



**Turner Seed Inc.**  
4315 Hurricane Creek Blvd.  
Antioch, TN 37013  
800-242-7331

**Turner Seed Inc.**  
321 Mt. Sterling Road  
Winchester, KY 40392  
877-350-7331





# ALFALFA

(*Medicago sativa* L.)



**Crops:** Alfalfa is harvested as hay or silage which is processed or fed directly to livestock. Alfalfa is an important source of leaf meal used for fortifying baby food and other special diet foods prepared for human use. Large quantities of dehydrated alfalfa are also used in manufacturing concentrated feeds for poultry and livestock.

**Livestock:** This plant is grown by itself or in combination with grasses in improved pastures. It is grazed by all types of domestic livestock. Caution should be taken when using alfalfa for grazing due to its potential bloat hazard.

**Wildlife:** Alfalfa is an excellent food for antelope, deer, elk, Canada geese, sage grouse and sharp tail grouse. It is fair food for sandhill cranes, mallards, Hungarian partridge, and pheasants.

Alfalfa (*Medicago sativa* L.) is a long-lived perennial legume. Flowers vary in color from purple to yellow and are borne in loose clusters. Pods of alfalfa range from the sickle type to those that are twisted into spirals. Each pod contains several small kidney-shaped seeds. Alfalfa is indeterminate and stems can reach several feet in length. New growth occurs from buds in the crown. The plant has a tap root which may penetrate 25 feet deep into the soil. Compound leaves are alternately arranged on the stem and are normally trifoliate although there are commercial varieties that have multifoliate leaves. There are approximately 227,000 seeds per pound.

## ***Adaptation and Distribution***

Alfalfa grows best on deep, well-drained, friable soils. Lands subject to frequent overflows or high water tables are unfavorable for alfalfa. The pH of the soil should be 6.5 to 7.5. Alfalfa is distributed throughout the United States and Canada.

## ***Establishment***

A seedbed should be smooth, firm, free of weeds and trash, and contain adequate moisture for germination and emergence. Land grading should be sufficient to ensure good surface drainage. Alfalfa should not be seeded as a first crop on newly leveled land where fill may settle and cause poor surface drainage.

Fifteen to 20 pounds of coated or non-coated inoculated seed per acre evenly drilled ¼-inch deep on adapted, properly prepared sites will produce adequate stands. A combination drill and packer is desirable. Cultipacking soil before and after seeding is helpful to stand establishment. Seeding depth should be no greater than ¼ inch on finer textured soils and no greater than ½ inch on sandy soils. Spring seedings can be made 30 days before the average date of the last killing frost. Alfalfa can also be successfully seeded during the late summer. Allow time for adequate growth prior to the first killing frost.

## ***Management***

In general, graze or cut for hay when alfalfa is in early bloom. Graze or cut to about a 2-inch height. Successive cuttings for hay should occur at ¼-inch bloom stage. Alfalfa can best withstand grazing if rotated frequently or grazed in small strips. The last cutting of alfalfa should be made 3 to 4 weeks before the first killing frost date. Alfalfa may cause livestock to bloat. Care should be used in managing such grazing to reduce the possibility of this hazard.



# Look for *Ameristand Alfalfas*

**Traffic Tested®**



The only national  
brand offering  
**Traffic Tested®**  
varieties and other  
proprietary innovations

## AmeriStand403T<sup>Plus</sup>

Enhanced Yield, Same Traffic  
Tolerance and Stand Persistence

Fall Dormancy 4 • Winter Hardiness 2.1



Yield Potential	EX
Quality Potential	EX
Traffic Tested	EX
Cuttings per Season	3-4
Stand Persistence	EX
Cut Recovery	Fast
Stress Tolerance	EX

### Resistance Ratings

Phytophthora Root Rot	HR
Aphanomyces Root Rot	
Race 1	HR
Race 2	R
Anthrachnose	HR
Vericillium Wilt	HR
Fusarium Wilt	HR
Bacterial Wilt	HR
Pea Aphid	R
Stem Nematode	MR



**High resistance**  
to Phoma crown rot

**Large, deep-seated  
crown,**  
finer stems, greater leaf mass,  
and more crown bud activity

**Patented  
tolerance**  
to liquid manure applications  
with higher yield and stand  
advantage



Traffic Tested® Conventional

**Traffic Tested®**

Bred to yield under pressure

## AmeriStand407TQ

Highest Tonnage and Quality  
average over 8 state trial locations

Fall Dormancy 4.4 • Winter Hardiness 1.7



Yield Potential	EX
Quality Potential	EX
Stand Persistence	EX
Cut Recovery	Very Fast
Cuttings per Season	4-5
Manure Tolerance	EX
Stress Tolerance	EX

### Resistance Ratings

Aphanomyces Root Rot	
Race 1	HR
Race 2	R
Anthrachnose	HR
Phytophthora Root Rot	HR
Vericillium Wilt	HR
Fusarium Wilt	HR
Bacterial Wilt	HR
Pea Aphid	R
Stem Nematode	R

**Highest Tonnage and Quality  
With Traffic Tested® Performance**



**Superior quality forage**  
from fine stems, excellent  
leaf retention and dark green  
color

**Excellent persistence and  
fast recovery** for aggressive  
cutting

**High resistance** to yield-  
robbing diseases

**Wide harvest window** for  
flexible cutting schedules

**Traffic Tested®**

Bred to yield under pressure





# Legacy Brand 405 Alfalfa

Besides a great yield, 405 Brand Alfalfa is selected for grazing and wheel traffic. An all around tough alfalfa, 405 has an excellent disease package and is perfect choice for growers who hay and or graze.

Fall Dormancy 4.0  
Winter Hardiness: Very High  
Trifoliate leaf habit

Disease Rating 28/30

• Bacterial Wilt	HR
• Fusarium Wilt	HR
• Anthracnose	R
• Phytophthora Root Rot	HR
• Aphanomyces Root Rot	R
• Verticillium Wilt	HR
• Pea Aphid	R
• Potatoe Leafhopper	MR



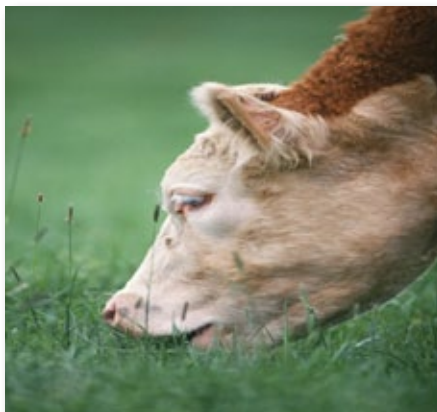
**Legacy Brand 405 Alfalfa** works extremely well for growers who want seed at a good value. Legacy Brand 405 will perform well in the Tennessee and Kentucky soils in the Turner Market area. Plant Legacy Brand 405 Alfalfa with confidence!

## FORGRAZER V Alfalfa

A new generation grazing alfalfa selected for high yield, forage quality and grazing tolerance. FORGRAZER V will work extremely well in a grazing, hay/graze for haying situation. It is truly a consistent performing alfalfa that will satisfy alfalfa growers.

### Agoronomic Characteristics

Forage Yield Potential	Very High
Forage Quality	High
Winter Hardiness	2.5
Fall Growth Habit	4.0
Persistence	Very Good
Recovery After Cutting	Very Fast
Stress Tolerance	Excellent
Reduced Tolerance	Excellent
Crown Size	Large



Fall Dormancy 4.0  
Winter Hardiness: Very High  
Trifoliate leaf habit

Disease Rating 29/30

• Bacterial Wilt	HR
• Fusarium Wilt	HR
• Anthracnose	HR
• Phytophthora Root Rot	HR
• Aphanomyces Root Rot	HR
• Verticillium Wilt	R
• Pea Aphid	R
• Potatoe Leafhopper	R

Forgrazer V is “new generation” grazing alfalfa product that has been selected for exceptional grazing tolerance along with extremely high forage quality yields. In addition, FORGRAZER V has exceptional winter hardiness and is also a Legacy Seeds “High Digestibility” H.D. selection. FORGRAZER V has resistance to Race 2 Aphanomyces which sets it apart for 95% of the alfalfa varieties on the market today. This alfalfa is extremely consistent.



# High Yield, High Quality Alfalfa

Growers have come to trust Cimarron SR alfalfa for its leafiness, high yield and long stand life.

## Top Forage Quality

Large leaves and increased stem branching make Cimarron SR the leafiest alfalfa you will find. And its resistance to leaf diseases allows it to hold its leaves in the standing field and in the windrow.

Break open a bale and you will see the difference that Cimarron quality makes.



## Sclerotinia Crown Rot Resistance

Sclerotinia crown rot causes patchy stand loss in stands throughout the Ohio Valley and the Southeastern United States. The most serious damage occurs in the early spring after fall planting. Cimarron SR provides the resistance needed to get and keep a good alfalfa stand.

## High Yielding

Cimarron SR is a proven high yielder topping yield trials across the country. But more importantly it has a proven track record in growers' fields.

## STRONG PEST AND DISEASE RESISTANCE

Sclerotinia Crown Rot ...	R
Phytophthora Root Rot .	HR
Aphanomyces Root Rot	MR
Bacterial Wilt .....	HR
Verticillium Wilt .....	HR
Anthracnose .....	HR
Lepto Leaf Spot .....	MR
Summer Black Stem ....	MR
Stem Nematode .....	R
Root knot nematode .....	R
Alfalfa weevil .....	T
Pea Aphid .....	HR
Blue Aphid .....	MR
Spotted Aphid .....	R

# Cimarron SR





# RED CLOVER

(*Trifolium pratense* L.)



## *Uses*

Red clover is used for hay, silage, pasture and soil improvement. It is a quick-growing crop, easily established, and produces high-quality forage. Tolerance of shade allows red clover to be used effectively as a cover crop under silage corn. Newer varieties of medium red clover can be productive for three years or more under proper management.

## *Description*

Red clover (*Trifolium pratense* L.) is a short-lived perennial that grows as one of two types: medium (double-cut) or mammoth (single-cut). Red clover plants grow from crowns. Plants have hollow, hairy stems and branches. Stem lengths of medium and mammoth types average 18 inches and 24 to 30 inches, respectively. Medium types have about four branches per stem; mammoth has six. Each leaf consists of a slender stalk bearing three leaflets. The taproot of red clover is extensively branched. Flowers are borne in compact clusters or heads and are usually rose-pink in color. Seed pods are small, short, and contain kidney-shaped seeds that vary in color from yellow to deep violet. There are approximately 272,000 seeds per pound. Mammoth red clover matures later than medium types; only one crop of mammoth red clover is harvested each season since recovery is slow.

## *Adaptation and Distribution*

Red clover grows best on well-drained loamy soils, but it will also grow on soil that is not well-drained. Medium- and fine-textured soils are preferred by the plant over sandy or gravelly soils. It is best adapted to a pH of 6.0 or higher. Red clover is distributed throughout the United States and Canada.

## *Establishment*

Red clover may be seeded in pure stands, but it is often mixed with grain or grass. Spring or late summer seedings are satisfactory. It may be overseeded in the spring or fall. Red clover seed should be inoculated. Phosphorus and potash are the fertilizer elements needed most by red clover. Apply as recommended by soil tests. Seeding may be done with a drill or broadcaster. A firm, weed-free seedbed is essential. Plant seeds  $\frac{1}{4}$  to  $\frac{1}{2}$  inch deep. Seeding rates are 12 to 15 pounds per acre broadcast and 6 to 8 pounds per acre when drilled. For renovating pastures, the recommended seeding rate is pounds per acre.

## *Management*

Graze or cut for hay when the red clover is  $\frac{1}{4}$  to  $\frac{1}{2}$  bloom. A second cutting or successive grazings should occur when red clover is  $\frac{1}{4}$  in bloom. Leave at least 2 to 3 inches of growth after each harvest. Care should be taken to eliminate or appreciably reduce bloat of livestock when grazing.

Keep lime and fertilizers (phosphorus and potash) at the proper level.





# RED GOLD

## RED CLOVER

Red Gold is an erect, early flowering, double cut (medium) red clover with improved resistance to northern and southern anthracnose and downy mildew. Medium red clover, in contrast to mammoth or single cut clover will produce several cuts or graze-downs each year depending on location and growing conditions. Red Gold is

generally grown on soils that are not adequately drained or limed or where soils cannot be practically improved for alfalfa. Red clover is well suited for short rotation and for plow-down rotations with potatoes and other row crops. Although difficult to dry as hay it makes excellent low-moisture silage when properly managed and harvested at late bud to early bloom. Because of its easy and rapid establishment, it is an excellent choice for inter seeding into sod pastures to improved forage yield and quality. Red Gold is recommended for grazing, hay and haylage with forage production better in second year than the first and third years of establishment. Red Gold is most often grown in association with cool-season grasses but can be grown alone or with certain warm-season perennial grasses. It can be used for pasture, hay or haylage, and is an excellent soil improvement crop. When grown where it is well-adapted, the yield of red clover is usually higher than that of any other clover. In addition, it has a longer growing season than any other clover grown in the United States.



Randolph	4.81	5.77	5.32	57.4
Cinnamon	4.77	5.88	5.33	53.5
Kenland	4.56	5.81	5.16	47.1
Red Gold	4.43	5.54	5.08	44.0
Arlington	4.42	5.44	5.05	43.8
Prima	4.41	5.77	5.01	43.9
Tyrant	4.28	5.19	4.83	40.6
"Common"	3.33	5.35	4.37	25.6
$\bar{x}$	4.48	5.63	5.06	47.1
LSD @ .05	.74	ns	ns	11.4



# WHITE CLOVER

(*Trifolium repens* L.)



## Uses

**Forage:** White clover is the most important pasture legume. It is a highly palatable, nutritious forage for all classes of livestock. White clover is commonly planted with orchardgrass, ryegrass, or tall fescue. Ladino clover grows tall enough to be harvested for hay, silage, and green chop. Intermediate and small white clovers seldom grow tall enough to be harvested for hay or silage.

**Wildlife:** White clover is a choice food for deer and elk.

**Erosion control:** Grass seedlings benefit from the nitrogen produced by white clover included in the seed mixture. Solid stands of white clover form a good erosion-controlling cover on moist fertile soils, but stands may be sparse or spotty on dry sites.

## Description

White clover (*Trifolium repens*, L.) is a perennial legume that originated in Europe and has become one of the most widely distributed legumes in the world. It has a prostrate, stoloniferous growth habit. The leaves are composed of three leaflets, which may or may not have a “crescent” or “water mark” on the upper surface. Leaves and roots develop along the stolon at the nodes.

The three general types of white clover usually recognized are large or ladino, intermediate, and small. The flower heads, each consisting of 40 to 100 florets, are borne on long stalks from the leaf axils. Florets are white but may have a pink hue. There are approximately 768,000 seeds per pound.

## Adaptation and Distribution

White clover thrives best in a cool, moist climate on soils with ample lime, phosphate, and potash. In general, white clover is best adapted to clay and silt soils in humid and irrigated areas. It grows successfully on sandy soils with a high water table or irrigated droughty soils when adequately fertilized. White clover seldom roots deeper than 2 feet, which makes it adapted to shallow soils when adequate moisture is available.

## Establishment

The standard seeding rate is 2 to 4 pounds per acre, planted at a depth of  $\frac{1}{4}$  to  $\frac{1}{2}$  inch. For pasture establishment, seeds are drilled into a well-prepared seedbed that has been plowed, harrowed, and compacted to produce a firm seedbed. The seeds are inoculated before seeding. For stabilization use, seeds are broadcast on roadside cuts and fills by cyclone seeders, hydroseeders, or blower-type equipment. The proper time of seeding is determined by seasonal and moisture conditions and may vary from April to May. Late summer and fall seedings should be conducted while adequate moisture is still in the soil to assure establishment before freezing.

## Management

Management for forage is aimed at maintaining 40% to 50% clover. Close grazing (2-inch stubble height) favors clover, whereas light grazing favors grass. Well-fertilized grass will outgrow clover in fall and winter and could smother the clover.

Spring applications of nitrogen will stimulate grass and provide early feed, but excessive rates are detrimental to the clover stand. Phosphate applications are broadcast in fall or spring according to soil tests. Sulfur, boron, or magnesium may be needed for maximum production on some soils in the western part of white clover's range.







### Kopu II White Clover

Kopu II was selected for stolon density, persistence under grazing, high yield, and large leaf size. This was achieved primarily by selecting under cattle grazing in the Northern United States and sheep grazing in New Zealand. Kopu II, bred by AgResearch of New Zealand, was selected from a world collection of white clovers. Penn State University and the University of Wisconsin participated in the selection and evaluation of the cultivar. In trials in Lancaster, Arlington, and Marshfield, WI and Rock Springs, PA. Kopu II has exhibited improved yield and persistence over the industry standard in university and in multiple on-farm trials.

#### Notable Characteristics:

- ⇒ High Stolon Density
- ⇒ Persistent
- ⇒ High Yielding
- ⇒ Excellent Season-long Growth
- ⇒ Large Leaves
- ⇒ Bred for Rotational Grazing
- ⇒ High NSC Energy Level
- ⇒ Erect Growing



Kopu II has very high stolon density

#### Seeding Rates:

New hay fields/pasture: 2-4 lbs/acre in mixes.

Renovation/Overseeding existing fields/pastures: Pastures and hay fields: 3-5 lbs./acre

#### Method of Seeding:

Use of a Brillion seeder, a no-till drill or a culti-packer is ideal. Frost seeding also works well, especially if the animals are allowed to "hoof" it into the existing pasture. Seed to soil contact is vital to having a successful stand. Plant the seed 1/4" deep. For best performance **Kopu II** should be lightly grazed frequently during establishment.

Variety	Dry Matter Yield (T/A)	% Mean	Kopu II Advantage
Kopu II	5.03	122%	
Huia	3.92	94%	+128%
Patriot	3.78	91%	+133%
Will	3.72	89%	+135%
Haifa	3.49	84%	+144%
Alice	3.43	82%	+146%
Durana	2.92	70%	172%
LSD 0.05	0.69		



**Kopu II**

Competitor

# ADVANTAGE LADINO CLOVER

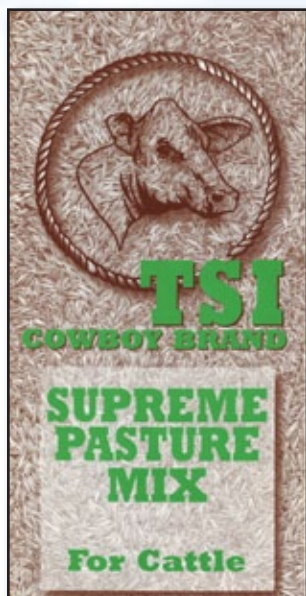


An exciting Ladino White Clover with exceptional growth habits, characterized by a tall, leafy, spreading plant mass. **ADVANTAGE LADINO** highly compliments existing pasture grasses, has good regrowth and persistence, and performs well under heavy grazing settings. **ADVANTAGE LADINO** is highly compatible with cool season grasses including tall fescue, orchardgrass and selected ryegrasses. **ADVANTAGE** will also compliment red clover. It will perform on a variety of soil conditions where other legumes are not well suited. **ADVANTAGE LADINO** has a magnetic effect on wildlife, highly attractive to deer and turkey.

With its dynamic appearance and user satisfaction, Advantage is becoming a very recognizable ladino in the midwest.

- Recommended seeding rate is 1/2 to 1 lb. per acre in pasture overseedings. When used for wildlife food plots exclusively, use 8 lb. per acre. Plant late winter, early spring or in late summer.

# TURNER SEED PASTURE MIXES



## SUPREME CATTLE PASTURE MIXTURE

- Proper ratio of ingredients to provide optimum pasture
- Premium quality components selected for regional adaptation and performance
- Maximum production per acre
- Produces high-quality, balanced hay
- Good general pasture mixture

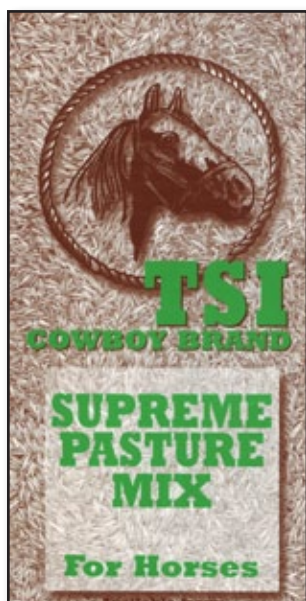
Supreme Cattle Pasture Mixture was created to meet the needs of producers who want to optimize animal performance and maximize per-acre return. It's also a good choice for hay producers who want a high-quality, balanced hay.

To meet these needs, we start with only the highest-quality ingredients. These species are carefully chosen for their regional adaptability and combined in the proper ratios to assure maximum pasture production.

This premium mixture, along with good management practices, will provide you with the best opportunity to optimize the return on your management investment.

### Ingredients

- Kentucky 32
- Prairie Orchardgrass
- Clair Timothy
- Red Gold Clover



## SUPREME HORSE PASTURE MIXTURE

- Proper ratio of ingredients to provide optimum pasture
- Premium quality components selected for regional adaptation and performance
- Specifically formulated to meet the nutritional needs of horses
- Withstands intense grazing pressure

High-quality pastures can provide much of the feed needed by horses, while providing the most natural and healthy environment for exercise and rest. Establish this type of productive environment — a healthy, safe and attractive pasture — for your horses, by using the quality components in Professional Horse Pasture Mixture.

### Ingredients

- Prairie Orchardgrass
- Linn Perennial Ryegrass
- Clair Timothy
- Haygrazer Alfalfa
- Advantage Ladino Clover



**NEW &  
IMPROVED**



**TALL FESCUE**  
**THE NEW CHOICE**



- Endophyte Free
- Persistent
- High Forage Yields
- Heat and Drought Tolerant
- Oregon Grown
- Highest Seed Purity
- Highest Genetic Purity

## Endophyte Free!!!

Several varieties of forage and turf tall fescue contain endophyte fungus, which produces toxic alkaloids that are detrimental to mares and foals. Kentucky 32 is endophyte free. Tested by the Oregon Department of Agriculture for endophyte infection, Kentucky 32 comes with an official "Green Tag".

Endophyte free Kentucky 32 will solve the problems associated with grazing highly infected K-31 tall fescue pastures, such as lower foal weights, lower live births, longer gestation periods, more retained placentas, and low or no milk production from the mares.

## Persistent!!!

Tested in Kentucky and Mississippi, Kentucky 32 is as persistent as endophyte infected K-31 tall fescue. Genetics, coupled with proper management and regional adaptation, are more relevant to life of stand than just endophyte infection.

With horses, pawing, pugging and high traffic in areas such as fencelines, corners, gates and stall doorways will always thin grass stands. It is always recommended to overseed Kentucky 32 into these areas on an annual basis to keep dense grass sward to help eliminate broadleaf and grassy weed infections. Rotational grazing will keep fresh, palatable pasture available throughout the grazing season.

## Planting!!!

It is highly recommended that when establishing a Kentucky 32 pasture, care is given to completely eradicate the old stand of grass, as this may contain fescue varieties that are infected with endophytes. Consult your local chemical company for recommendations on taking out old stands. This may include a non-selective herbicide like glyphosate, a summer fallow program, or some combination of methods. All grass must be killed, and remnant seed in the soil should be sprouted and killed ensure a clean seedbed.

A seeding rate of 25 to 35 pounds per acre will be adequate. A clean, fine, firm seedbed will be optimum for success in establishing a new pasture. Seed should be drilled no deeper than one half inch. Seed can also be broadcasted, then harrowed in. Always roll to compact and guarantee a good seed/soil contact. A good starter fertilizer, and possibly lime to correct acidity, should be applied before planting. Consult your extension agent or local fertilizer company for specific recommendations and soil testing.

Kentucky 32 can be either fall or spring planted when weather is mild and moist. If available, irrigation will help guarantee success. Horses should not graze pastures until well established. Avoid grazing pastures in wet, snowy or frozen conditions as this will reduce stand life.

# BERMUDAGRASS



## ***Uses***

***Erosion control:*** Bermudagrass is used for critical area planting (including channels and pond banks), grassed waterways, and vegetated flumes.

***Livestock:*** Bermudagrass provides excellent pasture and hay with proper management. Forage quality is dependent on soil fertility and stage of growth.

## ***Description***

Bermudagrass is probably Asian in origin and was documented as an important grass in the United States by 1807. It is a long-lived, warm-season perennial that spreads by rhizomes, stolons, and seed. Stems are leafy, branched, and short-jointed. They will be 4 to 6 inches tall and under favorable conditions, may be 12 to 18 inches high. Leaves are flat and spreading and may be hairy or smooth. The ligule is a circle of white hairs. Seed heads are usually in one whorl of three to seven spikes, each about 1 to 2½ inches long. Some robust forms may have up to 10 spikes in two whorls. There are approximately 2,071,000 hulled seeds per pound.

## ***Adaptation and Distribution***

Although a few hardy strains of Bermudagrass persist in areas with sub-zero winter temperatures, it has achieved importance only in areas of relatively mild winters. Once established on moderately deep to deep soils, Bermudagrass maintains dense sod with 16 inches of rainfall. It can withstand sedimentation and long periods of inundation. It prefers full sun and can grow rapidly at air temperatures exceeding 100° F.

Bermudagrass prefers deep soils but produces well on moderately shallow sites under irrigation and good management. It persists on poor soils but requires high nitrogen levels for best appearance. It withstands pH ranges from about 5.0 to 8.5 and is boron tolerant. It tolerates saline soils with up to 18 millimhos of electrical conductivity in the soil solution.

## ***Establishment***

Stands may be established by use of seed, sprigs or plugs planted during mid-spring to mid-summer followed by frequent applications of fertilizer and water. Early planting is most important in areas of marginal adaptability. Beds for seeding or planting should be firm, smooth and weed-free. Seed, sprigs or plugs should be placed into moist soil. For pasture or hay, drill 5 to 10 pounds of hulled seed per acre at ¼ inch depth or less. Higher seeding rates are advisable if seed is broadcast.

## ***Management***

Both pasture and hay require good rainfall and heavy fertilizer application for high yield and quality. Thirty to 40 pounds of nitrogen should be applied in split increments for each ton of anticipated dry forage yield. Highest yields are obtained on good soils in areas of high average annual temperature with ample water. Harvest or graze at three- to four-week intervals for best yields of total digestible nutrients and protein.





# WRANGLER

## SEEDED BERMUDAGRASS

with improved cold tolerance and forage production. WRANGLER was developed by the Johnston Seed Co. using breeding lines licensed by Oklahoma State University. WRANGLER seed is now being offered by Johnston Seed Co. and Missouri Southern Seed Corp.

### APPLICATION

WRANGLER is an excellent choice for pasture, hay, or soil conservation in temperatures and subtropical regions. WRANGLER is well adapted to the transition zone of the United States (OK, KS, MO, AR, TN, etc.) where winterkill of Arizona common and other bermudagrass is a problem.

### CULTURAL PRACTICES

- Fertility: A total of 100 to 200 lb./ac/year (112 to 224 kg/ha/year) of actual Nitrogen is recommended based on expected precipitation and level of dry matter production or quality desired. The Nitrogen should be split into at least two applications, the first in early spring and the second in mid summer. Minimum soil levels of 65 lb./acre phosphorous and 200 lb./acre potassium should be maintained for maximum production at the desired Nitrogen level.
- Harvesting Schedule: Every 30 to 60 days depending on fertility and moisture. As a rule, the more frequent cuttings provide higher quality forage with less total dry matter while less frequent cuttings reduce quality but increase dry matter production.

### SEEDING

- Dates: Late spring when soil temperatures reach 65°F (20°C). Plantings through summer months are successful if moisture is available for germination and seedling establishment.
- Rates: 8 to 12 lb./acre (9 to 13 kg/ha).
- Depth: 1/8" (3 mm) on heavy soils to 1/4" (6 mm) on sandy soils.
- Method: Brillion seeder; broadcast (roll or harrow).
- Soil Preparation: Prepare firm seed bed free of weeds and clods to provide good seed to soil contact.
- pH: Test soil prior to planting. A range of 6.0 to 7.5 is sufficient.
- Fertility: Test soil prior to planting. A fertilizer low in nitrogen but high in phosphorous and potassium is recommended as a starter fertilizer to promote seedling vigor without promoting excessive weed growth. Increases nitrogen as seedlings develop and a sod forms.
- Weed Control: Not recommended in the seedling stage except for very light applications of 2, 4 D to control broadleaf weeds. Residual herbicides are not recommended in the first 60 days.
- Irrigation: If applicable, keep soil moist for germination, as seedlings develop reduce frequency of watering but increase the amount.



## “The Horseman’s Choice”

*Specially Formulated For The Demanding Horseman*

- Superior Cold Tolerance
- High Forage Production
- Tolerant to Close Grazing
- Excellent Heat Tolerance
- Excellent Drought Tolerance
- Excellent Pest Resistance

Riata bermudagrass is a specially formulated blend of two bermudagrass varieties with superior cold tolerance, improved tolerance to repetitive close grazing, and the potential to maximize your supply of high quality forage needs for performance horses and other livestock.

Riata bermudagrass should be planted in areas of full sunlight when soil temperatures reach 65°F and are on the rise. A soil test should be conducted on the area to be seeded. Nutrient and pH deficiencies should be corrected prior to planting. Prepare a firm seed bed, free of weeds and clods. A firm seedbed is critical for proper seed placement and good seed-to-soil contact. Riata bermudagrass seed should be planted at a 1/8 inch depth in the soil. Placement of seed deeper than 1/4 inch can severely reduce seedling emergence and stand establishment. If applicable, maintain soil moisture for optimum germination and emergence. As seedlings develop, reduce the frequency of watering but increase the amount.

Riata bermudagrass will provide many years of high quality forage production with proper fertility and grazing management. Riata bermudagrass utilizes nitrogen, phosphorous, and potassium in a ratio of approximately 4-1-3. In addition, to produce one ton of dry forage, it takes 50 lbs. nitrogen, 15 lbs. of phosphorous, and 42 lbs. of potassium. Once a reasonable yield goal is determined these numbers can be computed to meet this goal. In intensive management systems it is recommended to split apply the nitrogen applications. Weed control in early stages of establishment can be challenging. Limited herbicide use is recommended in the first 30 days. Practices such as mowing and “flash grazing” can be a more effective form of weed control in the early establishment period. In the first 60 days of establishment, it is not recommended to use any herbicides with residual activity. Consult your local extension office, chemical supplier, or Riata dealer for more extensive weed control information.



# PLANTING



## FORAGE LEGUMES

SPECIES	RATE/ACRE DRILL/BROADCAST	SEEDING TIME	DEPTH INCHES	APPROX SEEDS/LB
ALFALFA.....	D 15-20 LBS	(SP. OR LATE SUMMER)	1/4	220,000
BIRDSFOOT TREFOIL.....	D 5-8 LBS	(FEB-APR OR LATE SUMMER)	1/4	375,000
MEDIUM RED CLOVER.....	B 5-8 LBS	(JAN-APR OR LATE SUMMER)	0 - 1/4	275,000
ALSIKE CLOVER.....	B 4-6 LBS	(JAN-APR OR LATE SUMMER)	0 - 1/4	680,000
ALTASWEDE CLOVER.....	B 6-10 LBS	(JAN-APR OR LATE SUMMER)	0 - 1/4	275,000
CRIMSON CLOVER, ANNUAL.....	B 15-20 LBS	(AUG-OCT)	0 - 1/4	150,000
LADINO CLOVER.....	B 1-3 LBS	(JAN-APR OR LATE SUMMER)	0 - 1/4	860,000
WHITE CLOVER.....	B 1-3 LBS	(JAN-APR OR LATE SUMMER)	0 - 1/4	860,000
SWEET CLOVER (YELL/WHITE).....	B 10-15 LBS	(JAN-APR OR LATE SUMMER)	0 - 1/4	260,000
KOBE LESPEDEZA (STRIATA).....	B 15-20 LBS	(JAN-APR)	0 - 1/4	227,000
KOREAN LESPEDEZA (STIPULECEA).....	B 15-20 LBS	(JAN-APR)	0 - 1/4	240,000
KOREAN LESPEDEZA, HULLED.....	B 10-20 LBS	(JAN-APR)	0 - 1/4	320,000

## ANNUAL LEGUMES

HAIRY WINTER VETCH.....	B 20-25 LBS	(FEB-APR OR LATE SUMMER)	0 - 1/4	16,000
WINTER PEAS.....	B 30-40 LBS	(FEB-APR OR LATE SUMMER)	1/4	3,600
FORAGE BRASSICA'S & HERBS				
CHICORY.....	4-5 LBS	(SPRING & FALL)	1/8 - 1/4	
RAPE.....	6-10 LBS	(SPRING & FALL)	0 - 1/4	
TURNIP.....	2-5 LBS	(SPRING, SUMMER & FALL)	1/4	

## FORAGE GRASSES

SPECIES	RATE/ACRE DRILL/BROADCAST	SEEDING TIME	DEPTH INCHES	APPROX SEEDS/LB
BERMUDA.....	D 8-12 LBS	(L. SPRING & E. SUMMER)	1/4	13,000,000
BLUEGRASS.....	B 10-15 LBS	(FEB-APR) (AUG-OCT)	0-1/4	2,200,000
BROMEGRASS.....SMOOTH	B 15-25 LBS	(FEB-APR) (AUG-OCT)	1/4-1/2	134,000
ORCHARDGRASS.....	D 15-20 LBS	(MAR-APR) (AUG-OCT)	1/4 - 1/2	590,000
PRAIRIE BROME, LAKOTA.....	D 30-35 LBS	(E. SPRING & E. FALL)	1/4 - 1/2	52,000
RED TOP.....	B 8-12 LBS	(FEB-JUNE) (AUG-OCT)	-----	5,100,000
REED CANARYGRASS.....	B 8-12 LBS	(FEB-MAY) (AUG-OCT)	1/4 - 1/2	550,000
RYEGRASS, ANNUAL.....	B 25-35 LBS	(FEB-MAY) (AUG-OCT)	-----	270,000
RYEGRASS, PERENNIAL.....	B 25-35 LBS	(FEB-MAY) (AUG-OCT)	-----	270,000
TIMOTHY.....	B 8-12 LBS.	(FEB-MAY) (AUG-OCT)	0-1/4	1,230,000
TALL FESCUE.....	B 20-25 LBS.	(FEB-APR) (AUG-OCT)	1/4-1/2	225,000

## PASTURE MIXTURES

CATTLE.....	B 35 LBS	(MAR-MAY) (AUG-OCT)	-----	1,033,000
HORSE.....	B 35 LBS	(MAR-MAY) (AUG-OCT)	-----	1,033,000

WARM SEASON GRASSES (PLS) PURE LIVE SEED	PLS LBS PER ACRE	SEEDING TIME	APPROX SEED PER LB
BIG BLUESTEM	5-10 LBS	(LATE MAY & JULY)	130,000
INDIANGRASS	6-10 LBS	(LATE MAY & JULY)	170,000
LITTLE BLUESTEM	5-6 LBS	(LATE MAY & JULY)	260,000
SIDE OATS GRAMMA	8 LBS	(LATE MAY & JULY)	135,000
SWITCHGRASS	5-6 LBS	(LATE MAY & JULY)	280,000
EASTERN GAMMA GRASS (DORMANT)	8 LBS	(DEC - FEB)	
CAUCASIAN BLUESTEM	2-3 LBS	(LATE MAY & JULY)	
CRABGRASS	4-6 LBS	((LATE MAY & JULY)	



**Turner Seed Inc.**  
**4315 Hurricane Creek Blvd.**  
**Antioch, TN 37013**  
**800-242-7331**

**Turner Seed Inc.**  
**321 Mt. Sterling Road**  
**Winchester, KY 40392**  
**877-350-7331**



# CHART

## LAWN SEEDS

SPECIES	LBS PER 1000 SQ FT	SEEDING TIME	APPROX SEEDS/LB
BERMUDAGRASS.....	2-3 LBS	(MAY-JULY)	1,300,000
BENTGRASS.....	2 LBS	(MARCH-SEPT)	8,000,000
BLUEGRASS.....	3-5 LBS	(FEB-MAY) (AUG-OCT)	2,200,000
BUFFALOGRASS.....	1-3 LBS	(MAY-AUG)	
CLOVER, WHITE DUTCH.....	3-5 LBS	(FEB-APRIL) (AUG-OCT)	
CROWNVELTCH.....	2-3 LBS	(SP-SUMMER-FALL)	122,000
FESCUE, TALL KY 31.....	8-10 LBS	(FEB-APR) (AUG-OCT)	225,000
FESCUE, TALL TURF TYPES.....	8-10 LBS	(FEB-APR) (AUG-OCT)	225,000
FESCUE, CREEPING RED ....	3-5 LBS	(MAR-MAY) (AUG-OCT)	615,000
FESCUE, CHEWINGS.....	3-5 LBS	(MAR-MAY) (AUG-OCT)	615,000
RYEGRASS, PERENNIAL.....	5-6 LBS	(FEB-JUNE) (AUG-OCT)	270,000
RYEGRASS, ANNUAL.....	5-6 LBS	(FEB-JUNE) (AUG-OCT)	270,000
RYEGRASS, TURF TYPES.....	5-6 LBS	(FEB-JUNE) (AUG-OCT)	270,000
ZOYSIA.....	2 LBS	(MARCH-MAY)	1,200,000
WILDFLOWERS, SOUTHEAST MIXTURE 5 OZ		(SPRING, FALL)	419,000

## LAWN MIXES

SOUTHERN SUPREME FESCUE	7-8 LBS	(FEB-APR) (AUG-OCT)
TSI 5-WAY FESCUE.....	7-8 LBS	(FEB-APR) (AUG-OCT)
PROUD LAWN.....	7-8 LBS	(FEB-APR) (AUG-OCT)
CONTRACTORS MIX.....	7-8 LBS	(FEB-APR) (AUG-OCT)
SOUTHERN SUPREME RYEGRASS	7-8 LBS	(FEB-APR) (AUG-OCT)
SHADY LAWN.....	7-8 LBS	(FEB-APR) (AUG-OCT)

## ANNUAL FORAGES AND GRAINS

SPRING	RATE/ACRE DRILL/BROADCAST	SEEDING TIME	DEPTH INCHES	APPROX SEEDS/LB
OATS.....	D 85-100 LBS	(FEB-APR)	1-2	16,000
BARLEY, SPRING.....	D 72-96 LBS	(EARLY SPRING)	1-2	14,000
OATS, SPRING.....	D 64-96 LBS	(FEB-APR)	1-2	16,000
RYE, (COVER).....	D 84-112 LBS	(JAN-MAY)	0-2	18,000
WHEAT, SPRING.....	D 90-120 LBS	(EARLY SPRING)	1-2	11,000

## SUMMER

HY-GAIN.....	D 20-30 LBS	(MID MAY-JULY)	1	22,000
MAXI-GAIN.....	D 15-20 LBS	(MID MAY-JULY)	1	17,000
SURPASS BMR-6.....	D 25-30 LBS	(MID MAY-JULY)	1	20,000
"TIFFANY" TEFF.....	D 10-12 LBS	(MID MAY-JULY)	1	15,000
PEARL MILLET HYBRID.....	D 12-15 LBS	(MID MAY-JULY)	1/2 - 3/4	82,000
FOXTAIL MILLET GERMAN.....	D 20-30 LBS	(MID MAY-JULY)	1/2	165,000
HAY BEANS, LAREDO (BLACK).....	D 50-60 LBS	(MID MAY-JULY)	1	6,000
SOYBEANS FORAGE.....	D 75-90 LBS	(MID MAY-JULY)	1	3,400
MILAGE, FORAGE MIX.....	B120-150 LBS	(MID MAY-JULY)	1	12,000
FORAGE SORGHUM, HYBRIDS.....	D 8-12 LBS	(MID MAY-JULY)	1	15,000
COWPEAS.....	D 50-60 LBS	(MID MAY-JULY)	1/2	3,600

## WINTER

RYE.....	D100-120 LBS	(LATE AUG-NOV)	0-2	18,000
TRITICALE.....	D100-120 LBS	(SEPT-OCT)	1-2	15,000
WHEAT.....	D100-120 LBS	(AUG-OCT)	1-2	11,000
BARLEY, WINTER.....	D 72-96 LBS	(AUG-EARLY OCT)	1/2-1	14,000
OATS, WINTER.....	D 75-100 LBS	(AUG-OCT)	1-2	16,000
RYE, WINTER.....	D 84-112 LBS	(AUG-NOV)	0-2	18,000

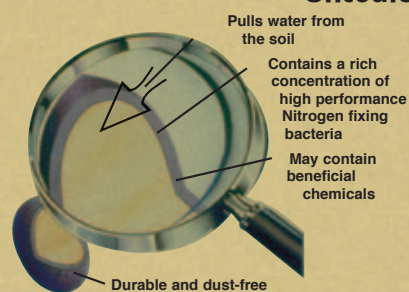
## WILDLIFE FOOD PLOT

SPECIES	PLANTING RATE LBS PER ACRE	SEEDING TIME
BUCKWHEAT	48-60	MAY - AUG
CHICORY	5	SPRING - EARLY FALL
CHUFA	30	APRIL - JULY
CLOVER, LADINO	5-8	JAN - APR, AUG - SEP
CORN, HYBRID, & OP	12	APRIL - MAY
COWPEAS	60	MAY - JULY
DEER MAGIC	10	SPRING - FALL
EGYPTIAN WHEAT	10	MAY - JULY
SPRING WILDLIFE	50	MAY - JULY
FALL WILDLIFE	50-100	AUGUST - OCTOBER
LAB-LAB BEANS	20	MAY - JULY
LESPEDEZA, BI-COLOR	10	SPRING - SUMMER
LESPEDEZA, SERICEA	20-30	EARLY SPRING
MILLET, BROWNTOP	30-40	SPRING - SUMMER, EARLY FALL
MILLET, JAPANESE	20-30	MAY - AUGUST
MILLET, WHITE PROSO	30	MAY - AUGUST
RAPE, DWARF ESSEX	6-10	APRIL - SEPTEMBER
RICE	50-90	MAY - JUNE
SORGHUM, HYB, FORAGE	8-12	MAY - JULY
SORGHUM, HYBRID GRAIN	8-12	MAY - JULY
SORGHUM, WGF	15-30	MAY - JULY
SOYBEANS	75-90	MID MAY - JULY
SUGAR BEET	5	SPRING, EARLY FALL
SUNFLOWER, PEREDOVIC	15-30	APRIL - JULY
SUNFLOWER, HYBRID OIL	6-8	MAY - JULY
TURNIP, FORAGE	3-5	EARLY SPRING - MID SUMMER
TURNIP, PURPLE TOP	2-5	SUMMER - FALL



Coated "CP"

Preinoculated  
Uncoated



**COATED SEED ENHANCES SEED GERMINATION AND SEEDLING SURVIVAL AND GROWTH. PLANTING RATES ARE THE SAME AS PURE SEED. CHECK PURE LIVE SEED REQUIREMENTS WHEN CONSIDERING COATED SEED.**

## How Many Plants In A Bag of Seed?



# ORCHARDGRASS



## Uses

**Livestock:** Orchardgrass may be used for hay, pasture or silage. It is highly palatable to all classes of livestock. Orchardgrass is one of the best forage grasses for use in pastures and in combination with alfalfa or red clover for hay.

**Erosion control:** Because of its dense network of roots, orchardgrass provides good erosion control on those soils to which it is particularly adapted.

**Wildlife:** Orchardgrass is used in grass-legume mixes for nesting, brood rearing, escape and winter cover for upland game birds and conservation plantings.

## Description

Orchardgrass (*Dactylis glomerata* L.) is a persistent, cool-season bunchgrass. Under dryland conditions, it usually develops distinct clumps and flower culms 15 to 18 inches tall. Leaves are usually less than 12 inches in height. When grown under irrigation or in more moist situations, it attains a height of 24 to 28 inches. No vegetative spread has been observed.

Orchardgrass is one of the earliest species to grow in the spring, making tremendous growth during cool conditions. Due to deep roots, it also is capable of strong summer growth when conditions are favorable. Orchardgrass has 416,000 seeds per pound.

## Adaptation and Distribution

Orchardgrass is found from Canada to the Gulf coast states and from the Atlantic coast to the Pacific coast. However, orchardgrass is not as winterhardy as smooth brome or timothy.

Orchardgrass performs well on different textured soils ranging from clay to gravely loams and on shallow to deep soils. It does not grow well in saline soils and areas with high water tables. It has the ability to establish and persist in areas that receive as little as 11 inches of annual precipitation.

Orchardgrass performs best in a pH range of 5.8 to 7.0.

## Establishment

A clean, firm, weed-free seedbed is recommended. Range and erosion control seedings should be made in the late fall or very early spring. Do not seed after the spring moisture period is well advanced or a failure may occur because of drought and hot summer conditions before the grass is well established. A deep furrow or range drill with press wheels may be used. Orchardgrass is easily established with grain drills or by broadcast seeding. The seeding rate is 8 to 12 pounds per acre. For range and critical area treatment, a seeding rate of 3 to 4 pounds per acre is recommended. If broadcast, double the seeding rate. Adjustments in seeding rate should be made when seeding in mixtures. Seeding depth should not be more than ½ inch.

## Management

Under irrigation and higher rainfall areas, orchardgrass should be cut at boot stage for the first cutting and then at four- to six-week intervals depending on regrowth. Rotational grazing is best for production, persistence and quality. Fields should be grazed heavily and frequently during the spring, but do not overgraze. Leave a 3- to 4-inch stubble so plants can recover quickly. Heavy grazing during the late fall should be avoided to prevent depletion of root reserves. Under dry land conditions, orchardgrass should not be grazed until late summer or fall of the second growing season. The plants may be severely damaged by overgrazing especially in the seedling year. Use no more than 60% of the annual growth during winter or 50% during the growing season. This plant responds well to rotational grazing systems and to good fertility management. To even out the forage production, fertilize the stand after the first and second cutting or grazing to boost late spring and summer production. Apply fertilizer based upon soil tests.





# PRAIRIE ORCHARDGRASS

- Good Disease Resistance
- High Yield
- Excellent Protein
- Winter Hardy
- Great Digestibility
- Heavy Seeder
- Very Persistent

Prairie Orchardgrass was developed by the Kentucky Agricultural Experiment Station's Forage Grass Breeding Project. This orchardgrass cultivar has been released because of its combination of high forage yield and desirable maturity.

The cultivar was derived from two cycles of phenotypic selection from older orchardgrass cultivators with wide adaptation in the mid-south area of the U.S. Prairie's parental clones displayed greater plant vigor, more leafiness, an upright growth habit, mid-season plant maturity, increased seed-head production and more resistance to scald and rust as compared to older cultivators. Prairie Orchardgrass has been in development for over 15 years.

Prairie is very winter hardy. It is an easily established proven orchardgrass sold where abundant forage production is important. Its digestibility is higher than any other mid season maturity varieties. Prairie is more resistant to diseases such as rust and scald. It is a heavy reseed and makes for more persistent stands. It has been trailed in Kentucky and consistently outperforms older varieties. Prairie is excellent for grazing, hay production and silage. It will perform well in mixtures with other grass and legumes. The best selling points are Prairie's good disease resistance, high yield potential, high digestibility, winter hardiness and stand ability.



## PERSIST ORCHARDGRASS

*Plant for Keeps*

**Anyway you CUT IT, CHOP IT, or GRAZE IT, you'll be able to MAKE MORE MONEY by PLANTING PERSIST!**

**Persist might be the most amazing orchardgrass ever!** Besides proving that it can withstand YEARS of grazing, overcome heat and drought stresses, take cold winters and hot summers, it also continues to prove itself as one of the top forage yielders, producing higher yields than most all other varieties. What does that mean to you?

**Persist Means Increased Income!** Higher yields and better stands equate to more money from more tonnage, quicker weight gains, and increased milk production - simply more forage per acre for your animals.

**Persist Means Reduced Costs!** Increased longevity, the ability to withstand grazing pressure and overcome weather-caused stresses mean you don't have to replace your fields as often when you plant Persist, saving you money! Lots of money! Also, denser stands compete better against weed pressure, reducing the need for costly herbicide applications.

**Persist Means More Profit!** With Persist you can make more money while reducing your costs. That's some real financial sense! Planting Persist equals profit! When you plant Persist you ***Plant for Keeps!***



# Forages Late Winter/Early Spring

## FROST MASTER PEA

### White Flowered Winter Wildlife Pea

**FROST MASTER PEA** is a long vined winter pea from the ProGene Plant Research breeding program for Wildlife Plots. It is a forage type winter pea with strong plant growth and good winter hardiness. The variety has small seed size and early plant growth of Nutrigreen is slightly quicker than that of Austrian Winter Pea. Frost Master Pea's advantage in the wildlife market is that it has a sweeter taste and therefore better palatability for deer, livestock and people. The foliage or the peas from the pod of AWP leave a bitter after taste. This occurs because of the chemical anthocyanin in the AWP plant. Anthocyanin also makes the AWP flowers purple. Frost Master Pea does not have anthocyanin in the plant and therefore has the sweeter taste and WHITE flowers. For this reason, deer and other wildlife are more attracted to the WHITE flower peas

**Key Attributes:** High Biomass Production for Wildlife Feed, quicker starting than AWP for earlier wildlife, sweeter taste and better palatability than AWP and Frost Master Pea is a Nitrogen fixing Legume.

**Yield:** High Bio Mass producing pea for maximum feed production

**Growth Habit:** Ling-Vine, normal leaf type  
**Plant Height:** Tall

**Seed:** Small seed averaging 15.7g per 100 seed or averaging about 2850 seeds per lb.

**Disease Resistance:** Tolerance to Aschocyta Blight Phoma Fungus

**Vine Color:** Dark Persistent Green

**Bloom:** White Flower



## Winter Annual Legumes - Spring Forages

**Hairy Winter Vetch** - A very winter hardy legume for pasture, hay or silage. High in protein, this legume is very palatable. Is used for a cover/plowdown crop. A good companion with small grains, wheat, rye, barley or triticale. Seed in late summer. Plant 25-30 lbs in mixtures; 40-50 lbs. in pure seeding.

**Austrian Winter Peas** - Winter peas make an excellent companion to small grains for hay or silage, adding additional protein and yield. Not adapted for grazing. Winter Peas makes a good nitrogen producing cover crop. Seed in late winter with oats or late summer with wheat or triticale. Plant 25-30 lbs. per acre with companion crop; 40-50 lbs. per acre for cover crop.

## Pasja Hybrid Brassica

Pasja is a high yielding brassica that is a cross between a forage turnip and forage rape. Pasja offers a tremendous opportunity for multiple grazings. Pasja can be sown in the spring with oats or Italian Ryegrass; in the summer with sorghum-sudangrass or pearl millet. With good fertility, moisture and management Pasja can be ready to graze in 35-75 days. Pasja has a tap root and grows longer than turnips into times of dry weather.

## Jerry Oats

Medium maturity-about 4 days later than Don, medium height. Good lodging resistance, very high test weight, high groat percentage white/ivory seed. Moderately susceptible for red leaf, moderately resistant to crown rust and moderately susceptible to stem rust.

# Forages Late Spring / Summer



## Hy-Gain

HYBRID  
SORGHUM SUDANGRASS

Hy-Gain is fine stemmed and very leafy. Hy-Gain is well suited for summer pasture, hay or green chop. Hy-Gain is a three way cross Hybrid Sorg-Sorghum X Sudangrass. The sorgo cross reduces the stem size and brings about its sweet, juiciness. Hy-Gain has uniform growth with very broad, dark green leaves. Its excellent root system provides stand ability and drought tolerance. Excellent seedling vigor and fast regrowth provide multiple cuttings or continuous summer pasture.

- Seeding Time: Planting can begin in mid-May or when the soil temperatures are 60 to 65 degrees. Later plantings up through July are possible if moisture is available for germination, and if fewer cuttings are acceptable.
- Seeding Rates: Drilled at 15 to 30 lbs. per acre. Broadcast at 25 to 40 lbs per acre. A good seed bed preparation will enhance quality and quantity. The higher the seeding rate, the smaller the stem size.
- Planting depth of 1 to 1 1/2 inches is recommended.
- Fertility: Soil test before planting. Hy-Gain normally needs 80 to 120 lbs. N. Split application, preplant and after first cutting, 50 lbs. P - 90 lbs. K. Very responsive to nitrogen needs. Lime is needed on acidic soils.
- Harvest 24 to 36 inches and should be cut when the first boot stage appears. Leave 6 to 10 inches of stubble for tillering and regrowth.
- Protein content ranges for 12% to 14% prior to heading.
- Not recommended for horses. Alternative Leafy 22 Hybrid Pearl Millet.
- Follow guidelines to avoid prussic acid and nitrate toxicity.
- A perfect way to rebuild hay supplies or quick pasture.

## LEAFY 22 HYBRID PEARL MILLET

An excellent choice for a quick hay crop or summer pasture. Very leafy on very fine stems. The extra leafiness will help boost protein levels over other pearl millets. Leafy 22 Hybrid Pearl Millet has excellent seedling vigor and tremendous regrowth and tillering after cutting or grazing. Leafy 22 Hybrid Pearl Millet will grow better on marginal or acidic soils than sorg x sudan crosses and is drought tolerant. There is no prussic acid danger with pearl millet, but is susceptible to nitrate toxicity. Leafy 22 Hybrid Pearl Millet offers multiple cuttings of excellent quality forages for cattle, horses, sheep and other grazing animals.



- Seeding Time: Mid May or when soil temperatures are 60 degrees plus. Later plantings can be done if moisture is adequate.
- Seeding Rate: 12 to 15 lbs. per acre drilled; preferably in narrow rows. Broadcast 30 to 40 lbs. per acre on prepared seed bed. 85,000 seeds per lbs.
- Planting depth of 1/2 to 3/4 inches.
- Fertility: Soil test before planting. Hybrid pearl millet normally requires 80 to 120 lbs. nitrogen in split applications, preplant and after first cutting. It responds to nitrogen, but excessive amounts with stress may cause nitrate toxicity.
- Harvest: 24 to 36 inches, or before seed heads emerge. Leave 6 to 10 inches of stubble for tillering and regrowth.
- Protein Content: Ranges 12% to 14% prior to heading.



# Forages Late Spring/Summer

## "Tiffany" Teff

### *A new Warm Season Annual Grass Hay with... Quality and Palatability rivaling Timothy"*

#### Planting & Growing Requirements

**Seed must be planted in the spring after the risk of frost has passed.** "Tiffany" Teff is a very small seeded annual grass with an average of 1.3 million seeds per pound. Planting rate is 10 lbs. per acre. Due to its small seed size it requires a firm seed bed, similar to alfalfa, in which good seed to soil contact is promoted. Planting depth should be 1/8" to 1/4" deep. Adequate soil moisture or overhead irrigation is ideal for the crops fast germination, which occurs within one week under warm conditions. Weed control during stand establishment using herbicides or management practices, is recommended.

Broadcast Planting using a Brillion grass seeder and cultipacker combination, or a spinner type grass seeder is optimal. If row plantings is used, row-spacing should be very narrow to allow for stronger weed competition. Teff has an initial slow growth until a good root system has been established. Herbicide programs for Teff would be similar to other annual grasses or cereal grains.

Applications of 50-60 lbs. of available N at planting is recommended. Small applications of N following each cut will enhance yields of later cuts. Moderate amounts of Phosphorous and in some cases sulfur may be required. Excessive fertilization should be avoided to prevent lodging. Harvesting cut before maturity for optimal quality feed. Cutting interval is generally 40-45 days, but may vary by location. Rotary cutters are preferred with a stubble height of 3-4 inches.

#### Disease & Pest Resistant Crop

Teff is a relatively new forage crop in the U.S., where disease and pest problems have seldom been observed in the crop. "Tiffany" Teff is relatively free of most major disease problems especially when compared to other grain crops used for hay. Preliminary University and grower trials have demonstrated that "Tiffany Brand" Teff can be grown, in most locations, without insecticides or fungicides. It is for the most part, considered a low input crop.

#### Nutritive Value

Nutritive value of "Tiffany" Teff is comparable to Timothy, making it an excellent forage for horses and other livestock. Palatability and animal acceptance has been reported to be very good by horse owners.

Protein content of Teff hay ranges from 12-17% depending on the growth stage of maturity. RFV values have been reported in the range of 80-120. Oregon State University trials reported ADF and NDF values at 3 locations ranging from 32-4- and 53-70 respectively.

Teff hay is high in calcium as well as phosphorus, iron, copper, aluminum, barium, and thiamine. Potassium levels have been reported in some hays in the 2.5-3.0% range. Nitrate and Nitrite content is low under normal fertility conditions.



**Crabgrass**

Crabgrass, a warm season annual that is easy to establish. Stands are maintained by allowing to reseed. Plant 3 to 5 lbs per acre in May or dormant seed late winter/early spring. Responsive to nitrogen.

## *Surpass BMR-6 Hybrid Sorghum-Sudangrass*

- A value added Brown Mid-Rib (gene 6) Hybrid Sorghum Sudangrass.
- Surpass BMR is a dwarf multileaf summer annual forage.
- Leaf to stem ratio values greater than 100% delivers more nutritional forage per acre.
- High leaf percentage allows easier harvest with a faster dry down.
- Tremendous green leaf retention extending the forage production period.
- RFQ values comparable to alfalfa.
- Provides energy and protein while improving animal health through a forage diet with readily digestible fiber.
- 35 — 50% more leaf matter than competitive bmr hybrids.
- 15 — 25% less lignin content than competitive bmr hybrids.

#### Surpass BMR-6 Benefits:

- A highly digestive forage can meet more than half of the energy needs of cattle and a good portion of the protein needs.
- Amount of energy a forage contributes to a ruminant diet is the single most important factor in predicting animal performance.
- Fiber is the largest single nutritional component of forage crops thus the digestibility of that fiber has a major impact on the energy available from forages.
- The more energy available in a forage results in more gain from the same amount of feed or the same amount of grain from less feed per animal.



#### Suggested Planting Rate: 25 — 35 lbs. per acre

- Recommended Nitrogen Fertilizer Rates: 120-150 Units N applied in split or multiple applications.

## MANAGEMENT TIPS

#### Prevent Prussic Acid and Nitrate Poisoning

In most cases prussic acid is produced early in the life of a plant and then is diluted by additional growth so that by the time the forage is fed there is no harm to the animal.

When plants are stunted at an early state, growth is abnormally slow or non-existent and the prussic acid content may be high enough to be toxic if fed to animals. A drought or early freeze can cause this stunting.

If growth is slow or halted, wait a sufficient amount of time before using as feed. All plants contain some nitrate, but excessive amounts are likely to occur in forages grown under stressful conditions.

Forages that contain high nitrate levels can be diluted in the diet with grains or with other forages low in nitrates and then can be fed safely.

It is best to test feed if high nitrate levels are suspected.



# LATE SUMMER FORAGES

## DAIRY MASTER BMR

This Forage sorghum hybrid is "Brown midrib" and has a very sweet stem with excellent green leaf retention. The brown midrib characteristic increases digestibility of the stem fibers by reducing the quantity of indigestible lignin. Lignin content is reduced approximately 40-60% depending upon environmental conditions. This reduction in lignin increases cellulose and hemicellulose content, both are more digestible than lignin. Because lignin is a structural component of the stem, by its reduction stems are somewhat softer and more limber.

The Hybrid has excellent foliar disease resistance and maintains a healthy canopy until harvest. Because the hybrid has an exceptional level of sugars in the stem palatability is very high. These sugars also provide additional energy and nutrition from the hybrid.

Large heads of tannin-free grain add to the nutritional level of silage produced. Days to bloom are approximately 85 from sowing. Although the hybrid is designed for a one-time harvest it has good regrowth capacity which can be utilized for direct grazing after the silage crop has been removed. Yield of silage is similar to SWEET T but with a greater grain to stover ratio.

Seed Count 15,000 to 16,000  
Seed Color White Without Tannin  
Exertion 6-8 Inches  
Head Size 6-10 Inches  
Height Approx. 85 Inches  
Days To Bloom Approx. 85 Days  
Regrowth Good  
Planting Rate 5 to 8 lbs. / acre



## GERMAN FOXTAIL MILLET

Excellent for hay, this summer annual is extremely drought tolerant and can be planted later in the season with expected good yields.

- Quick growth reduces weed competition.
- Can be harvested in 60 days. One cutting.
- Harvested when grain is in milk stage.
- Often planted with laredo haybeans as a roughage. However, at harvest, the millet is usually overripe.
- Plant May-July, 20-30 lbs. drilled, 30-40 lbs. broadcast.
- Responds to nitrogen fertilization.
- Not recommended for horses.

## LAREDO HAYBEANS

A late maturing soybean variety used for hay. The seed's small size allows 6,000 to 7,000 count per lbs. Seed is black in color. Plant height is tall and very bushy.

- High in protein and very rich
- Plant with german millet for added roughage. Millet will mature before the soybean.
- Ideal cutting as pod begins setting.
- Drill plant 40-50 lbs. per acre straight.
- Drill plant 40 lbs. with 15-20 lbs. german millet.
- Planting time May through July.

## COWPEAS

A summer annual legume. Use for pastures, hay and wildlife plantings. Very viney with weak stems and large leaves. Tolerant of drought conditions, low fertility and acid soils. Plant when soil temperatures are warm in late May-June. Plant 30-40 lbs. in rows, 100-120 lbs when broadcasting.

## MILAGE

Milage is a summer forage blend of milo and soybeans that has many advantages: Milage is a complete forage for beef and dairy cows and for backgrounding steers and heifers. Milage provides rapid ground cover and excellent erosion control, so it is suited to rolling as well as level ground. Plant Milage at 120 to 150 lbs./acre using the soybean setting on your drill. A 1-inch seeding depth is ideal in most situations. Soil temperature should be at least 60°F. Fertility - 40 lbs. "N" 80 lb. P. 100 K. Dairy producers who intend to feed Milage to their milking herd are likely to harvest Milage at 60 to 80 days for high protein percentage. If the primary use is for dry cows and heifers, harvest will likely be delayed to gain tonnage and lower K percentage. Beef producers will likely grow Milage more than 80 days, sacrificing some protein for higher tonnage and more energy.

- Milage can be planted anytime between mid May and mid July and is harvested 60 to 110 days after planting.
- Dry matter yields usually range from 3 to 6 tons/acre, depending on how long Milage is grown.
- Crude protein percentage usually ranges from 14 to 18%.
- Milage ferments into a silage that smells great - cattle love it!
- Milage provides excellent manure management options because manure can be incorporated in May, June or July prior to planting.
- Double cropping Milage after winter or spring annual forages produces 6 to 9 tons of dry matter/acre/year, provided that Milage is grown for at least 80 days.

The following results are for Milage planted in June and swathed 60, 80 and 100 days later at Sun Prairie, Wisconsin in 1998-2000.

Days to harvest	DM yield	CP	ADF	NDF	Milk yield	RFV	Ca	P	Mg	K
	t/a	%	%	%	lb/a		%	%	%	%
60	3.10	18.7	38.1	53.3	3482	103	0.76	0.41	0.45	3.46
80	4.54	16.6	36.8	53.7	5285	104	0.60	0.31	0.37	2.40
100	5.31	15.3	34.4	49.9	7613	116	0.57	0.32	0.35	1.90



## Switchgrass



## Panicum virgatum



**KANLOW SWITCHGRASS** - the energy source for tomorrow.

A lowland type switchgrass that produces a lot of biomass. Kanlow

does well in poorly draining soils and flooding areas. Kanlow switchgrass will be a factor in biofuel interest. Kanlow's extremely tall height provides a good screening and cover for wildlife.

**SWITCHGRASS** is good for livestock and wildlife. Other varieties adaptable for the Midwest are Cave-N-Rock, Blackwell, and the Northern section - Nebraska 28.





# WARM SEASON FORAGES



Sideoats Grama



Big Bluestem



Little Bluestem



Virginia Wild Rye



Eastern Gama



Indiangrass

# FALL/WINTER FORAGES



## Graze King 90 Rye

**High Yielding:** Graze King 90 is a high yielding forage rye that has been bred specifically for grazing, ensilage and hay production. Graze King 90 was bred in the south for southern farmers. It has been shown to be the top producer in University of Tennessee yield trials. It is excellent for both cattle and horses.

**Grazing:** Start grazing when Graze King 90 is at least 8" tall. Graze to 2-4" and then let regrow to 8" before grazing again.

**Hay or Ensilage:** Stop Grazing approximately March 15 to utilize Graze King 90 for hay or ensilage. Graze King 90 will mature at heights of 4 to 5 feet and it has tremendous tillering characteristics, making it an ideal hay and forage producer.

**High Quality:** Graze King 90 provides your livestock with high quality forage to produce steady gains, higher production, and greater profits. When planning your winter grazing program always specify Graze King 90 Rye. You will find Graze King 90 at your local independent farm dealer.

**Planting Dates:** August through December for best results

**Planting Rate:** Approximately 100 lbs. per acre for a full, tough coverage.

**Planting Depth:** Plant Graze King 90 at a depth of no more than one inch.

## FRIDGE TRITICALE (Triticum Secale)

Fridge Triticale is a tall winter variety that has excellent winter survival throughout the Midwest. Triticale is a genetic cross between wheat (triticum) and rye (secale) and has the ability to reproduce itself. It is higher in protein and palatability than wheat and common rye, and is an excellent small grain for pasture, hay, or haylage. In general, the variety is recognized by strong stems, dark medium green foliage color, and long, awnletted spikes (NOT BEARDED). Fridge relies on rapid, early growth and stand height to produce tonnage. Seed 100 to 120 lbs per acre September through October. Fertility requirements: 40 lbs P, 80 lbs K in the fall. 80 to 100 lbs N in the spring.

## FORAGE WHEAT (Triticum Aestivum)

Forage Wheat is a beardless, soft red winter wheat bred for large volume forage production. Very leafy, with wide blades and exceptionally tall height. Forage Wheat is 6 to 12 inches taller than most wheat varieties and almost double the forage production. Wheat produces a lot of straw with decent grain yields. Its closed head reduces disease and is resistant to weather damage resulting in high test weight. The beardless aspect allows for wider window of hay harvest time. Good for fall grazing and hay or haylage in the spring. Seed 100 to 120 lbs per acre - August through November. Responsive to Nitrogen.



# BRASSICAS



## Pasja Hybrid Brassica

Pasja is a high yielding brassica that is a cross between a forage turnip and forage rape. Pasja offers a tremendous opportunity for multiple grazings. Pasja can be sown in the spring with oats or Italian Ryegrass; in the summer with sorghum-sudangrass or pearl millet; or, in the late summer with oats or annual ryegrass. With good fertility, moisture and management Pasja can be ready to graze in 35-75 days. Pasja tops have proven to have substantially improved protein levels over purple top turnips. Pasja has not been known to taint milk. Pasja has a tap root and grows longer than turnips into times of dry weather.

**Fertilization:** pH between 5.3 and 6.8. Phosphorus levels above 60 lbs/acre. Nitrogen (70 lbs/acre) at sowing and again after 60-80 days

TURNIP, PURPLE TOP a 55-day popular general-purpose turnip. Roots are large and smooth, globular, white in color measuring sometimes up to 4 inches in diameter. Tops provide forage for wildlife. Seed 2 to 5 lbs. per acre. Plant April-October depending upon plot locations and harvest needs.



*Appin Turnips have multiple growing points on the bulb, which gives a better opportunity for re-growth.*

## Appin Forage Turnip

Appin is a unique forage turnip that was bred to give multiple grazings of high quality forage through-out the growing season. The Appin bulb is set firmly in the soil and has 6-10 growing points on the top of the bulb.

Appin can be sown with oats, annual ryegrass, pearl millet, sorghum sudangrass, cereal rye, and other grasses.

	No. Grazings	Crude Protein % Stem/Bulb	Tops	Total Yield Lb DM/ac	Energy MJ/kgDM	Digestibility %	Sowing Rate lb/Ac	Days to Grazing
Appin	2+	8-12	15-30	9,000	12.8	80	2-4	50-70
Pasja	4+	-	15-30	9,000	13.6	85	3-5	35-50



## Notable Characteristics:

- Nitrogen mining & Nutrient scavenging
- Increases row-crop yields
- Weed suppression
- Ground aeration & Alleviate soil compaction
- Promotes water infiltration
- Pilot hole root penetration
- Reduce use of chemicals and tillage
- May provide nematode control



**GroundHog** Brand radish produces more root mass than oil seed radish or mustards. This extra large root system allows **GroundHog** to pull nitrogen and nutrients deep within the soil and bring them back to the surface. According to University of Maryland soil scientist, Ray Weil, a radish cover crop will capture 150 to 200 pounds of nitrogen per acre before winter killing. Upon decomposition, the nitrogen uptake becomes available to the next cash crop.

**GroundHog** Brand radish will scavenge other nutrients as well.

**GroundHog** Brand radish has 2-4 times the amount of roots as rye or rape. (at 10"-20") Upon decomposition, these roots leave large holes in the ground that improve water infiltration and soil aeration.



# WILDLIFE



## **CORN, REID'S YELLOW DENT**

This old fashioned, 110 day maturity field corn is an open pollinated, non-hybrid variety with yellow kernels. A hardy and productive plant that will attract many wildlife species including deer. Plant 10 to 12 lbs. per acre April thru June.



**LAB LAB** This summer bean is extremely high yielding and drought tolerant. Once established, Lab Lab's high protein content makes it excellent for deer throughout the summer and fall until a killing frost. Lab Lab can be planted with millet, sorghum, or corn to provide a stalk for the vines to climb. This will help increase its productivity. Plant 20 lbs. per acre May thru July.



## **SORGHUM, HYB GRAIN**

Regular Milo grown for livestock and wildlife. Full grain head 100-120 day maturity. Plant 8-12 lbs. per acre. May-July.

**SORGHUM, WGF GRAIN** Wild Game Food, open pollinated is a short Milo 24" to 30", upright in growth with full grain head. Excellent wildlife feed. Ducks and geese love it. 100 day maturity. Plant 30 lbs broadcast, 15 lbs. drilled. May-July.



## **SUNFLOWER, PEREDOVIC**

Small, black sunflowers, growing 4-5 feet in height. Attracts game birds and other wildlife. Provides good hunter cover. 100-120 days to maturity. 30 lbs broadcast, 15 lbs. drilled. Plant April-July.

**SUNFLOWER, HYBRID** High in oil content, attracting most wildlife. Grown 2-3 ft with small heads filled with seeds. Plant 15 lbs. per acre broadcast, or 6-8 lbs. drilled. 100 day maturity. Plant April-July.

**COWPEAS** This viney, summer legume will attract turkey and deer from seedling stage on through maturity. Grows well on various soil types with very little preparation. Plant May thru July 60 lbs per acre.



## **SORGHUM, HYB-FORAGE**

**DAIRYMASTER BMR** a forage sorghum that puts on grain heads. Grows tall, allowing for lodging that gives feed and excellent cover for wildlife. Upland game birds and songbirds love it, not to mention turkey, deer, and rabbits. Grain heads are similar to Milo in size. 100-120 day maturity. Seed 15 lbs. per acre broadcast, or 8 lbs. per acre drilled. Plant May-July.



**BUCKWHEAT** Good for quail, doves, turkey, duck, and geese, plus other wildlife. Abundance of feed. 10-12 week maturity. Plant 40-50# per acre. April-July



**RICE** a duck and goose hunters dream wildlife plot. Don't wait for it to happen—create your own waterfowl habitat, preseason and postseason. Convert that wet land into a living sanctuary. Your reward will come from many hours of nature's association with hunting and waterfowl observations. Seed 50-90 lbs per acre. 150 day maturity. Plant June-July.



**EGYPTIAN WHEAT** Really a sorghum, very tall with a grain head. Provides excellent cover and feed for birds as it bends over. Seed 10-15 lbs. per acre.

## **SORGHUM, HYB-FORAGE**

**RED TOP KING** an economical forage sorghum hybrid that provides an abundance of seed heads, smaller in size than Milo, and a heavy forage stalk plant that lodges into a heavy habitat network. Provides feed and protection for all wildlife. 100-120 day maturity. Seed 30 lbs. broadcast or 15 lbs. per drilled. Plant May-July.



**JAPANESE MILLET** One of many different millets, growing fast to 2-4 ft. in height. Maturity 100-120 days. Good in flood plain. Ducks, geese, dove and quail. 20-30 lbs. per acres. Plant May-Sept.



**BROWN TOP MILLET** Grows 2-4 feet tall for quail, doves, turkey and ducks. Will produce seed in 60-70 days. Seed 30-40 lbs. per acre.



**GERMAN FOXTAIL MILLET** a summer annual grass usually cultivated for cattle hay. Seed heads have a foxtail appearance. Seeds are attractive to quail, dove, and other upland birds. Seed ripens in 60 days. Drill 20 - 25 lbs; Broadcast 30 lbs. in late May thru July.



**WHITE PROSO MILLET** Grows 1-2 ft. putting on small seeds that have high appeal to doves. Quail, pheasant and other wildlife will be attracted. Maturity 75 days. Plant 30 lbs. per acres. May-Sept.



# WILDLIFE



**SPRING WILDLIFE MIX** Spring Wildlife Mix is attractive to many wildlife species; deer, turkey, quail and more. The diversity of these different plants will provide food in spring, summer, fall, and early winter. This quality mix contains soybeans, hybrid grain sorghum, German foxtail millet, peredovic sunflowers and open pollinated corn. Plant 50 lbs. per acre -Mid-May thru July.



**ADVANTAGE LADINO CLOVER** Advantage Ladino clover is a long-lived perennial and a must have for wildlife food plots. Advantage spreads by stolons and secondary roots making a dense green mat. Advantage also grows upright for high yields and more browse. Advantage is tolerant of wet soils and lower pH. Easy to seed. Sow in late winter, early spring, or late, late summer. Seed 8 lbs. to the acre for thick stands.



**KOREAN LESPEDEZA** A reseeding annual legume used for pasture or hay and makes excellent wildlife cover and feed. Especially good for quail, dove, ducks, rabbits, deer, and livestock. Drought resistant and will grow in a variety of soils. Plant 10-15 lbs. per acre. Offers value in 90-120 days. Plant February-April and August-October.



**CHUFAS** Grow like peanuts with no outer shell. Prefer fertile, sandy and loamy soils. Good for deer and turkeys. Seed 50 lbs. per acre broadcast or 20-30 lbs. Planted in rows. Plant May-September.



**SUGAR BEET** Beet seed is a great addition to any wildlife plot. Deer love to eat both the foliage and the roots and the nutrition is excellent. Sugar beets grow well in almost all soil types but do require moisture. For wildlife plots, we recommend broadcasting 5 lbs. per acre. Plant in spring or early fall.



**LESPEDEZA, SERICEA** A perennial, erect in growth with fine stems and multiple leaves. Grows 18-40 inches tall depending upon weather and soil conditions. Especially attractive for certain wildlife cover. Offers some food value. Good for erosion control. Seed 20-30 lbs. per acres. Plant late March-May.



**BICOLOR LESPEDEZA:** This perennial shrub legume is used to provide food and cover to pheasant, quail, rabbit, and deer. Plant along field borders, ditches/washouts and other small areas devoted to wildlife habitat. Plant 10 lbs/acre late Spring and Summer.



**KOPU II WHITE CLOVER** Kopu II is a long-lived perennial white clover that is highly attractive to deer and turkey. With great persistence, large leaves, and the ability to spread by stolons, Kopu II would make an excellent addition to any food plot. Combine with chicory for the perfect food plot. Plant late winter, early spring, or late summer at 5 to 8 lbs. per acre.



**RAPE** Rape is a fast growing, heat and cold tolerant brassica that is highly adaptable to the Midwest. Being high in energy, rape makes good pasture for cattle or deer. Seed in spring for summer grazing or late summer for fall and winter harvest. Seed 10 lbs. per acre.



# WILDLIFE



- High yields from early spring through late fall
- High in digestibility and palatability
- High levels of metabolizable energy
- High levels of essential minerals
- Reliable summer forage in dry conditions
- Improved disease resistance

## Description:

**Oasis** brand forage chicory is a high-yielding, broad-leaved perennial herb that has excellent feed value for livestock. **Oasis** has been bred for greatly improved disease resistance, which significantly increases survival under grazing. Oasis also breaks winter dormancy earlier has a longer growing season to provide high quality feed for a longer period.



**FALL WILDLIFE MIX** Turner Seed's mix is a diversity of small grains and legumes that give deer the option of selection. These mixes contain Bob Oats, Winter Wheat, Winter Rye, Austrian Winter Peas, and clover. Good food for deer and other wildlife in the fall, winter and early spring. Plant 50 to 100 lbs. per acre - September thru November.



**CRIMSON CLOVER** a winter annual legume that is a good forage producer and a quick starter. It is a good food source for deer and turkey. Crimson promotes good insect production for quail and other birds. Seed 10 - 20 lbs. in the late summer preferred; or in the spring.



**HAIRY WINTER VETCH** A very winter hardy legume for pasture, hay or silage. High in protein, this legume is very palatable. Is used for a cover/plowdown crop. A good companion with small grains, wheat, rye, barley or triticale. Seed in late summer. Plant 25-30 lbs in mixtures; 40-50 lbs. in pure seeding. Also good with oats planted in spring.



**PASJA HYBRID BRASSICA** Pasja is a high yielding brassica that is a cross between a forage turnip and forage rape. Having a high protein content, this brassica is highly attractive to deer and other wildlife. Plant in spring or late summer.



**APPIN TURNIP** Forage turnip bred for multiple grazings. Bulb has 6-10 growing points making Appin Turnips a quality forage for wildlife. Highly digestible and high in protein. Plant 3-5 lbs/acre in spring or early fall.



**WINTER OATS, BOB** a variety suitable for fall planting. High in nutrition from plant and grain. Attracts deer, turkey, and rabbits. Not as winter-hardy as other small grains. Very compatible with winter annual legumes or brassicas. Seed 90-100 lbs. per acre - August thru October



**AUSTRIAN WINTER PEAS** Produce top quality forage for deer during the fall, winter and early spring. A cold tolerant viney plant. A good compliment to small grains. Plant August-September; February - April. 30 - 40 straight; 20-30 lbs. with grains.



# TURNER SEED INC. LAWN SEED

## TSI 5-WAY TURF TYPE TALL FESCUE BLEND

TSI 5-Way Turf Type Tall Fescue Blend — Includes Falcon IV, America's top rated turf type tall fescue. Falcon IV has been bred with (RTF) Rhizomus spreading ability for denser turf quality. This RTF quality helps patch and repair damaged and worn areas. TSI 5-Way also includes Finelawn Elite, another top rated turf type tall fescue, plus 3 other highly rated varieties for improved turf quality, rich green color, and disease and pest resistance.

### Features

- Improved turf quality
- Slower vertical growth results in less mowing
- Improved winter turf density
- Improved full season disease resistance
- Good heat & drought tolerance
- Improved traffic tolerance
- Uniform distinct appearance
- Strong seedling vigor for fast establishment
- Reduced nitrogen requirement
- Fewer fungicides & more environmentally sensitive
- Improved summer performance
- Great in full sun or partial shade

Excellent for new yards and building sites; attractive in sun or shade; irrigated or non-irrigated.

**TSI 5-Way** is durable enough for athletic fields and presents a uniform playing surface. **TSI 5-Way** performs better when mowed to 2.5 to 3 inches tall. Seed 8 to 10 lbs per 1000 square feet. Seed in spring or fall.



### DESCRIPTION

Falcon IV is a new and improved, heat and disease resistant, tall fescue variety developed for superior turf quality across a wide area of adaptation. It is dark green in color, fine textured with excellent wear tolerance. Falcon IV exhibits a unique combination of traits including dense growth, improved turf quality and resistance to brown patch. Falcon IV is an endophyte enhanced tall fescue which provides resistance to a number of leaf and crown feeding insects and nematodes. The presence of endophyte also contribute to improved biotic and abiotic stress tolerance, faster seedling establishment, enhanced fall recover and reduced summer weed invasion.

### PERFORMANCE

Falcon IV ranked #1 and statistically tied for 1st in mean turf quality among 160 entries in the 2001 NTEP Tall Fescue Test Progress Report No. 03-1 conducted across 31 U.S. locations. Falcon IV exhibits high quality turf performance and improved resistance to brown patch disease. Falcon IV tied for 1st in brown patch resistance across 6 test locations in the Coastal Plains and Mid Southern USA. It also exhibits improved resistance to leaf spot, pythium blight and winter net blotch.



### DESCRIPTION

Finelawn Elite is a new and improved, heat and disease resistant, dwarf tall fescue variety developed for superior turf quality across a wide area of adaptation. It is dark green in color, moderately fine textured with excellent wear tolerance. Finelawn Elite exhibits a unique combination of traits including short dwarf dense growth, improved turf quality and resistance to brown patch incited by Rhizoctonia solani. Finelawn Elite is an endophyte enhanced tall fescue which provides resistance to a number of leaf and crown feeding insects and nematodes. The presence of endophyte also contribute to improved biotic and abiotic stress tolerance, faster seedling establishment, enhanced fall recover and reduced summer weed invasion.

### PERFORMANCE

Finelawn Elite tied for 1st in mean turf quality in the 2001 NTEP Tall Fescue Test Progress Report No. 03-1 conducted across 31 U.S. locations. Finelawn Elite exhibits high quality turf performance and improved resistance to brown patch disease. Finelawn Elite tied for 1st in brown patch resistance across 6 test locations in the coastal plains of Virginia, Oklahoma, southern Illinois and Indiana. It also exhibits improved resistance to leaf spot, pythium blight and winter net blotch.

## SOUTHERN SUPREME TURF-TYPE FESCUE

**Southern Supreme is composed of the finest fescue varieties.**

Using a mixture of premium turf-type fescues, Southern Supreme is precisely matched to the growing condition of our area. Only the highest quality seed is mixed to produce the darkest green, finest textured lawn possible. Combine these characteristics with slower growth rate and you will enjoy a superior lawn with less care.

### Vigorous growth in full sun or partial shade

When properly established, Southern Supreme provides an extensive root system thus allowing it to thrive in full sun or partial shade. Competition from other grasses is limited because of southern Supreme's rapid germination, resistance to brown patch, and formation of superior turf density, making it ideal for all southern lawns.



### Southern Supreme will provide premium results

Whether you are planting for permanent turf on home lawns, commercial grounds or athletic fields, Southern Supreme will provide the dark green, fine textured, durable lawn that you demand.



### RHIZOMATUS TALL FESCUE (RTF)

Tall fescue is wear tolerant when mature, tolerates drought with a deep extensive fibrous root system and exhibits good shade tolerance. Its major problem has been slow recovery from injury and its tendency to become clumpy or bunchy if not overseeded. Breeders at Rutgers University hope to overcome these shortcomings by developing a family of tall fescue varieties like Falcon IV with rhizomes. These underground stems allow grasses to spread and form a close-knit sod that sends out new shoots and roots which aid in quicker repair after traffic damage and turf injury.



# TURNER SEED INC. LAWN SEED

## SOUTHERN SUPREME PERENNIAL

Southern Supreme Perennial Ryegrass is a blend of high quality turf grass with uses stretching from golf courses to home lawns. It will provide dark green color for all seasons making it ideal for permanent turf and overseeding dormant turf. Southern Supreme Perennial Ryegrass has demonstrated excellent traffic tolerance along with rapid recovery from stress and lawn maintenance. A blend of proven ryegrass for this region makes Southern Supreme Perennial Ryegrass the perfect choice.

Benefits:

- Disease Resistance
- Heavy endophyte for insect control and survivability
- Fast establishment
- Excellent wear tolerance

## SOUTHERN SUPREME SHADY LAWN MIXTURE

Southern Supreme Shady Lawn Mixture is a blend of fine leaf, shade tolerant grasses. As the name states, this blend is good for use in shady areas. It provides a fine texture, dark blue-green turf that is attractive and uniform by allocating the benefits of poa trivialis, creeping red and chewings fescue. Southern Supreme Shady Lawn will also blend well with other turf grasses for your convenience. Either way, this grass will be the envy of the neighborhood.

## Southeast Wildflower Mix



### Common Name

Lance-Leaved Coreopsis  
Purple Coneflower  
Perennial Lupine  
California Poppy  
Annual Baby's Breath  
Scarlet Flax  
Four O'Clocks  
Sulphur Cosmos  
Annual Gaillardia  
Tree Mallow  
Dwarf Cornflower  
Gaura  
Clasping Coneflower  
Black-Eyed Susan  
Plains Coreopsis

### Scientific Name

Coreopsis lanceolata  
Echinacea purpurea  
Lupinus perennis  
Eschscholzia californica  
Gypsophila elegans  
Linum grandiflorum rubrum  
Mirabilis jalapa  
Cosmos sulphureus  
Gaillardia pulchella  
Lavatera trimestris  
Centaurea cyanus  
Gaura lindheimeri  
Rudbeckia amplexicaulis  
Rudbeckia hirta  
Coreopsis tinctoria

Seeds/lb. = 181,000

Planting rate = 14-28 lbs./acre



### Advantages:

First Overall\* In NTEP Trials 1997-2001

Superior Turf Quality

Excellent Winter Hardiness

Drought Tolerant

Excellent Color

Excellent Spring Greenup

Excellent Wear Tolerance

Improved Spring Dead Spot Resistance

Fast Establishment From Seed

Excellent Divot Recovery Rate

### Varietal Development:

Riviera Seeded Bermudagrass, *Cynodon dactylon* (L.) Pers., was developed by Oklahoma State University Turfgrass Development Team, with financial support from the United States Golf Association. The Oklahoma State University Turfgrass Development Team is led by Drs. Charles Taliaferro, Dennis Martin and Jeff Anderson. Riviera is a synthetic variety derived from the intercrossing of three clonal parent plants selected on the basis of turf quality and transition zone adaptation. Riviera was licensed exclusively to Johnston Seed Company for seed production, marketing and distribution.

### Area of Adaptation:

Superior performance in the 1997-2001 NTEP trials indicates Riviera is well adapted to the transition zone as well as all regions where bermudagrass is currently grown.

### Establishment:

Riviera should be planted in areas of full sunlight when soil temperatures reach a consistent 65°F (18°C) and are on the rise. Plant 2 to 3 pounds of Riviera seed per 1000 square feet (1 to 1.5 kg/100 square meters) in a well-prepared firm seedbed. Cover seed with no more than 1/4 inch (6 mm) of soil. Maintain adequate soil moisture around seed using frequent but light irrigation for optimum germination. Seedlings should emerge in 10 to 14 days. As seedlings develop, decrease frequency of irrigation but increase the amount of water applied. As turf matures, follow recommended turf watering guidelines for your growing region.



### Zenith Zoysia from seed:

- Affordable
- Superior Lawn
- Low Water Requiring
- Dense Turf
- Winter Hardy
- Heat Loving
- Weed Resistant
- Low fertility Requiring
- A True Lifetime Lawn

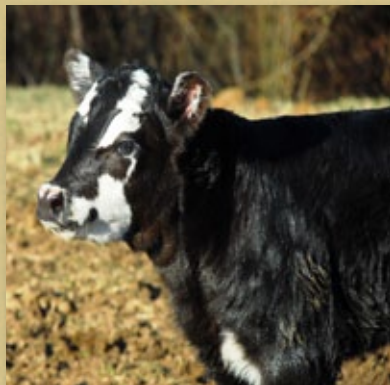




# TURNER SEED INC. PRODUCT LIST

## Agriculture

**Alfalfa**  
**Clover**  
**Orchardgrass**  
**Timothy**  
**Ryegrass**  
**Peas & Vetch**  
**Lespedeza**  
**Sorghum**  
**Millet**  
**Grains**



## Residential

**Turf Fescue**  
**Perennial Ryegrass**  
**Shade Blends**  
**Lime**  
**Birdfeed**  
**Bermudagrass**  
**Zoysia**  
**Bluegrass**  
**Fertilizer**



## Wildlife Products

**Brassicas**  
**Clovers**  
**Summer & Fall Blends**  
**Chufa**  
**Chicory**  
**Millets**  
**Rice**



## Landscape & Environmental

**State DOT Mixture**  
**Erosion Control Products**  
**Geotextile Fabric**  
**Native Grasses**  
**Wildflowers**  
**Contractors Mix**  
**Fertilizer**



## HOW TO PLANT A NEW LAWN

### Five Easy Steps to a New Lawn



**1. Preparation:** Aerate or till the soil, remove rocks, and apply an all-purpose fertilizer. Rake the seedbed until it is smooth and firm. When overseeding, be

sure to rake out thatch so seed can have contact with soil.



**2. Sowing:** Spread the seed evenly. Lime if necessary.

**3. Rake Lightly:** Germination is

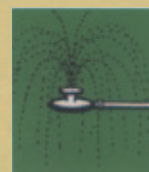
improved when seeds are covered with 1/8 to 1/4 inch of soil - no more.



**4. Cover Seed:** Cover the seedbed with a very thin layer of top dressing or straw. This keeps the soil from drying out while allowing the sun to

filter through.

**5. Water:** The top layer of soil must remain moist until the grass is well established. Spray mist as often as necessary. Avoid overwatering.



Your lawn should be ready for first mowing in three to six weeks.

■ Feed every six to eight weeks in fall and early spring.

■ Use broadleaf weed killers after the new lawn is mowed at least three times.