LA CROSSE SEED

FORAGE FIRST®

WHEN YIELD AND QUALITY MATTER®

SEED GUIDE | EDITION 13

Greater Potential.
Good Move.

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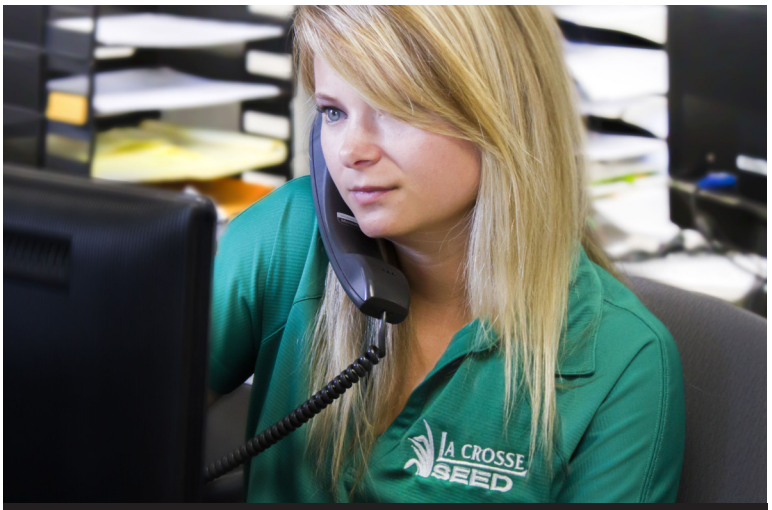
Placing an Order Has Never Been Easier:

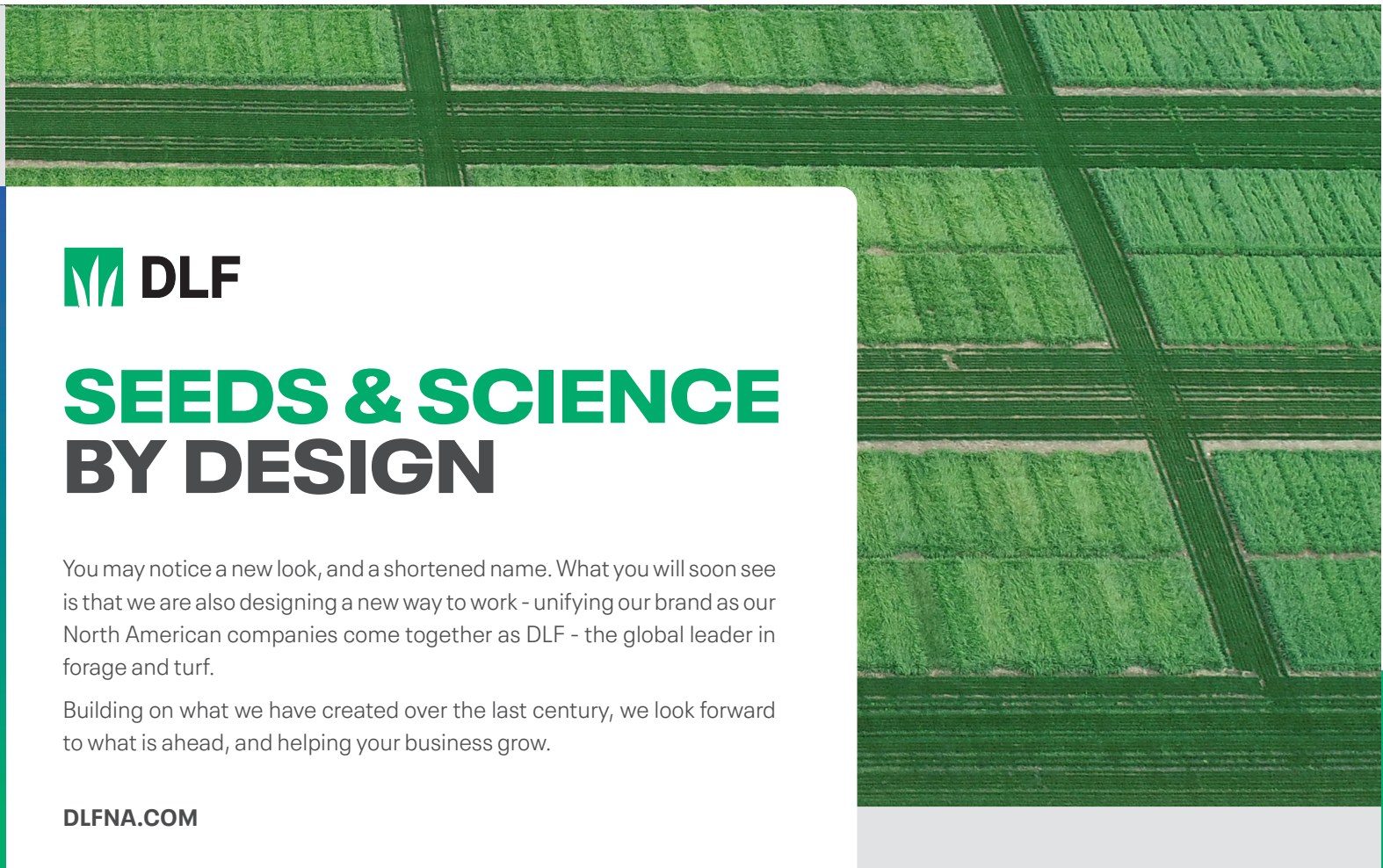
Our Customer Support Center is your link to our team of Sales Support Specialists (SSS). They are ready and willing to support you in any way they can. Specifically, our team can answer any questions you may have about orders, shipping, invoicing or marketing support.

Phone: Call to talk with a Sales Support Specialist
800.356.SEED

E-mail: Send your orders to **orders@laxseed.com** and our team will confirm it with you before shipping.



General questions can also be sent to info@laxseed.com



DLF

SEEDS & SCIENCE BY DESIGN

You may notice a new look, and a shortened name. What you will soon see is that we are also designing a new way to work - unifying our brand as our North American companies come together as DLF - the global leader in forage and turf.

Building on what we have created over the last century, we look forward to what is ahead, and helping your business grow.

DLFNA.COM

About Forage First®

GREATER VALUE. GOOD MOVE.
Yield and quality matter. But there's more. Our goal is to provide a higher standard of forage to maximize ROI – while keeping your wallet in mind. We take pride in delivering proven products that increase the bottom line at a good price.

ALWAYS INNOVATING
As a forage leader for many years, we've always worked hard to improve. Continual research and development of new varieties ensures the right balance of protein and feed quality, recovery and grazability to suit each animal and operation. Every top-performing variety is tested in many trials before being put to use. From the latest genetics to new treatments and technologies, we have you covered.

FORAGE WITH MORE PROFIT POTENTIAL
Walk into a field planted with Forage First® forage seed and you'll instantly notice lush, productive fields. That means healthy gains for your animals and land that lives up to its potential.

MAXIMUM FLEXIBILITY
We provide a diverse selection of products for producing high quality forage for your livestock and dairy operation. Our versatile portfolio offers a variety of proven products to fit each unique operation and was created with flexibility and ease of management in mind.

La Crosse Seed + DLF: Seeds & Science, Delivered

Since 2018, La Crosse Seed has been an operating company within DLF, the global leader in research, development, production and distribution of turfgrass and other seed.

Still the La Crosse Seed you know and love, we are now part of a worldwide organization with a tremendous passion for innovation and a commitment to helping us deliver the absolute best forage products.

As disease, climate and weather patterns continue to change, new genetics are needed to succeed. DLF leads the industry in developing products with useful forage traits found throughout our Forage First® lineup:

- Festulolium
- US bred orchardgrass
- High fiber digestibility
- Grasshance®
- More Milk with DLF

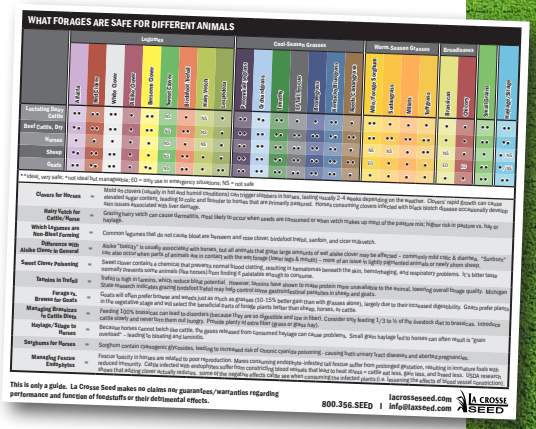
Important Forage Considerations

There are many aspects to consider to ensure the highest potential and productivity for your land and your animals. Our team has significant experience in the forage industry, and many agronomic resources on hand to increase your opportunity for success.

Visit lacrosseseed.com for more information on important forage considerations including:

- Importance of fertility
- Herbicide interactions
- Livestock safety
- Nutritional information
- And much more!

ONLINE RESOURCES



WHAT FORAGES ARE SAFE FOR DIFFERENT ANIMALS

	Legumes									Cool-Season Grasses					Warm-Season Grasses				Broadleaves			
	Alfalfa	Red Clover	White Clover	Birdsfoot Trefoil	Berseem Clover	Hairy Vetch	Crimson Clover	Austrian Field Pea	Cowpea	Meadow Fescue	Orchardgrass	Tall Fescue (Non-Endophyte)	Tall Fescue (Endophyte)	Tall Fescue (Novel Endophyte)	Perennial Ryegrass	Annual Ryegrass	Sudangrass	Millet	Brassicas	Chicory	Sunflowers	Forage Sorghum
Lactating Dairy Cattle	**	**	**	*	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Beef Cattle, Dry	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Horses	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Sheep	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Goats	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**

**, *, NS

Clovers for Horses	=
Hairy Vetch for Cattle/Horse	=
Which Legumes are Non-Bloat Forming	=
Differences With Alsike Clover in General	=
Sweet Clover Poisoning	=
Tetraploids in Trefoil	=
Forage vs. Browse for Goats	=
Managing Brassicas for Cattle Diets	=
Haylage/Silage for Horses	=
Sorghums for Horses	=
Managing Fescue Endophytes	=

This is only a guide. La Crosse Seed makes no claims nor guarantees/warranties regarding performance and function of foodstuffs or their detrimental effects.

800.356.SEED | lacrosseseed.com info@laxseed.com LA CROSSE SEED

Custom Mixes & Private Label

La Crosse Seed offers custom mixing capabilities and private label opportunities to meet your specific needs. Contact us to learn more.

Forage First® species that will include CrosseCoat™ are denoted throughout this guide with the CrosseCoat™ symbol.

The XL symbol throughout the guide represents branded products that meet the Forage First® promise. XL brands contain one or more improved varieties.

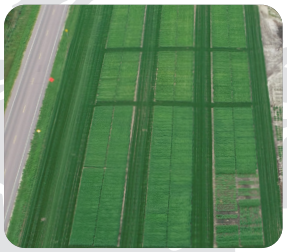
GROWING WITH DLF

Our customers demand a lot from their seed: yield, forage quality, winterhardiness and disease resistance. That is why we invest heavily in global R&D and our research plots. Roughly 11% (1 in 9) of DLF's over 2,000 worldwide employees are involved in breeding programs and product development. For more than 30 years, DLF breeding and product development has optimized forage and grass varieties ideal to local climatic and environmental conditions to seed the green future. We aim to deliver sustainable solutions with the potential to increase productivity of land and livestock, sequester carbon and reduce emissions in the supply chain.

Lindsay, Ontario Canada

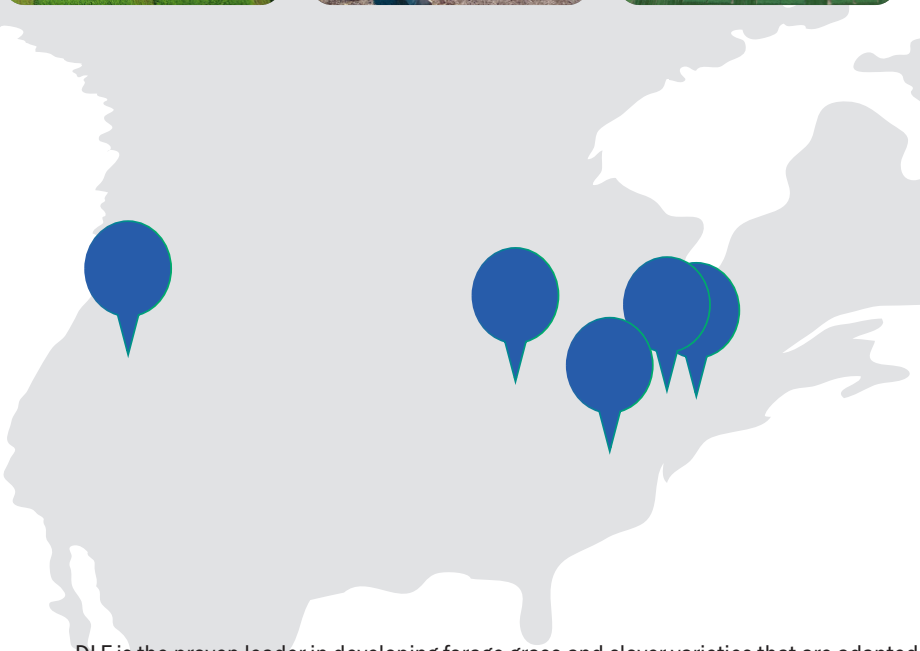
Port Hope, Ontario Canada

Bangor, Wisconsin USA



Philomath, Oregon USA

Berry, Kentucky USA

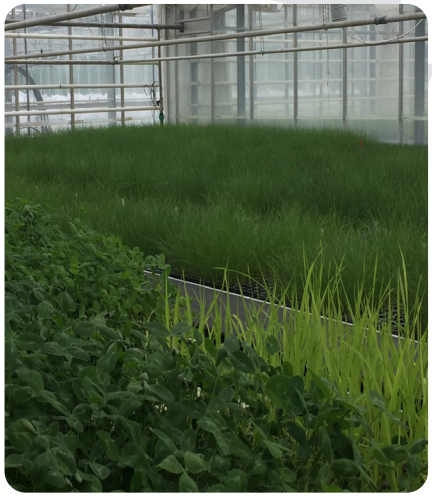


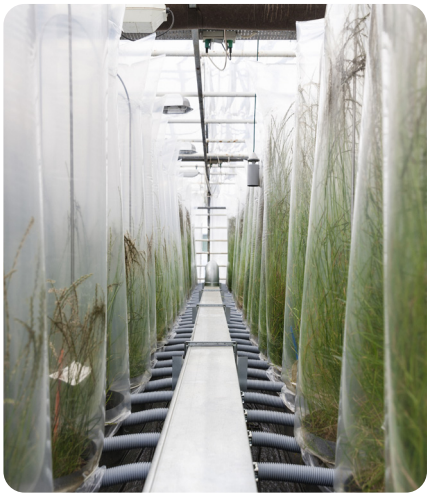
TESTING

- DLF head-to-head comparisons test current products against competitor check and experimental varieties
- This rigorous testing gives an ability to identify varieties with superior yield, persistence, faster regrowth, exceptional forage quality and superior disease resistance

DLF's Research trials provide the ability to select varieties that have improved disease resistance, superior yield, improved winterhardiness, faster regrowth and high forage quality based on true head to head comparisons!

DLF is the proven leader in developing forage grass and clover varieties that are adapted to diverse climatic and soil conditions. Our intensive breeding program is constantly developing new varieties of grass and clover species that will out-perform older generation genetics in yield, palatability, and forage quality.





La Crosse Seed + NEXGROW: Premium Alfalfa Technologies

HarvXtra® Alfalfa with Roundup Ready® Technology

FORAGE FIRST® and NEXGROW® alfalfa offers HarvXtra® alfalfa with Roundup Ready® Technology. The HarvXtra® Alfalfa with Roundup Ready Technology trait puts you back in charge of your cutting schedule. A flexible cutting window makes it easier to manage your operation, but that isn't all it does for you. Maintain a normal harvest schedule and achieve higher forage quality than with conventional varieties at the same stage of maturity or delay harvest up to 10 days for higher yield potential without sacrificing quality.

Roundup Ready® Alfalfa Varieties

A critical component to a strong crop is a weed-free field. Along with conventional varieties, FORAGE FIRST® and NEXGROW® alfalfa offers one of the industry's leading portfolios of alfalfa varieties with Roundup Ready® technology. Look for trusted varieties like FF 4319.A2 RR, 6424R and 6516R for help achieving a weed-free field.

Disease Protection

Select FORAGE FIRST® and NEXGROW® varieties include the UltraCut™ alfalfa disease package, helping growers produce a healthy alfalfa crop in field conditions susceptible to evolving Aphanomyces and Anthracnose disease strains. Its protection can help deliver an advantage through improved agronomic performance and yield potential. Look for UltraCut™ enhanced varieties like FF 42.A3, 6439HVXR and 6453Q.

Includes race 1 and race 2 protection. In addition, Forage Genetics International, LLC (FGI) has identified a novel source of Aphanomyces resistance in the greenhouse and field that visibly outperforms unrelated varieties on the market when grown under natural or artificial disease pressure. FGI researchers have been working cooperatively with universities collecting and testing the most virulent strains of Aphanomyces to help determine the level of resistance to this novel source.

Includes Anthracnose Race 1 protection, along with Anthracnose Race 5 protection, which is patented by FGI.

Seed Enhancement & Treatment

La Crosse Seed's portfolio of elite alfalfas include seed enhancement and treatment options to optimize germination, nodulation and promote early-season health and root development – allowing more seedlings to survive and reach their full genetic potential.

FORAGE FIRST® Featured Alfalfa

FF 4215.HVX RR

Cutting System: 3 - 5

- Manage yield without quality trade-off
- Greater flexibility with wide cutting windows
- Less lignin with higher NDFD*
- Fast recovery in frequent harvest schedules
- Excellent winter hardiness
- Superb yield potential maximizes feed value
- High multileaf expression

DISEASE & PEST CONTROL

Phytophthora Root Rot	HR	Aphanomyces Race 1	HR
Verticillium Wilt	HR	Aphanomyces Race 2	R
Anthracnose	HR	Pea Aphid	R
Bacterial Wilt	HR	Potato Leafhopper	NR
Fusarium Wilt	HR	Spotted Alfalfa Aphid	R
		Stem Nematode	R

Fall Dormancy	4.2
Winter Survival	1.5
Total DRI	34/35

HARVXTRA with Roundup Ready® Technology

CROSSECOAT™

FF 42.A3

Cutting System: 3 - 5

- Industry leading UltraCut™ disease package offers protection against evolving Aphanomyces & Anthracnose disease threats**
- Excellent forage yield with improved forage quality
- Patented Anthracnose*** technology, including Race 5
- 7 years forward breeding disease resistance/cold tolerance from 42.A2
- Very high multifoliate leaf expression

DISEASE & PEST CONTROL

Phytophthora Root Rot	HR	Aphanomyces Race 1	HR
Verticillium Wilt	HR	Aphanomyces Race 2	HR
Anthracnose 1	HR	Aphanomyces Race EMR**	R
Anthracnose 5***	HR	Potato Leafhopper	NR
Bacterial Wilt	HR	Spotted Alfalfa Aphid	R
Fusarium Wilt	HR	Stem Nematode	R

Fall Dormancy	4.4
Winter Survival	1.5
Total DRI	40/40

ULTRACUT™ Alfalfa Disease Package

CROSSECOAT™

FF 4319.A2 RR

Cutting System: 3 - 5

- Higher Aphanomyces 2 resistance with Roundup Ready® technology
- Disease resistance package promotes stand establishment in wet soils
- Even greater winter survival & persistence
- High multileaf expression
- Long stand life in adverse weather & soil conditions

DISEASE & PEST CONTROL

Phytophthora Root Rot	HR	Aphanomyces Race 1	HR
Verticillium Wilt	HR	Aphanomyces Race 2	HR
Anthracnose	HR	Pea Aphid	R
Bacterial Wilt	HR	Potato Leafhopper	NR
Fusarium Wilt	HR		

Fall Dormancy	4.3
Winter Survival	1.0
Total DRI	35/35

Roundup Ready® ALFALFA

CROSSECOAT™

FF 4022.LH

Cutting System: 3 - 5

- High yielding leafhopper alfalfa
- Latest generation of leafhopper resistance with improved leafhopper expression
- Resistant to both pea aphids & stem nematode
- High multileaf expression
- Widely adapted across the Midwest

DISEASE & PEST CONTROL

Phytophthora Root Rot	HR	Aphanomyces Race 1	HR
Verticillium Wilt	HR	Aphanomyces Race 2	R
Anthracnose	HR	Pea Aphid	R
Bacterial Wilt	HR	Potato Leafhopper	HR
Fusarium Wilt	HR	Stem Nematode	R

Fall Dormancy	4.0
Winter Survival	2.2
Total DRI	30/30

LEAFHOPPER PROTECTION

CROSSECOAT™

* Neutral Detergent Fiber Digestibility

** Includes race 1 protection, along with Anthracnose Race 5 protection, which is patented by FGI.

*** Includes race 1 and race 2 protection. In addition, Forage Genetics International, LLC (FGI) has identified a novel source of Aphanomyces resistance in the greenhouse and field that visibly outperforms unrelated varieties on the market when grown under natural or artificial disease pressure. FGI researchers have been working cooperatively with universities collecting and testing the most virulent strains of Aphanomyces to help determine the level of resistance to this novel source.

HARVXTRA® ALFALFA / ROUNDUP READY® ALFALFA GEOGRAPHICAL LIMITATIONS In the following states, purchase and use of HarvXtra® Alfalfa with Roundup Ready® Technology is subject to a Seed and Feed Use Agreement, requiring that products of this technology can only be used on farm or otherwise be used in the United States: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. In addition, due to the unique cropping practices do not plant HarvXtra® Alfalfa with Roundup Ready® Technology in Imperial County, California, pending import approval and until Forage Genetics International, LLC (FGI) grants express permission for such planting.

HARVXTRA® ALFALFA / ROUNDUP READY® ALFALFA MARKETING STATEMENT Forage Genetics International, LLC ("FGI") is a member of Excellence Through Stewardship® (ETS). FGI products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with FGI's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. HarvXtra® Alfalfa with Roundup Ready® Technology and Roundup Ready® Alfalfa have pending import approvals. GROWERS MUST DIRECT ANY PRODUCT PRODUCED FROM HARVXTRA® ALFALFA WITH ROUNDUP READY® TECHNOLOGY SEED OR CROPS (INCLUDING HAY AND HAY PRODUCTS) ONLY TO UNITED STATES DOMESTIC USE. Any crop or material produced from this product can only be exported to, or used, processed or sold in countries where all necessary regulatory approvals have been granted. It is a violation of national and international law to move material containing biotech traits across boundaries into nations where import is not permitted. Growers should talk to their grain handler or product purchaser to confirm their buying position for this product. Growers should refer to http://www.biotradestatus.com/ for any updated information on import country approvals. Excellence Through Stewardship® is a registered trademark of Biotechnology Industry Organization.

FF 42.A2

Cutting System: 3 - 5 **LIMITED AVAILABITY**

- Highly resistant to Aphanomyces 2
- Perfect disease resistance package
- Top forage yielder in trials
- Better suited for establishment in heavy & wet soils
- Fast recovery after cutting
- Even greater winter survival & persistence
- High multileaf expression

DISEASE & PEST CONTROL

Phytophthora Root Rot	**HR**	Aphanomyces Race 1	**HR**
Verticillium Wilt	**HR**	Aphanomyces Race 2	**HR**
Anthracnose	**HR**	Pea Aphid	**R**
Bacterial Wilt	**HR**	Potato Leafhopper	**NR**
Fusarium Wilt	**HR**	Stem Nematode	**HR**

Fall Dormancy	**4.0**
Winter Survival	**1.1**
Total DRI	**35/35**

CROSSECOAT™

FF 5020.FR

Cutting System: 4 - 5

- Fast recovery after cutting & later fall dormancy
- Excellent forage yield potential combined with excellent winter hardiness
- Resistance to several important alfalfa pests including pea aphids & stem nematode

DISEASE & PEST CONTROL

Phytophthora Root Rot	**HR**	Aphanomyces Race 1	**HR**
Verticillium Wilt	**HR**	Aphanomyces Race 2	**R**
Anthracnose	**HR**	Pea Aphid	**HR**
Bacterial Wilt	**HR**	Potato Leafhopper	**NR**
Fusarium Wilt	**HR**	Stem Nematode	**R**

Fall Dormancy	**4.9**
Winter Survival	**2.0**
Total DRI	**34/35**

CROSSECOAT™

FF PREMIUM Brand

Cutting System: 3 - 4

- Solid performance at a modest price
- Improved disease resistance
- Widely adapted

DISEASE & PEST CONTROL

Phytophthora Root Rot	**HR**	Aphanomyces Race 1	**HR**
Verticillium Wilt	**HR**	Aphanomyces Race 2	**NR**
Anthracnose	**R**	Pea Aphid	**NR**
Bacterial Wilt	**HR**	Potato Leafhopper	**NR**
Fusarium Wilt	**R**		

Fall Dormancy	**4.0**
Winter Survival	**2.0**
Total DRI	**28/30**

CROSSECOAT™

FF PRO Brand

Cutting System: 2 - 4

- Consistent performance at a budget price
- Widely adapted

DISEASE & PEST CONTROL

Phytophthora Root Rot	**HR**	Aphanomyces Race 1	**R**
Verticillium Wilt	**R**	Aphanomyces Race 2	**NR**
Anthracnose	**R**	Pea Aphid	**NR**
Bacterial Wilt	**R**	Potato Leafhopper	**NR**
Fusarium Wilt	**R**		

Fall Dormancy	**3.0**
Winter Survival	**2.4**
Total DRI	**25/30**

CROSSECOAT™

RESISTANCE RATINGS:

HR = Highly Resistant, 51% or more resistant plants
R = Resistant, 31 - 50% resistant plants
MR = Moderately Resistant, 15 - 30% resistant plants
LR = Low Resistance, 6 - 14% resistant plants
S = Susceptible, 0 - 5% resistant plants
NR = Not Rated

TRADEMARK STATEMENT ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. ROUNDUP READY® TECHNOLOGY CONTAINS GENES THAT CONFER TOLERANCE TO GLYPHOSATE. GLYPHOSATE WILL KILL CROPS THAT ARE NOT TOLERANT TO GLYPHOSATE. Roundup Ready® is registered trademarks of Bayer Group, used under license by Forage Genetics International, LLC. HarvXtra® is a registered trademark of Forage Genetics International, LLC. HarvXtra® Alfalfa with Roundup Ready® Technology is enabled with Technology from Noble Research Institute, LLC.

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Alfalfa

> **"We've been buying seed from La Crosse Seed for 25 years. This year we've added Forage First alfalfa to our product line. The product performance always meets our high expectations and my growers seem very satisfied."**
>
> **Greg G., Eastern Wisconsin**

FORAGE FIRST®

FF 4215.HVX RR	HARVXTRA	• Manage yield without quality trade-off • Greater flexibility with wide cutting windows • Less lignin with higher NDFD* • Fast recovery in frequent harvest schedules	• Excellent winter hardiness • Superb yield potential maximizes feed value • High multileaf expression
FF 4319.A2 RR	Roundup Ready ALFALFA	• Higher Aphanomyces 2 resistance with Roundup Ready® technology • Disease resistance package promotes stand establishment in wet soils	• Even greater winter survival & persistence • High multileaf expression • Long stand life in adverse weather & soil conditions
FF 42.A3	ULTRACUT	• Industry leading UltraCut™ disease package protects against evolving Aphanomyces & Anthracnose threats** • Excellent forage yield with improved forage quality • Patented Anthracnose*** technology, including Race 5	• 7 years forward breeding disease resistance/cold tolerance from 42.A2 • Very high multifoliate leaf expression
FF 4022.LH		• High yielding leafhopper alfalfa • Latest generation of leafhopper resistance with improved leafhopper expression	• Resistant to both pea aphids & stem nematode • High multileaf expression • Widely adapted across the Midwest
FF 42.A2		• Highly resistant to Aphanomyces 2 • Perfect disease resistance package • Top forage yielder in trials • Better suited for establishment in heavy & wet soils	• Fast recovery after cutting • Even greater winter survival & persistence • High multileaf expression
FF 5020.FR		• Fast recovery after cutting & later fall dormancy • Excellent forage yield potential combined with excellent winter hardiness	• Resistance to several important alfalfa pests including pea aphids & stem nematode
FF PREMIUM Brand		• Solid performance at a modest price • Improved disease resistance	• Widely adapted
FF PRO Brand		• Consistent performance at a budget price	• Widely adapted

NEW

NEXGROW (CONTACT LA CROSSE SEED FOR A FULL LIST OF NEXGROW VARIETIES AVAILABLE)

6409HVXR	HARVXTRA	• Reduced lignin & increased NDFD • RR trait provides optimal weed control	• Excellent harvest flexibility for optimal balance of quality & yield
6439HVXR	HARVXTRA ULTRACUT	• Reduced lignin and increased NDFD • Multi-race protection against Aphanomyces/Anthracnose	• Excellent harvest flexibility for optimal balance of quality & yield
6373R	Roundup Ready ALFALFA	• Perfect variety for the producer that wants quality in 2-4 cut system	• RR Trait provides optimal weed control • Best choice for stand persistance and winter survival
6497R	Roundup Ready ALFALFA	• Maximum yield, quality and/or milk per acre potential • High multifoliate expression for maximum quality	• RR Trait provides optimal weed control
NEXTECT™ RR	Roundup Ready ALFALFA	• Economical RR alfalfa blended for dependable forage & quality potential	• Good winter hardiness & disease resistance to key diseases
6424R	Roundup Ready ALFALFA	• High Aph 2 resistance for heavy or satruated soils • High multifoliate expression for maximum quality	• RR Trait provides optimal weed control
6516R	Roundup Ready ALFALFA	• Excellent choice for aggressive harvest management • Latest generation fall dormancy 5 variety	• RR Trait provides optimal weed control
6305Q		• Great quality and yield potential in a FD 3 variety • Exceptional winterhardiness and persistence	• Performs under intense harvest traffic
6480H Brand		• Step change in yield potential with highest level of Leafhopper protection	• Outstanding winterhardiness for Leafhopper varieties • Excellent disease package
6422Q		• Very fast recovery for multiple cut systems • Outstanding winterhardiness in full season variety	• Six-time commercial hay champion at World Forage Analysis Superbowl
6453Q	ULTRACUT	• Multi-race protection against Aphanomyces/Anthracnose • Excellent winter hardiness = increased persistance	• High quality feed value levels highly desirable for dairy and cash hay producers
6585Q		• A leading fall dormancy 5 for maximum cuttings • High yield potential variety selected for top forage quality	• High quality feed value levels highly desirable for dairy & cash hay producers
SPREADOR 5		• 5th generation spreador with creeping root system well suited to rangeland environments	• Well adapted as legume for pasture renovation • Tested & proven yields in salt-tolerant trials
ROUGHRIDER		• Economical blend with good forage yield & quality potential	• Recommended for marginal conditions • Good Disease resistance

FALL DORMANCY	WINTER SURVIVAL	TOTAL DRI	CUTTING SYSTEM	DISEASE & PEST CONTROL												
				PHYTOPHTHORA ROOT ROT	VERTICILLIUM WILT	ANTHRACNOSE 1**	ANTHRACNOSE 5**	BACTERIAL WILT	FUSARIUM WILT	APHANOMYCES RACE 1	APHANOMYCES RACE 2	APHANOMYCES*** (EVOLVING STRAINS)	PEA APHID	SPOTTED ALFALFA APHID	POTATO LEAFHOPPER	STEM NEMATODE
4.2	1.5	34/35	3 - 5	HR	HR	HR	◦	HR	HR	HR	R	◦	R	R	NR	R
4.3	1.0	35/35	3 - 5	HR	HR	HR	◦	HR	HR	HR	HR	◦	R	◦	NR	NR
4.4	1.5	40/40	3 - 5	HR	HR	HR	HR	HR	HR	HR	HR	HR	R	R	NR	R
4.0	2.2	30/30	3 - 5	HR	HR	HR	◦	HR	HR	HR	NR	◦	R	◦	HR	R
4.0	1.1	35/35	3 - 5	HR	HR	HR	◦	HR	HR	HR	HR	◦	R	◦	NR	NR
4.9	2.0	34/35	4 - 5	HR	HR	HR	◦	HR	HR	HR	R	◦	HR	◦	NR	R
4.0	2.0	28/30	3 - 4	HR	HR	R	◦	HR	R	HR	NR	◦	NR	◦	NR	NR
3.0	2.4	25/30	2 - 4	HR	R	R	◦	R	R	R	NR	◦	NR	◦	NR	NR
4.4	1.6	39/40	3 - 5	HR	HR	HR	R	HR	HR	HR	HR	HR	R	R	NR	R
4.4	1.6	39/40	3 - 5	HR	HR	HR	R	HR	HR	HR	HR	HR	R	R	NR	R
3.2	1.0	34/35	2 - 4	HR	HR	HR	◦	HR	HR	HR	R	◦	HR	R	NR	MR
4.0	2.0	30/30	4+	HR	HR	HR	◦	HR	HR	HR	◦	◦	R	◦	NR	R
4.0	2.0	28/30	3 - 5	HR	HR	R	◦	HR	HR	R	◦	◦	◦	◦	NR	◦
4.2	1.8	35/35	4+	HR	HR	HR	◦	HR	HR	HR	HR	◦	R	MR	NR	R
4.5	VH	30/30	5+	HR	HR	HR	◦	HR	HR	HR	◦	◦	HR	HR	NR	HR
3.2	1.0	30/30	2 - 4	HR	HR	HR	◦	HR	HR	HR	◦	◦	R	HR	NR	R
3.9	2.0	34/35	4+	HR	HR	HR	◦	HR	HR	HR	R	◦	HR	MR	HR	◦
4.5	1.0	30/30	4 - 5	HR	HR	HR	◦	HR	HR	HR	◦	◦	R	R	NR	R
4.4	1.6	40/40	4 - 5	HR	HR	HR	HR	HR	HR	HR	HR	HR	R	R	NR	R
5.0	1.9	34/35	4 - 6	HR	HR	HR	HR	HR	HR	HR	HR	HR	R	◦	NR	HR
1.9	1.0	34/35	1 - 2	HR	HR	HR	◦	HR	HR	HR	R	◦	R	R	NR	R
4.0	2.0	30/30	3 - 4	HR	HR	HR	◦	HR	HR	HR	◦	◦	R	R	◦	◦

GENERAL CHARACTERISTICS

ESTABLISHMENT	FAST
PERSISTENCE	HIGH
DROUGHT TOLERANCE	HIGH
WINTER HARDINESS	VARIES
PALATABILITY	HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	VARIES

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	15 - 20
MIXES	8 - 10
EMERGENCE (DAYS)	7- 14

HARVEST MANAGEMENT

Cut at 1/4 bloom; last cutting of season should be 4 weeks before 1st killing frost

ICON KEY:

- **LEAFHOPPER PROTECTION**
- **DURABLE ROOT STRUCTURE**
- **SALT TOLERANT**
- **CROSSECOAT™ TECHNOLOGY**

* Neutral Detergent Fiber Digestibility
** Includes race 1 protection, along with Anthracnose Race 5 protection, which is patented by FGI.
*** Includes race 1 and race 2 protection. In addition, Forage Genetics International, LLC (FGI) has identified a novel source of Aphanomyces resistance in the greenhouse and field that visibly outperforms unrelated varieties on the market when grown under natural or artificial disease pressure. FGI researchers have been working cooperatively with universities collecting and testing the most virulent strains of Aphanomyces to help determine the level of resistance to this novel source.

RESISTANCE RATINGS:

HR = Highly Resistant
51% or more resistant plants
R = Resistant
31 - 50% resistant plants
MR = Moderately Resistant
15 - 30% resistant plants
LR = Low Resistance
6 - 14% resistant plants
S = Susceptible
0 - 5% resistant plants
NR = Not Rated

Alfalfa

FARM SCIENCE GENETICS®

FSG 408DP		• Wide, deep-set crowns • Stands up to wheel traffic pressure	• Superior winter hardiness & persistence • High yield potential - hay or graze
FSG 415BR		• Branch rooting system • Aphanomyces 2 resistance • Stands up to wheel traffic pressure	• High yield & quality potential • Adapted to variable soil conditions
FSG 423ST		• Higher forage production in saline soil • Fine-stemmed with superior forage quality	• High resistance to stem & northern root-knot nematodes
FSG 431RRLH	Roundup Ready ALFALFA	• Highly resistant to potato leafhopper • Excellent winter hardiness & persistence	• Great forage yield potential & quality • High multifoliate leaf expression

W-L® (CONTACT LA CROSSE SEED FOR A FULL LIST OF W-L VARIETIES AVAILABLE)

WL 349HQ	ULTRA CUT	• Enhanced disease package delivers yield advantage • Dark green, fine-stemmed & highly palatable • High resistance to Anthracnose Race 5	• Great standability in intensive harvest situations • Highly resistant to Aphanomyces 1, 2 & 3
WL 356HQ.RR	Roundup Ready ALFALFA	• Outstanding yield & quality combination with unbeatable disease tolerance	• Highest Aphanomyces 1 & 2 resistance in a Roundup Ready® variety available
WL 358LH		• 8th generation potato leafhopper resistant	• HopperShield - Over 90% leafhopper control
WL 359LH.RR	Roundup Ready ALFALFA	• 8th generation potato leafhopper HopperShield resistant "stack" with Roundup Ready®	• Superb yielding fall dormancy coupled with excellent winter hardiness
WL 365HQ		• W-L's highest yielding conventional variety • High forage quality for cash hay or dairy operations	• Outstanding winter hardiness
WL 372HQ.RR	Roundup Ready ALFALFA	• For aggressive & intensive managers • Highly resistant to stem nematode	• Unbeatable recovery after cutting
WL 375HVX.RR	HARVXTRA ULTRA CUT	• Superb yield potential, agronomics & flexibility under 4, 5 & 6 cut systems	• Multi-race resistance to anthracnose • Highly resistant to Aphanomyces 1, 2 & 3

FALL DORMANCY	WINTER SURVIVAL	TOTAL DRI	CUTTING SYSTEM	DISEASE & PEST CONTROL												
				PHYTOPHTHORA ROOT ROT	VERTICILLIUM WILT	ANTHRACNOSE 1 **	ANTHRACNOSE 5***	BACTERIAL WILT	FUSARIUM WILT	APHANOMYCES RACE 1	APHANOMYCES RACE 2	APHANOMYCES** (EVOLVING STRAINS)	PEA APHID	SPOTTED ALFALFA APHID	POTATO LEAFHOPPER	STEM NEMATODE
4.0	1.9	28/30	4 - 5	HR	R	HR	◦	HR	HR	R	NR	◦	R	◦	NR	NR
4.0	2.0	34/35	4 - 6	HR	HR	HR	◦	HR	HR	HR	R	◦	NR	◦	NR	NR
4.0	2.0	28/30	4 - 5	HR	HR	R	◦	HR	HR	R	NR	◦	R	◦	NR	HR
4.0	2.0	30/30	4 - 5	HR	HR	HR	◦	HR	HR	HR	NR	◦	R	◦	HR	MR
4.4	1.7	40/40	4 - 5	HR	HR	HR	HR	HR	HR	HR	HR	HR	R	◦	NR	R
3.8	1.6	35/35	3 - 5	HR	HR	HR	◦	HR	HR	HR	HR	◦	R	MR	NR	HR
4.1	2.0	34/35	3 - 5	HR	HR	HR	◦	HR	HR	HR	R	◦	R	◦	HR	R
3.9	2.2	34/35	4 - 6	HR	HR	HR	◦	HR	HR	HR	R	◦	R	◦	HR	R
4.9	1.1	34/35	4 - 6	HR	HR	HR	◦	HR	HR	HR	R	◦	HR	HR	NR	R
4.8	1.8	34/35	4 - 6	HR	HR	HR	◦	HR	HR	HR	R	◦	HR	HR	NR	HR
4.6	2.1	39/40	3 - 5	HR	HR	HR	R	HR	HR	HR	HR	HR	R	R	NR	HR

GENERAL CHARACTERISTICS

ESTABLISHMENT	FAST
PERSISTENCE	HIGH
DROUGHT TOLERANCE	HIGH
WINTER HARDINESS	VARIES
PALATABILITY	HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	VARIES

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	15 - 20
MIXES	8 - 10
EMERGENCE (DAYS)	7- 14

HARVEST MANAGEMENT

Cut at 1/4 bloom; last cutting of season should be 4 weeks before 1st killing frost

ICON KEY:

- LEAFHOPPER PROTECTION
- DURABLE ROOT STRUCTURE
- SALT TOLERANT
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0 - 5% resistant plants
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Clover & Other Legumes

3-YEAR RED CLOVER

FORAGE FIRST® FACTOR: Red clover resilience (or lack thereof) is typically triggered by diseases that affect crown health. Most common red clovers (medium red clover included) typically persist for a couple of years before they fall victim. In many cases, a 2-year stand of clover fits the cropping cycle, delivering forage in a brief timeframe and providing a valuable nurse or relay crop for the ensuing cash crop. However, when the rotation allows, it makes sense to incorporate a 3-year clover. 3-year clovers have a stronger resistance to crown diseases that enables persistence into a 3rd year (or 2 years removed from the seeding year). The additional year provides at least 1 spring cutting, if not multiple harvests to greater supplement hay stocks.

FF 9615	ELITE	• Developed in & ADAPTED for the upper Midwest & Northeast	• High forage quality • Excellent stand persistence
NEW **REDKIN**	DLF	• Selected for persistence & disease resistance • 3 year yield performance	• High forage quality & yield potential
RED CARPET® XL	XL	• Best utilized for silage or spring hay • Increased disease resistance to southern anthracnose & downy mildew	• May produce 3 cuttings on second-year stands • Works well in rotational grazing programs
DURATION	ELITE	• High yield potential & excellent winter hardiness • Stocked in La Crosse, Wisconsin only	• Resistance to northern/southern anthracnose & powdery mildew

ALSIKE CLOVER

RADIUM XL	XL	• Withstands heavy grazing pressure, but merits management for success (see "What Forages are Safe for Animals" at lacrosseseed.com)	• Tolerant to poorly drained soils • Survives in poor pH soils

BALANSA CLOVER

FIXATION	ELITE	• High yield and quality potential • Excellent palatability and digestability	• Tolerant of a variety of soil types

BERSEEM CLOVER

FROSTY	ELITE	• Excellent companion to alfalfa • Quick Establishment	• High Forage Quality • Similar dry down to alfalfa

RED CLOVER

ESTABLISHMENT	FAST
PERSISTENCE	LOW
DROUGHT TOLERANCE	MED LOW
WINTER HARDINESS	MED HIGH
PALATABILITY	MED
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	MED

PLANTING TIMES

SPRING PLANTING	FEB - MAY
FALL PLANTING	AUG - OCT
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	8 - 12
MIXES	4 - 8

HARVEST MANAGEMENT

Harvest at 1/4 - 1/2 bloom; leave at least 3-4" of growth after each harvest

ALSIKE CLOVER

ESTABLISHMENT	FAST
PERSISTENCE	MED
DROUGHT TOLERANCE	LOW
WINTER HARDINESS	HIGH
PALATABILITY	HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	HIGH

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - OCT
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	6 - 8
MIXES	2 - 4

BALANSA & BERSEEM CLOVER

ESTABLISHMENT	MED FAST
PERSISTENCE	MED
DROUGHT TOLERANCE	MED LOW
WINTER HARDINESS	LOW
PALATABILITY	HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	MED

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - OCT
LIFE CYCLE	ANNUAL

SEEDING RATE (LBS/ACRE)	*BALANSA*	*BERSEEM*
ALONE	5 - 8	15 - 25
MIXES	3 - 5	7 - 12

DIFFERENCES BETWEEN 3-YEAR RED CLOVERS & COMMON MEDIUM RED

VARIETY	APPROX. COST/LB	LBS PLANTED/ACRE (OVERSEEDING)	SEED COST	3-YEAR TONNAGE ESTIMATION*	YIELD VALUE†	N FIXATION & VALUE‡	TOTAL VALUE	NET RETURN/ACRE
FF 9615 3-Year Red Clover	$3.80	12	$45.60	1.25 tons/year = 3.75	$543.75	$43.20	$586.95	$541.35
FF Red Carpet 3-Year Red Clover	$2.50	12	$30.00	1.0 tons/year = 3.0	$435.00	$43.20	$478.20	$448.20
Medium Red Clover	$1.90	12	$22.80	0.75 tons/year = 1.5**	$326.25	$28.80	$355.05	$332.25

**With better disease tolerance and crown health, one could easily assume 3-year clovers will outyield medium red in years 1 & 2 as well*
***Medium Red Clover only has 2 years of production in a 3-year period*
†Based on $145/ton
‡Based on Commercial Nitrogen @ $.48/LB

INTERMEDIATE WHITE CLOVER

NEW

RIESLING DLF

- High stolon density
- Medium to large leafed white clover
- Extended grazing potential during colder months
- Yield of ladino, persistence of intermediate

LADINO CLOVER

ORION XL XL

- Large white clover offering increased quality & protein digestibility
- Good regrowth following grazing
- Tolerates fall usage better than red clover
- Easy to establish
- Superior winter hardiness
- Tolerates low pH soils

BIRDSFOOT TREFOIL

LOTUS XL XL

- Tolerant of poorly drained, low pH soils
- High disease resistance
- Fast recovery after cutting
- Upright growth habit

ICON KEY

- DLF ELITE — ELITE VARIETY
- XL — XL BRAND
- CROSSECOAT™ TECHNOLOGY

INTERMEDIATE WHITE / LADINO CLOVER

ESTABLISHMENT	FAST
PERSISTENCE	MED
DROUGHT TOLERANCE	MED LOW
WINTER HARDINESS	MED HIGH
PALATABILITY	MED HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	MED

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - OCT
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	4 - 6
MIXES	2 - 4

BIRDSFOOT TREFOIL

ESTABLISHMENT	SLOW
PERSISTENCE	HIGH
DROUGHT TOLERANCE	HIGH
WINTER HARDINESS	HIGH
PALATABILITY	HIGH
YIELD POTENTIAL	MED
GRAZING TOLERANCE	HIGH

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - OCT
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	8 - 10
MIXES	4 - 5

Forage Grasses

ANNUAL RYEGRASS

FORAGE FIRST® FACTOR: Integrating annual ryegrass in the forage system requires the understanding that spring management will be paramount, depending on forage utilization. Dozens of annual ryegrass varieties exist, so make 100% sure the selection matches the goal and management style of the producer. Improved varieties offer greater winter tolerance and improved forage yields with added pest resistance.

COLDSNAP™

- Suitable for grazing or silage in fall (&/or spring in areas where it overwinters)
- Heavy dry matter producer with outstanding quality
- Widely adapted for forage production in Upper Midwest through Transition Zone
- Great for extending legume stands or emergency forage

ITALIAN RYEGRASS

FORAGE FIRST® FACTOR: Greater persistence mixed with better forage flexibility are reasons growers use Italian Ryegrass. During the establishment year, Italian types remain vegetative, but will act as an annual after winter vernalization in year two and need to be managed as such. Italian ryegrass is highly palatable with high leaf to stem ratio, providing higher digestibility. Improved varieties bring better winter hardiness and greater forage yield.

TETRABANA XL (XL)

- Tetraploid with high palatability
- Rapid establishment-ideal for green chop or silage, intensive grazing, renovating pastures & frost seeding
- Excellent for high-traffic or wet pastures
- High yielding & top feed quality

GRASSHANCER 200 (DLF)

- Blend of diploid & tetraploid Italian annual ryegrass
- Seeded in spring to boost season production
- Excellent establishment & improved persistence
- Rapid regrowth ability for green chop or silage

MAX 4N (DLF)

- Improved disease resistance
- Tetraploid variety with high quality & digestibility
- Top yield performer: 108% of checks
- High vernalization requirement for no heading in seeding year

BROMEGRASS

FORAGE FIRST® FACTOR: Bromegrass can be challenging for many livestock and hay producers. Typically, this sod-forming grass has a shortened grazing or harvest window compared to other cool season grasses. Since bromegrass spreads rapidly by seeds and rhizomes, it can become increasingly dominant in pastures and paddocks. Boosting stocking rates in spring and fall, and either moderate use or rotating away from bromegrass during the summer, will help year-round utilization.

BIG TON XL (XL, CROSSECOAT™)
Smooth Bromegrass

- Vigorous, long-lived sod-forming perennial grass
- Excellent drought resistance
- Improved leaf disease/seedling blight resistance
- VERY versatile, suited to grazing & haying
- Well-suited alongside alfalfa & in mixed stands

FLEET (ELITE)
Meadow Bromegrass

- High yields & rapid regrowth
- Excellent season-long forage quality
- Suitable for hay or pasture

ANNUAL RYEGRASS	
ESTABLISHMENT	FAST
PERSISTENCE	LOW
DROUGHT TOLERANCE	MED
WINTER HARDINESS	MED
PALATABILITY	HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	HIGH

HARVEST MANAGEMENT

Mechanical harvest should be made at boot to early heading stage. Graze during vegetative stage; removal during stem elongation will slow production until new tiller buds are available for regrowth.

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	ANNUAL

SEEDING RATE (LBS/ACRE)

ALONE	20 - 40
MIXES	5 - 10
EMERGENCE (DAYS)	5 - 14

ROTATIONAL GRAZING (IN)

BEGIN	8 - 12
STOP	3 - 6
AVERAGE DAYS REST	25 - 30

BROMEGRASS	*SMOOTH*	*MEADOW*
ESTABLISHMENT	SLOW	SLOW
PERSISTENCE	HIGH	HIGH
DROUGHT TOLERANCE	MED	MED
WINTER HARDINESS	MED	MED
PALATABILITY	HIGH	HIGH
YIELD POTENTIAL	HIGH	HIGH
GRAZING TOLERANCE	HIGH	MED

HARVEST MANAGEMENT

Bromegrass is tolerant of grazing in spring before the growing point emerges from below the ground; after jointing, frequent harvest can destroy stands. Mechanical harvest at boot to early bloom stage.

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	15 - 20
MIXES	5 - 10
EMERGENCE (DAYS)	14 - 21

ROTATIONAL GRAZING (IN)

BEGIN	10 - 12
STOP	4 - 6
AVERAGE DAYS REST	20 - 30

ICON KEY

- DLF
- ELITE VARIETY
- XL BRAND
- CROSSECOAT™ TECHNOLOGY

FESTULOLIUM

FORAGE FIRST® FACTOR: Festulolium is a hybrid of fescue and ryegrass. Some varieties exhibit greater characteristics (both in appearance and agronomic performance) as fescue and some are more similar to ryegrass. Selecting the right festulolium is critical, depending on its use and environment.

FUSION XL	XL	• Italian Ryegrass x Meadow Fescue • Ideal in winter-damaged alfalfa or where emergency forage is needed	• Increased summer performance & drought tolerance • Fast germination & establishment • High yielding & very palatable
FOJTAN	DLF	• Italian Ryegrass x Tall Fescue • Looks & grows like tall fescue • Higher forage quality & very palatable	• Excellent for grazing, silage & dry hay • Good rust resistance & winter hardiness

KENTUCKY BLUEGRASS

BALIN	DLF	• Good disease resistance • Suitable in mixes for intensive & extensive use	• Establishes fast with high yields • Persistence & high yields in permanent pastures

ORCHARDGRASS

FORAGE FIRST® FACTOR: La Crosse Seed works hard to bring varieties forward that exhibit strong disease resistance and tolerate the vigorous management schemes that many producers utilize. Maturity should be considered whether matching this grass with legumes or in a mono-culture, as harvesting in the boot stage is the goal. Proper fertility and higher cutting/grazing heights also aid in persistence.

HAYMATE XL	XL	• Medium-late maturity • Great companion for alfalfa	• Improved disease resistance • Maturity allows for more flexibility with first harvest in spring
ECHELON	DLF	• Extremely late maturing, maintains forage quality longer between harvests • Superior leaf disease resistance	• Perfect companion for alfalfa or clover mixes • Excellent persistence & vigor • Increased palatability & stand persistence
NEW **CAPTUR**	DLF	• Extremely late maturing (4 - 6 days later than Echelon), maintains forage quality longer between harvests • High yield, improved rust resistance, high salt tolerance	• Perfect companion for alfalfa or clover mixes • Excellent persistence & vigor

FESTULOLIUM

ESTABLISHMENT	FAST
PERSISTENCE	MED
DROUGHT TOLERANCE	MED
WINTER HARDINESS	HIGH
PALATABILITY	HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	HIGH

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	30 - 40
MIXES	10 - 15
EMERGENCE (DAYS)	7 - 14

ROTATIONAL GRAZING (IN)

BEGIN	10 - 12
STOP	4 - 6
AVERAGE DAYS REST	25 - 35

HARVEST MANAGEMENT

Mainly used in pastures for either grazing or fall stockpiling. Harvest for hay or haylage at boot to early heading stage.

KENTUCKY BLUEGRASS

ESTABLISHMENT	SLOW
PERSISTENCE	HIGH
DROUGHT TOLERANCE	MED
WINTER HARDINESS	HIGH
PALATABILITY	HIGH
YIELD POTENTIAL	LOW
GRAZING TOLERANCE	HIGH

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	10 - 15
MIXES	3 - 10
EMERGENCE (DAYS)	14 - 28

ROTATIONAL GRAZING (IN)

BEGIN	4 - 6
STOP	2 - 3
AVERAGE DAYS REST	30 - 40

HARVEST MANAGEMENT

High stocking rates in spring take advantage of its early production. Because of its shorter stature, bluegrass is perfectly suited for grazing & tolerates close (or over) grazing.

ORCHARDGRASS

ESTABLISHMENT	MED
PERSISTENCE	HIGH
DROUGHT TOLERANCE	MED
WINTER HARDINESS	HIGH
PALATABILITY	HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	MED

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	15 - 25
MIXES	3 - 10
EMERGENCE (DAYS)	7 - 21

ROTATIONAL GRAZING (IN)

BEGIN	8 - 12
STOP	4 - 6
AVERAGE DAYS REST	15 - 30

HARVEST MANAGEMENT

Harvest at boot stage in spring; cut or graze frequently in spring & early summer (cutting frequency influenced by temperature, soil moisture & fertility).

Forage Grasses

PERENNIAL RYEGRASS (TETRAPLOID)

FORAGE FIRST® FACTOR: Perennial ryegrass is best suited for milder climates, where drought and elevated temperatures aren't as common. Although improved varieties offer increased disease resistance, crown rust can easily overtake a population (even with varietals that offer some protection). Perennial ryegrass includes both diploid and tetraploid varieties. Tetraploid varieties are usually taller, with wider leaves and longer tillers – offering greater production consistently. Tetraploids are commonly less dense, which makes them a good option when mixed with legumes. They also tend to be more effective in grazing environments, however they typically don't persist as long as diploid options. While diploids often have deeper crowns, which make them more tolerant to stress and traffic, they also provide better sod coverage, which is valuable for quick establishment in multiple soil environments.

ENDO-GRAZE XL	XL	• High-yielding with rapid establishment • Excellent high quality forage in spring & fall	• Extremely palatable
NEW **DEXTER 1**	DLF	• Early spring growth with high dry matter yield • Very high yield with extremely fast recovery • High cold tolerance	• Very high leaf to stem ratio • Tolerates intensive grazing
KENTAUR	DLF	• Excellent resistance to leaf spot & crown rust • High sugar content • Excellent forage quality & consistency	• Early spring growth with high dry matter yield • Good recovery after cutting • Cold & heat tolerant

REED CANARYGRASS

DEFIANT XL	XL	• Performs well on poorly-drained soils & overly wet environments • Low alkaloid	• Can be used for hay, silage or pasture • Performs well on low pH soils • Widely adapted & extremely drought tolerant

BERMUDAGRASS & MORE

La Crosse Seed can access virtually any seed you need, including Bermudagrass & more. Contact us to learn more.

PERENNIAL RYEGRASS

ESTABLISHMENT	FAST
PERSISTENCE	MED
DROUGHT TOLERANCE	MED
WINTER HARDINESS	MED
PALATABILITY	HIGH
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	MED HIGH

PLANTING TIMES

SPRING PLANTING	FEB - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	30 - 40
MIXES	6 - 10
EMERGENCE (DAYS)	5 - 14

ROTATIONAL GRAZING (IN)

BEGIN	8 - 12
STOP	2 - 4
AVERAGE DAYS REST	15 - 30

HARVEST MANAGEMENT

Once established, ryegrass can be grazed (even continually) as quick as 3-4" in height assuming wet conditions don't ruin stand. Less dm will require longer curing times relative to other cool season grasses.

REED CANARYGRASS

ESTABLISHMENT	SLOW
PERSISTENCE	HIGH
DROUGHT TOLERANCE	HIGH
WINTER HARDINESS	HIGH
PALATABILITY	MED
YIELD POTENTIAL	HIGH
GRAZING TOLERANCE	HIGH

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	12 - 14
MIXES	6 - 8
EMERGENCE (DAYS)	14 - 28

ROTATIONAL GRAZING (IN)

BEGIN	10 - 12
STOP	4 - 6
AVERAGE DAYS REST	20 - 30

HARVEST MANAGEMENT

Mechanical harvest at heading stage for highest yields; most annual growth occurs before July - rotate pastures often; top growth will desiccate at frost so manage accordingly.

TALL FESCUE & MEADOW FESCUE

FORAGE FIRST® FACTOR: Various levels of endophyte toxicity are common in the majority of US tall fescue fields. Unless KY31 is requested, La Crosse Seed is focused on offering only varieties that are free of any endophytes. Improved tall fescue varieties demonstrate better cold tolerance across the Midwest while animal performance trials show enhanced grazing preference and palatability compared to older genetics. If renovating endophyte-infected fescue, it's best to rotate out for a period of 1-2 years until infected seed populations diminish and a new stand can establish without competition. If the goal is to improve existing pasture, adding legumes (like red clover) makes sense by helping production and quality. USDA research has shown that clover reduces some of the negative effects cattle see when consuming the infected plants.

STARGRAZER XL Tall Fescue	XL	• Well adapted for the Midwest, Mid-Atlantic & Northeast • Suitable for both pastures or hay production	• Slightly earlier maturing than KY31 • Good yielder with excellent persistence
TOWER Tall Fescue	DLF	• Broadly adapted with improved tolerance to extreme conditions • Late maturing variety suitable for intense grazing & hay environments	• Improved disease resistance (rust & other leaf diseases) • Maturity helps maintain higher RFQ at harvest
LAURA Meadow Fescue	DLF	• Very quick to establish & very aggressive • Excellent for cold & wet areas	• High yielding first cuts with excellent regrowth • Very good winter hardiness & persistence

TIMOTHY

FORAGE FIRST® FACTOR: Improved varieties of timothy are about improving its faults. Early maturing varieties align more closely when paired with alfalfa's harvest schedules. Timothy's shallow root system can struggle in warm and droughty environments. Increasing seeding rates can compensate for timothy's slow establishment, increasing stand density and weed suppression. What it lacks in seedling vigor, it makes up in winter hardiness.

TOP TIM XL	XL	• Early maturity blend • Excellent with clover or alfalfa for hay or pasture	• 1 - 2 weeks earlier to boot stage than Climax in most environments
ERECTA	DLF	• Late maturing • Very winter-hardy	• Known for its palatability & digestibility
RICHMOND	DLF	• Early maturing • Excellent early spring vigor	• Very good winter hardiness

FESCUE	*TALL*	*MEADOW*
ESTABLISHMENT	MED	MED
PERSISTENCE	MED HIGH	MED HIGH
DROUGHT TOLERANCE	HIGH	MED LOW
WINTER HARDINESS	MED	HIGH
PALATABILITY	MED	HIGH
YIELD POTENTIAL	HIGH	LOW
GRAZING TOLERANCE	HIGH	HIGH

PLANTING TIMES

SPRING PLANTING	MAR - MAY	APR - MAY
FALL PLANTING		AUG - SEP
LIFE CYCLE		PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE		25 - 30
MIXES		5 - 15
EMERGENCE (DAYS)		14 - 21

ROTATIONAL GRAZING (IN)

BEGIN	4 - 8	8 - 10
STOP		3 - 6
AVERAGE DAYS REST	25 - 35	15 - 25

HARVEST MANAGEMENT

Harvest at boot stage in spring; pure stands work well when stockpiled in fall.

TIMOTHY	
ESTABLISHMENT	SLOW
PERSISTENCE	MED
DROUGHT TOLERANCE	MED
WINTER HARDINESS	HIGH
PALATABILITY	HIGH
YIELD POTENTIAL	MED
GRAZING TOLERANCE	LOW

PLANTING TIMES

SPRING PLANTING	MAR - MAY
FALL PLANTING	AUG - SEP
LIFE CYCLE	PERENNIAL

SEEDING RATE (LBS/ACRE)

ALONE	8 - 15
MIXES	2 - 6
EMERGENCE (DAYS)	14 - 21

HARVEST MANAGEMENT

Because of timothy's lack of basal leaves to support regrowth, as well as its limited energy storage, frequent cutting or grazing greatly weakens stands. Harvest in spring at boot stage.

"We choose to sell premium brands like Forage First because it helps differentiate our business in the marketplace. The way to compete with big box companies is to offer premium varieties and brands that you can't find in many of those mainstream stores."

Jeff G.,
Northeastern Missouri

ICON KEY

- DLF **ELITE VARIETY**
- XL **XL BRAND**
- **CROSSECOAT™ TECHNOLOGY**

FORAGE FIRST®

		COOL SEASON GRASSES					
		SOD FORMING		NON-SOD FORMING			
		* SMOOTH BROME	KENTUCKY BLUEGRASS	TALL FESCUE	* ORCHARD	* TIMOTHY	* PERENNIAL RYEGRASS (TETRAPLOID)
		BIG TON XL	BALIN/GINGER	STARGRAZER XL	HAYMATE XL	TOP TIM XL	ENDO-GRAZE XL
ALL GRASS MIXES	VERSAGRASS™	25%			25%	25%	25%
	SPECIAL WATERWAY	65%		20%			15%
	BLM #4		15%	20%		15%	30%
	MARE & FOAL		10%		50%	25%	
	GRASS MASTER			35%	35%		15%
	JUMP START						50%
GRASS + LEGUME MIXES	715					15%	
	ALFALFA-BASED					20%	
	ALFALFA HAY & PASTURE				20%	15%	20%
	ALL PURPOSE				15%	20%	12%
	BEEF	15%		15%		5%	35%
	TRIPLE CROWN		15%			20%	35%
	CLOVER-BASED					25%	
CHARACTERISTICS	RATE FOR PURE STAND	15 - 20	10 -15	25 - 30	15 - 25	12 - 15	30 - 40
	RATE IN MIX	5 - 10	4 - 10	6 - 12	3 - 10	2 - 6	6 - 10
	ESTABLISHMENT	SLOW	SLOW	MED	MED	SLOW	FAST
	PERSISTENCE	HIGH	HIGH	HIGH	HIGH	MED	MED
	DROUGHT TOLERANCE	MED	MED	HIGH	MED	LOW	MED
	WINTER HARDINESS	HIGH	HIGH	MED	HIGH	HIGH	MED
	PALATABILITY	HIGH	HIGH	MED	HIGH	HIGH	HIGH
	YIELD POTENTIAL	HIGH	MED	HIGH	HIGH	MED	HIGH
	GRAZING TOLERANCE	HIGH	HIGH	HIGH	HIGH	MED	HIGH
	ADDITIONAL ELITE VARIETIES & OTHER FORAGE FIRST® PRODUCTS			TOWER	ECHELON CAPTUR	ERECTA RICHMOND	DEXTER 1 KENTAUR
	PAGE #	13	14	16	14	16	15

* ITALIAN RYEGRASS	* FESTULOLIUM	LEGUMES * ALFALFA		* RED CLOVER	* LADINO CLOVER	* ALSIKE CLOVER	* BIRDSFOOT TREFOIL	SEEDNG RATE (LBS/ACRE)
TETRABANA XL	FUSION XL	FF 42.A2	FF PREMIUM	REDCARPET XL	ORION XL	RADIUM XL	LOTUS XL	
								25 - 30
								25 - 30
20%								30 - 40
	15%							30 - 40
	15%							30 - 40
25%	25%							30 - 40
		70%		15%				18 - 20
		50%		20%	2%	8%		18 - 20
			40%		5%			18 - 20
5%			22%	13%	5%	8%		25 - 30
	10%		20%					30 - 40
	10%		20%					30 - 40
				63%	2%	10%		16 - 18
20 - 40	30 - 40	15 - 20	15 - 20	8 - 12	4 - 6	6 - 8	8 - 10	
5 - 10	10 - 15	8 - 10	8 - 10	6 - 8	2 - 4	2 - 4	4 - 5	
FAST	FAST	MED	MED	FAST	FAST	FAST	SLOW	
LOW	MED	MED	MED	HIGH	MED	MED	HIGH	
LOW	MED	MED	MED	MED	LOW	LOW	MED-HIGH	
LOW	HIGH	HIGH	HIGH	HIGH	MED	HIGH	HIGH	
HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	
HIGH	HIGH	HIGH	HIGH	MED	MED	HIGH	MED	
HIGH	HIGH	HIGH	HIGH	MED-HIGH	HIGH	MED-HIGH	HIGH	
GRASSHANCER 200 MAX 4N	FOJTAN	FORAGE FIRST® NEXGROW FARM SCIENCE GENETICS® W-L®		FF 9615 REDKIN DURATION				
13	14	5	5	11	12	12	12	

* Component ingredients may be coated in certain mixes. Legumes will be coated.

Forage First® Grass & Legume Mixes

We provide a diverse set of mixes to produce high quality forage for your unique operation. Our versatile pasture mix portfolio offers a variety of proven products to fit any need, created with flexibility and ease of management in mind.

SEEDING RATE (LBS/ACRE)

715 FORAGE MIX — 18 - 20

Suited for traditional hay production & increased management environments. Good winter hardiness.

- 70% FF 42.A2 Alfalfa
- 15% Red Carpet® XL Red Clover
- 15% Top Tim XL Timothy

ALFALFA HAY & PASTURE MIX — 18 - 20

Maximum production per acre. Produces high quality balanced hay.

- 40% FF Premium Alfalfa
- 20% Endo-Graze XL Perennial Ryegrass
- 20% Haymate XL Orchardgrass
- 15% Top Tim XL Timothy
- 5% Orion XL Ladino Clover

BEEF MIX — 30 - 40

High protein for maximum daily gain. Strong persistence & regrowth that withstands grazing pressure/hay production. Contains endophyte free tall fescue.

- 35% Endo-Graze XL Perennial Ryegrass
- 20% FF Premium Alfalfa
- 15% Big Ton XL Smooth Bromegrass
- 15% Stargrazer XL Tall Fescue
- 10% Fusion XL Festulolium
- 5% Top Tim XL Timothy

TRIPLE CROWN MIX — 30 - 40

Excellent yields of high-energy feed. Excellent for active horses.

- 35% Endo-Graze XL Perennial Ryegrass
- 20% FF Premium Alfalfa
- 20% Top Tim XL Timothy
- 15% Balin/Ginger Kentucky Bluegrass
- 10% Fusion XL Festulolium

SEEDING RATE (LBS/ACRE)

ALFALFA-BASED MIX — 18 - 20

Especially suited for high quality forage environments. Best adapted to well-drained soils (pH 7.0-7.5).

- 50% FF 42.A2 Alfalfa
- 20% Red Carpet® XL Red Clover
- 20% Top Tim XL Timothy
- 8% Radium XL Alsike Clover
- 2% Orion XL Ladino Clover

ALL PURPOSE MIX — 25 - 30

Flexible for hay & long-term pasture across a wide range of soils, but responds to better soils, irrigation & increased fertility.

- 22% FF Premium Alfalfa
- 20% Top Tim XL Timothy
- 15% Haymate XL Orchardgrass
- 13% Red Carpet® XL Red Clover
- 12% Endo-Graze XL Perennial Ryegrass
- 8% Radium XL Alsike Clover
- 5% Tetrabana XL Italian Ryegrass
- 5% Orion XL Ladino Clover

CLOVER-BASED MIX — 16 - 18

Formulated for wetter soils with a history of disease & fertility problems. Use in soils with low pH (below 6.5).

- 63% Red Carpet® XL Red Clover
- 25% Top Tim XL Timothy
- 10% Radium XL Alsike Clover
- 2% Orion XL Ladino Clover

Forage First® Grass Mixes

Our all grass mixes feature premium blends of elite performing forage grass varieties (sod-forming and non sod-forming), including endophyte fungus free.

SEEDING RATE (LBS/ACRE)

VERSAGRASS™ MIX — 25 - 30

Excellent for waterways, terraces, ditches, banks & headlands. Great for permanent pastures and companion crop for hay production.

- **25%** Big Ton XL Smooth Bromegrass
- **25%** Endo-Graze XL Perennial Ryegrass
- **25%** Haymate XL Orchardgrass
- **25%** Top Tim XL Timothy

BLM #4 MIX — 30 - 40

Versatile mix, establishes quickly. Endophyte-free tall fescue extends productivity into hot, dry summer.

- **30%** Endo-Graze XL Perennial Ryegrass
- **20%** Tetrabana XL Italian Ryegrass
- **20%** Stargrazer XL Tall Fescue
- **15%** Balin/Ginger Kentucky Bluegrass
- **15%** Top Tim XL Timothy

MARE & FOAL MIX — 30 - 40

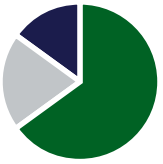
Ability to be productive under rotational grazing & hay production. Tolerant to heavy traffic.

- **50%** Haymate XL Orchardgrass
- **25%** Top Tim XL Timothy
- **15%** Fusion XL Festulolium
- **10%** Balin/Ginger Kentucky Bluegrass

SEEDING RATE (LBS/ACRE)

SPECIAL WATERWAY MIX — 25 - 30

Performs well in hay systems. Contains endophyte-free tall fescue, persistence retains quality for many years. Great for waterways.



- **65%** Big Ton XL Smooth Bromegrass
- **20%** Stargrazer XL Tall Fescue
- **15%** Endo-Graze XL Perennial Ryegrass

GRASS MASTER MIX — 30 - 40

Endophyte-free tall fescue & orchardgrass perform well in less-than-ideal summers. Good for grazing & hay production.

- **35%** Stargrazer XL Tall Fescue
- **35%** Haymate XL Orchardgrass
- **15%** Endo-Graze XL Perennial Ryegrass
- **15%** Fusion XL Festulolium

JUMP START MIX — 30 - 40

Excellent for overseeding existing hay stands or short/long-rotation pastures. Very responsive to fertilization.

- **50%** Endo-Graze XL Perennial Ryegrass
- **25%** Tetrabana XL Italian Ryegrass
- **25%** Fusion XL Festulolium

Silobuster Mixes

*100-120 Nurse

SILOBUSTER PEA & BARLEY MIX* — 100 - 150

Elite combination of forage peas & forage barley, ideal as nurse crop or straight forage.

- **50%** LC6040 Forage Peas
- **50%** Top Ton Spring Barley

SILOBUSTER PEA & TRITICALE MIX* — 100 - 150

Elite combination of forage peas & forage triticale, ideal as nurse crop or straight forage.

- **50%** LC6040 Forage Peas
- **50%** Forage Spring Triticale

SILOBUSTER PEA & OAT MIX* — 100 - 150

Elite combination of forage peas & forage oats, ideal as nurse crop or straight forage.

- **50%** LC6040 Forage Peas
- **50%** Forage Oats

Silobuster Mixes: Harvest should be based on maturity of small grain:

- Late boot stage for lactating dairy cows
- Soft dough stage for heifers, dry cows and beef cattle

SUMMER ANNUALS

					MATURITY	APPROX. SEEDS PER POUND*	DRYLAND SEEDING LBS/ACRE	IRRIGATION/ HI-RAIN SEEDING LBS/ACRE	RECOVERY AFTER CUTTING	LEAF DISEASE RESISTANCE	SUGARCANE APHID TOLERANCE	SINGLE SILAGE CUT SUITABILITY	RAPID DRY DOWN
MULTI-CUT SPECIES	SORGHUM X SUDANGRASS	QUICKDRY BMR T/TS	BMR 6		MED LATE	14,000 - 15,000	20 - 25	35 - 50	4	4	3	2	3
		DENSE TONNAGE BMR BD T	BMR 6	BD	MED LATE	14,000 - 15,000	15 - 25	25 - 35	4	4	1	4	2
		EVERGROW BMR PPS T	BMR 6	PPS	LATE	14,000 - 15,000	20 - 25	35 - 50	3	5	2	3	2
		GREENSUGAR TR T			MED	16,000 - 20,000	20 - 25	50 - 60	3	3	2	2	2
		GREENSUGAR MS T		MS	MED LATE	16,000 - 20,000	20 - 25	50 - 60	3	4	1	2	2
	SUDANGRASS	BALEMORE			EARLY MED	35,000 - 40,000	15 - 25	20 - 35	3	3	1	2	4
	PEARL MILLET	HERCULES BMR BD T	BMR 6	BD	MED	50,000 - 60,000	10 - 12	10 - 12	5	5	5	4	4
		PERFORM T			MED	50,000 - 60,000	10 - 12	10 - 12	5	4	5	4	4
	TEFF GRASS	REPRIEVE XL			NA	650,000	8 - 10	8 - 10	4	3	5	NA	4

				DAYS TO HARVEST (SOFT DOUGH STAGE)	APPROX. HARVEST HEIGHT (FT)	APPROX. SEEDS PER POUND*	SEEDING 30" ROWS (LBS)	SEEDING NARROW (LBS)	RECOVERY AFTER CUTTING	STANDABILITY	SUGARCANE APHID TOLERANCE	DOUBLE CROP	OVERALL ADAPTABILITY
SINGLE-CUT SPECIES	FORAGE SORGHUM	94 MS TS		MS	MS	6 - 8	17,000 - 19,000	4 - 6	10 - 15	3	4	2	3	4
		95 BMR TS	BMR 12	DWARF	85 - 95	5 - 7	16,000 - 18,000	5 - 7	NR	2	4	3	3	5

		PANICLE TYPE	GRAIN COLOR	MID-BLOOM (DAYS)	GRAIN MATURITY (DAYS)	APPROX. HEIGHT (IN)	APPROX. SEEDS PER POUND*	DRYLAND POPULATION / ACRE	IRRIGATED POPULATION / ACRE	HEAD EXERTION	STANDABILITY	SUGARCANE APHID TOLERANCE	PRE-FLOWER STRESS TOLERANCE	ANTHRACNOSE TOLERANCE
GRAIN SORGHUM	79 B TS	OPEN	BRONZE/RED	48 - 51	80 - 85	36 - 42	13,000	25,000 - 40,000	60,000 - 75,000	5	4	4	5	2
	94 R TS	SEMI-CLOSED	RED	68 - 71	110 - 115	50 - 56	16,000	25,000 - 40,000	60,000 - 75,000	5	4	5	4	3

	MILLET	PRIMARY FORAGE USE	PLANTING DATE	SEEDING RATE (LBS, BROADCAST - ADD 30%)	DAYS TO GRAIN MATURITY
FOXTAIL	Common Foxtail Millet	Hay or silage	May - July	20 - 25	60 - 100
	German Millet	Dry hay in 55 - 60 days	May - July	20 - 25	75 - 90
	Siberian Millet	Dry hay in 40 - 50 days	May - July	20 - 25	60 - 80
	White Wonder Millet	Dry hay in 50 - 55 days	May - July	20	70 - 90
	White Proso Millet	NR	May - July	20 - 25	70 - 90
GRAZING	Japanese Millet	Grazing; dry hay in 45 - 50 days	April - July	15 - 20	60 - 70
	Pearl Millet	Grazing in 35 - 40 days; dry hay in 40-50 days; can ensile or green-chop also	May - July	12 - 20	60 - 70
	Brown Top Millet	Thin stems make dry hay more suitable	May - July	20 - 25	60

BD = Brachytic Dwarf, **BMR** = Brown Mid-Rib, **MS** = Male Sterile, **PPS** = Photo Period Sensitive, **T** = Base Treatment, **TS** = Base Treatment/Safened

Unless otherwise indicated, a standard 5 point rating system is used. Ratings are based on comparison with other products of like maturity/product use.
1 = POOR, 5 = EXCELLENT

For more information on summer annuals, visit lacrosseseed.com

ONLINE RESOURCES

				• Widely adapted • Traditional growth habit with wide, long leaves	• Increased sugar content = improved digestibility • Fast establishment & regrowth = more productivity
				• Management friendly hybrid with greater harvest flexibility • Dwarf hybrid = improved standability & higher leaf:stem ratio	• Suitable for grazing environments or 1-cut silage systems • Increased sugar content = improved digestibility
				• Widely adapted with improved disease resistance • PPS hybrids remain vegetative until mid-Sept (day length < 12h, 20m)	• PPS allows for wider window of harvest • Build tonnage without sacrificing quality
				• Broad adaptation in a traditional, non-BMR package	• High yielding; increase population for improved quality
				• Higher levels of sugar/protein in vegetative portion of plant • Increased disease resistance	• MS = no anthers, thus no pollen for self-fertilization • Improved standability
				• Best summer annual option when dry hay production is planned • Can also be used for grazing or green chop	• Strong emergence & quick regrowth
				• Versatile hybrid suitable for silage, grazing & dry hay • Dwarf gene increases leaf:stem ratio & improves standability	• Enhanced palatability, digestibility & overall utilization • No prussic acid or sugarcane aphid concerns
				• Versatile hybrid suitable for silage, grazing & dry hay • Quicker regrowth compared to sorghum x sudangrass	• No prussic acid or sugarcane aphid concerns • Shorter stature = improved standability
				• Great rotational crop between alfalfa & perennial stands • Superior quality - ideal for horses & other livestock	• Well adapted to dry climates
YIELD FOR MATURITY	LEAF DISEASE RESISTANCE				
4	3			• Good disease resistance • Excellent regrowth for a forage sorghum	• Male Sterile = increased sugar accumulation
5	5			• Early maturing dwarf BMR • High grain yield for maturity	• Excellent leaf disease resistance • Widely adapted with excellent standability
HEAD SMUT TOLERANCE	FUSARIUM TOLERANCE	MAIZE DWARF MOSAIC TOLERANCE	DOWNY MILDEW TOLERANCE		
3	4	4	3	• Widely adapted - can go anywhere! • Ultra early hybrid	• Exceptional drought tolerance
5	4	5	5	• Widely adapted hybrid that yields • Medium maturity	• Excellent sugarcane aphid tolerance & disease resistance

*Refer to seeds per lb on seed tag

TYPICAL HEIGHT & STATURE	REGROWTH AFTER CUTTING/HARVEST	ATTRIBUTES	
2 - 4’	Little to no regrowth	• Forage type millets primarily • Many so called “varieties”	• Pasture only before heads form (not ideal)
2 - 4’	Little regrowth	• VERY fast growing • Used primarily for hay production; seeds for wildlife	• Mid-late maturing • Shallow rooted – not as drought tolerant
2 - 2½’	Little to no regrowth	• VERY fast growing • Earlier maturing	• Shorter stature • Best suited in Northern Plains
3 - 4’	Poor at best	• Dual purpose – hay & grain • Late maturing	• Heavy stem & taller than most foxtail types
2 - 2½’	Poor at best	• Usually grown for seed – bird seed or livestock feed	• Not tolerant of drought - keep off sandy soils
2 - 4’	Leave 6 - 8” for adequate regrowth	• Grazing / hay potential on wet soils (no prussic acid) • Ideal for waterfowl / wildlife feed	• Tolerant of waterlogged soils & flooding • Also used for erosion control
3 - 6’ (depending on variety)	Leave 8 - 10” for quickest regrowth	• Very resilient - handles a variety of soil types • No prussic acid concerns	• More drought tolerant than japanese / foxtail millets • Increased forage quality offered in BMR types
2 - 4’	Leave 6 - 8” for adequate regrowth	• Fast growing for seed mostly – wildlife • Seed shatters easily - reseed potential very high	• Best suited for Southeast US (needs adequate water) • Tolerant of acidic soils & low fertility

Tips For Managing Summer Annuals & Other Cover Crops For Forage

When the opportunity exists to plant early, warm season annuals provide large amounts of biomass while improving soil tilth and absorbing excess nutrients left behind from cash crops. Summer annuals provide quality forage suitable for all classes of ruminants (usually during periods where traditional perennial crops are less effective). Although sometimes referred to as “emergency forage”, summer annuals can be part of a planned cover crop program where the dual benefit of forage is the goal.

PRUSSIC ACID poisoning can occur when feeding forage sorghums after periods of drought or other stress, including frost. Toxic levels dissipate usually after 2 - 3 weeks and will further decrease when ensiled. Prussic acid is most concentrated in new growth, so sorghum forages should not be grazed until they are at least 18” tall. Storing hay or silage for at least 30 days generally dissipates the concern.

BRASSICA CROPS can cause animal health disorders if not grazed properly. Introduce grazing animals to brassica pastures slowly (usually over 3 - 5 days). With extremely high forage values, brassicas can cause problems if hungry animals are turned out into predominate brassica pastures. Even though traditional recommendations allow for 2/3, we recommend keeping brassicas to under 1/3 of the grazing animal's diet - always supplement brassicas with dry hay or other grasses (higher in fiber).

BLOAT can be an issue with most legume species. Reduce bloat by:

1. Utilizing grasses alongside the legumes
2. Pre-fill livestock with coarse hay prior to turning onto pasture, ensuring animals are not turned out to fresh pasture when hungry
3. Do not start grazing when the pastures are wet from dew or rain

GRASS TETANY can occur when grazing lush cereal grain crops in the spring or fall. Tetany risk can be lessened by adding legumes (which offset low magnesium levels that induce tetany) and by keeping livestock out of fields recently fertilized or manured.

NITRATE TOXICITY is common when fertility or manure applications are followed by a period of drought or stress. Cut plants do not lessen in their nitrate levels as they cure. If high levels are suspected, forage should be tested for a period of a few weeks until levels subside. Though often linked to summer annual grasses, increased nitrate levels can show up in most cover crops and forages.

1. Nitrates are concentrated more in the lower stalk – raising cutting height can reduce the risk
2. When a stressful drought precedes a moisture event, it is recommended to delay harvest by 1 - 2 weeks
3. Consider split applications of nitrogen (especially useful on summer annuals) to decrease nitrate accumulations

NITRATE LEVELS IN FORAGE

REFERENCES: Univ. of Missouri, Univ. of Wisconsin, Univ. of Tennessee, North Carolina State Univ., South Dakota State Univ.

REPORTED METHOD (Dry Matter Basis)				
Nitrate Nitrogen (NO_3-N)		Nitrate (NO_3)		
% (Ions)	ppm	% (Ions)	ppm	COMMENTS
<0.10	<1,000	<0.44	<4,400	Generally safe to feed. University of Missouri Extension states problems can already commence at 550 ppm NO3-N (2,500 ppm NO3), especially if feeding along with non-protein N sources.
0.10-0.15	1,000 - 1,500	0.44-0.66	4,400 - 6,600	Safe for non-pregnant animals. Limit to 50% or less (DM basis) for pregnant animals. Some abortions possible at this level.
0.15-0.20	1,500 - 2,000	0.66-0.88	6,600 - 8,800	Limit use to 50% total ration (DM basis) for all animals. Missouri Extension recommends limiting to only 25% of total ration between 1,100 - 3,400 ppm NO3-N (5,000 - 15,000 ppm NO3).
0.20-0.35	2,000 - 3,500	0.88-1.54	8,800 - 15,400	Limit use to 35% or less of total ration (DM basis) for non-pregnant animals. DO NOT FEED to pregnant animals.
0.35-0.40	3,500 - 4,000	1.54-1.76	15,400 - 17,600	Limit use to 25% or less of total ration (DM basis) for non-pregnant animals. DO NOT FEED to pregnant animals. Missouri Extension says anything over 3,400 ppm NO3-N (15,000 ppm NO3) should not be fed.... but if it must be fed, limit to less than 15% of total ration.
>0.40	>4,000	>1.76	17,600	Potentially toxic. DO NOT FEED.

THIS IS ONLY A GUIDE. La Crosse Seed makes no claims and makes no guarantees/warranties regarding performance and function of feedstuffs or their detrimental effects. Test results will vary by testing lab and by method of sample collection, forage management, climate and other environmental factors.

Managing Small Grains For Forage

Soil First® Mixes Work Great for Food Plots!

With a greater need for quality feed sources, cereal grain options are becoming increasingly popular as forage supplements to existing perennial hay and summer annual acres. Many forage benefits are consistent across all these cereal grain options but differences do exist in quality and tonnage based on proper management.

WINTER TRITICALE

Triticale is a cross between wheat and rye. This makes for a crop with higher yields than wheat, but lower quality. Triticale is best suited for grazing pasture. Because of its large stems, hay wilting and silage packing can be difficult.

BEST USE: Fall & Spring Pasture; Silage & Hay (boot to dough stage)

WINTER RYE

Rye offers the advantage of being the easiest cereal grain to establish in poor soils and having the greatest cold tolerance. Rye offers the greatest production for hay or pasture ground because of its quick growth both in the fall and spring.

BEST USE: Fall, Winter & Spring Pasture

SPRING OATS

Oats can be planted in the fall, as long as it's early enough to justify 60 - 90 day production.

BEST USE: Silage (milk to dough stage); Hay (boot to heading stage)

WINTER WHEAT

Wheat has good potential for forage and is usually higher in quality than rye, triticale and oats but not barley. However, wheat usually produces more dry matter than barley.

BEST USE: Fall & Spring Pasture; Silage (boot to dough stage); Hay (boot to milk stage)

WINTER BARLEY

Winter barley is the most susceptible to winterkill of the cereal grains. Consideration should be made when grazing late into the fall. Barley's value as a silage crop is the most comparable to whole-plant corn (90-100%).

BEST USE: Fall Pasture; Silage & Hay (boot to dough stage)

HAY PRODUCTION

Hay yields often average between 2 and 4 tons/acre. Moisture content should be between 15 - 20% moisture. Hay quality is more maturity-dependent at harvest than is silage.

The most efficient time to harvest small grain cereals for hay is at early-milk stage. This allows for the greatest compromise between forage yield and quality (quality would be greatest at the late-boot stage). To help speed up drying, a crimper is recommended when harvesting in the late-boot stage.

SILAGE PRODUCTION

Wheat, barley, oat and triticale silage yields are similar, 4 - 7 tons/acre of 35% dry matter forage in the boot stage and closer to 6 - 10 tons/acre when harvested in the late-boot stage. Small grains should be ensiled at between 62 – 68% moisture. Chop length should be set finer than when harvesting corn or forage sorghum.

(Kansas State University)

Soil First® PREMIUM COVER CROP SEED

COVER CROP MIXES

Soil First® Mixes Work Great for Food Plots!

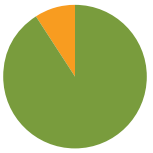
SOIL FIRST® 101 COVER STARTER

Simple. Practical. A low-risk option for early adopters and growers looking for flexibility.

- For multiple regions & marginal soil environments
- Winter-hardy rye will sequester excess nitrogen

SEEDING RATE (LBS/ACRE) Drill: 30 - 35 **Broadcast**: 35 - 40 **Aerial:** 30 - 40 **Forage:** 40 - 50

91% GUARDIAN® WINTER RYE
9% TILLAGE RADISH®



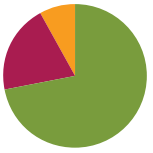
SOIL FIRST® 102 COVER STARTER +

Building nitrogen and root mass while improving soil tilth and biomass potential.

- Perfect before both corn or soybeans
- Ideal for Southern Corn Belt & beyond

SEEDING RATE (LBS/ACRE) Drill: 30 - 35 **Broadcast**: 35 - 40 **Aerial:** 30 - 40 **Forage:** 40 - 50

72% GUARDIAN® WINTER RYE
20% CRIMSON CLOVER
8% TILLAGE RADISH®



SOIL FIRST® 121 BRASSICA BOOST

Pairing with other species is great for forage or grazing and providing high biomass potential

- Perfect supplement for cereal grains like rye & oats
- Will scavenge for excess nutrients left in the soil

SEEDING RATE (LBS/ACRE) Drill: 6 - 8 **Broadcast**: 8 - 10 **Aerial:** 10 - 15 **Supplemental:** 2 - 4

50% PURPLE TOP TURNIPS
50% TILLAGE RADISH®

SOIL FIRST® 125 N-HANCER

Heavy legume mix intended for adding Nitrogen.

- Strong nitrogen fixing mix
- Ideal as fall forage mix

SEEDING RATE (LBS/ACRE) Drill: 35 - 40 **Broadcast:** 40 - 50 **Aerial:** NR **Forage:** 40 - 50

30% DEFENDER OATS
25% SPRING PEAS
20% BALANSA CLOVER
20% CRIMSON CLOVER
5% TILLAGE RADISH®

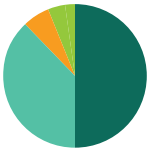
SOIL FIRST® 140 MULTI-PURPOSE

For livestock grazers providing soil protection & biomass from fall through spring.

- Early seeding/late fall silage opportunity
- Ideal forage for beef/non-lactating dairy

SEEDING RATE (LBS/ACRE) Drill: 35 - 40 **Broadcast:** 40 - 50 **Aerial:** NR **Forage:** 40 - 50

50% NITROUS® WINTER TRIT
38% WINTER PEAS
6% TILLAGE RADISH®
6% FORAGE BRASSICA



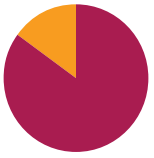
SOIL FIRST® 142 CLASSIC - NEW FORMULA

For early planting windows – double-crop, prevent plant, interseeding.

- Ideal for acres going to corn or other grass crops
- Plant early to maximize production

SEEDING RATE (LBS/ACRE) Drill: 12 - 15 **Broadcast:** 15 - 20 **Aerial:** 20 - 25 **Forage:** 15 - 20

85% CRIMSON CLOVER
15% TILLAGE RADISH®



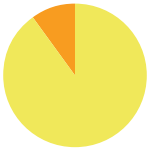
SOIL FIRST® 150 FIELD FIT

Straightforward & flexible mix with very minimal spring management.

- Winterkills in most northern climates
- Great for sequestering leftover nutrients

SEEDING RATE (LBS/ACRE) Drill: 30 - 35 **Broadcast**: 35 - 40 **Aerial:** 30 - 40 **Forage:** 40 - 50

90% DEFENDER OATS
10% TILLAGE RADISH®



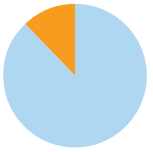
SOIL FIRST® 160 ROOTING

Blend of radish & ryegrass maximizes root mass and captures nutrients.

- Best for breaking up compaction & catching nutrients
- Perfect in manure systems

SEEDING RATE (LBS/ACRE) Drill: 15 - 20 **Broadcast**: 20 - 25 **Aerial:** 20 - 25 **Forage:** 20 - 25

88% ANNUAL RYEGRASS
12% TILLAGE RADISH®



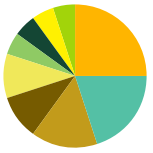
SOIL FIRST® 167 SUMMER BIOMASS

Base of 50% warm-season annual grasses is optimized for biomass & is uniquely suited for grazing.

- Tolerates poor soil, low pH, & drought environments
- Species diversity helps soil aggregate stability

SEEDING RATE (LBS/ACRE) Drill: 15 - 20 **Broadcast**: 20 - 25 **Aerial:** NR **Forage:** 25 - 30

25% SORGHUMxSUDANGRASS
20% IRON & CLAY COW PEAS
15% PEARL MILLET
10% GERMAN MILLET
10% DEFENDER OATS
5% SUNN HEMP
5% FORAGE COLLARDS
5% PEREDOVIK SUNFLOWER
5% HYBRID BRASSICA



SOIL FIRST® 175 ACCUSPREAD

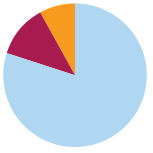
Coated clover and ryegrass creates spread patterns and broadcast germination.

- Great compaction alleviation & nutrient scavenging
- Facilitates more accurate broadcast seeding patterns

SEEDING RATE (LBS/ACRE) Drill: 20 - 25 **Broadcast**: 25 - 30 **Aerial:** 25 - 30 **Forage:** 25 - 30

80% ANNUAL RYEGRASS*
12% CRIMSON CLOVER*
8% TILLAGE RADISH®

*COATED



Conservation Seed Solutions

CUSTOM SEED MIXING

La Crosse Seed offers custom mixing capabilities to meet any cover crop or conservation needs. Contact us at ***info@laxseed.com*** or visit our website to learn more.

Cover crops are one of many conservation tools on the farm to better protect our soil and water. There are many choices when it comes to conservation and environmental farming practices, and we provide a diverse selection of conservation seed solutions.

SEED OPTIONS

La Crosse Seed offers a vast portfolio of seed designed for many conservation applications. A partial list available through La Crosse Seed includes seed for:

- **Conservation cover – including CRP and pollinator habitat seeds**
- **Contour buffer strips**
- **Filter strips**
- **Field borders**
- **Forage and biomass plantings**
- **Grassed waterways**
- **Stream bank protection**

CONSIDERATIONS WHEN CREATING CUSTOM SEED MIXES:

- Think about seed sizes – will the different size and shape of certain seeds prohibit specific application methods?
  - » *Aerial:* too large of seed might struggle to get adequate seed-to-soil contact
  - » *Drilling or Ground Seeding:* seed size usually affects seeding depth. Different seeding depths become a real challenge with numerous species all in the same bag
- Different cover crops often perform best when planted at different times
- Not all crops are beneficial to the next crop in the rotation
- Select species carefully, making sure all species are adapted to the field's soil, drainage and crop rotation

NATIVES FIRST™
Native Grasses & Wildflowers

MIXES
- Color Iowa Wild
- EcoGrass Short
- EcoGrass Tall
- Flood Plain
- Knee-High Wildflower
- Low-Grow Wildflower
- Midwest Wildflower
- Perennial Wildflower Pollinator
- Shady Wildflower

ONLINE RESOURCES
For product & management information, visit **lacrosseseed.com**

	ANNUAL COVER CROP FORAGE	PLANTING SEASON: SPRING	SUMMER	LATE SUMMER	FALL	CARBON/ NITROGEN RATIO (C:N)	SEEDING INFORMATION: SEEDING RATE (DRILL) LBS/ACRE	SEEDING RATE (MIX) LBS/ACRE	SEEDING RATE (FOR FORAGE) LBS/ACRE	SEEDING DEPTH (WITH DRILL)	SEEDS/LB	SEEDING TIME	BULK DENSITY * LBS/FT³	AERIAL SEEDING RATE*	GERMINATION SOIL TEMPERATRURE (DEGREES FAHRENHEIT)
BRASSICA/MUSTARD	Daikon Radish			✓		Tops - 9:1	3 - 8	1 - 3	5 - 8	¼"	30 - 40,000	Aug-Sep	44	3 - 8	45°
	Oilseed Radish			✓		Tops - 9:1	8 - 12	3 - 8	8 - 12	¼"	30 - 40,000	Aug-Sep	44	6 - 12	45°
	Turnips (Top)			✓		Tops - 9:1	2 - 6	2 - 4	3 - 8	¼"	220,000	Aug-Sep	45	2 - 6	45°
	Vivant Brassica		✓	✓		10:1 - 15:1	4 - 6	2 - 3	5 - 6	¼"	165,000	July-Sep	44	5 - 6	45°
	Forage Collards	✓	✓	✓		15:1 - 25:1	5 - 12	1 - 4	10 - 12	¼" - ½"	175,000	Mar-Apr; Aug-Oct	44	8 - 12	40°
	Rapeseed	✓		✓		20:1 - 22:1	4 - 6	2 - 4	6 - 8	¼" - ½"	145,000	Apr-May; Aug-Sep	45	5 - 8	41°
	Yellow/White Mustard	✓		✓		20:1 - 30:1	6 - 15	2 - 5	◦	¼" - ¾"	100,000	Apr-May; Aug-Sep	46	10 - 15	40°
LEGUMES	Crimson Clover	✓		✓		15:1 - 20:1	10 - 15	4 - 8	6 - 15	¼"	150,000	Feb-Mar; Aug-Sep	52	6 - 15	42°
	Berseem Clover	✓		✓		15:1 - 20:1	8 - 20	5 - 10	15 - 20	¼"	150,000	Mar-Apr; Aug-Sep	52	6 - 15	40°
	Balansa Clover	✓		✓		15:1 - 20:1	3 - 6	1 - 4	3 - 6	¼"	500,000	Feb-Mar; Aug-Sep	56	3 - 6	40°
	Winter Hairy Vetch			✓	✓	10:1 - 15:1	15 - 30	10 - 20	30 - 40	1"	16,000	Aug-Sep	52	NR	60°
	Sunn Hemp		✓	✓		18:1 - 29:1	15	5 - 8	5 - 15	½" - 1"	15,000	July-Sep	◦	NR	65°
	Austrian Winter Peas			✓	✓	15:1 - 20:1	30 - 80	10 - 30	40 - 60	1"	2,000	Aug-Sep	52	NR	41°
	Peas (Hay)	✓		✓		20:1 - 25:1	75 - 120	10 - 50	75 - 120	1"	3,000	Mar-Apr; Aug-Sep	50	NR	41°
	Peas (Silage)	✓		✓		Pea Straw - 29:1	75 - 120	10 - 50	75 - 120	1"	3,000	Mar-Apr; Aug-Sep	◦	NR	41°
	Peas and Oat Mix	✓	✓	✓	✓	◦	75 - 120	◦	75 - 120	¾" - 1"	Varies	Mar-Apr; Aug-Sep	◦	NR	41°
	Medium Red Clover	✓		✓	✓	12:1 - 16:1	8 - 12	6 - 8	8 - 12	¼"	270,000	Feb-May; Aug-Oct	48	4 - 10	41°
GRASSES	Annual Ryegrass	✓		✓	✓	Vegetative - 20:1	15 - 30	10 - 15	25 - 35	¼"	215,000	Mar-Apr; Aug-Oct	32	15 - 35	40°
	Spring Oats (Hay)	✓		✓		Vegetative - 20:1	30 - 50	20 - 40	80 - 120	¾" - 1"	15 - 18,000	Mar-Apr; Aug-Sep	38	20 - 60	38°
	Spring Oats (Silage)	✓		✓		Straw - 80:1	30 - 50	20 - 40	80 - 120	¾" - 1"	15 - 18,000	Mar-Apr; Aug-Sep	◦	20 - 60	38°
	Winter Rye (Hay)			✓	✓	Vegetative - 20:1	30 - 50	20 - 40	80 - 120	¾" - 1"	16 - 18,000	Aug-Oct	50	20 - 60	34°
	Winter Rye (Silage)			✓	✓	Straw - 70:1	30 - 50	20 - 40	80 - 120	¾" - 1"	16 - 18,000	Aug-Oct	◦	20 - 60	34°
	Triticale (Winter)			✓	✓	Vegetative - 20:1	30 - 50	20 - 40	80 - 120	¾" - 1"	14 - 16,000	Aug-Oct	48	20 - 60	38°
	Triticale (Spring)	✓		✓		Straw - 80:1	30 - 50	20 - 40	80 - 120	¾" - 1"	14 - 16,000	Mar-Apr; Aug-Sep	◦	NR	38°
	Barley (Winter)			✓	✓	Vegetative - 20:1	30 - 50	20 - 40	80 - 120	¾" - 1"	14 - 16,000	Aug-Oct	40	20 - 60	38°
	Barley (Spring)	✓		✓		Straw - 80:1	30 - 50	20 - 40	80 - 120	¾" - 1"	14 - 16,000	Mar-Apr; Aug-Sep	◦	NR	38°
	Wheat (Hay)			✓	✓	Vegetative - 20:1	30 - 50	20 - 40	80 - 120	¾" - 1"	11 - 12,000	Aug-Oct	48	20 - 60	38°
	Wheat (Silage)			✓	✓	Straw - 80:1	30 - 50	20 - 40	80 - 120	¾" - 1"	11 - 12,000	Aug-Oct	◦	20 - 60	38°
	Forage Sorghum		✓			Vegetative-20:1	6 - 20	◦	6 - 20	¾" - 1 ½"	17,000	May-July	45	NR	65°
	Sorghum x Sudan		✓			Leftover Stalks-80:1	25 - 70	5 - 20	25 - 70	¾" - 1 ½"	21,000	May-July	45	NR	65°
	Sudangrass		✓			◦	20 - 45	◦	20 - 45	½" - 1"	43,000	May-July	40	NR	65°
	Teff Grass		✓			Vegetative - 20:1	8 - 12	◦	8 - 12	¼"	1,300,000	May-July	◦	NR	65°
	Pearl Millet		✓	✓		12:1 - 20:1	20 - 30	5 - 20	20 - 30	½" - 1"	60,000	May-Aug	42	NR	65°
	German Millet		✓	✓		12:1 - 20:1	20 - 25	5 - 15	20 - 25	1"	220,000	May-Aug	◦	NR	65°
	White Proso Millet		✓	✓		12:1 - 20:1	20 - 30	5 - 20	20 - 30	1"	80,000	May-Aug	37	NR	65°
SOIL FIRST® MIXES	SF 101 Cover Starter			✓	✓	◦	30 - 35	◦	40 - 50	¼" - 1"	◦	Aug-Sep	48	30 - 40	45°
	SF 102 Cover Starter+			✓	✓	◦	30 - 35	◦	40 - 50	¼" - 1"	◦	Aug-Sep	54	30 - 40	45°
	SF 121 Brassica Boost		✓	✓	✓	◦	6 - 8	2 - 4	10 - 15	¼" - ½"	◦	July-Sep	44	10 - 15	45°
	SF 125 N-Hancer		✓	✓		◦	35 - 40	◦	40 - 50	¼" - 1"	◦	July-Sep	44	NR	45°
	SF 140 Multi-Purpose		✓	✓	✓	◦	35 - 40	◦	40 - 50	¼" - 1"	◦	July-Sep	50	NR	45°
	SF 142 Classic		✓	✓		◦	12 - 15	◦	15 - 20	¼" - ½"	◦	Aug-Sep	52	20 - 25	45°
	SF 150 Field Fit		✓	✓		◦	30 - 35	◦	40 - 50	¼" - 1"	◦	Aug-Sep	36	30 - 40	45°
	SF 160 Rooting			✓	✓	◦	15 - 20	◦	20 - 25	¼" - ½"	◦	Aug-Sep	50	20 - 25	45°
	SF 167 Summer Biomass		✓	✓		◦	15 - 20	◦	25 - 30	½" - ¾"	◦	July-Sep	42	NR	65°
	SF 175 AccuSpread			✓	✓	◦	20 - 25	◦	25 - 30	¼"- ½"	◦	Aug-Sep	35	25 - 30	45°
OTHER	Phacelia		✓	✓		12:1 - 18:1	8	1 - 2	8	¼"	230,000	Jun-Sep	◦	8 - 10	37°
	Sunflower		✓	✓		Leaves 20:1, Stalks 40:1	3 - 5	1 - 2	3 - 5	¾" - 1"	8,000	May-Aug	28	NR	50°
	Buckwheat	✓	✓			10:1 - 18:1	40 - 55	5 - 20	40 - 55	½" - 1"	15,000	May-Aug	40	NR	65°
	Sugar Beet		✓	✓		Tops - 19:1	2 - 5	1 - 3	2 - 5	¼"	10,000	May-July	24	NR	50°

Days to Harvest = Estimations based on average growing season to reach optimum quality

*** +/- 5%. Bulk Density averages are only a guide. Moisture, humidity and seed quality all affect bulk density.**

REFERENCES: Texas Tech University, Oklahoma State University, Iowa State University, Mississippi State University, North Dakota State University, Colorado State University, University of Florida, Michigan State University, University of Wisconsin, Kansas State University

		NON-FORAGE BENEFITS									NUTRITIONAL VALUE INFORMATION (VALUES VARY GREATLY DEPENDING ON MATURITY)										
			NON-FORAGE BENEFITS (5 = EXCELLENT, 1 = POOR)																		
USDA HARDINESS ZONE	DAYS TO EMERGENCE	NITROGEN FIXES OR SCAVENGES	COMPACTION ALLEVIATION	WEED SUPPRESSION	BIOMASS PRODUCTION	EROSION CONTROL	DISEASE/PEST CONTROL	POLLINATOR/ BENEFICIALS	P & K CYCLING	EASE OF ESTABLISHMENT	CRUDE PROTEIN	NEL † MCAL/LB	ADF% ‡	NDF% ◇	TDN	DM TONS PER ACRE	DAYS TO 1ST HARVEST	DAYS TO NEXT HARVEST	GRAZE	BALEAGE	CHOP
		† - Net Energy for Lactation = Energy available after subtracting digestive and metabolic losses | ‡ - Acid Detergent Fiber = Low values mean more digestible | ◇ - Neutral Detergent Fiber = Low values mean cows can eat more																			
9	3 - 5	Scavenger	5	5	4	4	3	2	4	5	18	0.73	26	21	70	2-4	45	◦	+++	◦	+
9	3 - 5	Scavenger	4	5	4	4	4	3	4	5	18	0.73	26	21	70	2-4	45	◦	+++	◦	+
6-7	4 - 10	Scavenger	3	5	4	3	3	3	3	5	16	0.70	23	20	69	2-5	60-80	◦	+++	◦	+
7	4 - 6	Scavenger	3	4	4	3	3	3	3	5	14	◦	23	22	78	2-5	35-40	25-30	+++	++	+
5	4 - 10	Scavenger	3	4	4	4	3	3	3	5	20	0.74	25	21	70	2-4	35-40	25-30	+++	◦	+
5	4 - 10	Scavenger	5	3	4	4	4	4	4	5	14	TBD	28	41	57	1.5-4	60-80	◦	+	++	+++
7	5 - 7	Scavenger	4	3	4	3	4	5	3	5	◦	◦	◦	◦	◦	◦	◦	◦	◦	◦	-
7	7 - 10	Fixer	2	4	3	3	3	3	3	4	17	0.56	31	42	59	.5-2	60	◦	++	+++	+
8	5 - 8	Fixer	2	4	3	4	1	3	4	4	18	0.73	23	36	69	1-2.5	60	◦	+	+++	++
5	14	Fixer	3	4	4	4	3	5	3	4	16	TBD	31	45	65	1-4	40-50	◦	++	+	+++
3-4	14	Fixer	3	4	4	3	3	5	4	3	26	0.58	33	48	64	1-3	Spring	◦	+++	◦	+
Frost	3 - 7	Fixer	2	4	5	3	3	4	3	3	25	---------- Varies Greatly ----------				1-5	40-45	◦	+++	+	++
6+	9	Fixer	2	4	3	3	3	4	2	4	28	0.60	38	54	70	0.5-2	Spring	◦	++	+	+++
Frost	9	Fixer	2	4	3	3	3	4	2	4	10	0.60	52	62	60	1.5-3	60-80	◦	++	+	+++
Frost	9	Fixer	2	4	3	3	3	4	2	4	16	0.58	44	55	58	1.5-3	60-80	◦	◦	+	+++
Frost	5 - 9	Both	2	4	4	4	3	3	3	4	17	0.57	30	57	59	3-5	60	◦	++	+	+++
4	7 - 10	Fixer	4	4	4	3	2	4	4	3	16	0.56	36	46	55	2-5	Spring	40	++	+++	+
6	7	Scavenger	5	5	3	5	3	2	3	5	9	0.58	38	65	58	.5-2	90	◦	++	+	+++
7	5 - 8	Scavenger	2	4	5	4	3	1	3	4	10	0.54	39	63	54	3-6	60-70	◦	++	+	+++
7	5 - 8	Scavenger	2	4	4	4	3	1	3	4	12	0.60	39	59	60	1.5-3.5	80	◦	◦	+	+++
3	5 - 8	Scavenger	4	5	4	5	3	1	4	4	10	0.58	38	65	58	3-5	Spring	◦	+	++	+++
3	5 - 8	Scavenger	4	5	4	5	3	1	4	4	14	0.59	37	59	59	2.5-4	Spring	◦	◦	+	+++
3	6 - 8	Scavenger	2	4	5	4	3	1	4	4	12	0.58	41	69	56	2.5-4	Spring	◦	+	++	+++
3	6 - 8	Scavenger	2	4	5	4	3	1	4	4	12	0.58	39	56	58	3-4	50-60	◦	++	+	+++
6	6 - 8	Scavenger	1	4	5	4	3	2	3	4	9	0.57	37	65	57	3-4	Spring	◦	++	+	+++
6	6 - 8	Scavenger	1	4	5	4	3	2	3	4	12	0.58	37	58	59	2-4	50	◦	++	+	+++
3	6 - 10	Scavenger	3	4	4	5	3	1	4	4	9	0.57	38	66	59	2-3	Spring	◦	++	+++	+
3	6 - 10	Scavenger	3	4	4	5	3	1	4	4	12	0.59	37	62	59	2-3	Spring	◦	◦	+	+++
Frost	10	Scavenger	4	5	5	4	4	3	3	4	9	0.59	38	59	59	6-9	80-105	◦	++	+	+++
Frost	10	Scavenger	4	5	5	4	4	3	3	4	16	0.70	29	55	55	5-8	45-70	30	+	++	+++
Frost	3 - 5	Scavenger	4	5	5	4	4	3	3	4	9	0.57	43	67	57	2-6	50	30	+	++	+++
Frost	3 - 5	Scavenger	1	3	3	4	3	2	3	4	18	0.60	33	57	64	3-5	35	25	◦	+	+++
Frost	3 - 5	Scavenger	3	5	5	4	4	3	3	5	16	0.66	39	48	52	3-6	45	35	++	+	+++
Frost	3 - 5	Scavenger	3	3	4	5	3	1	3	4	14	N/A	34	60	60	2-4	50	◦	+++	◦	◦
Frost	3 - 5	Scavenger	3	3	4	5	3	1	3	4	12	N/A	39	72	62	1.5-2.5	50	◦	+++	◦	◦
◦	Varies	Scavenger	5	5	5	4	3	2	4	4	10-13	Nutrition values vary due to differences in the forage quality of the mix components and differences in how and when each component is harvested (grazed versus baleage)				2-5	45-50	Spring	+++	+	++
◦	Varies	Both	5	5	4	5	3	2	4	4	12-15					2-5	45-50	Spring	+++	+	++
◦	Varies	Scavenger	5	4	4	3	3	3	4	5	16-18					1-3	45-50	◦	+++	◦	◦
◦	Varies	Fixer	4	4	4	5	2	3	4	4	14-18					2-5	45-50	◦	+++	+	++
◦	Varies	Both	4	5	5	3	3	2	3	5	11-14					3-5	45-50	25	+++	+	++
◦	Varies	Both	4	3	3	3	3	3	4	4	16-18					2-4	45-60	Spring	+++	+	++
◦	Varies	Scavenger	5	5	4	3	3	2	3	5	13-17					2-4	45-50	◦	+++	◦	+
◦	Varies	Scavenger	5	4	4	4	4	3	4	4	10-14					2-4	45-50	Spring	+++	+	++
◦	Varies	Both	4	5	5	4	3	5	4	3	12-18					3-6	45-50	30-40	+++	++	++
◦	Varies	Both	5	4	4	4	4	3	4	4	10-16					2-5	45-50	Spring	+++	+	++
8	10 - 14	Scavenger	2	5	3	3	4	5	2	4	◦	◦	◦	◦	◦	◦	◦	◦	◦	◦	+
Frost	4 - 10	Scavenger	4	3	3	4	3	5	4	3	11	TBD	36	42	63	2-3	Varies	◦	+++	◦	++
Frost	3 - 5	Scavenger	3	5	4	2	1	5	5	5	12	0.68	33	44	65	1.5-4	60	◦	++	◦	+
8	7 - 14	Scavenger	4	4	4	3	3	2	3	4	14	0.58	14	25	58	2-4	60-80	◦	+++	◦	+
											18	0.55	37	49	55	3-8	◦	30	◦	◦	+++
											19	0.59	35	45	59	3-8	◦	30	+	++	+++
											8	0.74	27	46	72	7-10	120	◦	◦	◦	+++

Some Benefit = +
More Benefit = ++
Best Benefit = +++

Not Recommended = ⊘
Not Applicable = ◦

Alfalfa (Silage)
Alfalfa (Hay)
Corn (Silage)

BRIER RIDGE® Food Plot Seed

Brier Ridge® products have been formulated to provide superior performance in establishing, attracting and keeping those trophy bucks, turkeys and upland birds on your property.

ONLINE RESOURCES

Go to lacrosseseed.com for planting windows and other useful information.

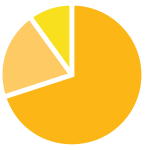
NAME	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS	DESCRIPTION	ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)
8847 GT1 FORAGE SOYBEANS					• Spring/fall planted annual species offering spring/summer/fall food source • Performs well on light to heavy soil types in light shade to full sun • Glyphosate tolerant, late maturity soybean stays green longer • Increased plant height	**ANNUAL**	**140,000** Seeds/Acre ***(1" Depth)***	**140,000** Seed Count
BUCKWHEAT				FORBS	• Quick growing broadleaf, grows well in dry/summer conditions • Produces leafy above ground biomass for forage and weed supression • Aids in settling soil in seed bed preparation for next crop	**ANNUAL**	**50** Lbs Per Acre ***(½" Depth)***	**50**
BULLS-EYE DEER TURNIPS					• Early fall planted annual turnip blend offering early/late fall food source • Performs well on light to heavy soil types in light shade to full sun • Turnips will remain green until 10°F • Optimally planted 6 - 8 weeks prior to killing frost, sugars will flush vegetative growth after frost, making it an appealing food source • Unique blend of turnips provide extensive above & below ground growth	**ANNUAL**	**2** Lbs Per ¼ Acre ***(¼" Depth)***	**2**
DEER CANDY SUGAR BEETS					• Late spring planted annual offering early/late fall food source • Performs well on medium to heavy, well drained soils in full sun • Provides high energy food source from vegetation & root	**ANNUAL**	**2 - 3** (Drilled) **8** (Brdcast) ***(½" Depth)***	**1**
FORAGE COLLARDS					• Spring/fall planted annual offering summer/late fall food source • Thrives in drought & remains green in below 0°F conditions • Superior forage quality with high biomass	**ANNUAL**	**5** (Drilled) **8** (Brdcast) ***(¼" Depth)***	**50**
FORAGE KALE					• Early fall planted annual offering early/late fall food source • Kale will remain green until 10°F • Short stem, high leaf-to-stem ratio	**ANNUAL**	**3** (Drilled) **5** (Brdcast) ***(¼" Depth)***	**50**
PLOT SPIKE® FORAGE OATS					• Spring/fall planted annual species offering spring/summer/fall food source • Performs well on light to heavy soil types in light shade to full sun • Late maturing forage oat selected for cold tolerance • Easy to establish, producing large amounts of forage	**ANNUAL**	**100 - 120** ***(1" Depth)***	**50**
TITAN™ FORAGE RAPESEED					• A new generation rape x kale interspecies cross with high yielding multi-graze, intermediate height rape • Excellent regrowth potential suitable for summer, autumn and winter feed • Highest animal preference rape cultivar available with aphid and virus tolerance	**ANNUAL**	**3.5** (Drilled) **4** (Brdcast) ***(¼" Depth)***	**50**
VIVANT FORAGE BRASSICA					• Quick establishment & vigorous regrowth, even under close feeding • Different than turnips, all the energy of the plant is contained in the leaves • Low bolt/high yielding leafy hybrid brassica - high digestability	**ANNUAL**	**4** (Drilled) **6** (Brdcast) ***(¼" Depth)***	**50**
WILDLIFE GRAIN SORGHUM (DWARF TYPE)					• Summer planted annual offering cover for upland game birds, migratory birds & deer • Drought tolerant - performs in light to heavy soil types & light shade to full sun • Quick to establish, requires 60 - 65°F soil temps for planting/germination • Food source for various bird species later in fall/winter	**ANNUAL**	**6 - 8** (Drilled) **8 - 10** (Brdcast) ***(1" Depth)***	**50**
WILDLIFE SUNFLOWER (PEREDOVIK TYPE)				FORBS	• Spring planted annual offering cover & food source for upland game birds • Drought tolerant - performs in light to heavy soil types & light shade to full sun • Food source for various bird species later in fall/winter	**ANNUAL**	**6 - 8** (Drilled) **8 - 10** (Brdcast) ***(1" Depth)***	**50**

ANNUAL HABITAT HIDE-A-WAY

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
ANNUAL	**10***	**10**				FORB

- Summer annual mix planted as bedding/buffer source
- Performs well on light to heavy soil types in light shade to full sun
- Quick to establish, requires 60 - 65°F soil temps for planting/germination, annual alternative to *Perennial Habitat Hide-A-Way*
- Can reach heights up to 8 ft tall

60% Summer Select® Forage Sorghum
30% Wildlife Grain Sorghum
10% Wildlife Sunflowers



***Seed at 1" Depth**

PERENNIAL HABITAT HIDE-A-WAY

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
PERENNIAL	**9***	**9** & **50**				

- Spring/fall planted native grass perennial mix offering year-round bedding/buffer source
- Performs well on light to heavy soil types in light shade to full sun
- Maintenance needed during slow establishment period; alternative to *Annual Habitat Hide-A-Way*
- Will reach heights up to 8 ft tall

34% Switchgrass
33% Indiangrass
33% Big Bluestem

See Natives First® Guide for establishment guidelines

***Seed at ¼" Depth**

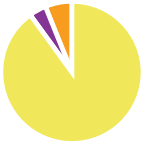
Food Plot Mixes

AUTUMN ENERGY

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
ANNUAL	40 - 50*	25	✓		✓	

- Early fall planted annual species offering early/late fall food source
- Performs well on light to heavy soil types in light shade to full sun
- Portion remains green until air temps reach 10 - 15°F
- Optimally planted 6 - 8 weeks prior to killing frost

90% Plotspike® Oats
6% Tillage Radish®
4% Purple Top Turnips



*Seed at ¼" Depth

BUCK'S BANQUET

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
ANNUAL/ PERENNIAL	10*	10 & 5	✓	✓		✓ FORB

- Early fall planted annual & perennial species offering early/late fall food source
- For medium to heavy soil types in light shade to full sun
- Clover/chicory remain perennial after brassicas winterkill
- Portion remains green until air temps reach 10 - 15°F
- Optimally planted 6 - 8 weeks prior to killing frost

20% Orion XL Ladino Clover
20% Rapeseed
15% Purple Top Turnips
15% Tillage Radish®
10% Intermediate White Clover
10% Radium XL Alsike Clover
10% Chicory

*Seed at ¼" Depth

DEER COUNTRY POINT BUILDER PLUS

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
ANNUAL/ PERENNIAL	15* (Drilled) 20 - 25 (Brdcast)	25	✓	✓	✓	✓ FORB

- Spring/fall planted perennial mix offering year-round food source
- Performs well on medium to heavy soil types in light shade to full sun
- Includes high sugar perennial grass & high energy legumes

25% Berseem Clover
20% Orion XL Ladino Clover
20% High Sugar Perennial Ryegrass
15% Rapeseed
10% Intermediate White Clover
10% Chicory

*Seed at ¼" Depth

DEER COUNTRY FIELD MIX

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
ANNUAL/ PERENNIAL	10* (Drilled) 15 - 20 (Brdcast)	25		✓	✓	

- Spring/fall planted perennial mix offering year-round food source
- Performs well on light to heavy soil types in light shade to full sun
- Includes high energy legumes that will thrive in various geographical locations

25% FF Pro Alfalfa
20% High Sugar Perennial Ryegrass
15% Orion XL Ladino Clover
10% Radium XL Alsike Clover
10% Red Carpet XL Red Clover
10% Intermediate White Clover
10% Berseem Clover

*Seed at ¼" Depth

DEER COUNTRY TRAIL MIX

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
ANNUAL/ PERENNIAL	10* (Drilled) 15 - 20 (Brdcast)	25		✓	✓	

- Spring/fall planted perennial mix offering year-round food source
- Performs well on light to heavy soil types in moderate shade to full sun
- Very quick & easy establishment
- Includes shade tolerant species

20% High Sugar Perennial Ryegrass
20% Berseem Clover
20% Intermediate White Clover
15% Crimson Clover
15% Creeping Red Fescue
10% Radium XL Alsike Clover

*Seed at ¼" Depth

HORN HONEY

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
PERENNIAL	10*	10 & 5		✓		✓ FORB

- Spring/fall planted perennial mix offering year-round food source
- Performs well on medium to heavy soil types in light shade to full sun
- Includes high energy legumes that will thrive in various geographical locations
- Chicory will thrive during summer months

25% Orion XL Ladino Clover
25% Red Carpet XL Red Clover
25% Intermediate White Clover
15% Radium XL Alsike Clover
10% Chicory

*Seed at ¼" Depth

RUT N READY

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
ANNUAL	8*	8 & 4	✓			

- Early fall planted annuals offer early/late fall food source
- For light to heavy soil types in light shade to full sun
- Brassicas remain green until air temps reach 10 - 15°F
- Optimally planted 6 - 8 weeks prior to killing frost, sugars flush vegetative growth after frost for appealing food source
- Brassicas attract deer early fall & after killing frost

30% Tillage Radish®
20% Rapeseed
20% Purple Top Turnips
10% Forage Kale
10% Vivant Brassica
10% Forage Collards

*Seed at ¼" Depth

SUCRASEED® SWEET SPOT

ANNUAL/ PERENNIAL	SEEDING RATE (LBS/ACRE)	BAG SIZE (LBS)	BRASSICAS	LEGUMES	GRASSES	WILD FLOWERS
ANNUAL/ PERENNIAL	10* Lbs Per ½ Acre	10	✓	✓	✓	✓ FORB

- Spring/fall planted perennial mix offering year-round food source
- Performs well on medium to heavy soil types in light shade to full sun
- Quick to establish & able to withstand heavy grazing
- Includes grasses with higher sugar content & higher energy legumes

55% Aber HSG Perennial Ryegrass
10% Medium Red Clover
10% Frosty Berseem Clover
10% Fixation Balansa Clover
7% Ladino White Clover
5% Chicory
3% Purple Top Turnips

*Seed at ¼" Depth

Earth Carpet Mixes

THE SCIENCE IS IN THE SEED®

		MIX PERCENTAGES											SEEDING LBS/1,000 SQ FT	
		ELITE	LXQ	ELITE	LXQ	LXQ	ELITE	LXQ	ELITE	ELITE	ELITE	ELITE		
		Kentucky Bluegrass		Perennial Ryegrass		Annual Ryegrass	Creeping Red Fescue		Chewings Fescue	Hard Fescue	Sheep Fescue	Tall Fescue	NEW	OVER
PROFESSIONAL LANDSCAPE MIXES														
choice sun & shade	Ideal for establishing premium lawns or upgrading existing turf	40		30			10		10	10			4-6	2-4
madison parks®	Ideal for establishing premium lawns or upgrading existing turf	50		25			10		10	5			4-6	2-4
spartan® GRADE A	Ideal for establishing premium lawns or upgrading existing turf	40		20			20		20				4-6	2-4
wear-n-tear®	Ideal for establishing premium lawns or upgrading existing turf	40		40			10		10				4-6	2-4
GENERAL LANDSCAPE MIXES														
park place®	Ideal for home lawns, parks & school grounds		50		25			10	10	5			4-6	2-4
sunny place®	Ideal for home lawns & commercial landscapes		33		34			33					4-6	2-4
quick-2-gro	Ideal for areas needing quick establishment		25		30	25		20					4-6	2-4
michigan green®	Ideal for the Great Lakes Region & easy on your budget		15		15	35		35					4-6	2-4
KENTUCKY BLUEGRASS & PERENNIAL RYEGRASS BASED MIXES														
blue carpet®	Ideal for golf course tees, fairways & fine home lawns	100											2-4	1-3
pro-sports®	Ideal for sports fields & other high performance areas	80		20									3-5	2-3
sports park OS	Ideal for renovating athletic fields & playgrounds	50		50									3-5	2-3
champion	Ideal for renovating athletic fields & high traffic areas			100									6-8	3-5
SLOPE & SHADE MIXES														
care-free A-LIST	Ideal for hillsides, deep roughs, RV parks & cabin sites						20		20	50	10		6-8	3-4
shady place®	Ideal for home lawns with moderate to densely shaded areas	10		10			30		30	20			5-8	3-4
TALL FESCUE BASED MIXES														
green resistor®	Ideal for home lawns, athletic fields & golf course roughs											100	8-10	4-8
tuff-stuff® A-LIST	Ideal for high traffic, athletic fields & golf course roughs		10									90	8-10	4-8
survivor A-LIST	Ideal for low maintenance sites	15		15			15		15			40	8-10	4-8

A-LIST Approved — Elite Varieties — LXQ LA CROSSE QUALITY Branded Components

Component ingredients will be coated in certain mixes. Look for the Crossecoat™ symbol next to the mix.

Sweet Corn

Some varieties are sweeter than others, depending on whether one or both of their parents were sugary enhanced. Varieties that get the 'se' gene from both their parents are homozygous for that trait, or 'double se,' and all of their kernels have the se characteristics. Typically a homozygous se will have better eating quality than a heterozygous se.

Sweet corn comes in three colors: yellow, white and bicolor (yellow and white). Cross pollination of yellow kernel varieties with white kernel varieties will result in production of bicolor corn. If a bicolor is cross pollinated with a yellow variety, kernel color will be mostly yellow. Although there are regional preferences for certain kernel colors, there is no relationship between color and sweetness.

CONVENTIONAL VARIETIES

	MATURITY DAYS	COLOR
Trinity	70	bicolor
Sugar Buns	72	yellow
Ambrosia	75	bicolor
Bodacious	75	yellow
Delectable	84	bicolor
Incredible	85	yellow

CrosseCoat™
PREMIUM SEED COATING

Premium Seed Coating + Quality Seed = Best Possible Seedling Establishment

CrosseCoat™ is an elite platform of proven seed coating and treatments to enhance germination, establishment and survival of the top varietals, blends and mixes offered within the Forage First® portfolio.

CrosseCoat™ Benefits Include:

- Improves seeding distribution
- Improves seed-to-soil contact
- Improves water intake
- Protects against fungal attacks
- Enhances nutrient uptake
- Enhances nodulation to provide superior nitrogen fixation

Inoculants

novozymes VERDESIAN Visjon BIOLOGICS

Our goal is to offer our customers the best the inoculant industry has to offer. La Crosse Seed has selected Novozymes, Verdesian and Visjon Biologics as our preferred inoculant partners. These companies provide cutting edge inoculant technologies with elite performance, ease of application and excellent technical support.

SOYBEANS

TAGTEAM® LCO XC	MultiAction® phosphate-solubilizing, nitrogen fixing liquid inoculant with LCO Promoter Technology® for retail application
OPTIMIZE® FXC	Nitrogen fixing liquid inoculant with LCO Promoter Technology® for retail application
CELL-TECH® LIQUID	Liquid seed applied single-action nitrogen fixing inoculant for grower application
PRESIDE CL	Features Take-Off technology, an advanced crop nutrient assimilator that accelerates nutrient acquisition and use efficiency of nitrogen. Preside CL is a fast-mixing, easy to handle, highly concentrated liquid inoculant for soybeans.
N-TAKE	Liquid seed applied single-action nitrogen fixing inoculant for grower application
EXCEED® SAR	Nitrogen fixing liquid inoculant. Systemic Acquired Resistance (SAR) is a mechanism of plant defense that provides broad spectrum protection against multiple pathogens including both disease and nematodes. For retail application.
EXCEED® TRADITIONAL	Liquid seed applied single-action nitrogen fixing inoculant for grower application
EXCEED® PEAT	Peat based, seed applied nitrogen fixing inoculant for soybeans

OTHER FORAGE AND COVER CROP LEGUMES

LINK™	LINK™ Cover Crop Inoculant can be used effectively on over 50 legumes making it also a convenient option for forage planting
EXCEED® PEAT	Peat based seed applied nitrogen fixing inoculants for alfalfa, all clovers, birdsfoot trefoil, pea, vetches, lentils, cowpeas and sunn hemp

CrosseCoat™ Coating Details*

CrosseCoat (XC1 Options)	Coating Code	Coating %	Inoculant	Fungicide	Additional Treatments
FF 4215.HVX RR	XC1-CPF	34%	Nitragin Gold	Stamina + Apron XL	
FF 42.A2 Alfalfa	XC1-CPF	34%	Nitragin Gold	Stamina + Apron XL	
FF 4319.A2 RR Alfalfa	XC1-CPF	34%	Nitragin Gold	Stamina + Apron XL	
FF 4022.LH Alfalfa	XC1-CPF	34%	Nitragin Gold	Stamina + Apron XL	
FF 5020.FR Alfalfa	XC1-CPF	34%	Nitragin Gold	Stamina + Apron XL	
FF Premium Alfalfa	XC1-CPF	34%	Nitragin Gold	Allegiance-FL or Apron XL	
FF Pro Alfalfa	XC1-CPF	34%	Nitragin Gold	Allegiance-FL or Apron XL	
FF 9615 Red Clover	XC1-CPF	34%	Nitragin Gold	Allegiance-FL	
Red Carpet XL Red Clover	XC1-CP	34%	Nitragin Gold		
Duration Red Clover	XC1-CP	34%	Nitragin Gold		
Orion XL Ladino Clover	XC1-CP	34%	Nitragin Gold		
Radium XL Alsike Clover	XC1-CP	34%	N-Dure		
Lotus XL Birdsfoot Trefoil	XC1-CP	34%	N-Dure		
Big Ton XL Smooth Brome	XC1-CTD	34%			Hydroloc
Haymate XL Orchardgrass	XC1-CTD	34%			Hydroloc
Reprieve XL Teff Grass	XC1-CTD	50%			

Additional Coated Products We Offer

Medium Red Clover	CP	34%	Yes		
Crusade White Clover	CP	34%	Yes		
Frosty Berseem Clover	CP	34%	Yes		
Common Orchardgrass	CTD	34%			
Common Smooth Brome	CTD	34%			
WL Alfalfas - HVX/RR	CPF	34%	Yes	Stamina + Apron XL	Gold Treatment Plus
WL Alfalfas - Other	CPF	34%	Yes	Stamina + Apron XL	Gold Treatment Plus
FSG Alfalfas - HVX/RR	CPF	34%	Yes	Allegiance-FL	AquaBond with Nutri-Start
FSG Alfalfas - Other	CPF	34%	Yes	Allegiance-FL	

***Coatings are comprised of calcium carbonate, commonly described as lime**

Descriptions

Hydroloc	Branded name for XC1 hydration component. Natural, mineral-based material. Absorbs 3x more water than regular limestone coating.
Nitragin Gold®	Nitrogen-fixing inoculant for alfalfa and clover promotes seed adhesion & maximum yield; Apron XL/Allegiance FL compatible
Stamina®	Fungicide seed treatment providing robust disease control & more rapid/increased emergence under certain cold conditions
Apron XL®	Seed treatment product for protection against Pythium and Phytophthora causing damping-off, seed rot, and systemic downy mildew diseases of certain crops
Allegiance-FL®	Seed treatment chemical for control of seed rot and damping-off diseases of certain crops
AquaBond® with Nutri-Start® (FSG)	Plant/environment-friendly seed treatment combining water absorbing polymer & micro-nutrient fertilizer package for improved germination & emergence
Gold Treatment Plus™	W-L's Gold Treatment Plus™ features 34% coating with Optimize® Gold LCO Promoter, Stamina® fungicide, Nitragin Gold® inoculant, Apron XL® fungicide and a micro-nutrient package (Mo/Mn)

Coating Abbreviations (as noted on La Crosse Seed pricelist and seed tags)*

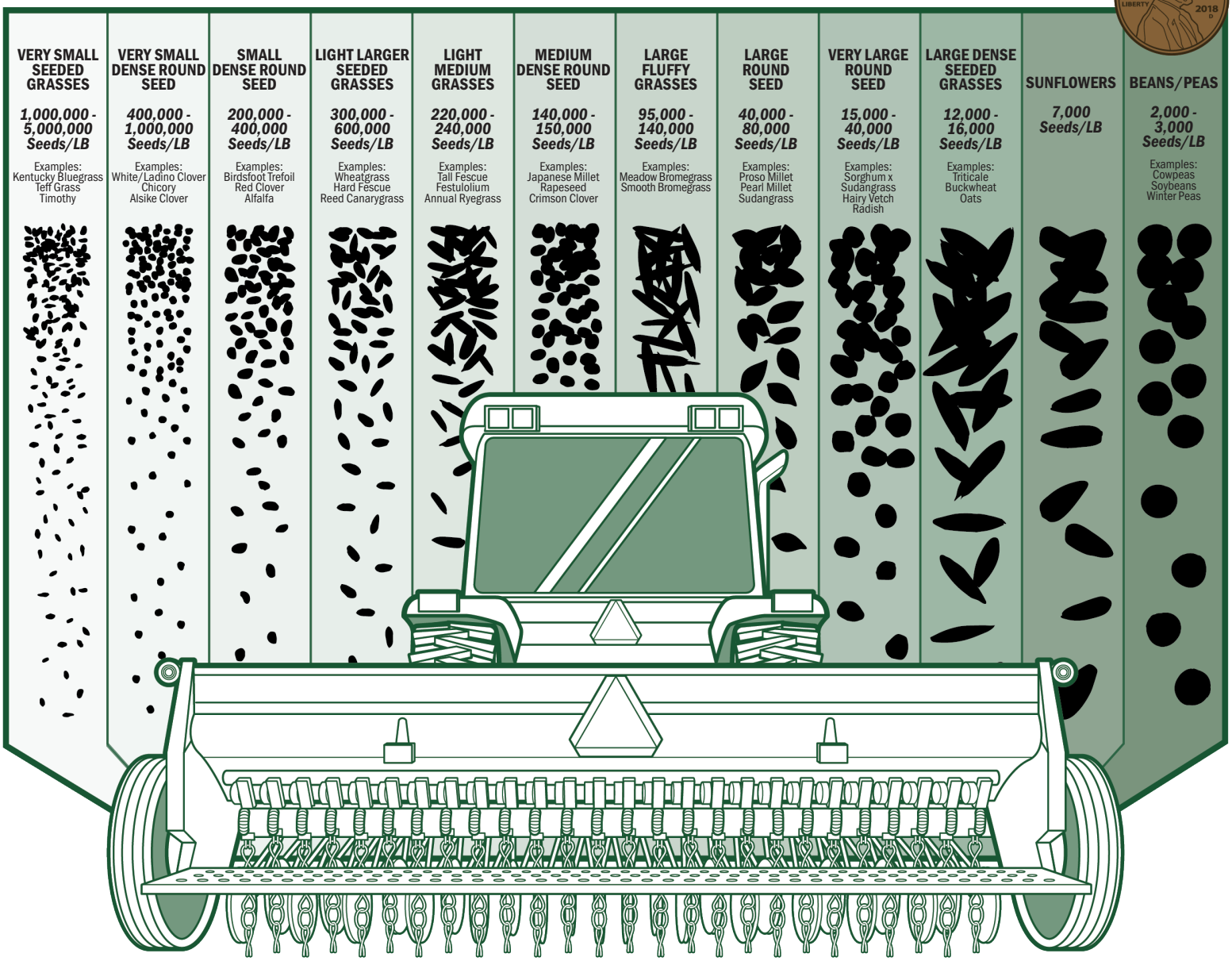
CTD	Coated Only
CPF	Coated, Pre-Inoculated, and Fungicide
CP	Coated, Pre-Inoculated
PI	Pre-Inoculated, no Coating or Fungicide

34% COATED SEED – RECOMMENDED SEED RATES

Coated seed items or mixes with coated seed have same recommended seeding rates as they would if non-coated

*Lot number abbreviations may differ from above. Refer to tag for specific seed treatments.

Drill Calibration Suggestions



Seed or sowing charts provided by drill manufacturers are a great place to start to ensure the correct LBS get seeded. However, some drills may not be as accurate due to age and/or wear and tear. In most cases, only a few species are listed on the chart, leading to questions about calibrating the drill for seeds not listed or when mixes are used. **The above graphic is only a suggestion, helping identify seeds with like size and density.** Besides wheel slippage, other variables can affect seed flow and seeding rates – like seed treatments and coatings.

Note: native seeds, forbs, and wildflowers work best when placed in the "native grass" box where applicable. PLS rates will need to be calculated using the germination and purity % on the seed tag.

Seed delivery systems in drills are not as precise as planters that meter seed through singulation. For this reason, it makes sense to regularly calibrate drills and seeders. One method is to seed a known area and weigh the amount of seed used. This takes vacuuming the drill afterwards to calculate LBS of seed sown. Another way is by simulating actual seeding, but with the drill stationary and raised to collect LBS of seeds falling through the seed delivery tubes (with buckets, small bags, or tarps). This method calls for totaling the amount of drive wheel rotations needed to cover the fixed area (and then replicating those rotations to produce the amount of seed) that would be sown if it was actually sowing seed. The second exercise also detects if any drop tubes are plugged or not working properly.

When planting two or more species per planter box, calibrate each species individually OR add the index settings for the quantity of each seed being sown. Keep in mind, mixtures usually pack denser so start with the index setting for the largest seed in the mix and adjust accordingly.

34% coated legume seeds will weigh approximately 1/3 more than uncoated seed. Several Midwestern universities and equipment manufacturers have published research showing that coated seed flows faster through seeding equipment versus uncoated, with several findings showing significant variability (> 40% higher seeding rates). Coated grass seed (used primarily on "fluffy" grasses) typically increases the bulk density, resulting in seed moving through equipment faster (but not as variable as with legumes). Increased density = quicker seed movement.

Monitor seeding depth, especially when plantings first begin. Seeding depth should be approximately 3-5 times the diameter of the seeds being sown.

OTHER RESOURCES THAT MAY HELP:

- *From Purdue: https://www.extension.purdue.edu/extmedia/ABE/ABE-126-W.pdf*
- *From Virginia Tech: http://pubs.ext.vt.edu/418/418-121/418-121.html*
- *From Penn State: https://extension.psu.edu/calibration-of-grain-seed-drills*
- *From Arkansas: https://www.uaex.edu/publications/pdf/FSA-3111.pdf*
- *From NRCS: https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/wapmctn6331.pdf*

Planting Information Chart

KIND OF SEED	APPROX. SEEDS/LB	LBS/ BU	PLANTING RATE LBS/ ACRE	PLANTING RATE LBS/ACRE IN MIXES	SEEDING DEPTH	SUGGESTED PLANTING DATES	EMERGENCE TIME (DAYS)	PRIMARY USE	LIFE
Alfalfa	227,000	60	15 - 20	8 - 10	¼" - ½"	Mar - May, Aug - Sep	7	Hay, Silage, Pasture	Perennial
Barley	14,000	48	30 - 100	20 - 40	¾" - 1"	Mar - Apr, Aug - Oct	6 - 8	Pasture, Silage	Annual
Bermudagrass (Hulled)	2,071,000	40	5 - 10	N/A	⅛"	Apr - Jun, Aug - Sep	21	Hay, Pasture	Perennial
Birdsfoot Trefoil	370,000	60	8 -10	4 - 5	¼"	Feb - May, Aug - Sep	7	Pasture	Perennial
Bluegrass, Kentucky	2,177,000	14	10 - 15	4 - 10	¼"	Feb - May, Aug - Sep	28	Pasture	Perennial
Brassicas, Hybrid	165,000	N/A	4 - 6	2 - 3	¼"	Jul - Sep	4 - 6	Cover Crop	Annual
Brome, Meadow	93,000	N/A	12 - 20	5 - 10	¼" - ½"	Mar - May, Aug - Sep	14	Hay, Pasture	Perennial
Brome, Smooth	138,000	14	15 - 20	5 - 10	¼" - ½"	Mar - May, Aug - Sep	14	Hay, Pasture	Perennial
Buckwheat	15,000	52	40 - 55	5 - 20	½" - 1"	Jun - Jul	7	Cover Crop	Annual
Cereal Rye	18,000	56	30 - 80	20 - 40	¾" - 1"	Mar - Apr, Aug - Oct	5 - 8	Cover Crop, Silage, Pasture	Annual
Chicory	426,000	N/A	4 - 5	2 - 3	⅛" - ¼"	Apr - May, Aug - Sep	7 - 21	Pasture, Wildlife	Perennial
Clover, Alsike	728,000	60	7 - 8	1 - 3	¼" - ½"	Feb - May, Aug - Oct	7	Hay, Pasture	Perennial
Clover, Arrowleaf	400,000	60	5 - 10	N/A	⅛" - ½"	Aug - Oct	7	Hay, Pasture	Annual
Clover, Balansa	500,000		3 - 6	1 - 4	¼"	Feb - Mar, Aug - Sep	14	Cover Crop, Hay	Annual
Clover, Berseem	207,000	60	8 - 20	5 - 10	¼"	May - Jun, Aug - Oct	5 - 8	Cover Crop, Hay	Annual
Clover, Crimson	150,000	60	10 - 15	4 - 8	¼"	Aug - Oct	7 - 10	Cover Crop, Hay	Annual
Clover, Kura	227,000	60	10	4 - 6	¼" - ½"	Apr - May, Aug	7	Hay, Pasture	Perennial
Clover, Ladino White	768,000	60	4 - 6	2 - 4	⅛" - ¼"	Feb - May, Aug - Oct	7 - 10	Hay, Pasture	Perennial
Clover, Mammoth Red	272,000	60	8 - 12	6 - 8	¼" - ½"	Feb - May, Aug - Oct	7	Hay, Silage, Pasture	Biennial
Clover, Medium Red	272,000	60	8 - 12	6 - 8	¼" - ½"	Feb - May, Aug - Oct	7	Hay, Silage, Pasture	Biennial
Clover, New Zealand White	768,000	60	4 - 6	2 - 4	⅛" - ¼"	Feb - May, Aug - Oct	7 - 10	Pasture	Perennial
Clover, White Dutch	768,000	60	6 - 8	2 - 4	⅛" - ¼"	Feb - May, Aug - Oct	7 - 10	Pasture	Perennial
Crownvetch	138,000	60	20 - 40	5 - 10	½"	Mar - May, Aug - Sep	14	Erosion Control	Perennial
Fescue, Hard	592,000	N/A	5 - 10	N/A	¼" - ½"	Feb - May, Aug - Sep	14	Erosion Control	Perennial
Fescue, Tall	227,000	25	25 - 30	6 - 12	¼" - ½"	Mar - May, Aug - Sep	14	Hay, Pasture, Erosion Control	Perennial
Festulolium	227,000	N/A	30 - 40	15 - 20	¼"	Mar - May, Aug - Sep	14	Hay, Pasture	Biennial
Hairy Vetch	16,000	60	15 - 30	10 - 20	1"	Aug - Oct	14	Cover Crop	Annual
Kale	200,000	N/A	3.5 - 4	2 - 3	½"	May - Jul	7	Cover Crop	Annual
Lespedeza, Korean (Hulled)	238,000	25	25 - 35	N/A	¼" - ½"	Mar - Apr	14	Hay, Pasture, Erosion Control	Annual
Lespedeza, Striate (Kobe)	200,000	25	25 - 35	N/A	¼" - ½"	Mar - Apr	14	Hay, Pasture, Erosion Control	Annual
Millet, Browntop	142,000	50	10 - 30	N/A	½" - 1"	May - Jul	10	Hay, Pasture	Annual
Millet, Foxtail (German)	220,000	50	20 -25	N/A	1"	May - Jul	10	Hay	Annual
Millet, Japanese	143,000	35	15 - 30	8 - 12	1"	Apr - Jul	10	Hay, Wildlife, Erosion Control	Annual
Millet, Pearl	60,000	52	10 - 30	5 - 20	½" - 1"	May - Jul	3 - 5	Pasture, Silage	Annual
Millet, Proso	80,000	56	20 - 30	5 - 20	1"	May - Jul	3 - 5	Grain, Wildlife	Annual
Oats, Spring, Fall	16,000	32	30 - 50	20 - 40	¾" - 1"	Mar - Apr, Aug - Sep	5 - 8	Cover Crop, Silage, Hay	Annual
Orchardgrass	416,000	14	20 - 30	3 - 10	¼" - ½"	Mar - May, Aug - Sep	18	Hay, Pasture	Perennial
Peas, Austrian Winter	2,000	60	30 - 80	10 - 30	1" - 1 ½"	Aug - Sep	9	Cover Crop	Annual
Peas, Cow	3,000	60	75 - 120	N/A	¼" - ½"	May - Jul	8	Cover Crop, Silage	Annual
Phacelia	230,000	N/A	8	1 - 2	¼"	Jun - Sep	10 - 14	Cover Crop	Annual
Radish	35,000	N/A	3 - 8	1 - 3	¼" - ⅓"	Aug - Sep	14	Cover Crop	Annual
Rapeseed	145,000	50	4 - 6	2 - 4	¼" - ½"	Apr - May, Aug - Sep	4 - 10	Cover Crop	Annual
Red Top	4,990,000	14	4 - 5	1 - 2	¼"	Mar - May, Aug - Sep	10	Pasture, Erosion Control	Perennial
Reed Canarygrass	480,000	47	5 - 10	3 - 5	¼" - ½"	Mar - May, Aug - Sep	21	Hay, Pasture	Perennial
Ryegrass, Annual	227,000	24	15 - 30	10 - 15	¼"	Mar - Apr, Aug - Oct	7	Cover Crop, Silage, Pasture	Annual
Ryegrass, Perennial	227,000	24	30 - 40	6 - 10	¼" - ½"	Feb - May, Aug - Sep	14	Hay, Pasture	Perennial
Sainfoin	30,000	55	20	15	½" - ¾"	Mar - Apr	10	Hay, Pasture, Wildlife	Perennial
Sorghum, Forage	17,000	56	6 - 15	N/A	¾" - 1 ½"	May - Jul	10	Silage	Annual
Sorghum, Forage BMR	17,000	56	4 - 6	N/A	1"	May - Jul	10	Silage	Annual
Sorghum, Grain	15,000	50	3 - 10	N/A	1"	May - Jul	10	Grain, Wildlife	Annual
Sorghum x Sudangrass	21,000	56	25 - 50	5 - 20	¾" - 1 ½"	May - Jul	10	Silage	Annual
Sorghum x Sudangrass BMR	21,000	56	15 - 35	N/A	1"	May - Jul	10	Silage	Annual
Sudangrass	43,000	40	20 - 45	N/A	½" - 1"	May - Jul	10	Hay, Pasture	Annual
Sunn Hemp	15,000	N/A	15	5 - 8	½" - 1"	Jul - Sep	3 - 7	Cover Crop	Annual
Sunflower	7,000	32	8 - 5	1 - 2	¾" - 1"	May - Aug	4 - 10	Wildlife	Annual
Sweetclover	259,000	60	12 - 15	6 - 8	¼" - ½"	Feb - May, Aug - Oct	7	Pasture, Wildlife	Biennial
Switchgrass	389,000	55	5 - 8 PLS	N/A	½"	Apr - May	21	Hay, Pasture, CRP	Perennial
Timothy	1,152,000	45	12 - 15	2 - 6	¼" - ½"	Mar - May, Aug - Sep	10	Hay, Pasture	Perennial
Teffgrass	1,300,000	N/A	8 - 12	N/A	¼"	May - Jul	3 - 5	Hay, Pasture	Annual
Triticale	15,000	48	30 - 100	20 - 40	¾" - 1"	Mar - Apr, Aug - Oct	6 - 8	Hay, Pasture	Annual
Turnips	220,000	55	2 - 6	1 - 4	¼"	Aug - Sep	4 - 10	Cover Crop	Annual
Weeping Lovegrass	1,482,320	60	3 - 5	1 - 2	½"	May - Jun	7	Hay, Pasture	Perennial
Wheat	11,000	60	90 - 120	60 - 90	¾" - 1 ½"	Mar - Apr, Aug - Oct	7	Pasture, Silage	Annual

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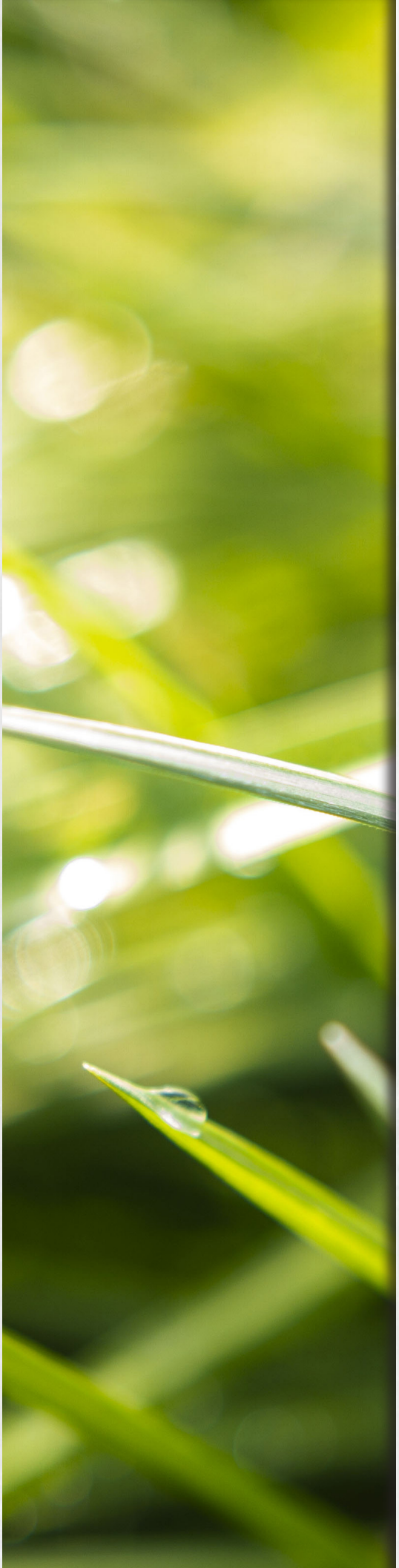

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