Forage For Stockmen

Buffalo Brand Seed Co. - Where Yield & Palatability Meet **2022**

FORAGE VARIETY

Characteristics at a Glance

	Forage Variety	Cold Soil Seedling Vigor	Minimum Germination Temperature (°F)	Forage Quality Early Harvest	Forage Quality Late Harvest	Late Season Leaf Retention	Dry Hay or Haylage Suitability	Mature Plant Silage Suitability	In Season Grazing Suitability	Regrowth After Clipping	Approximate Seeds per pound*	Max. Seeding Depth (inches)	Iron Chlorosis Tolerance
SUMMER SEASON FORAGE	Bison Hybrid Forage Sorghum BMR	7	62°	10	10	10	10	10	4	6	17,000	2.5	5
	Bison Hybrid Forage Sorghum w/poll.	7	62°	9	8	10	10	10	4	6	21,000	2.5	5
	Bison BMR (Brachytic Type)	7	62°	8	8	10	6	9	4	3	14,000	2.5	5
	Buffalo Honey BMR	10	60°	10	9	5	10	5	10	10	15,000	2.5	5
	Buffalo Honey	10	60°	8	5	5	10	5	10	10	15,000	2.5	9
	Buffalo Honey II	10	60°	8	8	8	10	5	10	10	15,000	2.5	9
	Buffalo Max Hybrid Pearl Millet	2	65°	8	5	5	10	5	8	10	84,000	2.5	9
	Foxtail Millet	3	65°	9	5	-	10	-	1	1	220,000	1	10
	Teff Grass	2	65°	10	9	-	10	-	2	10	1,000,000+	.25	10
COOL SEASON	Winter/Spring Peas	-	40°	10	9	-	10	10	6	1	5,000	2	10
	Spring Oats	-	43-45°	10	8	10	10	10	10	8	15,000	2	10
	Winter Triticale	-	42°	8	6	10	10	10	10	10	17,500	2	10

CHART SCALE : 1 to 10 1 = Least Desirable 10 = Most Desirable

**Approximate seeds per pound is provided as an aid to planning, and varies. Sharp Bros. Seed Co. does not imply or warrant that seed will be of the count per pound listed above.*

UNDERSTANDING FORAGE QUALITY:

Are Palatable Forages Profitable Forages?

Ranchers & stockmen: judge forage quality every day based upon a variety of facts and observations:

- Do the animals selectively graze or bunk sort?
- What is rate of gain or milk output? Is animal condition improving or decreasing?
- Does laboratory analysis of protein and TDN percentages indicate adequate levels to meet the needs of the class of livestock for which the forage is intended?

HOW CLOSELY RELATED IS FORAGE PALATABILITY TO ENERGY & ANIMAL PERFORMANCE

Probably the most important question regarding forage quality: How closely related is forage palatability to energy and animal performance? Studies have demonstrated that this relationship is very close. Volatile fatty acids (VFA) are the primary energy source for the great class of livestock and wildlife known as ruminants. VFAs are produced by fermentation in the rumen, part of the animal's digestive system. Ruminants are equipped with nerve receptors in the rumen that continually monitor VFA levels. Major as well as minor changes in VFA concentrations influence the animal's grazing/ feeding behavior, selecting high quality forages that increase these levels and rejecting poorer quality forages that lower VFA concentrations. Because of this built in quality control mechanism, the ruminant is a remarkably efficient judge of forage energy levels and chooses forages that produce the best rate of gain, milk production, body condition and profit for the stockman.

Buffalo
GREELEY, COLORADO

Stems of BMR forages are significantly more palatable and digestible than the stems of non BMR forages, even when harvested in very mature stages of growth.

Uses, Strategies and Suggested Planting Rates:

Baled Dry Hay or Haylage:

Production goals should target fine stems for quick dry down in the windrow and tight, weather resistant bales or easily packed haylage. High plant populations produce the finest stems, low plant populations have the best drought tolerance. Producers should find the best compromise between these competing goals for their cropping conditions. Narrow rows (grain drills) are preferable to wide rows (row crop planters).

WESTERN DRYLAND	*12-20 lbs/acre*
EASTERN DRYLAND/ IRRIGATED	*18-28 lbs/acre*

Mature Plant Silage:

Production goals are similar to grain sorghum production goals --- abundant grain production and sturdy stalks that stand through late stages of plant maturity. This is best achieved with a plant population 25% higher than that of grain sorghum population in the same cropping conditions. Either wide row (row crop planter) or narrow row (grain drill) equipment can be effective for these plantings, although narrow row plantings are commonly seeded up to 30% higher populations than are wide row plantings.

WESTERN DRYLAND	*1.5-4 lbs/acre*
EASTERN DRYLAND/ IRRIGATED	*4-10 lbs/acre*

BROWN MIDRIB & HYBRID ADVANTAGES

The brown midrib trait (BMR) has been part of our of hybrid forage sorghums and hybrid sorghum sudangrasses since 2000. All hybrids with the trait are designated with BMR as part of the variety name. BMR is a visual marker for a genetic trait that causes the plant to accumulate less lignin. Lignin is indigestible and reduces the digestibility of other nutrients. Lowering lignin levels dramatically improves digestibility and consumption while reducing forage waste caused by bunk sorting or selective grazing. Stems of BMR forages are significantly more palatable and digestible than the stems of non BMR forages, even when harvested in very mature stages of growth. Animal performance is improved with BMR forages-- faster rate of gain, more milk production and superior animal condition. Hybridization has significantly improved seedling vigor, regrowth after clipping, drought tolerance and yield potential.

HYBRID FORAGE SORGHUMS

Best products for one harvest per season baled dry hay, haylage (immature plant silage) or mature plant (hard dough grain) silage. Occasionally used as a standing hay crop grazed after frost and drydown. Also used as a cover crop preceding perennial grass seedings. As a class, these products exhibit good seedling vigor and high yield potential due to hybridization. Minimum germination soil temperature of 62 degrees and rising. Maximum planting depth 2 ½ inches. Excellent late season leaf retention allows large harvest window.

Standing Hay Grazed After Frost and Fall Drydown:

Production goals should target somewhat coarser stems than would be desirable for baled hay in order to produce a crop that is likely to stand past frost.

WESTERN DRYLAND	*6-10 lbs/acre*
EASTERN DRYLAND/ IRRIGATED	*8-12 lbs/acre*

Cover Crop Preceding Perennial Grass Seedings:

Coarse stems are important to formation of durable cover since stems generally stay in place through the following winter and spring as compared to leaves which frequently blow away.

WESTERN DRYLAND	*6-10 lbs/acre*
EASTERN DRYLAND/ IRRIGATED	*8-12 lbs/acre*

HYBRID FORAGE SORGHUMS

Detailed Variety Descriptions

BISON HYBRID FORAGE SORGHUM BMR Medium maturity fertile BMR forage sorghum, the ideal maturity for dryland production of sorghum hay, silage or standing hay grazed after frost. Bronze grain production. Excellent drought tolerance. Bison Hybrid Forage Sorghum BMR will typically reach in 68 to 78 days, hard dough grain development in 98 to 108 days after emergence. Well suited for double crop silage production after wheat on the central and southern Plains. Unsurpassed forage quality. Gene 12/18 BMR position. Extremely palatable, less waste. LDP eligible. *Concep safener optional*

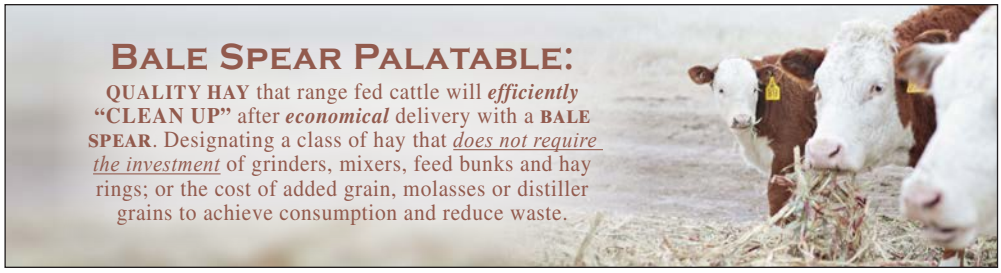
BISON HYBRID FORAGE SORGHUM WITH POLLINATOR Medium early maturity. Typically reaches boot to early heading stage in 65 to 75 days, hard dough grain development in 95 to 105 days after emergence. The standard hybrid in the industry, noted for drought tolerance and high stem sugar. High feed values, as high as some competitive BMR's. Male sterile with 10% pollinator. Produces red grain on compact heads. Concep safener optional

BISON BMR (BRACHYTIC DWARF)
High yields in the field with fraction of the water. High tonnage production potential with closely spaced leaves. Outstanding fiber digestibility with the BMR 12/18 gene position. Bison BMR delivers high yields in the field with a fraction of the water requirement of corn. In the feed bunk, Bison BMR delivers milk output for dairymen and rates of gain for beef producers that rivals high quality, high expense corn silage. This hybrid BMR can wait for a late rain or irrigation while remaining healthy. While waiting for a silage chopper late in the season, it will remain standing.

SORGHUM SUDANGRASS HYBRIDS

These hybrids, resulting from a cross of sorghum with sudangrass are best suited for in season grazing or multi-cut haying or haylage (immature plant silage). Excellent regrowth after clipping. Excellent seedling vigor. Somewhat better iron chlorosis tolerance and slightly better cold seedbed tolerance than forage sorghum. Minimum germination soil temperature of 60 degrees and rising. Maximum planting depth 2½ inches. Late season leaf retention is poor compared to forage sorghums, making sorghum sudangrass less suited for post season grazing or mature plant silage.

The Buffalo Brand 2021 lineup of sorghum sudangrass hybrids consists of a BMR hybrid a standard (non BMR) hybrid and a late maturing hybrid. Our selection and testing effort has concentrated on BMR hybrids over the past decade. As a result, our BMR hybrids are equal to and frequently better than the non BMR hybrids in regards to seedling vigor, yield potential, and regrowth. Stalk quality (energy levels and palatability) is noticeably better than that of non-BMR sorghum sudangrass hybrids in early stages of maturity. In later stages of maturity, BMR sorghum sudangrass stalk quality is dramatically better than that of the non-BMRs. Harvested early or harvested late, the Buffalo Honey BMR sorghum sudangrass hybrids produce palatable nutritious forage resulting in excellent animal performance and very little waste when hayed or grazed.



SORGHUM SUDANGRASS HYBRIDS

Uses, Strategies & Suggested Planting Rates:

Multi Cut Baled Dry Hay, Haylage

Production goal --- Fine stems for quick dry down in the windrow and tight weather resistant bales or easily packed haylage. High plant populations produce the finest stems; low plant populations have the best drought tolerance. Producers should find the best compromise between these competing goals for their cropping conditions. Narrow rows (grain drills) are preferable to wide rows (row crop planters).

WESTERN DRYLAND	12-20 lbs/acre
EASTERN DRYLAND/ IRRIGATED	18-28 lbs/acre

In Season Grazing

Production goal --- Fine stemmed, leafy dense growth contributes to maximum efficiency grazing. Initiate grazing when sorghum sudangrass is 24 inches tall, 4 to 5 weeks after emergence with good growing conditions.

WESTERN DRYLAND	12-20 lbs/acre
EASTERN DRYLAND/ IRRIGATED	18-28 lbs/acre

Mixed seeding of Hybrid Sorghum Sudan & triticale (30 days after planting & ready to graze)

Late Summer Mixed Planting with Winter Annual Small Grains for Fall Grazing

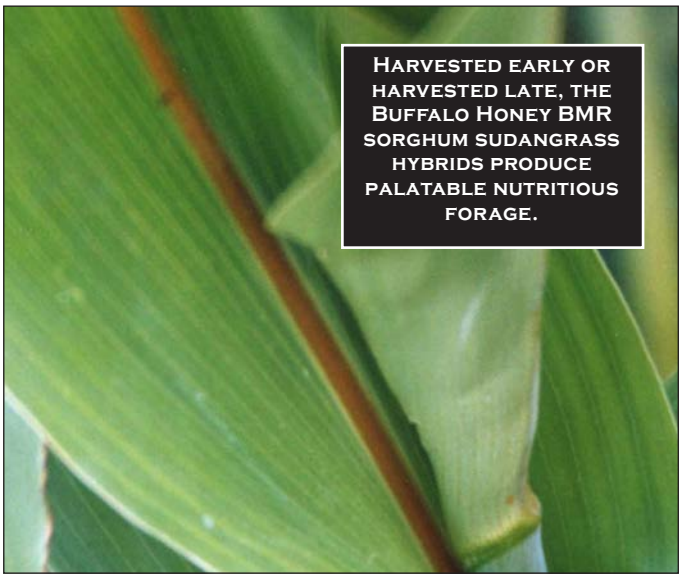
Sorghum sudangrass seed can be added to winter annual small grains (wheat, rye, triticale or barley) seedings to increase fall grazing at an earlier date. This is most productive with plantings in August or early September. Producers have effectively mixed these seeds by adding sorghum sudangrass seed to cereal grain seed as it is augered into the seed tender. Cattle should be turned out to graze when sorghum sudangrass is 24 inches tall, approximately 4 weeks after seeding. Producers report that the partial shade created by the sorghum sudangrass does not noticeably restrict small grain development. If sorghum sudangrass is still present as the first freeze is predicted, cattle should be removed from the field until frozen sorghum sudangrass plants have dried, allowing prussic acid to evaporate, usually 4 to 7 days. Observe the sorghum sudangrass plants after this dry down period to make certain plants do not produce new shoots from the crown. New tillers are unlikely to be produced from the small crowns typical of late summer plantings, but if they do occur, prussic acid levels could be high.

WESTERN DRYLAND	6-10 lbs/acre
EASTERN DRYLAND/ IRRIGATED	8-12 lbs/acre

Cover Crop Preceding Perennial Grass Seedings

Coarse stems are important to creating durable cover since stems generally stay in place through the following winter and spring as compared to leaves which frequently blow away.

WESTERN DRYLAND	6-10 lbs/acre
EASTERN DRYLAND/ IRRIGATED	8-12 lbs/acre



Harvested early or harvested late, the Buffalo Honey BMR sorghum sudangrass hybrids produce palatable nutritious forage.

Hybrid Sorghum Sudangrass Descriptions

BUFFALO HONEY BMR

Medium early maturity. Buffalo Honey BMR will reach the boot to early heading stage 60 to 70 days after emergence. Buffalo Honey BMR excels in good moisture environments with outstanding yields. Buffalo Honey BMR has higher top end yield potential with 18-20 tons per acre. Outstanding forage quality for haying, grazing and silage.

BUFFALO HONEY

Medium early maturity. Buffalo Honey will reach the boot to early heading stage 60 to 70 days after emergence. Acceptable forage quality when harvested early or grazed to suppress stem formation. This hybrid, priced more economically than other BMRs, is an excellent choice for cover crop on high lime soils or soils with marginal fertility. Buy Buffalo Honey II for a later maturing option.

OTHER WARM SEASON FORAGES

Millet, Annual Grasses & Warm Season Legumes

BUFFALO MAX HYBRID PEARL MILLET

The BMR concept in Pearl Millet is the same as you expect with Sorghum Sudangrass BMR. Buffalo Max offers greater digestability and palatability of the forage compared to other conventional hybrids, yielding greater returns such as weight gain and/or milk per ton. Excellent regrowth and drought tolerance. Used for grazing and multi-cut haying. With good growing conditions, pearl millet may be grazed 4 weeks after emergence. No prussic acid, however the potential for nitrate toxicity is greater than that of forage sorghum or sorghum sudangrass. Boot stage is normally reached approximately 70 days after emergence. Minimum germination soil temperature 65 degrees and rising. Maximum planting depth ¾ inch.

WESTERN DRYLAND	8-10 lbs/acre
EASTERN DRYLAND/ IRRIGATED	14-18 lbs/acre

GOLDEN GERMAN MILLET, (FOXTAIL MILLET)

Golden German millet is used almost exclusively for single harvest dry hay production. The root system is easily dislodged, making it a poor choice for grazing. Little or no regrowth after clipping. Stems are exceptionally fine. It is favored as a hay product for young cattle that prefer fine textured grass hay. Best harvested for hay in boot to early bloom stage approximately 50 days after emergence. Mature foxtail millet heads can be bristly and unpalatable. Overly mature foxtail millet can have a diuretic/ laxative effect on horses. Minimum germination soil temperature 65 degrees and rising. Maximum planting depth 1 inch.

WESTERN DRYLAND	10-12 lbs/acre
EASTERN DRYLAND/ IRRIGATED	15-25 lbs/acre

TEFF GRASS

Teff grass is primarily used for multiple cuttings of dry hay. It is usually planted alone, over seeded into thin alfalfa stands or cool season perennial grass to boost summer hay production. It should be harvested prior to head exertion for best regrowth and forage quality. First cutting occurs approximately 42 to 52 days after emergence, subsequent cuttings are at approximate 30 day intervals. Clipping below 4 inches causes slow regrowth. It is somewhat prone to being uprooted when grazed during the first 5 to 6 weeks of growth or later on sandy soils. Grazing, if done, usually follows a cutting of hay. Once established, teff withstands both drought and water logged soils and has salt tolerance similar to that of alfalfa. Forage quality is good; teff is popular as a horse hay. Minimum germination soil temperature is 65 degrees and rising. Maximum planting depth is ¼ inch and requires a firm seed bed similar to what would be required for alfalfa planting. Rainfall or irrigation after planting is necessary for germination. Very small seeded; about 1/6th the size of alfalfa seed, most teff seed is coated to make it more compatible with planting equipment. The suggested seeding rate for drills planting coated seed is 8 to 10 pounds per acre, 10 to 14 pounds per acre when broadcast. growth or later on sandy soils.

COOL SEASON FORAGES

Peas, Oats and Triticale

AUSTRIAN WINTER PEAS

Winter annual legume that grows rapidly in cool, moist weather. Austrian Winter Peas generally survive the winter south of the Kansas/ Oklahoma border, with less dependable winter hardiness north of that point. Most often planted in the fall. Excellent forage quality that is good for haying. High palatability and high protein. Little or no regrowth after clipping. Seed may be planted as deep as 3 inches if necessary and should be placed with moist soil above and below the seed since germination moisture requirements are high. Use pea, vetch, lentil inoculants; N-Dure for Cool Season: Rhizobium leguminosarum biovar viceae. Plant 30 to 40 pounds per acre as a single crop planting.

FORAGE PEAS

This cool season annual legume is a spring growth habit version of the Austrian Winter Pea, similar to the growth pattern of spring wheat as compared to winter wheat. It may be planted in early spring by itself or mixed with oats. Forage quality, planting requirements and regrowth characteristics are similar to Austrian Winter Peas. Use pea, vetch, lentil inoculant ; N-Dure for Cool Season: Rhizobium leguminosarum biovar viceae. Plant 30 to 40 pounds per acre as a single crop planting.

SPRING OATS

Cool season annual cereal, generally planted in early spring for hay production or grazing. Oats are ocassionally planted in the fall for short term grazing. Both winter oats or spring oats, when planted in autumn, will usually winter kill any where north of central Oklahoma and the southern Texas panhandle, leaving standing dry hay. Oats produces high quality hay favored by horses and young cattle. 65 pounds per acre are frequently used for early plantings, late February through early March on western dryland. As much as 100 pounds per acre may be used for later plantings, the last 1/2 of March through early April, or on eastern dryland and irrigated.

WINTER TRITICALE

Cool season winter annual cereal originally developed from a cross between wheat and rye. It can be planted in the fall approximately 30 days earlier than wheat because of superior disease resistance. Used for grazing, dry hay production or silage. Good winter hardiness. A high production forage with palatability somewhat lower than wheat. It produces especially well in the spring. Plant 70 pounds per acre for western dryland, 90 to 100 pounds per acre for eastern dryland and irrigated.

HELPFUL TIPS

Nitrate & Prussic Acid Management Tips

NITRATES

Nitrates are primarily a potential problem when feeding dry hay, occasionally a problem when grazing or feeding silage.

BEST MANAGEMENT PRACTICES

Provide balanced fertility - *Nitrogen, phosphorus, potassium, zinc and sulfur are of primary concern on plains soils.*

Avoid harvest during periods of slow growth - *caused by drought, low temperatures or prolonged cloudy weather. Have laboratory analysis for nitrates preformed if in doubt.*

Delay harvest after drought breaking rain - *at least ten days following drought breaking rain fall*

Raise cutter bar to reduce nitrate concentration - *nitrate levels are highest in the lower stem of the plant. Raising cutter bar height will reduce nitrate concentration of hay produce.*

PRUSSIC ACID

Prussic acid toxicity is a potential problem when grazing or feeding green chop. Since it evaporates during drying or handling it is rarely a concern when feeding dry hay or silage. Prussic acid levels are generally at low levels in standing dry sorghum and can be safely grazed if there is no new growth at the base of the plant.

BEST MANAGEMENT PRACTICES

Provide balanced fertility - *Nitrogen, phosphorus, potassium, zinc and sulfur are of primary concern on plains soils.*

Delay grazing sorghum sudangrass until 24 inces tall - *When forage sorghums are grazed the forage may have unsafe prussic acid levels until several feet tall.*

Monitor animals for toxicity during drought - *Weedy sorghums such as Johnsongrass and shatter cane are particularly prone to prussic acid accumulation during drought. Infested fields should be watched carefully for signs of prussic acid toxicity.*

Remove cattle prior to freezing weather - *Cattle should be removed from sorghum pastures prior to freezing weather because prussic acid levels may be dangerously high for several days afterwards.*

HYBRID FORAGE SORGHUM

Bison Forage Sorghum
Bison Forage Sorghum w/ pollinator
Bison Forage Sorghum BMR
Bison Brachytic Type BMR

HYBRID SORGHUM SUDANGRASS

Buffalo Honey
Buffalo Honey II
Buffalo Honey BMR

MILLETS

Buffalo Max *(Hybrid Pearl Millet)*
Golden German *(Foxtail)*
White Wonder *(Foxtail)*

Buffalo BRAND SEED
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