visjon Biologics offer the grower an advantage in the field through the addition of fresh and plentiful nitrogen-fixing bacteria.

The symbiotic relationship the Rhizobium bacteria has with your legume crop enables the seed to germinate quickly and stimulates plant hormones responsible for root formation and development. This brings more nourishment to the plant, which is evident by rapid and healthy growth with high-yield return.

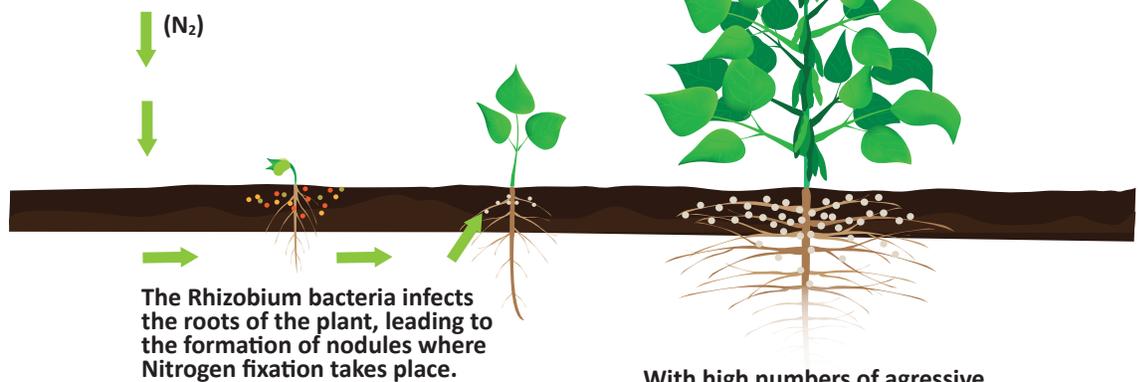
Soybeans require 4-6# of Nitrogen per bushel produced.

Do more than meet your yield goals... EXCEED them.

The Benefits of Rhizobium Bacteria Inoculation. Nitrogen-Fixation Process

Nitrogen (N₂) is available for the plant, from 3 sources:

- Air (Atmospheric)
- Plant Residue (Decomposition)
- Rhizobium Bacteria (Applied)



Field conditions such as High or Low pH, Saturated Soil, Low Organic Matter and Longer Crop Rotations, can have adverse effects on Native Rhizobia in the soil. Inoculating with fresh Rhizobium Bacteria assures high numbers for the benefit of the plant.

With high numbers of aggressive Nitrogen-fixing Rhizobia Bacteria:

- Every soybean planted can fully yield.
- Yield is improved in challenged areas.
- Full-field Yield Averages increase.

Visjon Biologics is a family-owned and operated company.



The Inoculant Experts

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SORGHUM FORAGE PRODUCTS

QUALITY STAR SEED

SORGHUM LINE

TYPE	PEARL MILLET	HYBRID SUDAN	SORGHUM SUDAN	FORAGE SORGHUM
DESCRIPTION	Low prussic acid levels, very leafy and palatable grazing choice. Slow re-growth and lower yield potential.	Fine stemmed, high quality, rapid re-growth potential. Poor leaf retention after heading.	Yields between sudan and forage sorghum, very flexible forage type.	Highest yielding for large volume feed production.
MOST POPULAR USES	Premium grazing choice.	High quality rotational grazing, or multi-cut premium leafy hay.	Flex forage choice for grazing, multi-cut hay, or green chop.	Baled feed and silage production.

POPULAR TRAITS

BROWN MID-RIB (BMR)

Promote better animal performance by increased palatability and digestibility because of its low lignin levels.

PHOTOPERIOD SENSITIVE (PS)

Plant stays in vegetative growth period that is controlled by the length of day.

BRACHITIC DWARF (BD)

The shortening of the internodes allows more leaves per plant, which results in greater feed quality and resistance to lodging.

MALE STERILE (MS)

The absence of pollen grain or the incapability of the plant to produce viable pollen grain results in sugar accumulation in the stock.

PREMIUM FORAGES

AVAILABLE THROUGH THE STAR SEED DEALER NETWORK

			CONVENTIONAL HYBRID	BROWN MID-RIB	PHOTO SENSITIVE	BRACHYTIC DWARF	SUGGESTED USES
HYBRID SUDAN	BLUE RIBBON 3D	Premium Quality Sudan — very dry and quick to cure for baling; on average 3 days to cure after cutting.					Fine stemmed for high value markets; breeding stock, or show cattle.
SORGHUM X SUDAN	EXCEL II	High Performing Tonnage — consistent performer over a wide range of environmental conditions.					Very flexible feed uses including single cut baled feed, green chop, multi-cut OR grazing feed choices.
	NUTRIMAXX BMR	Long season BMR sorghum sudan with superior drought tolerance; high yielding, very aggressive tillering and fast recovery for multi-cut and intense grazing.					
	DRYLANDER	Photo period sensitivity makes this a good choice for upland acres, continuing to produce feed following periods of drought and severe heat.					
	BRUISER	Dwarf variety but is high yielding with plentiful moisture and delivers very rapid re-growth for intensive grazing or planned multiple cuts.					
FORAGE SORGHUM	MAGNUM	A conventional hybrid produces sweet and palatable baled feed and performs over a wide range of environmental conditions. Special order available with 80% LDP eligibility. Can be ordered male sterile.					High yielding baled feed production.
	MAGNUM ULTRA BMR	BMR Market Leader — delivers more TDN than conventional hybrids. Male sterile or special order available with 80% LDP eligibility.					High quality baled feed OR non-grain producing silage.
	BRUTIS	Dwarf variety is shorter, but high yielding with plentiful moisture produces a very dense leaf pack. Great choice for irrigation or plentiful moisture.					High quality BMR grain silage.
	PACKER HGY	100% LDP heavy grain production. Compare and use as conventional alternative to NK300 or FS5.					Conventional silage with high grain yield.
	QUICK CHOP	Good disease resistance. 90-Day Grain. One-third less water compared to corn.					Short season silage. Good winter grazing. Great after wheat harvest.
PEARL MILLET	ALL STAR PEARL MILLET	Tall and leafy, reaching pre-boot between 60 and 75 days. Tillers profusely with very fine stems for excellent quality hay. Does not produce prussic acid.					Premium market forage or grazing for horses and show cattle.
	BMR PEARL MILLET	Shorter Brachyitic Dwarf hybrid pearl millet that produces high yields. It typically will reach boot stage in around 60 days. This high leaf mass assures high concentrations of protein and TDN values.					

Concept Herbicide Safener and Insecticide Treatment is Available on Most Products

SORGHUM FORAGES

PRODUCT SELECTION GUIDE

BALED FEED

LACTATING COWS & GROWING ANIMALS		DRY COWS OR MAINTENANCE		HORSES & SPECIALTY LIVESTOCK	
SINGLE CUT	MULTI-CUT	SINGLE CUT	MULTI-CUT	SINGLE CUT	MULTI-CUT
Magnum Ultra, Drylander, BMR All-Star Pearl Millet	Bruiser, Blue Ribbon 3D, NutriMaxx BMR, DryLander	Magnum, BMR All-Star Pearl Millet	Excel II	All-Star Hybrid Pearl Millet, BMR All-Star Pearl Millet	

GRAZING PASTURE

BEEF CATTLE LIVESTOCK			HORSES & SPECIALTY LIVESTOCK
CONTINUOUS SUMMER	ROTATIONAL	STANDING WINTER	ROTATIONAL OR CONTINUOUS
AllStar Hybrid, Pearl Millet, BMR All Star	Bruiser, Blue Ribbon 3D	Magnum Ultra (Sterile)	AllStar Hybrid Pearl Millet, BMR All Star Pearl Millet

SILAGE

LACTATING COWS & GROWING ANIMALS		DRY COWS OR MAINTENANCE	
WITH GRAIN	NO GRAIN	WITH GRAIN	NO GRAIN
Brutis, Packer HGY, Quick Chop	Magnum Ultra (Sterile)	Packer HGY, Magnum LDP, Quick Chop	Magnum Sterile



BALED FEED HARVESTING TIPS

When planning to harvest baled feed, its best to harvest it around 48 inches and when the plant has reached the boot stage of maturity. Cut the feed down to 6-8 inches leaving three nodes for regrowth if desired. This added height will also help reduce the risk of nitrate poisoning. Using wide windrows will aid in drying, along with aggressive crimping.

GRAZING TIPS

Rotational grazing is encouraged. Do not begin grazing until growth exceeds 20-24 inches or more. Remove when leaves have been removed but before stalks are consumed. Return to grazing only when growth exceeds 18 inches; this gives best animal performance, best growth, and reduces prussic acid and nitrate risks.

SILAGE HARVESTING

The best stage of growth to harvest grain producing Forage Sorghums is at the soft dough stage. Finding the optimal timing to harvest male sterile, or non-grain producing hybrids can be more challenging. It is recommended to harvest male sterile hybrids when the whole plant moisture has dropped to around 60-70 percent.



MANAGING PRUSSIC ACID & NITRATES WITH SORGHUM FORAGES

Prussic acid occurs when a compound in the leaf epidermis combines with a compound in the leaf mesophyll cells to release prussic acid (cyanide).

Crushing, chewing, or freezing can burst cells and allow these compounds to come in contact with each other; **do not graze during frost risk.**

Prussic acid is most concentrated in new re-growth therefore, sorghum forages **should not be grazed until more than 18" tall.**

Prussic acid is not generally a concern in well-cured hay, silage that has been stored more than 30 days, or in foliage that has been frosted and dried out.

Pearl Millet is the forage choice when prussic acid is a major concern.

Toxic levels of **nitrate** can develop in sorghum forages, especially when excessive nitrogen combined with drought conditions occur at or near the time of harvest. High levels of nitrate in sorghum forage is dangerous and can be fatal to livestock if not managed properly. To prevent and manage nitrate concerns, follow these general guidelines...

- Wait 7 to 10 days after a drought breaking rain before harvesting; test before harvesting during extended periods of stress.
- Balanced fertility reduces risks for nitrate problems. Split applications of N on multi-cuts is a constructive management practice, half at planting, and the rest after each hay harvest.

GUIDELINES FOR ROTATIONAL STOCKING SORGHUM FORAGE

The nutritional requirements of the livestock being grazed should be considered when deciding when to end grazing. The closer a pasture is grazed, the lower forage quality will be toward the end of that particular grazing cycle. Greater residual heights may be desired for animals with higher nutritional requirements (for example: stocker cattle vs. cows and calves).

	BEGIN GRAZING	END GRAZING	RETURN TO GRAZING
Forage Sorghum & Sorghum Sudan	20-24 inches	8-12 inches	Regrowth >18 inches





SORGHUM & SUDANGRASS FORAGE PRODUCTS

BLUE RIBBON 3D

BMR HYBRID SUDANGRASS

Blue Ribbon 3D is a premium quality sudan forage with the dry stalk gene and quickness to cure for baling. This hybrid produces a fine stemmed sudan forage suitable for grazing or baling. With excellent regrowth, this sudangrass makes for exceptional multicut feed.

BLUE RIBBON 3D CHARACTERISTICS		BLUE RIBBON 3D PRODUCT INFORMATION	
Plant Height	5-6 Feet	Hay	Excellent
Grain	N/A	Silage	Good
Days to Pollination	60-75	Continuous Grazing	Very Good
Typical Seeds / lb	22,500	Rotational Grazing	Excellent
Dryland Seeding Rate	13-19 lbs drilled	Palatability	Excellent
Irrigated Seeding Rate	22-32 lbs drilled		
Advanced Genetics	Brown Mid Rib (BMR)		



EXCEL II

CONVENTIONAL SORGHUM SUDANGRASS

Excel II is a hybrid sorghum sudangrass that produces high-quality forage and has a quick regrowth. This variety produces tons of palatable forage. Excel II is a multicut hybrid that will perform over a wide range of environmental conditions.

EXCEL II CHARACTERISTICS	
Plant Height	6-8 Feet
Grain	Yes
Days to Pollination	90-95
Typical Seeds / lb	19,000
Dryland Seeding Rate	13-24 lbs drilled
Irrigated Seeding Rate	22-32 lbs drilled
Advanced Genetics	Conventional Hybrid

EXCEL II PRODUCT INFORMATION	
Hay	Very Good
Silage	Good
Continuous Grazing	Very Good
Rotational Grazing	Very Good
Palatability	Very Good



NUTRIMAXX BMR

LATE MATURING BMR SORGHUM SUDAN

Nutrimaxx BMR is a full season sorghum sudan alternative to photoperiod sensitive (PPS) genetics. Nutrimaxx BMR hybrid features include a very high green leaf retention, aggressive tillering, re-growth and recovery, all packaged with excellent drought tolerance. This variety has a wide harvest window and produces full season forage.

NUTRIMAXX BMR CHARACTERISTICS

Plant Height	7-9 Feet
Grain	Yes
Days to Pollination	85-90
Typical Seeds / lb	17,000
Dryland Seeding Rate	13-24 lbs drilled
Irrigated Seeding Rate	22-32 lbs drilled
Advanced Genetics	Brown Mid-Rib (BMR)

NUTRIMAXX BMR PRODUCT INFORMATION

Hay	Excellent
Silage	Good
Continuous Grazing	Excellent
Rotational Grazing	Excellent
Palatability	Excellent



BRUISER

BRACHYTYC DWARF (BD) BMR SORGHUM SUDAN

Bruiser is a brachytic dwarf BMR sorghum sudan that overcomes many of the difficulties of grazing or haying older tall varieties. Brachytic Dwarf means a hybrid that has shortened internodes but additional leaves, so quality is enhanced without sacrificing yield. BRUISER has excellent grazing qualities with rapid and abundant regrowth after grazing or swathing. The BMR genetics coupled with the shortened internodes, makes this hybrid very palatable and nutritious, while at the same time leaving foliage accessible to livestock.

BRUISER CHARACTERISTICS	
Plant Height	5-6 Feet
Grain	Yes
Days to Pollination	70-85
Typical Seeds / lb	14,000
Dryland Seeding Rate	13-24 lbs drilled
Irrigated Seeding Rate	22-32 lbs drilled
Advanced Genetics	Brown Mid Rib (BMR) Brachytic Dwarf (BD)

BRUISER PRODUCT INFORMATION	
Hay	Excellent
Silage	Good
Continuous Grazing	Excellent
Rotational Grazing	Excellent
Palatability	Excellent



DRYLANDER

PHOTOPERIOD SENSITIVE (PPS) SORGHUM SUDAN FOR UPLAND ACRES AND COVER CROPPING MIXES

Daylight rather than environmental condition triggers **Drylander** to switch from vegetative to the reproductive stage. This means environmental extremes have less impact on Drylander with better recovery and resumed vegetative growth after periods of drought and heat stress.

DRYLANDER CHARACTERISTICS	
Plant Height	8-9 Feet
Grain	No
Days to Pollination	Varies by Day Length; <12.5 hours daylight repro.
Typical Seeds / lb	17,000
Dryland Seeding Rate	13-24 lbs drilled
Irrigated Seeding Rate	22-32 lbs drilled
Advanced Genetics	Brown Mid Rib (BMR) Photo Sensitive (PS)



DRYLANDER PRODUCT INFORMATION	
Hay	Excellent
Silage	N/A
Continuous Grazing	Excellent
Rotational Grazing	Excellent
Palatability	Excellent

MAGNUM

CONVENTIONAL, SINGLE CUT HYBRID

Magnum has been a standout forage sorghum, producing outstanding tonnage as well as quality feed. Magnum can be ordered as a male sterile conventional, single cut hybrid that will perform over a wide range of environmental conditions.

MAGNUM CHARACTERISTICS	
Plant Height	7-9 feet
Grain	Yes*
Days to 50% Anthesis	75
Typical Seeds / lb	15,500
Dryland Seeding Rate	15-20 lbs drilled
Irrigated Seeding Rate	20-24 lbs drilled
Advanced Genetics	Conventional Hybrid



MAGNUM PRODUCT INFORMATION	
Hay	Very Good
Silage	Very Good
Continuous Grazing	Good
Rotational Grazing	Good
Palatability	Very Good

*Can be ordered sterile

MAGNUM ULTRA BMR

SINGLE CUT BALED FEED OR PREMIUM QUALITY SILAGE



Magnum Ultra is a single cut forage sorghum hybrid with the BMR trait, leading to exceptional feed quality and high tonnage. This means that the feed production will always rank very high with respect to quality and value. Magnum Ultra can also be ordered as a sterile product, making it adaptable to many different environmental factors and farming practices.



Brutis is a brachytic dwarf, long maturity forage sorghum. Brachytic Dwarf means a hybrid that has shortened internodes, resulting in additional leaves, so quality is enhanced without sacrificing yield. This hybrid has a long maturity that adds to total yield, about 50% more leaves that are much longer and wider than taller forage sorghums. Quality is exceptional due to BMR genetics, good grain yield, and a very high leaf-to-stem ratio. The shorter mature height makes the standability exceptional. If planted after July 1, Brutis makes an ideal winter grazing for livestock.

MAGNUM ULTRA BMR CHARACTERISTICS

Plant Height	7-9 feet
Grain	Yes (Can be ordered sterile)
Days to 50% Anthesis	80-85
Typical Seeds / lb	19,500
Dryland Seeding Rate	15-20 lbs drilled
Irrigated Seeding Rate	20-24 lbs drilled
Advanced Genetics	Brown Mid Rib (BMR)

MAGNUM ULTRA BMR PRODUCT INFORMATION

Hay	Very Good
Silage	Excellent
Continuous Grazing	Good
Rotational Grazing	Good
Palatability	Excellent

BRUTIS

BRACHYTIC DWARF (BD)
BMR FORAGE SORGHUM

BRUTIS CHARACTERISTICS

Plant Height	5-7 feet
Grain	Yes
Days to 50% Anthesis	100-105
Typical Seeds / lb	16,000
Dryland Seeding Rate	5-6 lbs row planted
Irrigated Seeding Rate	6-8 lbs row planted
Advanced Genetics	Brown Mid Rib (BMR) Brachytic Dwarf (BD)

BRUTIS PRODUCT INFORMATION

Hay	N/A
Silage	Excellent
Continuous Grazing	N/A
Rotational Grazing	N/A
Palatability	Excellent

PACKER HGY

EXCELLENT ALTERNATIVE TO FS5 AND NK300; A CONVENTIONAL HYBRID FORAGE SORGHUM FOR HIGH PRODUCTION SILAGE.

Packer HGY produces a high grain yield and is a strong standing forage sorghum. The high grain-to-stover ratio significantly increases digestible dry matter produced per acre when harvested for silage feed. The high-protein content and total digestible nutrients make this an excellent hybrid for feedlot and dairy operations. Packer HGY is an excellent alternative to FS5 and NK300 for a high production silage.



PACKER HGY CHARACTERISTICS	
Plant Height	6-7 feet
Grain	Yes
Days to Pollination	85-90
Typical Seeds / lb	16,000
Dryland Seeding Rate	5-6 lbs row planted
Irrigated Seeding Rate	6-8 lbs row planted
Advanced Genetics	Conventional Hybrid

PACKER HGY PRODUCT INFORMATION	
Hay	N/A
Silage	Excellent
Continuous Grazing	N/A
Rotational Grazing	N/A
Palatability	Very Good

QUICK CHOP

SHORT SEASON BMR FORAGE SORGHUM

Quick Chop is a medium maturity one cut silage with grain for maximizing tonnage and digestibility. This hybrid grows quickly making it suitable for double cropping after wheat harvest. It should be ready to harvest in 90 days or in the soft dough stage. Quick Chop has good stalk strength giving it excellent standability. Reduced lignin in the plant improves the digestibility significantly.



QUICK CHOP CHARACTERISTICS	
Plant Height	7-9 feet
Grain	Yes
Days to Pollination	80-90
Typical Seeds / lb	18,000
Dryland Seeding Rate	5-6 lbs row planted
Irrigated Seeding Rate	6-8 lbs row planted
Advanced Genetics	Brown Mid Rib (BMR)

QUICK CHOP PRODUCT INFORMATION	
Hay	N/A
Silage	Excellent
Continuous Grazing	N/A
Rotational Grazing	N/A
Palatability	Excellent



MILLET FORAGE PRODUCTS

ALL-STAR

HYBRID PEARL MILLET

All-Star is a high protein, very palatable, no prussic acid millet forage type for grazing or high quality hay. A forage choice for horses and other livestock sensitive to the prussic acid levels in other sorghum forage types.

ALL-STAR CHARACTERISTICS

Plant Height	5-6 feet
Grain	Yes
Days to 50% Anthesis	65-70
Typical Seeds / lb	80,000
Dryland Seeding Rate	10-20 lbs drilled
Irrigated Seeding Rate	20-28 lbs drilled
Advanced Genetics	Conventional Hybrid



BMR ALL-STAR

BMR PEARL MILLET

BMR All Star is a shorter Brachytic Dwarf hybrid pearl millet that produces high yields. It typically will reach boot stage in around 60 days. It has a short plant structure, therefore the plant is mostly all leaves. This high leaf mass assures high concentrations of protein and TDN values. It may not yield as much as typical sudangrass but tolerance to sugar cane aphids can offset that tonnage difference.

BMR ALL-STAR CHARACTERISTICS

Plant Height	4-5 feet
Grain	Yes
Days to 50% Anthesis	55-60
Typical Seeds / lb	60,000
Dryland Seeding Rate	10-20 lbs drilled
Irrigated Seeding Rate	20-28 lbs drilled
Advanced Genetics	Brown Mid-Rib (BMR); BD



JAPANESE MILLET

ECHINOCHLOA FRUMENTACEA

Japanese Millet (*Echinochloa frumentacea*) is a higher yielding forage than foxtail (German) millet and much higher yielding than proso millet, but not as high yielding as pearl millet or sorghum sudangrass. Forage quality is similar to foxtail or pearl millet. It is very early maturing, able to produce seed in 60 days and has high seed yield. It is perhaps the most tolerant summer annual forage grass to flooded or wet conditions, making it a favorite plant to use in plantings for waterfowl.



JAPANESE MILLET CHARACTERISTICS	
Plant Height	3-4 feet
Grain	Yes
Days to 50% Anthesis	45 to 60
Typical Seeds / lb	142,800
Dryland Seeding Rate	15-25 lbs drilled
Advanced Genetics	None

GERMAN MILLET

FOXTAIL MILLET (SETARIA ITALICA)

German, or Foxtail Millet, is rapid growing and drought tolerant but matures early, which limits its yield potential to less than pearl millet or sorghum sudan. The forage of foxtail millet cures rapidly after swathing due to its naturally fine stems, making it very easy to put up as dry hay. The regrowth after cutting is very poor, making it best suited as a one cut, short term hay crop.

GERMAN MILLET CHARACTERISTICS	
Plant Height	2-3 feet
Grain	Yes
Days to 50% Anthesis	40 to 60
Typical Seeds / lb	165,000
Dryland Seeding Rate	20-25 lbs drilled
Advanced Genetics	None



PROSO MILLET

PANICUM MILLEACEUM

Proso Millet (*Panicum milleaceum*) is a very water efficient grain crop, but due to shallow roots it is not tremendously drought tolerant and has a low yield potential compared to grain sorghum. It has prickly hairs on the leaves, which reduce forage palatability. It is often used in food plots due to its short height (grain heads are often within reach of pheasants) and early maturity. The seed is similar in quality and nutritional value as grain sorghum.

PROSO MILLET CHARACTERISTICS

Plant Height	2 feet
Grain	Yes
Days to 50% Anthesis	60 to 65
Typical Seeds / lb	150,000
Dryland Seeding Rate	20-25 lbs drilled
Advanced Genetics	None



ROX ORANGE

OPEN POLLINATED SORGHUM

Rox Orange is a selection of forage sorghum released by Kansas Agriculture Experiment Station in circa 1934. It is a selection from Kansas Orange, a variety first selected in 1857. Compared to earlier forage sorghums, it had more palatable stalks with a higher sugar content and less tannin in the seeds. It is distinctly inferior in both yield and quality to modern BMR hybrids.

ROX ORANGE CHARACTERISTICS

Plant Height	6 feet
Grain	Yes
Days to 50% Anthesis	105
Typical Seeds / lb	17,000
Dryland Seeding Rate	20-25 lbs drilled
Advanced Genetics	None

SUMAC

OPEN POLLINATED SORGHUM

Early Sumac is a forage sorghum variety first released to the public by the Kansas Agriculture Experiment Station in 1925. It has small seeds, which give it a high plant population per pound of seed, giving finer stems at similar seeding rates. It is distinctly inferior to modern BMR hybrids in both yield and quality.

SUMAC CHARACTERISTICS

Plant Height	7.5-8.5 feet
Grain	Yes
Days to 50% Anthesis	100
Typical Seeds / lb	30,000 to 32,000
Dryland Seeding Rate	20-25 lbs drilled
Advanced Genetics	None