

CISCO SEEDS®

FORAGE GUIDE



FORAGE & FIELD GUIDE

VOLUME V

The CISCO Companies is dedicated to providing customers with the highest-quality forage varieties and practical expertise available in today's forage industry. Based in Indianapolis, Indiana, we are proud to be a family-owned distributor with a strong tradition of service. For more than 60 years, we have supported independent retailers by offering quality products, competitive pricing, and reliable, personalized customer care.

Rooted in the heart of the Midwest—where agriculture is a way of life—we believe success is built on trust, hard work, and exceeding expectations. This passion and understanding guide every decision we make as we remain committed to farmers, retailers, and small businesses. We hope this forage guide proves to be a valuable resource and helps your operation perform at its best.



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CISCO ALFALFA VARIETIES

ALFALFA

Plant type: Perennial Legume

Planting dates: March–April or Aug–Sept.

Soil pH: 6.6–7.2

Soil adaption: Well-drained, high fertility

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 227,000

Seeding rate: 14–20 lb/A
8–10 lb/A mix

Days to germination: 7–10

Main usage: Pasture, hay, silage

Height at maturity: 15"–36"

Length of stand: 3–7 years

Reproduces by: Seed

Pounds per bushel: 60

Precautions: Bloat Potential



ENDURO 423 AP

- Non-GMO
- FD 4.5, 1.7 WSI
- DRI - 39/40
- Resistance to Aphanomyces - root rot race 1, 2, and 3
- Sunken crown variety with branch roots
- Fast recovery after cutting
- Excellent yield potential
- High forage quality



ENDURO 442 HD

- Non-GMO
- FD 4.3, 1.7 WSI
- DRI - 34/35
- High yielding
- Fast recovery after cutting
- High multi-leaf expression
- More milk per acre
- 4–5 cuttings/year



ENDURO 439 LHR

- Non-GMO
- FD 3.9, 1.8 WSI
- DRI - 34/35
- High resistance to potato leafhopper
- Ideal "no-spray" alfalfa
- High yielding & highly digestible
- 3-4 cuttings/year



ENDURO 525 HD

- Superior winterhardiness
- Position on best ground
- Very aggressive and fast recovery
- MR Aphanomyces Race 2
- 5+ cuttings/year



CISCO 328

- Non-GMO
- FD 3.4, 1.8 WSI
- Large crowns with good shoot production
- Heaving tolerance
- Superior persistence
- Excellent disease resistance package
- Reasonably priced with tremendous value



LESS MANAGEMENT (MORE DEFENSIVE) **MORE MANAGEMENT (MORE OFFENSIVE)**

ENDURO 439 LHR
Leafhopper Resistant

Fall Dormancy 3.9
Winter Survival Index 1.8

- High resistance to potato leafhopper
- Ideal "no-spray" alfalfa
- High yielding & highly digestible
- 3-4 cuttings/year
- Apex Green Coated
- Organic eligible

ENDURO 423 AP
Position Anywhere!

Fall Dormancy 4.5
Winter Survival Index 1.7

- Branch root/sunken crown
- Place on "toughest acre"
- Aphanomyces Race 1, 2, & isolates of 3
- 39/40 Disease Rating Index
- 3-5 cuttings/year
- Coated/PI, Apex Green, & Raw/PI
- Organic eligible

ENDURO 442 HD
Dairy Quality / 30-35 days

Fall Dormancy 4.3
Winter Survival Index 1.5

- High-yielding
- Fast recovery after cutting
- High multi-leaf expression
- 34/35 Disease Rating Index
- 4-5 cuttings/year
- Coated/PI, Apex Green, & Raw/PI
- Organic eligible

ENDURO 525 HD
Dairy Quality / 25-28 days

Fall Dormancy 4.9
Winter Survival Index 1.1

- Superior winterhardiness
- Position on best ground
- Fast recovery
- MR Aphanomyces Race 2
- 33/35 Disease Rating Index
- 5+ cuttings/year
- Coated/PI, Apex Green, & Raw/PI
- Organic eligible

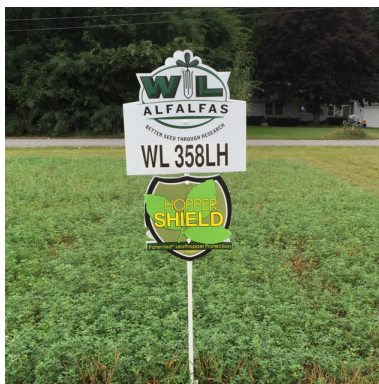
ENDURO ALFALFA PLACEMENT CHART

1=EXCELLENT

4=LEAST PREFERRED FIT

	Dairy	Beef, Sheep, Goat	Horse	Cash Hay Producer	Organic	Alfalfa Grass Mix
Enduro 442 HD	1	1	1	1	3	1
Enduro 423 AP	3	1	1	1	3	1
Enduro 439 LHR	4	1	1	1	1	1
Enduro 525 HD	1	2	2	1	3	3
Enduro 430 HGP	4	2	3	2	NA	1

WL ALFALFA VARIETIES



WL 358 LH

- FD 4.1, 2.0 WSI
- 8th generation LHR release
- Ideal "no-spray" alfalfa
- 34/35 DRI
- 3–5 cuttings/year
- Apex Green coated
- Organic eligible



WL 349 HQ

- FD 4.4, 1.7 WSI
- Tough soil condition performer
- Place on "toughest acre"
- Aphanomyces Race 1, 2, & evolving strain 3
- HR to Anthracnose 1 & 5
- 40/40 Disease Rating Index
- 4–5 cuttings/year



WL 365 HQ

- FD 4.9, 1.1 WSI
- Dairy quality/30–35 days
- Position with aggressive mgmt.
- Exceptional digestibility w/ outstanding yield potential
- 30/30 Disease Rating Index
- 4–6 cuttings/year
- Coated/PI, Apex Green
- Organic eligible



WL 3521 ULTRA CUT C3

- FD 5.0, 1.8 WSI
- Dairy quality/25–28 days
- Top yield potential
- Superb winterhardiness
- Position throughout Midwest
- Fast recovery
- MR Aphanomyces Race 2
- 40/40 Disease Rating Index
- 5+ cuttings/year



WL 359 LH.RR



- FD 3.9, 2.2 WSI
- 8th generation LHR release
- Ideal "no-spray" alfalfa
- High yield potential
- High forage quality
- 34/35 Disease Rating Index
- 3-4 cuttings/year



WL 3441 HQ.RR



- FD 4.3, 2.0 WSI
- Very winterhardy
- Long stand life under adverse weather and soil conditions
- Highly resistant to stem nematodes and diseases
- 35/35 Disease Rating Index

WL 3546 HQ.RR



WL POWERSTAND RR

- FD 5.0, WSI 1.4
- Highest-yielding, winterhardy RR FD5 to date
- Top choice for heavy, compacted and saturated soils
- Maximum returns under intensive management
- 40/40 Disease Rating Index

- FD 4.0, 2.0 WSI
- Economical Roundup Ready blend
- Moderate to fast recovery after cutting



WL 3474 HVX.RR



- FD 4.4, 1.8 WSI
- Best placed on tough acres
- Benefit of delayed cutting
- Maximize fiber digestibility
- Reduced lignin
- Extremely fast recovery after cutting
- 40/40 Disease Rating Index



WL 3581 HVX.RR



- FD 4.5, 1.7 WSI
- Highest yield under top management
- Benefit of delayed cutting
- Maximize fiber digestibility
- Reduced lignin
- Quick recovery after cutting
- 40/40 Disease Rating Index



ALFALFA CHARACTERISTICS & POSITIONING

LESS MANAGEMENT (MORE DEFENSIVE) **MORE MANAGEMENT (MORE OFFENSIVE)**

<p>WL 358LH <i>Leafhopper Resistant</i></p> <p>Fall Dormancy 4.1 Winter Survival Index 2.0</p> <ul style="list-style-type: none"> - 8th generation LHR release - Ideal "no-spray" alfalfa <ul style="list-style-type: none"> - High yielding - Highly digestible - 34/35 Disease Rating Index <ul style="list-style-type: none"> - 3-5 cuttings/year - Apex Green Coated <ul style="list-style-type: none"> - Organic eligible 	<p>WL 349HQ <i>Tough Soil Condition Performer</i></p> <p>Fall Dormancy 4.4 Winter Survival Index 1.7</p> <ul style="list-style-type: none"> - Place on "toughest acre" - Aphanomyces Race 1, 2, & evolving strain 3 - HR to Anthracnose 1 & 5 - 40/40 Disease Rating Index <ul style="list-style-type: none"> - 4-5 cuttings/year - Coated/PI 	<p>WL 365HQ <i>Dairy Quality / 30-35 days</i></p> <p>Fall Dormancy 4.9 Winter Survival Index 1.1</p> <ul style="list-style-type: none"> - Position with aggressive mgmt. - Exceptional digestibility w/ outstanding yield potential - 34/35 Disease Rating Index <ul style="list-style-type: none"> - 4-6 cuttings/year - Coated/PI, Apex Green <ul style="list-style-type: none"> - Organic eligible 	<p>WL 3521HQ <i>Dairy Quality / 25-28 days</i></p> <p>Fall Dormancy 5.0 Winter Survival Index 1.8</p> <ul style="list-style-type: none"> - Top yield potential - Superb winterhardness - Position throughout Mid-west <ul style="list-style-type: none"> - Fast recovery - MR Aphanomyces Race 2 - 40/40 Disease Rating Index <ul style="list-style-type: none"> - 5+ cuttings/year - Coated/PI
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ALFALFA CHARACTERISTICS & POSITIONING

LESS MANAGEMENT (MORE DEFENSIVE) **MORE MANAGEMENT (MORE OFFENSIVE)**

<p>WL 359LH.RR <i>Leafhopper Resistant</i></p> <p>Fall Dormancy 3.9 Winter Survival Index 2.2</p> <ul style="list-style-type: none"> - 8th generation LHR release - Ideal "no-spray" alfalfa - High yield potential - High forage quality <ul style="list-style-type: none"> - 34/35 DRI - 3-4 cuttings/year - Coated/PI 	<p>WL 3441HQ.RR</p> <p>Fall Dormancy 4.3 Winter Survival Index 2.0</p> <ul style="list-style-type: none"> - High yield potential - High forage quality <ul style="list-style-type: none"> - Very fast recovery <ul style="list-style-type: none"> - 35/35 DRI - 4-5 cuttings/year - Coated/PI 	<p>WL 3546HQ.RR </p> <p>Fall Dormancy 5.0 Winter Survival Index 1.4</p> <ul style="list-style-type: none"> - High yield potential - Top choice for heavy soils - High forage quality <ul style="list-style-type: none"> - 40/40 DRI - 4-6 cuttings/year - Coated/PI 	<p>WL 3474 HVX.RR </p> <p>Fall Dormancy 4.4 Winter Survival Index 1.8</p> <ul style="list-style-type: none"> - Benefit of delayed cutting - Maximize fiber digestibility <ul style="list-style-type: none"> - Reduced lignin - High yield potential - High forage quality <ul style="list-style-type: none"> - 40/40 DRI - 4-6 cuttings/year - Coated/PI 	<p>WL 3581 HVX.RR </p> <p>Fall Dormancy 4.6 Winter Survival Index 1.7</p> <ul style="list-style-type: none"> - Benefit of delayed cutting - Maximize fiber digestibility <ul style="list-style-type: none"> - Reduced lignin - High yield potential - High forage quality <ul style="list-style-type: none"> - 40/40 DRI - 4-6 cuttings/year - Coated/PI
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PERENNIAL LEGUMES

AGRONOMIC SCORES 1= EXCELLENT, 5=POOR

	Seeds/lb.	Seeding Rate	Life Cycle	Typical Stand Life (years)	Establishment Seed	Shade Tolerance	Drought Tolerance	Low Fertility Tolerance	Persistence/Utility Grazing	Yield Potential	Dry Hay	Stlage/Baleage
Aberlasting Clover	240,000	8-12	Perennial	3-6	3	3	2	3	1	3	3	1
Alfalfa	220,000	14-20	Perennial	3-5	3	5	1	5	3	1	1	1
Balansa Clover	500,000	3-6	Annual	2-3	1	2	3	3	3	3	4	1
Berseem Clover	265,000	8-15	Annual	2-3	1	2	3	3	3	3	1	1
Birdsfoot Trefoil	375,000	6-12	Perennial	5-10+	5	2	3	2	2	3	1	1
Crimson Clover	150,000	18-20	Annual	2-3	1	2	3	3	3	3	3	1
Lespedeza	300,000	10-20	Perennial	3-6	2	5	1	3	3	3	2	1
Medium Red Clover	275,000	8-12	Perennial	2-4	3	2	3	3	3	3	2	1
Soybeans	2,800	50-60	Annual	1	3	5	4	3	3	2	5	3
Stockade Peas	4,000	40-80	Annual	1	3	5	4	3	3	3	5	3
Sunn Hemp	15,000	20-30	Annual	1	1	5	3	2	4	2	3	1
Hairy Vetch	18,000	15-25	Annual	1	3	2	3	3	3	3	3	3
White Clover	800,000	2-4	Perennial	3-6	3	3	4	2	2	4	4	1
Winter Peas	4,000	40-80	Annual	1	3	5	4	3	3	3	5	3

ABERLASTING CLOVER

Plant type: Perennial Legume

Planting dates: Feb-April or Aug-Sept.

Soil pH: 5.8-6.5

Soil adaption: Wide

Planting depth: 1/8"-1/4"

Approximate seeds/lb: 240,000

Seeding rate: 8-12 lb/A

Days to germination: 7-10

Main usage: Hay, conservation, pasture, wildlife

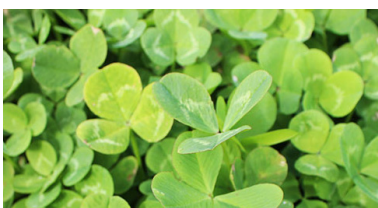
Height at maturity: 15"-36"

Length of stand: 3-5 years

Reproduces by: Seed and stolons

Pounds per bushel: 60

Precautions: Bloat potential, slow drying as hay



Aberlasting clover is a cross between white and Caucasian clover. This cross provides the high forage quality of white clover and the persistence of Caucasian clover. It is very drought tolerant but also does well in saturated soil. Use for forage, cover crop, or wildlife. Manage bloat potential. Slow drying for hay.

ALSIKE CLOVER

Plant type: Perennial Legume

Planting dates: Jan–April or Aug–Sept.

Soil pH: 6.0–6.5

Soil adaption: Poorly drained, med. fertility

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 728,000

Seeding rate: 6–8 lb/A
1–2 lb/A mix

Days to germination: 7–10

Main usage: Hay, pasture

Height at maturity: 12"–36"

Length of stand: 2–3 years

Reproduces by: Seed

Pounds per bushel: 60

Precautions: Bloat potential, photo sensitivity,
not for horses, slow drying for hay



Alsike Clover is known for its ability to thrive in wet/saturated, acidic conditions. Low-lying pasture areas are a perfect place to try alsike. It will get 2–4 feet tall and bloom pink to white. Used for hay, pasture, and soil improvement. Will generally not yield as much as other perennial clovers. Seed with a companion grass such as timothy. Can be toxic to horses.



CAUTION: Alsike clover has a tendency to cause bloat and should be fed to livestock with care. On pasture high in alsike clover content, take steps to introduce animals gradually to the forage to reduce bloat potential. It has also been implicated as causing "alsike clover poisoning" in horses. Alsike-induced photo-sensitization has been reported among animals grazing alsike clover. This will occur in bright, sunny weather and causes a reddening of the skin and swelling of the affected areas in horses.

BIRDSFOOT TREFOIL

Plant type: Perennial Legume

Planting dates: March–April or Aug–Sept.

Soil pH: 5.5–7.0

Soil adaption: Poorly drained, low pH soils

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 375,000

Seeding rate: 6–12 lb/A
3–5 lb/A mix

Days to germination: 14

Main usage: Pasture, hay

Height at maturity: 2'–4'

Length of stand: 5–10+ years

Reproduces by: Seed

Pounds per bushel: 60



Birdsfoot trefoil can be used for pasture and hay. It does well in poorly drained and acidic soil. A rest period of 40–45 days is necessary for prolonged stand quality. An ideal stubble height is 4.5". Livestock will not bloat on BFT, unlike other perennial legumes. It can be slow to establish, but very persistent if managed properly.

Plant type: Perennial Legume

Planting dates: Feb–April or Aug–Sept.

Soil pH: 5.8–6.5

Soil adaption: Wide

Planting depth: 1/8”–1/4”

Approximate seeds/lb: 800,000

Seeding rate: 4–6 lb/A
0.5–2 lb/A mix

Days to germination: 7–10

Main usage: Hay, conservation, pasture, wildlife

Height at maturity: 15”–36”

Length of stand: 2–5 years

Reproduces by: Seed and stolons

Pounds per bushel: 60

Precautions: Bloat potential, slow drying as hay

The largest white clovers are known as Ladino clovers. They are responsive to cool, wet soil conditions. Their larger plants and leaves generally produce more biomass, however, they do not persist as long as smaller white clovers.



ADVANTAGE

- Great for pastures or wildlife plots
- Remains in a vegetative state during whitetail deer antler growth
- High crude protein content with large, succulent leaves
- Early vigor and hardiness
- Bred under grazing pressure



JUMBO II

Jumbo II Ladino Clover is known for its aggressive tiller density and disease resistance. Its leaves may be slightly smaller than traditional Ladino Clover, but its superior tillering provides a dense canopy.



HESLOP

- Bred for strong plant vigor and long-term productivity
- Large leaf
- High-quality forage with excellent palatability
- Optimized maturity
- Ideal for hay production



COMPANION

- High degree of drought tolerance
- Excellent seedling vigor
- Fast establishment
- Vigorous stolons

MEDIUM RED CLOVER

Plant type: Perennial Legume

Planting dates: Jan–April or Aug–Sept.

Soil pH: 6.0–7.0

Soil adaption: Well drained

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 275,000

Seeding rate: 8–12 lb/A
2–6 lb/A mix

Days to germination: 7–12

Main usage: Pasture, hay, pasture renovation, soil improvement

Height at maturity: 24"–36"

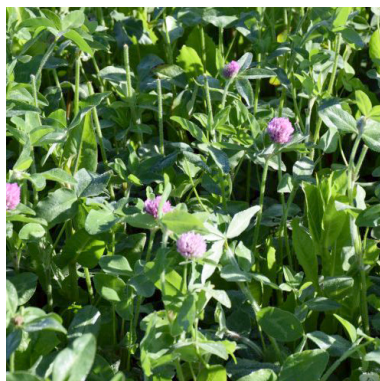
Length of stand: 1–4 years

Reproduces by: Seed

Pounds per bushel: 60

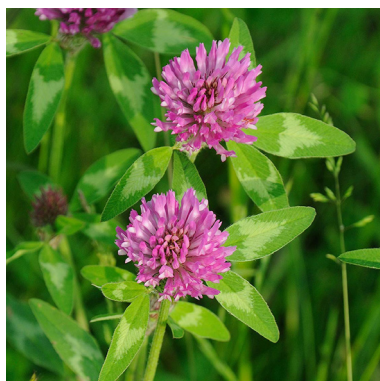
Precautions: Bloat potential

Medium red clover is a short-lived perennial clover known for its flexibility. It can be frost-seeded, drilled or broadcasted. Can be used for hay, soil improvement, pastures, and wildlife. Red clover contains isoflavones, specifically biochanin A, which has shown to contribute to higher average daily gains and reduces the effect of fescue toxicosis. It is less invasive than white clover and has a tap root that's excellent at breaking up compaction.



BEARCAT RED CLOVER

- True multi-year red clover
- Excellent disease resistance and stand persistence
- Excellent grazing tolerance
- Aggressive regrowth
- High yielding forage



RANCHER

- Good persistence
- Vigorous growth
- High forage quality
- Pairs well with cool-season grasses
- Improves soil health

Plant type: Perennial Legume

Planting dates: Feb–April or Aug–Sept.

Soil pH: 5.5–7.0

Soil adaption: Wide

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 800,000

Seeding rate: 2–4 lb/A
0.5–2 lb/A mix

Days to germination: 7–10

Main usage: Soil improvement, pasture, wildlife

Height at maturity: 3"–24"

Length of stand: 2–10 years

Reproduces by: Seed and stolons

Pounds per bushel: 60

Precautions: Bloat hazard, slow drying as hay



LEGACY

- Latest generation of New Zealand-bred white clover
- Large leaves and excellent yield potential
- Tall growth pattern allows it to pair well with fescue and ryegrass
- Easier for cattle to graze



WHITE DUTCH

- Smallest of white clovers
- Natural spreader and tolerant of traffic and heavy grazing
- Reseeds better than Intermediate and Ladino Clovers



STAMINA

- Bred to be more drought and heat tolerant
- Persists well under heavy grazing and less than ideal weather conditions



HUIA

- Known for its ability to thrive under over-grazed or low mowing situations
- Does not like drought-prone soils and will struggle to overwinter in the coolest regions of our footprint

ANNUAL LEGUMES

BALANSA CLOVER

Plant type: Annual Legume

Planting dates: April–October

Soil pH: 4.5–8.5

Soil adaption: Moderate to well drained

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 500,000

Seeding rate: 3–6 lb/A
1–3 lb/A mix

Days to germination: 7

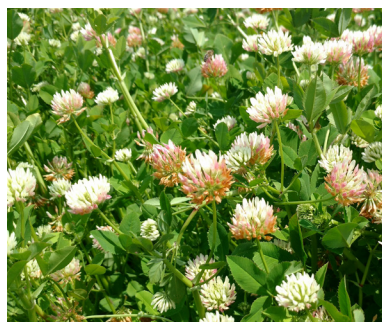
Main usage: Cover crop, nurse crop, pasture, hay, wildlife

Height at maturity: 18"–30"

Length of stand: 6 months or less

Reproduces by: Seed

Pounds per bushel: 60



FIXATION BALANSA CLOVER



Fixation Balansa Clover is very adaptable across a wide range of soils. It can be used for cover crops or forage. It doesn't get a lot of top growth in the fall but will grow quickly in the spring once temperatures warm. Legume with a lower risk of bloat, especially when mixed with a grass. Has a hollow stem that allows for roller crimping and potential for dry hay.

BERSEEM CLOVER

Plant type: Annual Legume

Planting dates: April–August

Soil pH: 6.0–7.5

Soil adaption: Moderate to well drained

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 265,000

Seeding rate: 8–15 lb/A
3–6 lb/A mix

Days to germination: 7

Main usage: Cover crop, nurse crop, pasture, hay, wildlife

Height at maturity: 18"–30"

Length of stand: 6 months or less

Reproduces by: Seed

Pounds per bushel: 60



FROSTY BERSEEM CLOVER



Frosty Berseem Clover is a great companion with alfalfa. It helps improve yield and quality. It grows quickly and can handle temperatures down to 5 degrees Fahrenheit. It also works well after wheat. You want to make sure not to cut too low. Since its an annual, it needs leaf material to gather sunlight so it can re-grow. Hollow stems allow it to dry down quickly. Consider adding it to an old or damaged alfalfa field to gain one more year of production.

Plant type: Winter Annual Legume

Planting dates: Aug–Sept

Soil pH: 4.8–8.2

Soil adaption: Adapted to wide variety of soils as long as soil is well drained

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 150,000

Seeding rate: 20 lb/A
8–10 lbs/A mix

Days to germination: 7–10

Main usage: Hay, pasture, soil improvement, cover crop

Height at maturity: 24"–36"

Length of stand: Weak biennial

Reproduces by: Seed

Pounds per bushel: 60

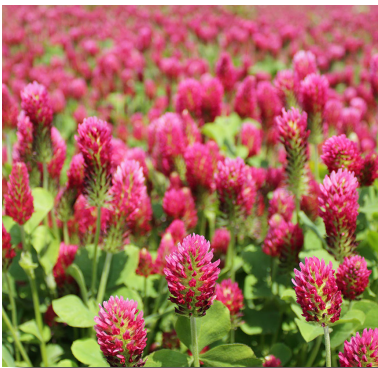
Precautions: Bloat potential

Crimson Clover will overwinter if given adequate time (6–8 weeks) to establish before the weather turns cold. It can be grazed or used for hay. It does better in shade than other clovers, has a fine, fibrous root system, and will establish quickly.



DIXIE

- Very popular throughout the Midwest because of its tolerance to many different soil types
- Came from the southwest, which is also where the “Dixie” name came from.
- Considered an early maturing, re-seeding variety
- Does best if seeded at least 6 weeks before a hard frost
- The “old faithful” when it comes to crimson clover



KENTUCKY PRIDE

- Deeper-rooted, more cold tolerant, later-maturing (about 2 weeks) variety than Dixie
- Offering all the same benefits as Dixie, it may help alleviate compaction a little better with its more robust root system
- Best to use this in the more northern parts of our territory if you are wanting it to over-winter/grow later into the fall
- Tolerates temperatures 10 to 15 degrees cooler than Dixie.
- Extended growing season generally offers more tonnage come spring



WHITE CLOUD

- Only white flower Crimson Clover on the market
- Manage it like you would Dixie
- Increased protein levels and high sugar content
- Lower amounts of bitter anthocyanins.
- Sweeter taste animals tend to prefer over crimson-colored varieties
- Does not re-seed as well as Dixie or Kentucky Pride
- Overseed in the fall

COW PEAS

Plant type: Annual Legume

Planting dates: May–August

Soil pH: 6.0–7.0

Soil adaption: Wide, 60° or warmer soil temperature

Planting depth: 1/2"–1"

Approximate seeds/lb: 1,600–4,300

Seeding rate: 30–90 lb/A

Days to germination: 7–10

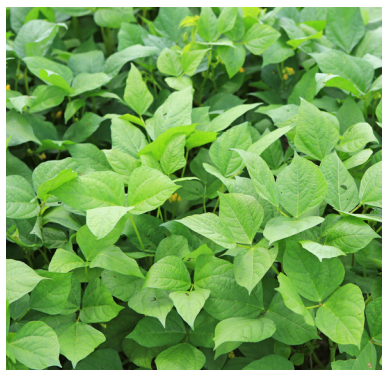
Main usage: Pasture, cover crop, silage

Height at maturity: 3'–4'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 60



COWPEAS

- Warm season annual legume similar to soybeans
- Grows well in dry, hot conditions
- Mix with sorghum sudangrass for pasture or silage
- One harvest crop
- Inoculate to enhance nitrogen (N) production
- Produces 70–150 lbs/A N
- Great wildlife crop

COW PEAS WITH SORGHUM SUDANGRASS



FORAGE SOYBEANS

Plant type: Annual Legume

Planting dates: May–June

Soil pH: 6.0–7.0

Soil adaption: Well drained, moderate to good fertility

Planting depth: 3/4"–1 1/2"

Approximate seeds/lb: 2,600

Seeding rate: 140,000–160,000/A

Days to germination: 5–7

Main usage: Wildlife, silage

Height at maturity: 3'–6'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 60

FORAGE SOYBEANS



- Group 5.6 forage soybean
- Ranges 17–25% in crude protein
- Can be mixed with other summer annual crops such as sorghum sudangrass
- Developed at University of Arkansas as a forage soybean
- Can grow 4–6' tall, deliver high yields
- Resistant to SDS, soybean mosaic virus, and frogeye leaf spot
- Non-GMO

HAIRY VETCH

Plant type: Biennial Legume

Planting dates: March–May or Aug–Sept

Soil pH: 6.6–7.2

Soil adaption: Well drained, high fertility

Planting depth: 3/4"–1 1/2"

Approximate seeds/lb: 16,000

Seeding rate: 18–20 lb/A
8–15 lb/A mix

Days to germination: 7–10

Main usage: Pasture, hay, silage

Height at maturity: 15"–24"

Length of stand: 3–7 years

Reproduces by: Seed

Pounds per bushel: 60

Precautions: Normally contains hard seed and can emerge in the future

VILLOTA



- Early to medium flowering variety with a robust, vining growth pattern and few hard seeds
- Widely adapted
- Attracts wildlife and pollinators
- Produces abundant nitrogen
- Winter-hardy
- Very few hard seeds

KOREAN LESPEDEZA

Plant type: Annual Legume

Planting dates: March–May or Aug–Sept.

Soil pH: 6.6–7.2

Soil adaption: Well drained, high fertility

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 238,000

Seeding rate: 25–35 lb/A
8–15 lb/A mix

Days to germination: 7

Main usage: Pasture, hay, silage

Height at maturity: 15"–36"

Length of stand: 3–7 years

Reproduces by: Seed

Pounds per bushel: 25

Korean Lespedeza is commonly used for wildlife food and cover, forage, cover or nurse crop as well as temporary cover for erosion. Korean Lespedeza is the earliest germinating of the annual Lespedezas, providing the earliest grazing of any Lespedezas. It should be grazed or cut when it reaches the half bloom stage. All harvesting methods should leave a 3" stubble. It is a reseeding annual that reaches full bloom in late summer when the growth rate rapidly declines. The reason for its popularity is due to what it can do on poor soil. It will grow well on acidic soils with low fertility and can survive both drought and flood. It is a good companion with bunch type grasses, such as timothy, orchardgrass, and tall fescue. It provides much-needed summer grazing when cool-season grasses are dramatically slower at biomass production. As with all legumes, it is important to inoculate with the correct species of rhizobial bacteria.



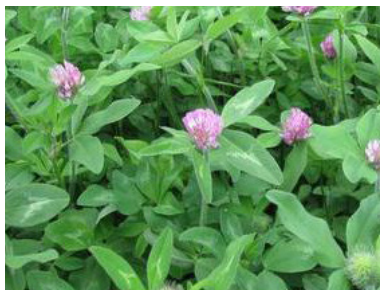
KOREAN LESPEDEZA

- Annual legume mostly used for wildlife food plots
- Can be used as a forage, temporary ground cover, or a cover crop
- Grows well on acidic, low fertility soils
- Matches with bunch grasses such as orchardgrass, timothy, and tall fescue

MAMMOTH RED CLOVER

Plant type: Biennial, weak perennial
Planting dates: Jan–April or Aug–Sept
Soil pH: 5.5–7.0
Soil adaption: Most soil types
Planting depth: 1/8"–1/4"
Approximate seeds/lb: 272,000
Seeding rate: 10–12 lb/A
 2–6 lb/A mix

Days to germination: 7–10
Main usage: Soil improvement, plow down
Height at maturity: 36"–48"
Length of stand: 1–2 years
Reproduces by: Seed
Pounds per bushel: 60
Precautions: Bloat potential



Mammoth Red Clover, or single-cut clover, is not as desirable for hay or pasture as Medium Red Clover because of its coarse stems. However, its vigorous growth (it grows taller than Medium Red Clover) and maturity (10 days to two weeks later than Medium Red Clover) make it a good choice for soil improvement. Mammoth Red Clover has been widely used as a plow-down or cover crop with Sweet Clover to build organic matter in the soil and provide nitrogen to the following crop. Mammoth Red Clover can be frost seeded into winter wheat.

SPRING PEAS

Plant type: Annual Legume
Planting dates: March–April or Aug–Sept
Soil pH: 6.0–7.0
Soil adaption: Wide range of soils
Planting depth: 3/4"–1"
Approximate seeds/lb: 4,000
Seeding rate: 40–80 lb/A
 30–40 lb/A mix

Days to germination: 7–10
Main usage: Wildlife, cover crop, green manure
 plow down
Height at maturity: 2'–4'
Length of stand: Annual
Reproduces by: Seed
Pounds per bushel: 60



STOCKADE FIELD PEAS

- Spring-planted field pea
- Works well with cereal grains, such as oats or triticale for a forage crop
- Needs to be inoculated and drilled

WINTER PEAS

Plant type: Annual Legume

Planting dates: Aug–Sept

Soil pH: 6.0–7.0

Soil adaption: Wide range of soils

Planting depth: 1/2"–1"

Approximate seeds/lb: 3,500

Seeding rate: 30–50 lb/A
20–40 lb/A mix

Days to germination: 7–10

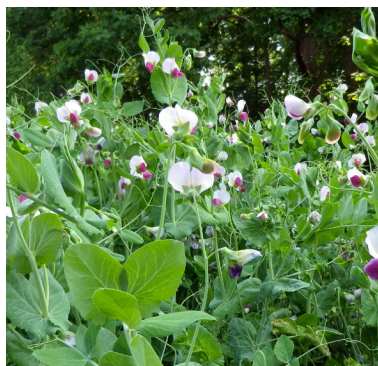
Main usage: Wildlife, cover crop, green manure
plow down

Height at maturity: 2'–4'

Length of stand: Annual

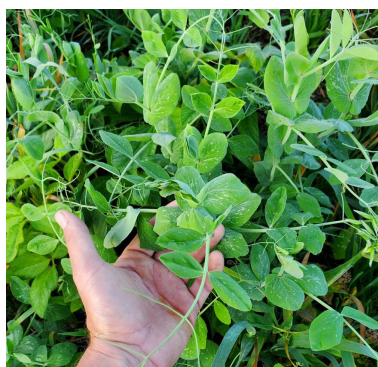
Reproduces by: Seed

Pounds per bushel: 60



AUSTRIAN WINTER PEAS

- Cold tolerant, viney, annual legume
- Great for cover crop and wildlife plots
- More cold tolerance than Canadian Field Peas
- Can produce 60–120 lbs/A nitrogen (N) and yield 1–2 t/A forage yield
- Can survive down to 20°F
- Needs to be inoculated and drilled
- Large fan root structure adds organic matter to soil



SURVIVOR FORAGE WINTER PEAS

- Advanced cold tolerance
- Pink flowers
- High yielding forage producer
- Great N producer



VAIL

- Selected for forage quality and cold tolerance
- A semi-leafless, stand-up, winter green pea with white flower

Plant type: Annual Legume

Planting dates: May–August

Soil pH: 5–8.4

Soil adaption: Most soil types

Planting depth: Up to 1" max

Approximate seeds/lb: 15,000

Seeding rate: 15 lb/A alone;
5–10 lb/A in mix

Days to germination: 3–7

Main usage: Nitrogen fixing cover crop

Height at maturity: up to 7'

Length of stand: until 1st frost

Reproduces by: Seed

Pounds per bushel: 50



SUNN HEMP

- Warm season legume with rapid growth
- Produces up to 100 lbs of nitrogen per acre
- Can reach 6 feet tall in 60 days
- Generally used as a cover crop, but can also be grazed ensiled, or hayed

ANNUAL GRASSES

BARLEY

Plant type: Annual Grain

Planting dates: March–May or Sept–Oct

Soil pH: 6.0–7.0

Soil adaption: Well drained

Planting depth: 1"–1 1/2"

Approximate seeds/lb: 12,500

Seeding rate: 75–100 lb/A

Days to germination: 7

Main usage: Grain, forage

Height at maturity: 3'–5'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 48



LACEY (SPRING)

- Six-rowed malting barley
- Medium-sized kernels
- Consistently top yielder
- Received favorable reviews for brewing characteristics
- Released by Minnesota Ag Experiment Station
- Plant height averages 33" with good lodging resistance
- Has semi-smooth awns and short rachilla hairs for easier harvest



NOMINI (WINTER)

- Early maturity, medium height
- Six-rowed, compact spikes
- Not as winterhardy as other barleys
- Good resistance to powdery mildew, septoria, and barley yellow dwarf
- Released by Virginia Ag Experiment Station
- Good to use for grain or cover crop



VALOR

- Six-rowed feed barley
- Up to 2 weeks earlier than wheat
- Excellent winterhardiness
- Beardless
- Aggressive spring growth
- High quality, high protein forage
- Widely adapted and tolerant of low fertility soils

Plant type: Annual

Planting dates: Sept–Nov

Soil pH: 5.0–7.0

Soil adaption: Wide range of soils

Planting depth: 1"–1 1/2"

Approximate seeds/lb: 18,000

Seeding rate: 50–100 lb/A

Days to germination: 7–10

Main usage: Grazing, green manure, silage, cover crop

Height at maturity: 5'–7'

Reproduces by: Seed

Pounds per bushel: 56



ELBON

- Developed by the Noble Research Foundation
- Earlier maturity than VNS Cereal Rye
- Good forage producer
- Great for a cover crop



HAZLET

- Shorter variety, resistant to lodging
- Cold tolerant with great winterhardiness
- Can germinate at or near freezing



GRAZE KING 90 FORAGE

- High-quality, forage type Cereal Rye
- Larger leaves, more tillers per plant than common Cereal Rye
- Higher-yielding than common Cereal Rye
- Harvest in late boot stage for optimal quality

OATS

Plant type: Annual Grain

Planting dates: March–April forage or grain production; Aug–Oct cover crop or forage

Soil pH: 6.0–6.5

Soil adaption: Wide

Planting depth: 3/4"–1"

Approximate seeds/lb: 14,000

Seeding rate: See below

Days to germination: 7

Main usage: Forage, graze, gain, cover crop, soil improvement

Height at maturity: 3'–4'

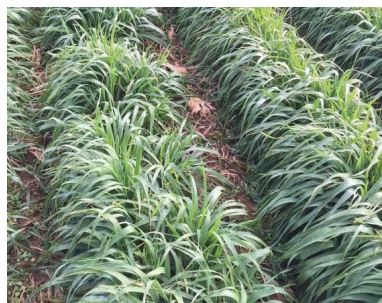
Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 32

Seeding Rate

- Grain 64 lb/A (2 bu/A)
- Forage 100 lb/A (3 bu/A), approximately 55-60 days to late boot stage
- Nurse crop 32 lb/A (1 bu/A)
- Cover crop 15-50 lb/A



COSAQUE BLACK WINTER

- Great yield - can match Cereal Rye yields
- Great for breaking up disease cycles, especially certain nematodes
- Works well for forage, cover crop, or biomass
- Cold tolerant



HAYWIRE

- High-yielding, high-quality forage Oat
- About 58 days to boot stage
- Excellent standability
- Led 2014 Pennsylvania trial in forage quality



JERRY

- Dual purpose grain/forage Oat
- Great as a cover crop
- Good lodging resistance
- Good yields and straw production

Plant type: Annual Grain

Planting dates: Sept–Oct

Soil pH: 6.0–7.0

Soil adaption: Well range of soils

Planting depth: 1"–1 1/2"

Approximate seeds/lb: 14,000 dehulled

Seeding rate: 80–100 lb/A

Days to germination: 7

Main usage: Grain

Height at maturity: 3'–4'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 40



MAVERICK

- Improved winterhardiness
- Shorter variety for improved lodging resistance
- Earlier maturity variety



SONIC

- Forage variety
- Vigorous tillering
- Awnless
- Excellent disease tolerance
- Tall with good standability
- Improved disease resistance and vigor



SUNGOLD

- Sub-species of common wheat
- Used as an alternative grain for Oats or Barley
- Can be utilized for hay or grazing
- Can be utilized like Oats, Wheat, or Barley either as grain or a forage
- Excellent standability & winter survival
- Medium brown chaff
- Food grade Spelt
- Well-adapted to Midwest growing conditions

TRITICALE

Plant type: Annual Grain

Planting dates: March–April or Sept–Oct

Soil pH: 6.0–7.0

Soil adaption: Well range of soils

Planting depth: 1/4"–1/2"

Approximate seeds/lb: 20,000

Seeding rate: 100–126 lb/A
50–70 lb/A mix

Days to germination: 10

Main usage: Grazing, hay, silage

Height at maturity: 3'–4' (Spring)
5'–7' (Fall)

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 42

SPRING TRITICALE



ELEVATOR (SPRING)

- High-yielding spring seeded forage
- Excellent nurse crop
- Harvest in the boot stage for optimal quality
- Graze in vegetative stage for high-quality pasture
- Forage quality declines rapidly with maturity
- Huge root mass for improved soil conservation

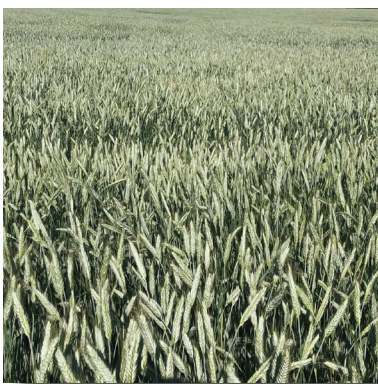
FALL TRITICALE

- Hybrid between Wheat and Cereal Rye
- Improved forage quality compared to Cereal Rye
- Matures about two weeks later than Cereal Rye, but two weeks before Wheat
- Tillers well with a high leaf/stem ratio



GAINER

- Early-maturing variety – maturing 2 weeks earlier than Showtime
- Moderate height for lower lodging potential



OUTLAW

- Awnletted variety (reduced beard)
- Above average crude protein when harvested as silage
- Outstanding disease package
- Excellent standability



SHOWTIME

- Latest-maturing variety – flexibility to harvest late without losing quality
- Excellent winterhardiness
- Awnless for increased palatability
- Medium tall plant type
- High tillering



FLEX

- Mid-maturity
- Wide leaf
- Broadly adapted
- Facultative
- Awnletted
- Great winterhardiness
- Moderate plant height

WHEAT

Plant type: Annual Grain

Planting dates: Sept–Oct

Soil pH: 6.0–7.0

Soil adaption: Well range of soils

Planting depth: 1"–1 1/2"

Approximate seeds/lb: 14,000 dehulled

Seeding rate: 80–100 lb/A

Days to germination: 7

Main usage: Grain

Height at maturity: 3'–4'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 60



WHEAT

- Tolerates wet soil better than barley or oats
- Very winterhardy
- Strong tillers that fill in at lower planting populations
- Great nurse crop for Red Clover or Sweet Clover
- Highly palatable, high protein
- Holds forage quality later into development allowing for more yield accumulation

ANNUAL RYEGRASS

Plant type: Annual Grass

Planting dates: Feb–May or Aug–Oct

Soil pH: 5.6–6.2

Soil adaption: Well-moderately drained, med-high fertility

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 227,000

Seeding rate: 20–35 lb/A
10–20 lb/A mix

Days to germination: 5–7

Main usage: Pasture, winter cover crop

Height at maturity: 12"–24"

Length of stand: 1–2 years

Reproduces by: Seed

Pounds per bushel: 24

Precautions: Can be considered invasive

Annual Ryegrass is quick establishing and capable of producing high forage yields in a short period of time. It is a very competitive winter annual cool-season grass that works well as a cover crop, forage, and erosion control. CISCO has gone to great lengths to ensure you will be provided with top winterhardy varieties of annual ryegrass. Do not use common varieties of annual ryegrass as a cover crop because they may not have adequate winterhardiness, may not have an adequate disease package, or may not break dormancy evenly in the spring.



BRUISER

- Diploid Annual Ryegrass
- Great disease resistance package
- Very winterhardy
- Good for high-quality forage



CENTURION

- Dual purpose cover crop and forage
- Deep-rooted with great winterhardiness
- High-yielding with improved forage quality
- Great disease resistance package



COLD GREEN

- Diploid
- Improved cold tolerance
- Extensive root system
- Resistance to lodging



LOWBOY

- Aggressive tillering to minimize bare soil
- Easy to terminate
- Deep-rooted
- Good cold tolerance
- Stays low to the ground



WINTERHAWK

- Diploid Annual Ryegrass
- Above average disease resistance to crown rust and gray leaf spot
- Extremely winterhardy
- Led The Ohio State University trials in yield and winterhardiness
- Consider supplemental nitrogen (N) if used for feed



Plant type: Annual Grass

Planting dates: Feb–May or Aug–Oct

Soil pH: 5.6–6.2

Soil adaption: Well-mod-well drained,
med-high fertility

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 227,000

Seeding rate: 25–40 lb/A
3–20 lb/A mix

Days to germination: 5–7

Main usage: Pasture, green chop, haylage

Height at maturity: 12"–24"

Length of stand: 1–3 years

Reproduces by: Seed

Pounds per bushel: 24

Italian Ryegrass is a short rotation ryegrass. During the seeding year, the plant remains vegetative and will not produce seed heads. Once it overwinters, it will produce a seed head. It can be used as a spring forage crop, a double-crop option, or as a cover crop. It can also be used to thicken an older alfalfa stand. Requires 50 lb/A of nitrogen (N) for first harvest and an additional 30–50 lb/A for each subsequent harvest.



TETRAPRIME II

- Medium maturity
- Extensive tillers
- Grazing tolerant
- Excellent drought tolerance



TRUE

- Medium/Early maturity
- Superior cold tolerance
- Increased digestible fiber
- Excellent disease resistance

PERENNIAL GRASSES

KENTUCKY BLUEGRASS

Plant type: Perennial Grass

Planting dates: Feb–May or Aug–Sept

Soil adaption: Well-mod-well drained, med-high fertility

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 2,100,000

Seeding rate: 5–10 lb/A

Days to germination: 14–21

Main usage: Pasture, hay

Height at maturity: 12"–36"

Length of stand: 10+ years

Reproduces by: Seed, rhizomes

Pounds per bushel: 14

Kentucky Bluegrass is a highly palatable, high quality cool-season grass that spreads on rhizomes to fill in gaps and form a sod. It tolerates close grazing. It fits well into pastures particularly paired with Birdsfoot Trefoil. It can handle a little drought and lower fertility situations but thrives when it has good moisture and nutrient-availability.



BALIN

- Good disease resistance
- Fast establishment
- Excellent persistence and high yields in permanent pastures
- Tall growing variety that competes well with other forage grasses



GINGER

- Very early spring green up and forage production
- Wide leaf
- Aggressive rhizome growth that creates a dense sod

Plant type: Perennial Grass

Planting dates: April–May or Aug–Sept

Soil pH: 6.0–7.5

Soil adaption: Well drained, fertile

Planting depth: 1/8”–1/4”

Approximate seeds/lb: 150,000

Seeding rate: 15–20 lb/A
3–8 lb/A mix

Days to germination: 14

Main usage: Hay, pasture

Height at maturity: 36”–48”

Length of stand: 10+ years

Reproduces by: Seed, rhizomes

Pounds per bushel: 14

Meadow Brome is a long-lived perennial with short rhizomes that form a loose sod. It is similar to Orchardgrass in both maturity and its preference to moderately or well-drained soils. Establishment is slow and its fluffy seed makes it difficult to mix and very difficult to broadcast. It will hold its quality longer into reproductive growth than Orchardgrass and regrows faster than Smooth Brome grass. It makes a good match with Alfalfa and takes up to 4 cuts per year.



MACBETH

- Long-lived
- Very winter hardy
- Shorter rhizomes (doesn't become sod-bound)
- Good summer growth



TORSION

- Excellent winter hardiness
- Rapid regrowth
- Widely adapted
- Excellent pasture variety
- Very good forage quality

MEADOW FESCUES

Plant type: Perennial Grass

Planting dates: March–May or Aug–Sept

Soil pH: 6.6–7.2

Soil adaption: Well drained, high fertility

Planting depth: 1/8”–1/4”

Approximate seeds/lb: 277,000

Seeding rate: 20–25 lb/A

Days to germination: 7

Main usage: Pasture, hay, silage

Height at maturity: 15”–36”

Length of stand: 3–7 years

Reproduces by: Seed

Pounds per bushel: 22

Meadow Fescue is a grass that was introduced to the United States and Canada in the early 1800’s. It works well in managed intensive grazing situations and is a good choice for hay production, where “winter kill” is an issue. Meadow Fescue performs well under drier conditions for making hay or silage. Although Meadow Fescues do contain endophytes, they are at very low levels and show no signs of having detrimental effects on livestock. Plant at a rate of two to three pounds per acre with alfalfa.



PREVAL

- Good forage yield with improved disease resistance
- Extremely winterhardy
- Well-fit to rotational grazing
- Suitable for hay and grazing
- Long, wide leaves



BIG GAINS

- Medium maturity that works well as hay or pasture
- Very winterhardy with early spring growth
- Works well in diverse forage mixtures
- Very persistent if not overgrazed



DELLS

- Superior winterhardiness
- Drought tolerant
- Disease resistant
- Tolerates wet feet
- Frequent harvest
- Selected for tolerance to frequent close grazing for horse pastures

Plant type: Perennial Grass
Planting dates: April–May or Aug–Sept
Soil pH: 5.8–8.2
Soil adaption: Well drained
Planting depth: 1/8”–1/4”
Approximate seeds/lb: 416,000
Seeding rate: 10–15 lb/A
 2–5 lb/A mix

Days to germination: 18–22
Main usage: Hay, pasture
Height at maturity: 24”–40”
Length of stand: 8–10 years
Reproduces by: Seed
Pounds per bushel: 14

Orchardgrass is a bunch grass that exhibits reproductive growth of 2–4’ in height and vegetative growth from 6–18”. It is well adapted to most Midwestern farms because of its high yield, drought tolerance, shade tolerance, and winterhardiness. It matches well with most forage legumes, such as Alfalfa, Red Clover, and Birdsfoot Trefoil. Orchardgrass can produce high-quality, high-yielding feed if harvested in a timely fashion (ideally late boot stage to early bloom). If it is harvested in seed production, the forage quality drops rapidly.



ALPINE II

- Very late-maturing Orchardgrass
- High-yielding with a great disease package
- Good seedling vigor for quick establishment
- Performed well in University of Kentucky forage trials
- Excellent companion for Alfalfa



BIGHORN

- Medium maturity
- Very high-yielding – out-yielded all varieties at University of Kentucky 3-year trial 2013–2015
- Excellent rust resistance
- Industry-leading seedling vigor and quick establishment



DEVOUR

- Tolerant to grazing, withstands grazing pressure
- Quick establishing because of good seedling vigor
- Late-maturing, matches up with Alfalfa or Red Clover
- Works well for hay
- High-yielding
- Exceptional palatability



ECHELON

- Very late maturity
- Excellent persistence and vigor
- Superior leaf disease resistance
- High-yield and forage quality



ENDURANCE

- Grazing-type Orchardgrass with lowest crowns
- Medium maturity
- Germplasm selected under grazing
- High-yielding



LATE MATE II

- One of the latest-maturing Orchardgrass varieties available
- Matches very well with Alfalfa
- Great for hay production
- Dependable performance



TRUGRAZER

- Grazing type with lower crowns
- High palatability
- Early to medium maturity
- Forms dense bunches



POTOMAC

- Older, more economical variety
- Early-maturing Orchardgrass that does not match well with legumes
- Very high-yielding in monocultures
- Can be very susceptible to leaf rust pressure

SMOOTH BROMEGRASS

Plant type: Perennial Grass

Planting dates: April–May or Aug–Sept

Soil pH: 6.0–7.5

Soil adaption: Well drained, fertile

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 140,000

Seeding rate: 15–20 lb/A
3–8 lb/A mix

Days to germination: 14

Main usage: Hay, pasture

Height at maturity: 36"–48"

Length of stand: 10+ years

Reproduces by: Seed and rhizomes

Pounds per bushel: 14

Smooth Bromegrass generally matures later than orchardgrass. It is a 2–3 cuts per year grass (45 day rest periods). It does fill in with rhizomes, and it does not like a low cutting height. It grows best in moderately to well-drained soils like orchardgrass. Smooth Bromegrass is colder tolerant than orchardgrass. It holds its forage quality through seed production.



SMOOTH BROMEGRASS

- Long-lived sod forming forage grass
- Late-maturing grass that matches well with Birdsfoot Trefoil
- Smooth Bromegrass has better cold tolerance than Orchardgrass



FORAGE TALL FESCUES

LOW ENDOPHYTE VARIETIES

Plant type: Perennial Grass

Planting dates: March–May or Aug–Sept

Soil pH: 5.0–8.0

Soil adaption: Wide, dry-wet

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 227,000

Seeding rate: 10–30 lb/A
10–15 lb/A mix

Days to germination: 10–12

Main usage: Pasture, hay, stockpiling

Height at maturity: 24"–40"

Length of stand: 10+ years

Reproduces by: Seed, short rhizomes

Pounds per bushel: 25

Precautions: **KY-31 Endophyte Fungus, KY-31 not recommended for grazing animals**

Tall Fescue is a relatively deep-rooted bunch grass found throughout much of the United States. It can tolerate a wide range of soils and fertility. It matches well with forage legumes, especially Red and Ladino Clover. KY-31 Tall Fescue makes up 75% of all Tall Fescue grown in the US. Under careful management, KY-31 can be a productive and profitable grass. However, it contains an endophyte (a fungus that grows between the plant cells) that makes it less palatable, reduces animal performance, and causes serious health problems in extreme cases. KY-31 is not recommended for horses. Therefore, low or friendly endophyte varieties should be considered to eliminate animal health problems and improve palatability. Low or friendly endophyte Tall Fescues are safe for horses.



BRONSON

- Low endophyte Tall Fescue
- Exhibits high-yield and toughness associated with Tall Fescue
- Persistent
- Soft, palatable leaves
- Best animal acceptance per Penn State University grazing trials



FORCE

- Medium maturity tall fescue
- Soft-leafed variety improves palatability
- Excellent disease tolerance
- Bred for improved winterhardiness
- Crown rust resistance



TETON II

- Endophyte free
- Excellent seedling vigor
- Exceptionally high-yielding
- Medium maturity
- Deep-rooted with heat and drought tolerance

FORAGE TALL FESCUES

FRIENDLY ENDOPHYTE VARIETIES



BAROPTIMA PLUS E34

- Late-maturing, high-yielding Tall Fescue
- Beneficial endophyte improves yield and persistence without sacrificing performance
- Very palatable and safe for all types of livestock



MARTIN II WITH PROTEK

- Low endophyte Tall Fescue
- Early flowering with high seedling vigor
- Great in hay or pasture situations
- Extended stay-green forage production during mild summers
- Relatively drought-tolerant



ESTANCIA WITH ARKSHIELD

- ArkShield, smart endophyte protection (novel endophyte)
- Exceptionally high-yielding
- HiMag Tall Fescue developed for higher magnesium levels to minimize grass tetany potential
- Medium maturity

FORAGE TALL FESCUES

ENDOPHYTE INFECTED VARIETIES



KY-31

- Endophyte infected Tall Fescue
- Extremely drought-tolerant and tough
- Can be stockpiled
- Good for waterways and other conservation practices
- Not advised to use for grazing animals unless diluted with clover and not grazed when hot and dry

TIMOTHY

Plant type: Perennial Grass

Planting dates: March–May or Aug–Sept

Soil pH: 5.0–7.0

Soil adaption: Wide

Planting depth: 1/8”–1/4”

Approximate seeds/lb: 1,200,000

Seeding rate: 6–8 lb/A
1–4 lb/A mix

Days to germination: 10–14

Main usage: Pasture, hay

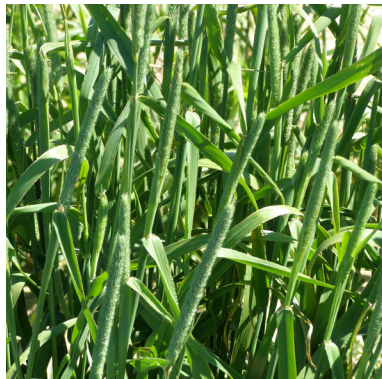
Height at maturity: 24”–40”

Length of stand: 2–5 years

Reproduces by: Seed

Pounds per bushel: 45

Timothy is the oldest cultivated forage grass in North America. It is highly palatable as well as winterhardy. It performs best in cool, moist conditions. Timothy is well known and preferred in the horse market. It matches well with clovers or Birdsfoot Trefoil due to its late-maturity. The following varieties offered are ranked in the order of maturity.



CATAPULT

- Aggressive growing, early to mid-maturity Timothy
- Developed to perform well in a Midwestern environment
- Bred for spring vigor and summer regrowth
- Tall plant height with good stand persistence



KOOTENAI

- Top of the line for yield and forage quality
- Matures three to five days earlier than Climax
- Very disease-resistant and winterhardy
- Maturity matches well with alfalfa
- Consistent performance



TUUKKA

- Matures about three days earlier than Climax
- High leaf/stem ratio
- Good regrowth characteristics
- Can be mixed with alfalfa



CLIMAX

- Medium-late maturity
- Most commonly used in hay mixtures
- Tall, fine-stemmed, good leaf production



INTERMEDIATE RYEGRASS

Plant type: Annual Grass

Planting dates: Feb–May or Aug–Oct

Soil pH: 5.6–6.2

Soil adaption: Well-mod-well drained,
med-high fertility

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 227,000

Seeding rate: 25–35 lb/A
5–10 lb/A mix

Days to germination: 5–7

Main usage: Pasture, green chop, haylage

Height at maturity: 12"–24"

Length of stand: 1–3 years

Reproduces by: Seed

Pounds per bushel: 24

Intermediate ryegrass is a short-lived perennial that can persist 3–5 years. It has the forage quality of an Italian Ryegrass and some of the persistence of a perennial ryegrass.



TETRAMAG

- Hybrid ryegrass that persists 3–5 years
- Excellent yield and forage quality
- Cold tolerant with high seedling vigor
- Leading yielder in university trials

Plant type: Annual Grass

Planting dates: Feb–May or Aug–Oct

Soil pH: 5.6–6.2

Soil adaption: Wide

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 240,000

Seeding rate: 20–25 lb/A
3–10 lb/A mix

Days to germination: 7–10

Main usage: Pasture, hay

Height at maturity: 24"–36"

Length of stand: 3–5 years

Reproduces by: Seed

Pounds per bushel: 24

Perennial Ryegrass is a high-quality, high sugar content, cool-season grass. It is not as persistent as other forage grasses such as Orchardgrass. It is not as winterhardy as Smooth Brome grass. It performs very well under intensive grazing conditions and should be on a 21 to 25 day rotation. In general, Perennial Ryegrass needs to be grazed, chopped, or wet wrapped. It is a slow drying hay crop due to its high moisture content and thick, waxy cuticle.



ALBION

- Most drought-tolerant tetraploid Perennial Ryegrass available
- Utilized in Missouri as a KY-31 Tall Fescue replacement
- Late-maturing tetraploid
- Bred for lower water requirements; as drought tolerant as Orchardgrass
- Mixes well with legumes such as red and white clover
- Good fit for Midwestern grazers wanting a Perennial Ryegrass



MATHILDE

- Tetraploid
- Performs excellent on low land
- Very dense foliage – more like diploid varieties



POWER

- Late-maturing tetraploid variety
- Profuse tillering and rapid regrowth
- Less sensitive to drought and heat than many other varieties
- Excellent palatability/digestibility
- Wide succulent leaves
- Excellent rust resistance



TETRASWEET

- Rapid growing tetraploid Perennial Ryegrass
- High energy, high digestibility
- Profuse tillering
- Late maturity
- Foliar disease resistant
- Excellent yield all season long



TRIBAL

- Tetraploid
- Strong yield
- Aggressive regrowth
- Excellent digestibility
- Stem and crown rust resistance
- Persistence in tough conditions

HOW THEY'RE DIFFERENT

DIPLOID

Dense/Compact Growth
 Lower Sugar:Fiber
 Tolerates lower fertility
 Tolerates wetter soils
 Competitive against weeds
 Smaller seeds/lower sowing rate

TETRAPLOID

Fewer Tillers/Upright Growth
 High Sugar:Fiber
 Larger, longer leaves
 Higher yielding
 More palatable/Higher intake
 Doesn't outcompete other forages
 Larger seed/Higher sowing rate

THE RYEGRASSES ARE A BIG FAMILY WITH A FEW IMPORTANT, DISTINGUISHING FEATURES:

- A true annual ryegrass does not require vernalization prior to flowering and thus produces seed in the year of planting. Annual ryegrass is sometimes called Westerwold ryegrass; named after a region in the northeast of the Netherlands where it is commonly grown.
- Italian ryegrass requires vernalization for flowering. Planted in the spring, it remains vegetative until after overwintering, behaves as a biennial, and can provide multiple cuttings when harvested in a vegetative stage of the first year.
- Annual ryegrass types include diploid and tetraploid. This refers to the number of genomic copies (2 or 4) but more importantly it causes predictable characteristics.
- Diploid ryegrass is more winterhardy and stress tolerant, has better disease resistance, and maintains a lower, bushier growth habit.
- Tetraploid ryegrass offers thicker, wider leaves with high sugar content. They grow more upright making them less prone to outcompete clover. They are also less winterhardy and should be selected from proven varieties.
- Perennial ryegrass is used in pastures and hay fields and typically has a short but productive lifespan.
- Proper species and variety selection is critical to match forage performance with farm needs.

Plant type: Perennial Grass

Planting dates: March–May or Aug–Sept

Soil pH: 5.5–7.5

Soil adaption: Wide range of soils

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 210,000

Seeding rate: 15–30 lb/A
3–15 lb/A mix

Days to germination: 10

Main usage: Hay, pasture, grazing, silage

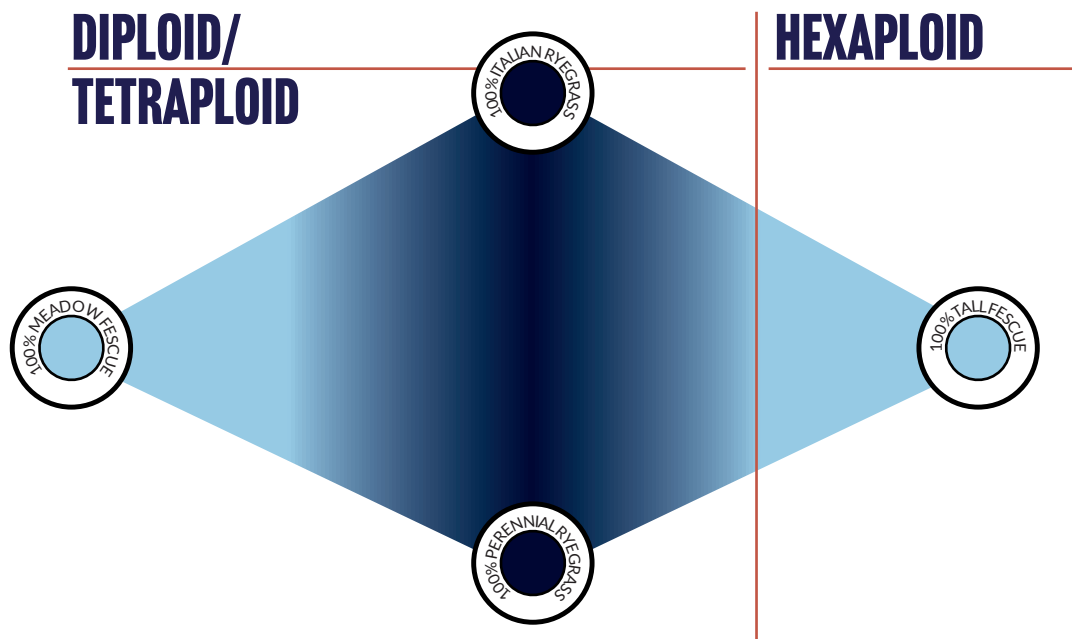
Height at maturity: 12"–30"

Length of stand: 3–7 years

Reproduces by: Seed

Pounds per bushel: 24

Festulolium is a hybrid between ryegrass (either Italian or perennial) and meadow fescue or tall fescue. It is a high sugar content perennial that is great for grazing or hay production. Festuloliums exhibit yields higher than perennial ryegrass, similar forage quality with better disease resistance, persistence, and winterhardiness.



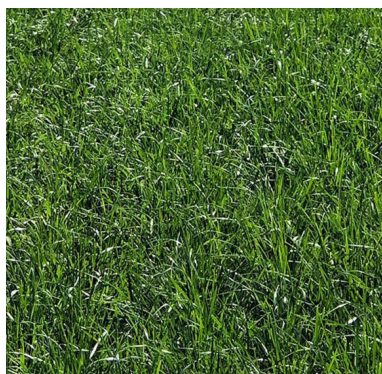
DUO II

- Seeding rate: 25–30 lb/A
- Perennial ryegrass X meadow fescue
- Looks, digests, palatability is like ryegrass but hearty like meadow fescue
- Less “summer slump” due to meadow fescue parent



FOJTAN

- Seeding rate: 20–30 lb/A
- Italian Ryegrass X tall fescue
- Very high yield potential with high persistency, drought resistance and tolerance to periodical flooding



HOSTYN

- Seeding rate: 20–30 lb/A
- Italian X meadow fescue
- High-yielding with relative high sugar
- Early spring growth, high forage yield and persistency combined with very good feeding value



MAHULENA

- Tall fescue type festulolium
- Very few stems in regrowth for improved forage quality
- Excellent persistence
- Adaptability to water logged soils in winter or summer drought



SUGARCREST

- Seeding rate: 15–20 lb/A
- Cross between tetraploid perennial ryegrass and a meadow fescue
- Winterhardiness and persistence of a meadow fescue
- Forage quality of a perennial ryegrass
- Does not tolerate hot, dry conditions

FORBS & BRASSICAS

BUCKWHEAT

Plant type: Annual Grain

Planting dates: June–August

Soil pH: 5.0–6.5

Soil adaption: Wide range of soils

Planting depth: 1"–1 1/2"

Approximate seeds/lb: 14,200

Seeding rate: 35–50 lb/A

Days to germination: 7–10

Main usage: Wildlife, cover crop, grain

Height at maturity: 2'–3'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 60



BUCKWHEAT

- Rapid growing broadleaf small grain
- Will flower in 35 to 45 days
- Small tap root system
- Great for mineralizing phosphorous (P) and sulfur (S) from the soil
- Great as a cover crop or a wildlife plot
- Excellent choice for a pollinator

CHICORY

Plant type: Perennial Herb

Planting dates: April–May, August

Soil pH: 5.5–7.0

Soil adaption: Dry, well-drained

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 425,000

Seeding rate: 6–8 lb/A

1–4 lb/A mix

Days to germination: 7–21

Main usage: Grazing, wildlife

Height at maturity: 1'–3'

Length of stand: 1–7 years

Reproduces by: Seed

Grazing Recommendations

- Do not graze until Chicory is at least 8" tall and graze no lower than 3"
- Chicory should be allowed to accumulate growth of 4–6" before going dormant in the fall
- A rest period of 14–25 days between grazing periods is best for Chicory persistence and performance



OASIS

- High-quality summer forage
- Broadleaf perennial herb
- Suitable for all types of livestock
- Tolerates hot, dry conditions
- High magnesium (Mg) content that can help control grass tetany in grazing cattle



ENDURE

- Lower bolting
- Summer long production
- Fast establishing and strong regrowth
- High forage yield with excellent forage quality
- Improved persistence in wet soil

Plant type: Annual Brassica
Planting dates: July–August
Soil pH: 5.5–7.0
Soil adaption: Wide
Planting depth: 1/8”–1/4”
Approximate seeds/lb: 130,000
Seeding rate: 3–4 lb/A
 1 lb/A mix

Days to germination: 5–7
Main usage: Wildlife, forage
Height at maturity: 2’–4’
Length of stand: Annual
Reproduces by: Seed

Kale is a summer seeded Brassica that is used for fall grazing. It has low fiber stems and is easily digested by livestock. It needs to be seeded when soil temperature is above 50°F. Kale works well as an intermediate crop when renovating pastures.



MARIS KESTREL

- Full maturity variety with short stems
- Low fiber stems with high digestibility
- Extends grazing season as cool season pasture ends



BAYOU

- Smooth leaves with a sweet taste
- Winterhardy variety
- Excellent regrowth when rotationally grazed
- Small stems, very palatable
- Deep taproot to loosen hardpan

RADISH

Plant type: Annual Brassica

Planting dates: Early Aug–Sept

Soil pH: 6.0–7.0

Soil Adaptation: Wide range of soils

Planting depth: 1/4"–1/3"

Approximate seeds/lb: 35,000

Seeding rate: 6–8 lb/A

1–4 lb/A mix

Days to germination: 4–6

Main usage: Cover crop, wildlife, soil builder

Height at maturity: 2'–3'

Length of stand: Annual

Reproduces by: Seed



SCAV-N-GER®



- Daikon type radish
- Great nutrient scavenger
- Mixes well with small grains and grasses
- Earthworm "magnets"
- Deep taproots and fine root hairs
- Repositions nutrients from soil profile

**Available both as raw seed or coated with Q's Pinnacle Quick Start*



DOUBLE MAX

- Doublemax is a late-flowering, nematode-reducing radish
- Class 1 resistance to sugar beet cyst nematodes (90% reduction) and Columbia root-knot nematodes (95% effective)
- Can also reduce stubby root nematode populations
- Works as a natural soil fumigant when chopped and incorporated into the soil (while green)

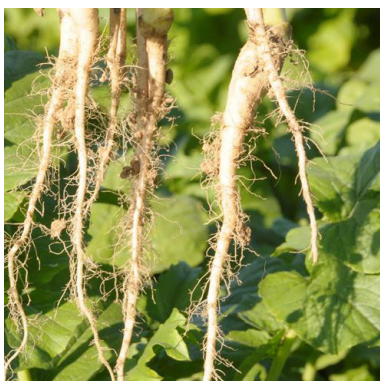


GROUNDHOG™



- Daikon cover crop radish that produces significant root mass
- Nitrogen mining, nutrient scavenging, and nutrient repositioning
- Great food source for earthworms
- Improves soil biology
- Can suppress undesired weeds

**Available both as raw seed or coated with Q's Pinnacle Quick Start*



RESPECT

- Biofumigant for control of beet cyst nematode
- Well-suited for erosion control and soil tilth
- Aids in reduction in soil compaction
- Can be used for grazing and forage

RAPESEED

Plant type: Annual Brassica

Planting dates: August

Soil pH: 5.5–7.0

Soil adaption: Wide

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 120,000

Seeding rate: 6–8 lb/A
1–2 lb/A mix

Days to germination: 5–7

Main usage: Wildlife, forage, cover crop

Height at maturity: 3'–4'

Length of stand: Annual

Reproduces by: Seed



TROPHY

- Late-maturing forage rape with short stems and large leaves
- Great for finishing livestock in the fall
- Good source of winter feed after row crops
- Caution: can change milk flavor in dairy cow



DWARF ESSEX

- Cool season brassica that works well alone or seeded with oats
- Can start grazing 8–10 weeks after seeding
- Large leaves, high-quality forage
- Frost increases sugar concentration in leaves
- Not suited for hay or silage due to high plant moisture content
- Great cover crop

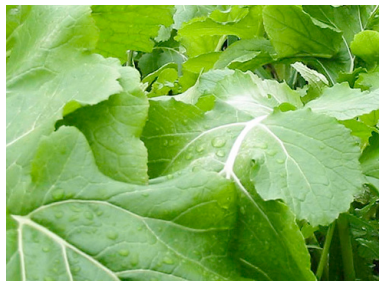
Plant type: Annual Brassica
Planting dates: March–April, August
Soil pH: 5.5–7.0
Soil adaption: Wide
Planting depth: 1/8”–1/4”
Approximate seeds/lb: 240,000
Seeding rate: 3–10 lb/A
 1–2 lb/A mix

Days to germination: 5–7
Main usage: Grazing, forage
Height at maturity: 2’–3’
Length of stand: Annual
Reproduces by: Seed



APPIN

- Vigorous establishment and quick maturity, 60-100 days
- High leaf production
- Multiple grazings , leaves, and tubers
- Mixes very well with oats
- Plant late summer/early fall
- Multiple growing points for quick regrowth



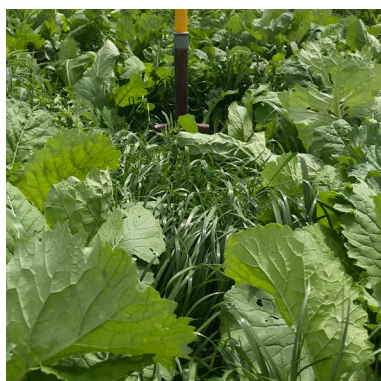
BARKANT

- Vigorous growth turnip from Barenbrug
- High bulb yield and top growth
- High sugar content and winterhardiness



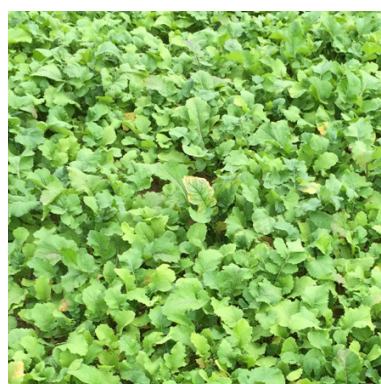
PASJA

- Hybrid forage brassica with early maturity, 50-70 days
- Turnip/Chinese cabbage hybrid developed in New Zealand
- High leaf/bulb ratio
- Tolerates heat better than other forage turnips
- Can yield up to 4 t/A dry matter



JACKPOT

- Low-growing bulb for protection from grazing animals
- Excellent regrowth after grazing
- High forage yield
- Works well as a cover crop or a forage



PURPLE TOP

- High-quality, high bulb yielding turnip
- Grow with the "globe" exposed providing easy access to the entire plant
- Can utilize in summer or fall
- Used for livestock or wildlife
- Mixes with Cereal Grains well, especially Oats



PERENNIAL MIXES



BALER MIX

20–25 lb/A; plant April–May, August–early September

- Produces about 60% legume and 40% grass for easy maintenance
- Very flexible mix that can be baled, chopped, or used for pasture
- Inoculated and ready to be planted



BEEF PASTURE MIX

30–35 lb/A; plant late March–early May, August–September

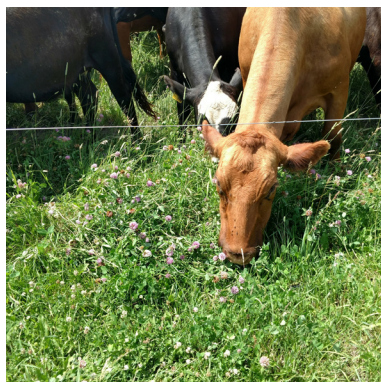
- Formulated for top animal production for beef producers
- Works well for hay or grazing
- Can be stockpiled
- Soft, highly palatable fescues
- Best to rotationally graze



DRY HAY MIX

20 lb/A alone; 10–15 lb/A w/ 10–15 lb of alfalfa

- Excellent companion for alfalfa
- Flexible all-grass hay option
- Season long production
- Outstanding winterhardiness
- Responds well to nitrogen/manure applications
- Can also be used as rotationally grazed pasture



HAY & GRAZE CLOVER MIX

5-8 lb/A; Frost seed mid February-mid March, Spring seed April-mid May, Summer seed August-mid September

- Mix of outstanding clovers formulated at just the right percentage to give the best benefit for production livestock managers
- Overseed grass pastures
- Great for frost seeding
- Proper ratio of red to white clover
- Helps reduce the effect of endophyte fungus found in infected KY-31 tall fescue



HAYMASTER GRASS MIX

10-15 lb/A sown w/ alfalfa, 25-30 lb/A for grass hay; plant April-May, August-September

- Maturity matches well with alfalfa
- All grass hay option
- Hardy species for multi-cut mixture
- Outstanding winterhardiness
- Responds well to nitrogen/manure applications
- Produces under tough hot, dry conditions



HORSE HAY MIX

25 lb/A; plant late March-April, late August-mid September

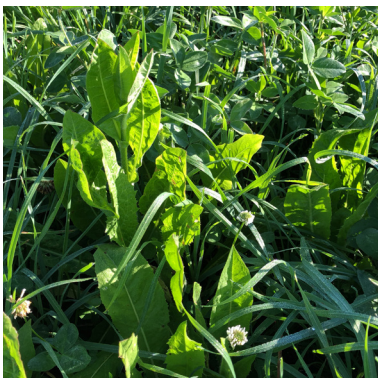
- Proper mixture of alfalfa and grass for great horse hay
- Includes potato leafhopper resistant alfalfa for premium forage quality
- Works best in well drained soil
- Properly balanced forage for equine; flexible forage for all species
- Can also be used as rotationally grazed pasture



PREMIUM PASTURE MIX

15-18 lb/A; plant April-May, August-early September

- All top producing, value added forage varieties - no cheap fillers
- Balanced alfalfa/clover/grass mix for flexible use as hay or pasture
- Can be used for a legume base to add selected forage grasses for permanent pasture



SHEEP & GOAT PASTURE MIX

25 lb/A; plant April-May, August-September

- Excellent grass/legume mix for sheep and goats
- High quality season long pasture
- Good mix to handle summer stress



ANNUAL MIXES



MILK MAKER

100–120 lb/A for a forage crop; 50–70 lb/A for a nurse crop; plant March–April, August

- 60 days from emergence to harvest; best when triticale is in the boot stage
- High quality haylage for improved animal performance
- Great nurse crop for a forage seeding
- Fits well before or after a summer annual crop
- Tolerates frost or light freeze



PARTNER PEA/OAT MIX

100–120 lb/A; plant March–April, August

- 60 days from emergence to harvest; best when oats are in the boot stage
- High quality haylage
- Fits well before or after a summer annual crop
- Tolerates frost or light freeze
- Spectacular yield & quality with Haywire Oats



CHAMPION PASTURE MIX

Seed at 35–50 lb/A

Formulated with grass varieties selected for horses and all production animals. It is a mix of highly palatable varieties that make super quality forage. Top choice for grazing and hay.



MIDWESTERN GRAZER MIX

Seed at 30–40 lb/A

Midwestern Grazer is intended for use with managed intensive grazing practices. This is a mix of highly palatable grasses and legumes that make high-quality forage for making milk or meat. Also a great hay mix.



RENOVATOR SPECIAL MIX

Seed at 10–25 lb/A

Renovator Special is specially designed for renovating existing pastures. Renovator Special works well for interseeding into existing horse and cattle pastures. It is also used for improving weak alfalfa stands. Dairy, beef, and sheep producers, along with horse owners can all benefit from using Renovator Special. It is low endophyte.



SUPERIOR FORAGE MIX

Seed at 35–50 lb/A

Superior Forage is a mix of highly palatable varieties that make high-quality forage for making milk or putting weight on growing livestock. Can be used for hay, silage, dry hay, and managed intensive grazing.

SUMMER ANNUAL PORTFOLIO & PLACEMENT

		Harvest Management				
	Summer Annual Options	Maturity	Days to Maturity	Harvest Stage	Sugar Content	Protein Potential
1-Cut Forage Sorghum Hybrids	GW400 BMR 6 (male sterile)	Medium	85-95	soft dough/boot	10-14%	8-11%
	<i>Dry stalk genetics allows plant to reach 65-70% moisture at soft dough stage</i>					
	<i>Dual purpose - multiple harvest in boot stage OR full season harvest in soft dough</i>					
	GW2120	Medium	85-90	soft dough/boot	14-18%	7-10%
	<i>Male sterile hybrid with increased sugar content = improved digestibility</i>					
<i>Tall, high biomass hybrid - suitable for bulk tonnage, cover crop, & wildlife/wildlife screens</i>						
Multi-Cut Sorghum x Sudangrass Hybrids	SS 711 BMR BD	50-60 days 1st cut	boot stage		12-16%	14-16%
	<i>Brachytic dwarf (shortened internodes) for increased leaf-to-stem ratio (& increased harvest height flexibility)</i>					
	<i>Well suited for grazing or ensiling</i>					
	<i>Quick to germinate with strong regrowth</i>					
	SS 626 PF	50-60 days 1st cut	boot stage		10-15%	12-15%
	<i>Prussic acid free trait offers safety for grazing</i>					
	SS 636 PF BMR	50-60 days 1st cut	boot stage		10-15%	12-15%
	<i>Prussic acid free trait offers safety for grazing</i>					
	<i>BMR available for improved forage quality, palatability, and preference</i>					
	SS 833 BMR	45-60 days 1st cut	boot stage		10-15%	12-15%
	<i>Broadly adapted, dry stalk hybrid with reduced plant moisture content at harvest</i>					
	<i>Great in grazing or silage scenarios; & its finer stalks make dry hay production possible</i>					
	SS 834 BMR	45-60 days 1st cut	boot stage		10-15%	12-15%
	<i>Drystalk, BMR with best regrowth potential</i>					
	<i>Excellent early season vigor for quick first cutting</i>					
	SS 912 BMR PPS	60-90 days 1st cut	4-6'		12-16%	12-15%
	<i>Photoperiod sensitive - will not head until day length is less than 12 hours, 20 minutes</i>					
	<i>Maintains forage quality throughout the growing season</i>					
	<i>PPS hybrids allow for a wider harvest window & greater overall flexibility</i>					
	SS 105 Delayed Maturity	55-85 days 1st cut	4-6'		12-16%	12-16%
<i>Delayed maturity trait keeps hybrid from heading out for up to 90 days</i>						
<i>Well suited for grazing & baleage</i>						
<i>Ideal for full-season 1-cut schedules, & when managing weather-delayed harvests</i>						
SS 340 Conventional	45-60 days 1st cut	boot stage		12-15%	14-16%	
<i>Quick growing conventional hybrid with sweet stalks and juicy leaves</i>						
<i>Excellent vigor & rapid regrowth</i>						
<i>Increased tolerance to foliar diseases</i>						
Other Multi-Cut Forages	CISCO SummerFlex BMR Sudangrass	45-60 days 1st cut	late boot stage		8-12%	14-18%
	<i>Dry stalk straight sudangrass, best utilized for making dry hay (but can also be grazed or green chopped)</i>					
	Piper Sudangrass	45-60 days 1st cut	late boot stage		8-12%	14-18%
	<i>Conventional sudangrass suitable for hay, silage, grazing, and post-cereal grain cover crop</i>					
	Sweet Summer BMR Pearl Millet	40-50 days 1st cut	late boot stage		6-8%	16-20%
	<i>Benefits of BMR (increased performance & digestibility), without the risk of prussic acid during stress - i.e. drought, frost</i>					
	Tifleaf 3 Conventional Pearl Millet	40-50 days 1st cut	late boot stage		6-8%	16-20%
<i>Increased protein & digestibility vs. sorghum sudangrass, but lower dry matter yields</i>						
Summer Delite Teff Grass	35-50 days 1st cut	late boot stage		5-8%	12-16%	
<i>Fine-stemmed & rapid regrowth grass perfect in dry hay environments for horses & cattle (but can be grazed, ensiled, or wet wrapped)</i>						

Best Fit (Attributes & Placement)								Recommended Planting Populations			
Dairy Pasture	Beef Pasture	Dry Hay	Wet Hay (Baleage)	Silage Yield	Silage Quality	Safe for Horses	N LBS/A Planting	Approx. Seeds/LB	Dryland	Irrigated / + Precipitation	
NR	NR	NR	NR	best	best	no	60-75	13-15K	4-6 lb/A	5-7 lb/A	
NR	NR	NR	NR	better	good	no	40-50	16-19K	5-8 lb/A	6-10 lb/A	
better	better	good	best	best	best	no	50-60	15-20K	30-45 lb/A	35-45 lb/A	
best	best	better	better	good	better	no	50-60	15-18K	22-24 lb/A	30-35 lb/A	
best	best	better	better	good	best	no	50-60	15-18K	22-24 lb/A	30-35 lb/A	
better	better	better	best	better	best	no	50-60	14-18K	35-50 lb/A	40-50 lb/A	
better	better	better	best	better	best	no	50-60	18-20	18-20 lb/A	30-35 lb/A	
better	better	good	best	best	better	no	50-60	14-18K	35-50 lb/A	40-50 lb/A	
better	best	good	best	good	good	no	50-60	15-20K	25-40 lb/A	40-50 lb/A	
good	good	good	good	better	good	no	50-60	19-25K	35-50 lb/A	50-60 lb/A	
better	better	better	better	good	good	no	50-75	25-35K	25-40 lb/A	35-50 lb/A	
better	better	better	good	good	good	no	50-75	30-45K	25-40 lb/A	35-50 lb/A	
good	best	better	better	good	better	yes	40-50	50-60K	10-12 lb/A	10-15 lb/A	
good	better	better	better	good	good	yes	40-50	50-60K	10-12 lb/A	10-15 lb/A	
NR	NR	best	better	good	good	yes	50-75	600-650K	8-12 lb/A	10-12 lb/A	

SUMMER ANNUALS

FORAGE SORGHUM

Plant type: Annual Grain

Planting dates: May–July

Soil pH: 6.0–7.0

Soil adaption: Wide, 60° or warmer

Planting depth: 1"–1 1/2"

Approximate seeds/lb: 13,000–15,000

Seeding rate: 60–80,000 population
20" to 30" rows

Days to germination: 7

Main usage: Hay, silage

Height at maturity: 5'–8'

Length of stand: Annual

Reproduces by: Sterile

Pounds per bushel: 56

Precautions: Prussic Acid, Nitrate Poisoning

Forage Sorghum is a drought-tolerant, high-yielding forage crop with excellent quality characteristics (low NDF and high energy). It can be grown as a primary forage crop to break insect and disease cycles in continuous corn systems or as a short-season double crop. Plant in very warm soils. Harvest in the boot to heading stage. Due to limited regrowth, it is best managed in a single-cut system. It is often utilized as silage but can be wilted and wrapped or fed directly (green-chop). Follow management guidelines if prussic acid is present after a frost or drought event.



GW 400

- Excellent water-use efficiency
- BMR for excellent palatability
- High forage yield potential
- Very good forage quality
- Resistance to downy mildew
- Plant at 3–5 lb/A (64,000–95,000 seeds/A) in 20" to 30" rows



GW 2120

- Excellent water-use efficiency
- High forage yield potential
- Very good forage quality
- Resistance to Downy Mildew and anthracnose

Plant type: Annual Grass

Planting dates: May–July

Soil pH: 6.0–7.0

Soil adaption: Wide, 60° or warmer soil temperature

Planting depth: 3/4"–1 1/4"

Approximate seeds/lb: 15,000–19,000

Seeding rate: 20–50 lb/A

Days to germination: 7

Main usage: Green chop, hay, silage

Height at maturity: 5'–7'

Length of stand: Annual

Reproduces by: Sterile

Pounds per bushel: 56

Precautions: Prussic Acid, Nitrate Poisoning

Sorghum-Sudangrass hybrids are crosses between forage type sorghum and sudangrass. The result is a fast-growing, warm-season, drought and heat-tolerant grass that makes excellent forage. As a forage, it can easily be chopped or ensiled. Making dry hay is difficult but can be accomplished by cutting while the stalks are small, using a dry stalk variety, and finding a wide drying window prior to harvesting. Follow management guidelines if prussic acid is present in forage after a frost or drought event.



SS 711 BMR BD

- Semi-dry stalk
- BMR
- Brachytic dwarf for high leaf to stem ratio
- Grazing animals prefer its reduced stature



SS 833 BMR

- Dry stalk, BMR
- Fine stemmed, sweet plant
- Excellent early season vigor for quick first cutting



SS 626 PF AND 636 PF BMR

- Prussic acid free for grazing without concerns
- Great for early season vigor
- Very leafy, consistent yield
- Choose SS 636 BMR for improved forage quality



SS 834 BMR

- BMR-6 with the best regrowth potential
- Drystalk offers quicker drydown
- SCA tolerant



SS 912 BMR PPS

- Multiple cuttings or one large cutting
- Photoperiod sensitive, will not bloom until day length is less than 12 hours and 20 minutes
- Improved drought tolerance
- Anthracnose resistant
- Long harvest window and higher quality forage



SS 105 DELAYED MATURITY

- Delayed maturity prevents heading for up to 90 days
- Resistance to anthracnose and downy mildew
- Fine-stemmed
- Height at maturity: 72"-84"
- For single cutting: drill 20-25 lb/A or broadcast 25-30 lb/A
- For multiple cuttings: drill 50-60 lb/A or broadcast 55-70 lb/A
- Harvest first cutting 50-60 days after planting



SS 340 CONVENTIONAL

- Exceptional vigor
- Highly nutritious, sweet midrib
- Sugar cane aphid tolerant
- Height at maturity: 72"-84"
- For single cutting: drill 20-25 lb/A or broadcast 25-30 lb/A
- For multiple cuttings: drill 50-60 lb/A or broadcast 55-70 lb/A
- Harvest first cutting 50-60 days after planting

Plant type: Annual Grass

Planting dates: May–August

Soil pH: 6.0–6.5

Soil adaption: Wide, 60° or warmer soil temperature

Planting depth: 1/2"–1"

Approximate seeds/lb: 43,000

Seeding rate: 20–30 lb/A

Days to germination: 10

Main usage: Forage, cover

Height at maturity: 3'–4'

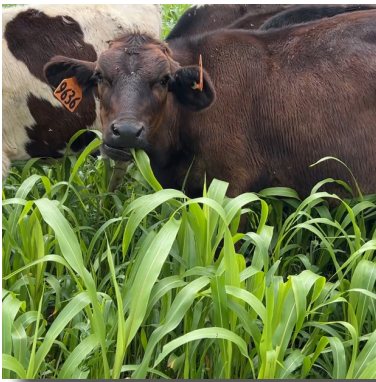
Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 40

Precautions: Prussic Acid, Nitrate Poisoning

Sudangrass is a summer annual grass in the sorghum family. It is medium-yielding, regrows quickly, and resistant to drought. Its stems tend to be smaller in diameter and dry down more quickly than other summer annuals, making it a feasible option for dry hay. It can also be used for pasture, cover crop, green chop, and silage. With proper harvesting practices, sudangrass can provide multiple cuttings due to its quick growth. It should be planted when soil temperature is at least 60°F. Allow at least 20" of growth prior to grazing or cutting.



SUMMERFLEX BMR

- Brown midrib
- Extremely high forage quality
- BMR variety – excellent palatability and animal intake
- Dry stalk trait – best variety for dry hay
- Excellent regrowth
- Drought tolerant
- Increased tillering vs. Sorghum-Sudangrass
- Plant 25–35 lb/A or broadcast 35–45 lb/A



PIPER

- Fine-stemmed summer annual
- Use for hay, silage, or pasture
- Great cover crop after wheat
- Resistant to anthracnose and downy mildew
- Plant 25–35 lb/A or broadcast 35–45 lb/A

TEFF GRASS

Plant type: Annual Grass

Planting dates: May–July

Soil pH: 6.0–7.0

Soil adaption: Wide, 60° or warmer soil temperature

Planting depth: 1/8"–1/4"

Approximate seeds/lb: 1,250,000

Seeding rate: 10–12 lb/A

Days to germination: 3–5

Main usage: Hay, silage, grazing after 1 cut

Height at maturity: 1'–2'

Length of stand: Annual

Reproduces by: Seed

Summer Delite Teff Grass is a fine-stemmed, warm-season, annual grass that produces multiple crops of high-quality forage. Summer Delite Teff Grass can be used for all classes of livestock, including horses dairy, beef, and sheep. It also produces excellent hay.



CISCO SUMMER DELITE

- Excellent forage quality
- Fast-growing
- High-yielding
- Excellent root structure for drought tolerance
- Foliar disease resistance
- Excellent for hay



Plant type: Annual Grass

Planting dates: May–July

Soil pH: 5.5–7.5

Soil adaption: Wide, 60° or warmer soil temperature

Planting depth: 1/2"

Approximate seeds/lb: 60,000

Seeding rate: 16–20 lb/A

Days to germination: 10

Main usage: Hay, graze

Height at maturity: 2'–4'

Reproduces by: Seed

Pounds per bushel: 52

Pearl Millet is a warm-season annual grass crop that can be grazed or harvested as hay or silage. It develops extensive roots that are able to scavenge nutrients and water making it low-input and drought-tolerant. Soil temperature of 60°–64° and air temperatures in the mid-90s are optimum for growth. Pearl Millet is safe for horses, does not produce prussic acid which gives this crop additional late-season flexibility for grazing management.



SWEET SUMMER BMR

- Rapid growth
- Drought tolerant
- Excellent disease resistance
- No prussic acid (HCN)
- Extensive tillering
- Faster dry down due to leafiness
- Wide adaptability to soil fertility and pH
- Height at maturity: 60–70"
- Plant or drill 10–15 lb/A or broadcast 25–30 lb/A



TIFF LEAF III

- Good resistance to leaf rust
- Drought tolerant
- Can persist and yield well on less than ideal soils
- Height at maturity: 36–60"
- Plant or drill 10–15 lb/A or broadcast 25–30 lb/A

GRAIN SORGHUM

Plant type: Annual Grass

Planting dates: May–August

Soil pH: 6.0–6.5

Soil adaption: Wide, 60° or warmer soil temperature

Planting depth: 1"–1 1/2"

Approximate seeds/lb: 14,000

Seeding rate: 4–20 lbs/A

Days to germination: 7

Main usage: Wildlife, grain

Height at maturity: 3'–4'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 56

Precautions: Prussic Acid, Nitrate Poisoning

Worldwide, Sorghum is a food grain for humans. In the United States, Sorghum is used primarily as a feed grain for livestock. Grain Sorghum types are relatively short-growing (less than six feet) and provide moderate yields when harvested as forage. Grain Sorghum varieties are classed in seven agronomic groups, however, milo is the only economic one for the Midwest. Leaf blades are wavy with a yellow midrib. Heads are bearded or awned, compact, and oval in shape. Seeds are large, pale pink to cream in color. Plants tend to be more tolerant to heat and drought. Feed value of Grain Sorghum is similar to corn. Grain Sorghum can also make a great, simple spring/summer food plot for deer. It is a great choice for plots where high Whitetail deer volumes prevent other grain crops from making through the summer



WILDER

- Primarily used as wildlife food in the Midwest
- Heat and drought tolerant
- Grain can be used for livestock feed
- Grows 3–4' tall and produces grain in 90 days or less
- Becomes more palatable throughout the fall



DEER BLIND

ANNUAL

Seeding rate: 10 lb. bag covers 1/4-1/2 A

Planting dates: late May-early Aug

Egyptian Wheat, Sorghum Sudangrass, Grain Sorghum, 2120 Tall Sorghum, Sunn Hemp



DRY GROUND GREENS

PERENNIAL

Seeding rate: 6 lb covers 1/2 A

Planting dates: March-April, Aug-Sept

Endure Forage Chicory, Small Burnet, Stamina White Clover, Bearcat Medium Red Clover, Advantage Ladino Clover, Frosty Berseem Clover



FORAGE OATS X-TRA

ANNUAL

Seeding rate: 25 lb covers 1/4 acre, 12 lb covers 1/8 A

Planting dates: Aug-Sept

Forage Oats, Wheat, Triticale



FROZEN FORAGE

ANNUAL

Seeding rate: 4 lb covers 1/2 A

Planting dates: late July-mid Sept

Groundhog Radish, Dwarf Essex Rapeseed, Ethiopian Cabbage, Forage Turnips, Purple Top Turnips, Forage Collards, Trophy Rapeseed



GAME MIX

ANNUAL

Seeding rate: 12 lb covers 1/4 A

Planting dates: May–Aug

Foxtail Millet, Pearl Millet, Grain Sorghum, Buckwheat, Peredovic Sunflower, Korean Lespedeza, Advantage Ladino Clover



MIDWESTERN T-N-T

PERENNIAL

Seeding rate: 5 lb covers 1/2 A

Planting dates: March–April, Aug–Sept

Jumbo Ladino Clover, Stamina White Clover, Frosty Berseem Clover, Bearcat Red Clover, Aberlasting White Clover, CISCO 328 Alfalfa



NO TILL

ANNUAL

Seeding rate: 10 lb covers 1/2 A

Planting dates: April–May, July–Sept

Winterhawk Annual Ryegrass, Winter Rye, Triticale, Groundhog Radish, Dwarf Essex Rapeseed, Fixation Balansa Clover, Improved Crimson Clover



SAFE & TASTY

ANNUAL

Seeding rate: 25 lb covers 1/2 A, 12 lb covers 1/4 A

Planting dates: May–June

Buckwheat, Grain Sorghum, Sorghum Sudangrass, Forage Soybeans, Forage Peas, Peredovic Sunflower

Midwestern Wildlife Zone



SAFE-T-SWITCH

PERENNIAL

Seeding rate: 5 lb covers 1 A
Planting dates: March–Aug, Dormant
Short Height Switchgrass, Moderate Height Switchgrass, Tall Height Switchgrass

TREASURE TRAIL

PERENNIAL

Seeding rate: 25 lb covers 1 A , 10 lb covers 1/3 A
Planting dates: April–May, Aug–Sept
Aberlasting Clover, Dixie Crimson Clover, Advantage Ladino Clover, Bronson Tall Fescue, Creeping Red Fescue, Big Gains Meadow Fescue, Tetraprime Italian Ryegrass, Orchardgrass, Redtop, Tetragam Ryegrass



VENISON VEGGIES

ANNUAL

Seeding rate: 5 lb covers 1/2 A
Planting dates: March–Aug
Sugar Beets, Sunn Hemp, Hybrid Brassica, Kale, Forage Turnips, Purple Top Turnips



WILDLIFE HABITAT

PERENNIAL

Seeding rate: 10 lb covers 1/2 A
Planting dates: March–April, Aug–Sept
Forage Perennial Ryegrass, Timothy, Forage Tall Fescue, Advantage Ladino Clover, Bearcat Red Clover, Vernal Alfalfa, Peredovic Sunflower

EGYPTIAN WHEAT

Plant type: Annual Grass

Planting dates: May–July

Soil pH: 6.0–7.0

Soil adaption: Moderate to well drained

Planting depth: 1/2"–3/4"

Seeding rate: 15–20 lb/A

Days to germination: 7

Main usage: Cover, Food Plots

Height at maturity: 8'–10'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 56



EGYPTIAN WHEAT

- Summer annual with rapid growth
- Can reach 7 to 10 ft in height
- Great wildlife food plot visibility screen
- Matures late and seeds last into winter
- Late maturity provides more cover and feed for wildlife



SWEET CLOVER

Plant type: Biennial Legume
Planting dates: January–April
Soil pH: 6.5–7.5
Soil adaption: Wide
Planting depth: 1/8"–1/4"
Approximate seeds/lb: 250,000
Seeding rate: 15–20 lb/A
2–6 lb/A mix

Days to germination: 7–10
Main usage: Soil improvement
Height at maturity: 24"–60"
Length of stand: 2 years
Reproduces by: Seed
Pounds per bushel: 60
Precautions: Soybean stem nematode host, not for hay pasture



YELLOW BLOSSOM

- Soil builder, legume
- Can improve soil drainage with large, vigorous tap root
- Good food source for honey bees and beneficial predatory wasps
- Matures 10–14 days earlier than white blossom sweet clover
- Do not use for hay, pasture, or silage



WHITE BLOSSOM

- Soil builder, legume
- Prefers well-drained soil
- Can improve soil drainage with large, vigorous tap root
- Good food source for honey bees
- Produces lighter-colored honey than Yellow Blossom Sweet Clover
- Matures 10–14 days later than Yellow Blossom Sweet Clover
- Do not use for hay, pasture, or silage

JAPANESE MILLET

Plant type: Annual Grass

Planting dates: May–June

Soil pH: 5.5–6.5

Soil adaption: Well suited for areas with wet conditions

Planting depth: 1/2"

Approximate seeds/lb: 155,000

Seeding rate: 15–30 lb/A
9–12 lb/A mix

Days to germination: 10

Main usage: Wildlife food plots

Height at maturity: 1'–5'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 35



JAPANESE MILLET

- Most rapid growth millet; 45 days to seed production
- Likes wetter, muddy areas
- Great for waterfowl and other wildlife
- Not recommended for hay or silage because of its coarse unpalatable characteristics

GERMAN FOXTAIL MILLET

Plant type: Annual Grass

Planting dates: May–July

Soil pH: 6.0–7.0

Soil adaption: Wide, 60° or warmer soil temperature

Planting depth: 1/2"

Approximate seeds/lb: 220,000

Seeding rate: 20–30 lb/A

Days to germination: 10

Main usage: Hay, graze

Height at maturity: 2'–4'

Length of stand: Annual

Reproduces by: Seed

Pounds per bushel: 50



GERMAN FOXTAIL MILLET

- Fast-maturing summer annual grass
- One cut harvest available 60 days after emergence
- Great for double cropping
- Very low water use
- Great for wildlife
- Allow six weeks after German Foxtail Millet before planting wheat to avoid potential carryover of a mosaic virus from the GF Millet to wheat

Wild flowers
by The CISCO Companies



WILDFLOWER MIXES

	Ingredients
Midwest Sun	Purple Coneflower, Lance-Leaved Coreopsis, Dwarf Blue Coneflower, Illinois Bundleflower, Purple Prairie Clover, Claspig Coneflower, Indiana Blanket, Prairie Coneflower, Black-Eyed Susan, Scarlet Flax, Shirley Single Corn Poppy, Polka Dot Mix Coneflower, Pale Purple Coneflower, Shasta Alaska Daisy, Greyheaded Coneflower, Ox-Eye Sunflower, Mexican Hat, New England Aster
Midwest Shade	Baby Blue-Eyes, Annual Baby's Breath, Shirley Single Mix Corn Poppy, Shasta Alaska Daisy, Helen Mount Johnny Jump-Up, Giant McKana Columbine, Tussock Bellflower, Annual Candytuft, Lance-Leaved Coreopsis, Purple Coneflower, Rocket Imperial Mix Larkspur, Sweet Williams Pink, Clarkia, Dwarf Columbine, Chinese Forget-Me-Not
Midwest All Perennial	Lance-Leaved Coreopsis, Russell Lupine, Purple Coneflower, Siberian Wallflower, Missouri Evening Primrose, Shasta Alaska Daisy, Perennial Lupine, Purple Giant Hyssop, Purple Moss Verbena, Blanketflower, Blue Flax, Gayfeather, Dwarf Columbine, Sweet Williams Pink, Black-Eyed Susan, Mexican Hat, Maltese Cross
Hummingbird & Butterfly	Rocket Imperial Mix, Larkspur, Purple Coneflower, Tall Blue Cornflower, Orange California Poppy, Scarlet Sage, Mexican Hat, Lemon Mint, Butterfly Milkweed, Tall White Sweet Alyssum, Dwarf Plains Coreopsis, Gayfeather, Blanketflower, China Aster Single Mix, Lance-Leaved Coreopsis, Dwarf Godetia, Annual Candytuft, Siberian Wallflower, Black-Eyed Susan, Indian Blanket
Bee Feed	Purple Coneflower, Chinese Forget-Me-Not, Lance-Leave Coreopsis, Baby Blue-Eyes, Orange California Poppy, Globe Gilla, Plains Coreopsis, Purple Giant Hyssop, Fleabane Daisy, Siberian Wallflower, Shirley Single Corn Poppy, Blue Flax, Chinese Aster Single Mix, Tidy-Tips, Indian Blanket, Tall White Sweet Alyssum, New England Aster, Bergamot
Honey Bee	China Aster Single Mix, Lance-Leaved Coreopsis, Blanketflower, Chinese Forget-Me-Not, Purple Prairie Clover, Cape Forget-Me-Not, Purple Coneflower, Prairie Coneflower, Purple Giant Hyssop, Siberian Wallflower, Shirley Single Corn Poppy, California Orange Poppy, Sulphur Dwarf Mixed Cosmos, Sweet Mignonette, Sweet Genovese Basil, Lacey Phacelia, New England Aster, Slender Mountain Mint
Eastern Pollinator	Partridge Pea, Purple Coneflower, Golden Alexander, Showy Tick Trefoil, Butterfly Milkweed, Lavender Hyssop, Hairy Beardtongue, Lance-Leaved Coreopsis, Ohio Spiderwort, Indian Blanket, Bergamot, Black-Eyed Susan, Evening Primrose
Sunflower	Sunflower mixture of bright yellows, deep reds, orange, and autumnal bronzes
Red, White, & Blue	Scarlet Flax, Annual Baby's Breath, Dwarf Blue Cornflower, Blue Flax, Shasta Alaska Daisy, Blue Sage, Bishop's Flower, White Rockcross, Baby-Blue Eyes, Perennial Lupine, Deep Carmine Baby's Breath, Red Corn Poppy, Scarlet Sage, Dwarf Red Coneflower, Maltese Cross, Tall White Sweet Alyssum, Chinese Forget-Me-Not

Type	Planting Time	Planting Rate (lb./ac)	Planting Rate (oz./1000sq.ft.)	Seeds/lb	Notes
Blend of Annuals and Perennials	April/May	9	5 oz	562,596	
Blend of Annuals and Perennials	April/May	8	4 oz	609,000	Not suitable for dense shade
Perennial	Aug/Sept/April-May	12	7 oz	210,000	
Blend of Annuals and Perennials	April/May	17	8 oz	247,000	Nectar and seeds foraged by Songbirds, Hummingbirds, and Butterflies
Blend of Annuals and Perennials	April/May	9	5 oz	547,000	Suitable for short and long tongued bees
Blend of Annuals and Perennials	April/May	9	5 oz	492,000	
Blend of Annuals and Perennials	April/May	11	7 oz	242,000	Developed for pollinator conservation
Annual	May/June	25	10 oz	16,850	
Blend of Annuals and Perennials	April/May	9	5 oz	409,487	Blend of garden and wild-flowers in patriotic colors

NATIVE GRASSES

	Height	Growth Type	Bloom Color/Season
Big Bluestem	5-8 ft	Upright clumps of blue/grey grass. Warm season perennial	Purplish/Red, Summer/Fall
Canada Wild Rye	3-5 ft	Cool season, clump forming, bunch grass	Wheat/rye-like spikes, Summer
Indiangrass	4-6 ft	Upright, warm season perennial	Light brown with yellow stamens, Summer/Fall
Little Bluestem	2-3 ft	Upright clumps of slender, linear, green leaves	Purplish/Bronze, Summer/Fall
Partridge Peas	2 ft	Annual legume	Yellow with deep Red stamens in the Summer. Maroon seed pod in the Fall
Riverbank Wild Rye	3-6 ft	Perennial, cool season, bunch grass	Yellow seed head, July/August
Sideoats Grama	1-3 ft	Bunchy, sod-forming. Perennial, warm season grass	Purplish, oat-like spikelets. Purple and Red foliage in the Fall. Summer/Fall
Virginia Wild Rye	4-5 ft	Cool season, perennial, bunchgrass	Green/Cream, Summer/Fall

Moisture	Planting Rate (lb./ac)	Planting Rate (oz/1000 sq.ft.)	Seeds/lb	Notes
Wet-Medium Wet	7-10 lbs PLS	3 oz	144,000	Deer resistant. Slow to establish, but once established, easy to maintain
Medium-Medium Dry	10-12 lbs PLS	4 oz	114,000	Short-lived perennial
Medium-Medium Dry	6 lbs PLS	3 oz	175,000	Does well in poor, dry, unfertile soil. Tends to flop in moist/rich soil
Medium	6 lbs PLS	3 oz	241,000	Cut to ground late winter, early spring. Deer resistant
Medium-Medium Dry	10-15 lbs PLS	5 oz	43,200	Leaves retreat when touched
Wet-Medium Wet	4 lbs PLS	2 oz	125,000	Essential component of streambank rehabilitation
Medium	3-4 lbs PLS	2 oz	159,000	Often found growing with Little Bluestem. Doesn't compete well with tall grasses. Quick growth
Wet-Medium Wet	8-10 lbs PLS	4 oz	73,000	Similar look to Canada Wild Rye, but has more erect seed head and is generally shorter

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