

2023 COVER CROPS & FALL FORAGE GUIDE

Fertile Fields. Higher Yields. Plan On It.





A Key to Productivity and Profit

As farmers, our ultimate goal is to grow safe, wholesome food. But the challenge is to do it properly and profitably, for now and into the future of farming. It starts with a commitment to soil management and respect for the earth that God has given us.

Wise use of cover crops is a healthy step to sustainable productivity—from seed and soil to the nourishing forage for livestock to the milk and meat on the kitchen table. Cover crops can improve and replenish soil fertility and help clean up and preserve our water supply. And consumers can appreciate the use of cover crops as the natural, organic way to take proper care of our soil, thus contributing to the quality of the food from our farms. We simply cannot rebuild regenerative agricultural systems without cover crops.

Byron Seeds has been working with a German company, DSV, that has over 90 years of experience in cover crops. They have taught us the importance of blending cover crops intelligently and the value of using specific cover crops before specific cash crops. Examples:

- TerraLife[™] MaizePro DT, a cover crop mix designed for corn production, can increase corn yields by 30-80 bushels per acre. This has been documented several times compared to no cover crop or just rye alone as a cover crop.
- Sorghum-sudan cover crop blends are an important part of vegetable/produce farming.
- A lot of cover crop mixes usually have one or two species that dominate the whole field. However, with intelligent pairing of species and percentages, we have developed mixes that produce healthy plants of every species in the mix. Mixes of this caliber will build soil and benefit the following crop.
- Cover crops can be a benefit or a detriment to the following crop. It's important to pair them correctly.

The more you have something growing in your soil in an intelligent rotation, the more you improve its quality and productivity. The bad news is that modern farming is incredibly hard on soil. The

typical corn/soybean rotation year after year is kicking the life and productivity out of our soil—ever notice how it takes more inputs to maintain yield?

The good news is that cover crops can help reverse the damage of modern farming, improving soil quality and performance. Like a finely tuned tractor, rejuvenated soils can make you money. That's why cover crops are so important, something green and growing year-round.

But, you may be thinking, "I don't know where to start. There are so many cover crop options and so many people saying different things."

This is true. But what if you had a local cover crop specialist to guide you? Byron Seeds has cover crop specialists across the Midwest that can do an on-farm prescription of a cover crop plan that best suits your operation and goals. If need be, we can custom blend a mix that will optimize your soil health program.

Get started with cover crops today:

- 1. Set up a farm visit by contacting your local Byron Seeds specialist listed on pages 34-35 of this guide or calling us at 800-801-3596.
- 2. Together, we'll develop a cover crop plan that fits your farm and your goals.
- 3. Start building soil health and benefiting your cash crops this year.

Today, we see improvements in farming that must be accomplished in our country. Working together, farm by farm, we can overcome many challenges and improve our farms in America. At Byron Seeds, we are eager to help with this effort.

Samuel S. Fisher

Samuel Fisher Founder and CEO

Summer cover crop plots at Byron Seeds, Rockville, Indiana

the of

How to Use This Resource Guide

Growing Zones

Across from the name of each variety listed in this resource guide is a zone recommendation. The variety does best in the recommended zone(s). The map at right shows the location of each zone.

There may be a management recommendation as well. The listed variety will do well in the management zone(s) if good farming management practices are implemented.

Zones: These zones are the recommended location(s) for the variety listed.

Management: An acceptable variety in this zone with good farm management, soils and fertility.

Maturity Zones pictured: Minnesota, Wisconsin, Michigan, Iowa, Kansas, Missouri, Illinois, Indiana, Ohio, Kentucky, North Dakota, South Dakota and Tennessee.



Replant Policy

Byron Seeds will replace the seed of our Premium Products that failed to germinate and emerge, as determined by a Byron representative. Premium Products



that qualify for the Replant Policy are as follows: KingFisher products, Premium perennial grasses and Alta products. Byron Seeds also offers a 50% replant on any competitor's premium products.

EXCEPTIONS

Corn planted prior to or after the state's insurable dates is not covered under this Replant Policy. Seed that is frost-seeded or interseeded into existing stands is excluded as are non-KingFisher annuals, cover crops and turf grass.

GOOD FARMING PRACTICES

Byron Seeds will not replace seed if planting was not done under good farming practices. Good farming practices include, but are not limited to, proper seedbed preparation, good weed control at planting, proper seed depth and recommended seed-to-soil contact. To qualify for a replant, a site inspection and approval by a Byron representative may be required.

TERMS

Replant requests must be received within 6 months of the planting date. Freight charges apply. Other terms and conditions may apply.

Organic Seed

Byron Seeds is a supporter of the organic farming movement. We believe there is a need for good, healthy forage for our livestock and good, healthy food for our families. It seems others agree with us because there is an ever-increasing demand for a source of unmodified food and forage.

Contents

Increase Soil Function Specifically for Corn	
TerraLife [®] Cover Crop Mixes	5
Cover Crop Mixes Speedy Cover	7
Cover Crop Species Table	
Nitrogreen Mix	
Soil Builder	
Cover Crop Legumes	
Hairy Vetch	10
Crimson Clover	11
Clovers	12
Field Peas	13
Cowpeas	
The Benefits of Cover Crops	
Cover Crops for a Specific Purpose	16
Brassicas	
Radishes & Rape	
Forage Brassicas	18
Cover Crops Mustard	10
Mustaro Phacelia	
Phacella Buckwheat	
BMR Gene 6 Sorghum-Sudan	
Farmers Don't Want Annual Ryegrass to Head Ou	∠⊺ t 22
Cool-Season Grasses	••••
Annual Ryegrass	23
Italian Ryegrass	
Byron Seeds Timothy Program	
Small Grains	
Cereal Rye	
Oats	
Triticale	28
Small Grain Mixes	
Spelt	
Wheat and Barley for Grain and Forage	
Cover Crop Packaging Options	
Forage Cover Crop Information Chart	
Byron Seeds Dealers	34-35

INCREASE SOIL FUNCTION SPECIFICALLY FOR CORN

Plant TerraLife[®] MaizePro DT, a cover crop mix designed to enhance mycorrhizal function and root exudates, to prepare an improved soil structure that's ready to receive your corn seed.

TerraLife® MaizePro DT brings many benefits to your farm:

- The intelligent ratio of cover crop species promotes mycorrhiza formation and exploits nitrogen.
- Soils become more water stable, have an improved bearing capacity and are easier to work.
- Intensive root penetration creates new root channels that help the corn, particularly in a drought.
- Partly winter-hardy components guarantee highly efficient erosion protection right into spring.

MaizePro DT is the ideal mix for corn crop rotations. It selectively supports the formation of mycorrhiza in a corn rotation, and as a result improves the soil structure. The soils become more water stable, have an improved bearing capacity and are easier to work. The intensive root penetration properties of the components create new root channels, which help the corn particularly during periods of drought. The hardy components guarantee highly efficient erosion protection right into spring. After a successful cover crop, the soil requires working only to a depth of the soil horizon receiving the corn seed. In this way, the capillarity is maintained, ensuring water availability for germination.

Byron Seeds is offering TerraLife[®] MaizePro DT to help you succeed with your corn crop next year. Contact your local dealer on pages 34-35 of this cover crop guide to order MaizePro today!





The only difference between the above two seedlings is the cover crop that was used ahead of planting the corn. For two years in a row in our Wisconsin plots, we've observed that MaizePro DT boosts vigor in corn seedlings seven days after planting.



Corn root system after Maize Pro compared to corn root system after other cover crop.

TERRALIFE[®] COVER CROP MIXES



TerraLife® Rigol DT

ZONES: 1, 2, 3, 4, 5, 6

- Rigol DT works very well planted after wheat and prior to soybeans.
- This mix is extremely effective in penetrating compacted soils thanks to its intensive rooting activity.
- The low carbon-to-nitrogen ratio allows rapid nitrogen availability for the following crop.
- Included Species: Abyssinian Cabbage, Black Oat, Buckwheat, Egyptian Clover, Linseed, Phacelia, Persian Clover, Sunflower, Tillage Radish.
- Seeding Rate:18-20 lbs./A
- Planting Dates: late May to late August

TerraLife[®] BetaMaxx

ZONES: 1, 2, 3, 4, 5, 6

- BetaMaxx was developed for planting in sugar beet rotations, but it also works very well for produce production. No cruciferous plants are included in this mix, which makes it suitable for growing in advance of brassica crops like broccoli and cabbage.
- Since BetaMaxx will reliably winter-kill in the North, vegetables and beets can be grown the following year with minimal soil preparation.
- Included Species: Black Oat, Common Vetch, Egyptian Clover, Pea, Linseed, Phacelia.
- Seeding Rate: 35-40 lbs./A
- Planting Dates: late May to late August

TerraLife® MaizePro DT

ZONES: 1, 2, 3, 4, 5, 6

- MaizePro DT is ideal for corn crop rotations as it supports the formation of mycorrhiza and improves soil structure.
- This mix has several winter-hardy components that will likely need to be terminated before planting corn.
- It also has components that will grow quickly in the fall and die over the winter, providing fall weed suppression and quick nutrient availability in spring.
- Included Species: Alsike Clover, Crimson Clover, Field Pea, Linseed, Persian Clover, Sorghum, Sunflower, Tillage Radish, Winter Rye, Winter Vetch.
- Seeding Rate: 35-40 lbs./A
- Planting Dates: late May to late August

Our TerraLife[®] mixes were formulated by DSV, a European company with over 90 years of research in cover crops. They have discovered the best ratios to achieve increased biodiversity above and below the soil surface. Byron Seeds has tested and verified their results in our Midwest environment. The varying root systems, plant structure and top height of TerraLife thrive together in a powerful symbiotic relationship.



COVER CROP MIXES



Bio-D, 16-Way Mix

ZONES: 1, 2, 3, 4, 5, 6

- Highly diverse mix with an intelligent design that allows all the species to actively express themselves.
- Utilize upper, middle, and lower canopy to maximize sunlight capture for warm-season nutrient cycling.
- Works for grazing or forage but yields less dry matter than a more focused mix.
- Included Species: Millet, Braco Mustard, Abyssinian Cabbage, Cowpeas, Sunn Hemp, Forage Sorghum, Flaxseed, Spring Pea, Black Oat, Sunflower, Phacelia, Berseem Clover, Persian Clover, Lifago Buckwheat, T-raptor Rape, Nitro Radish.
- Seeding Rate: 20-45 lbs./A. Plant from late May to early August.

Summer Lightning Mix

ZONES: 1, 2, 3, 4, 5, 6

- A fast-establishing mix designed for weed control with summer grazing potential (if grazed, the sorghum-sudan will be the only species to re-grow).
- Sorghum-sudan and buckwheat are powerful mycorrhizae builders while Sunn hemp and cowpeas add some nitrogen fixing.
- Our dual-purpose summer cover crop mix for high dry matter yields and forage quality.
- Included Species: Sunn Hemp, Sorghum-sudan, Cowpeas, Lifago Buckwheat.
- Seeding Rate: 20-35 lbs./A. Plant from late May to late August.

N-Cite, 8-Way Mix

ZONES: 1, 2, 3, 4, 5, 6

- A warm-season mix designed for nitrogen production and recycling with grazing potential.
- Good mix to follow small grain harvest; corn can perform well following this mix.
- This mix will winter-kill.
- Included Species: Cowpeas, Spring Peas, Lifago Buckwheat, Millet, Sunn Hemp, Nitro Radish, Sunflower, Abyssinian Cabbage.
- Seeding Rate: 15-30 lbs./A. Plant from late May to late August.

In test plots, Bio-D had 15 out of 16 species growing compared to a computer-generated mix that had only 7 out of 17 species growing, 4 of which were brassicas.

SPEEDY COVER

Description

Speedy Cover is a mixture of oats and radish. True to its name, Speedy Cover is extremely quick to establish and also quick and easy to plant and manage. Since this mix will typically winter-kill, no spring spraying or tillage is normally needed. All you have to do is plant into the beautiful killed mulch that this mix leaves behind.

Management

Plant into existing crops at the beginning of leaf wilt. The harvest of soybeans should not be impacted unless harvest is delayed and too much growth of the cover crop has occurred by then. Brassicas and oats will winter-kill when temperatures dip into the low 20s. Avoid planting in waterlogged areas.

Establishment

Seed at 80-100 lbs./A. For best results, drill 0.25-0.5 inch deep or broadcast into a tilled seedbed and cultipack. Aerial applications have been very successful when corn has dried as high as the ear or soybean leaves start to drop. It can be no-tilled into a grass/alfalfa sod that has been killed or mowed very close. Herbicides can also be used to suppress the sod.

Speedy Cover		ZONES: 3, 4, 5, 6
This mix of oats and radish is	Loosen Soil	V. Good
very quick to establish and will normally winter-kill.	Forage Value	V. Good
It is a good choice for a first- time cover cropper.	Ground Cover	Excellent
ume cover cropper.	Soil Builder	V. Good
	N Scavenger	V. Good
	N Production	Poor
CONSISTS OF A SPECIAL MIX O	F:	
Oats 92%	Nitro Radish	8%
Untreated Seed		

Cover Crop Species	Seeding Rate-Drilled (lb/A)	Seeding Rate-Broadcast (lb/A)	Best Established
Annual Ryegrass	15-25	25-35	Early Spring, Late Summer-Fall
Barley	50-100	80-125	Fall, Spring
Oats	80-110	110-140	Early Spring, Late Summer
Rye	80-120	90-160	Late Summer-Fall
Wheat	80-120	90-160	Late Summer-Fall
Buckwheat	30-40	50-70	Spring to Late Summer
Sorghum-sudan	35-40	40-50	Late Spring to Late Summer
Mustard	10-15	15-20	Spring, Late Summer
Radish	8-13	10-20	Late Summer, Early Fall
Rapeseed	5-10	8-14	Spring, Fall
Berseem Clover	8-12	15-20	Early Spring, Early Fall
Cowpeas	30-90	70-120	Early Summer
Field Peas	50-80	90-100	Early Spring to Fall
Hairy Vetch	15-20	25-40	Early Spring, Early Fall
Crimson clover	10-15	15-25	Late Summer, Early Spring
Red Clover	8-10	10-12	Early Spring, Late Summer
White Clover	2-4	5-12	Spring, Fall
Sweet Clover	5-15	10-20	Spring, Summer
Balansa Clover	5-15	10-20	Fall
Phacelia	12-15	15-20	Spring, Late Summer

NITROGREEN MIX

Description

Nitrogreen Mix is a mixture of species to maximize nitrogen production and green manure crop. Nitro radishes help loosen and aerate the soil. Plant from August 15th to October 10th, depending on how far south you are. If left until flowering the following year, it can produce up to 100-150 units of N for the next crop.

Management

Nitrogreen Mix must be sprayed or moldboard plowed in the spring before planting the cash crop. Direct seeding is best but also a relatively early seeding date is needed in northern zones to make sure the legumes are established enough to be winterhardy. This mix does well when aerial-seeded into standing crops in late August. When aerial-seeded, you can expect more crimson clover to establish than hairy vetch, unless soil moisture is very consistent near the soil surface for a couple of weeks after seeding.

Establishment

Seed 15-25 lbs./A. Drill 0.5 inch deep.

Nitrogreen Mix		ZONES	: 1, 2, 3, 4, 5, 6
This mix includes deep-r	ooting	Loosen Soil	V. Good
legumes for southern an northern zones.	d	Forage Value	V. Good
The Nitro radish element breaks up hardpan and		Ground Cover	V. Good
recycles deeply buried		Soil Builder	V. Good
numents.		N Scavenger	V. Good
		N Production	Excellent
CONSISTS OF A SPECI	AL MIX	OF:	
Hairy Vetch	60%	Crimson Clover	10%
Medium Red Clover	10%	Balansa Clover	5%
Yellow Blossom Clover	10%	Nitro Radish	5%
Organic Coating Seed			

SOIL BUILDER

Description

Soil Builder is a mixture of annual ryegrass, crimson clover, hairy vetch and nitro radish. This versatile mix will scavenge nutrients, fix nitrogen and establish quickly to combat weeds. No matter why you plant a cover crop, Soil Builder deserves your consideration.

Management

Soil Builder has to be sprayed or moldboard plowed in the spring before planting the cash crop. This versatile mix can be terminated early and still contribute a good amount of nitrogen due to the crimson clover. But if the cropping schedule permits, letting this mix grow until the purple blooms of the hairy vetch can be seen will result in significantly higher nitrogen fixation.

In the North, the radishes are not likely to perform to their potential if planting occurs after mid-August. Below I-70, the last date for planting for optimal radish performance would be September 10th. Other species in the mix, however, will still give tremendous benefits if planting is a bit late.

Establishment

Seed 18-25 lbs./A. Drill up to 0.5 inch deep. Satisfactory results can be obtained by flying the mix on if the seeding rate is increased.

Soil Builder

- Soil Builder has tremendous root growth and early spring top growth.
- The legumes in this mix can fix up to 100 lbs. of nitrogen.

Looser	Soil	V. Good
Farrage	Value	V. Good
Forage	value	v. Good
Ground	l Cover	V. Good
Coll D.	Ider	Excellent
Soil Bu	illaer	Excellent
N Scav	enger	V. Good
N. Durad		Caad
N Prod	uction	Good
K OF:		

ZONES: 3, 4, 5, 6

CONSISTS OF A SPECIAL MIX OF

Annual Ryegrass	40%	Crimson Clover	20%
Hairy Vetch	36%	Nitro Radish	4%



Organic Coating Seed

HAIRY VETCH

Description

While hairy vetch is a top producer of nitrogen and ground cover, fall-planted vetch is slow to establish and will not produce much top cover unless planted early, for example, after wheat or oats. For this reason, vetch is usually mixed with fasterestablishing cover crops such as radishes and ryegrass. Rapid spring growth produces a heavy mulch layer and is one of the best for suppressing weeds and preventing erosion. If allowed to reach 50% bloom, vetch can produce up to 250 lbs. of N, about half of which is available to the following crop. About 10% of vetch seed is "hard seeded" and will not germinate the first year, posing potential weed problems.

Management

Hairy vetch is best ahead of corn. Inoculate with a vetch inoculant for best N production. Once vetch reaches 50% bloom, it can be killed by mowing or rolling with a roller crimper. Spraying and incorporation also work well. Vetch will provide a heavy ground cover, but as a succulent, it decomposes rapidly and will lose its effectiveness as cover in 4-6 weeks. Winter-kill is possible if temperatures are below 5°F with no snow cover.

Establishment

Drill 15-20 lbs./A or broadcast at 25-30 lbs./A and cover with a harrow (in mixes 10-15 lbs./A.). Seed 30-45 days before a killing frost as vetch is slow to establish. Plant 0.5-1.0 inch deep. Roots will continue to grow through the winter. Vetch has a high phosphorous and potassium requirement but needs very little N for establishment. Vetch doesn't do well as a spring-planted crop.



Hairy vetch root system with nitrogen-fixing nodules

AU Merit Hairy Vetch

- This is an early-maturing variety allowing earlier termination in the spring to permit timely planting of corn.
- It is the fastest-establishing hairy vetch we have seen and the fall growth has been impressive.

Organic Coating Seed

ZONES: 2, 3, 4, 5, 6

Loosen Soil	V. Good
Forage Value	Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	Fair
N Production	Excellent

Hairy Vetch

- Hairy vetch is a great nitrogen producer and can lower N expenses by one-third.
- Rapid spring growth gives heavy mulch cover for weed suppression and erosion control.

USDA IRGAMIC Untreated Seed

ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil	V. Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	Fair
N Production	Excellent

Rating scale: POOR | FAIR | GOOD | VERY GOOD | EXCELLENT

CRIMSON CLOVER

Description

Crimson clover is a fast-growing annual that provides early spring nitrogen, up to 200 lbs. at 50% bloom. Its rapid growth makes it an excellent weed suppressor and an emergency forage supply that doesn't cause bloat. In the South, crimson clover is fall-planted with other cover crops for weed suppression, erosion control and quality spring forage. It can be spring-seeded in northern areas for weed control and nitrogen production. If planted in the spring or summer, it will bloom the same year and will not overwinter.

Management

Crimson clover thrives in cool, moist conditions. It works well on any soil with the exception of heavy, wet clays. Inoculate for best N production. It is usually mixed with annual ryegrass, vetch, radishes, and small grains like oats. Nitrogen production requires an adequate supply of phosphorous and potassium.

Crimson clover can be killed by spraying or incorporation. At bloom stage, it can also be killed by mowing or rolling with a roller crimper.

Dixie Crimson Clover

ZONES: 1, 2, 3, 4, 5, 6

- This clover is fast-establishing and provides up to 200 lbs. of nitrogen.
- It is moderately winter-hardy (zones 1, 2, 3 are spring planted only).

Dixie



Untreated Seed	N Scar
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Organic Coating Seed	N Proc



Establishment

For fall planting, drill at 15-18 lbs./A, 0.125-0.25 inch deep, or broadcast at 22-30 lbs./A. If broadcast, roll into a firm seedbed. Use 10-15 lbs./A in mixes. For spring planting, seed as soon as all danger of frost is past. Don't plant too early in the fall if you want it to overwinter. If crimson clover goes to seed in the fall, it will not regrow in the spring.

Majestic Crimson Clover NEW ZONES: 1, 2, 3, 4, 5, 6

- Majestic is more cold-tolerant than Dixie, making Majestic a better choice for a fall-planted cover crop that will produce good spring biomass.
- Good winterhardiness, but zones 1 and 2 are spring planted only.



Loosen SoilFairForage ValueExcellentGround CoverV. GoodSoil BuilderGoodN ScavengerFairN ProductionV. Good



CLOVERS

Description

Clovers are an excellent source of nitrogen and can double as a quality forage. They are good as a soil builder, as a weed suppressor and for erosion control. Clovers can be frost-seeded and work well mixed with other cover crops such as small grains, grasses, radishes, and other legumes.

- Clovers can be spring-planted by frost-seeding or planting with small grains. Use the grass seeding box on the drill.
- North of Interstate 80, clovers can be overseeded into standing corn at last cultivation. Allow 6-7 weeks after applying pre-emergent herbicides like Altrazine; check labels.
- · Clovers can be broadcast or aerial-seeded into beans at leaf yellowing prior to leaf drop.

Red clover will grow well in cooler, moist conditions and will slow down over the summer months. Yellow Blossom Sweet Clover does well in the summer and has the greatest warmweather biomass production of any legume, exceeding even alfalfa.

Berseem (also known as Egyptian clover) works well doubling as a cover crop and as a forage, producing 18-28% protein.

Viper Balansa Clover

ZONES: 1, 2, 3, 4, 5, 6

- Viper is an annual clover with white blossoms and hollow stems-great for cover crop or forage.
- Viper replaces Fixation because it's more aggressive, establishing quickly with more mass.
- A low seeding rate (5-8 lbs./A) makes it very economical; cold tolerant to -14°F.

Organic Coating Seed

Mammoth Red Clover

- This clover produces up to 150 lbs. of nitrogen and 4 tons of dry matter seeded at 10-12 lbs./A.
- When mixed with grains, it can be left for cover or forage after grain harvest.
- Mammoth is better than crimson clover for the North because it is more likely to survive the winter.

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Organic	Coating	Seed

Loosen Soil	Good
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	Good
N Production	Excellent

ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil	Good
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	Excellent
N Scavenger	Fair
N Production	Excellent



Frosty Berseem Clover

ZONES: 1, 2, 3, 4, 5, 6

V Good

- Berseem is a fast-growing summer annual and a heavy nitrogen producer-150-200 lbs.
- Frosty survives cool temperatures better than crimson clover and usually produces more biomass in the spring.

This is the only berseem that can reliably be fall-seeded.

LUUSCII SUI	v. 0000
Forage Value	Excellent
Ground Cover	Excellent
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Excellent

Looson Soil

Organic Coating Seed

Medium Red Clover

ZONES: 1, 2, 3, 4, 5, 6

- Medium Red can be cut once late in the seeding year and twice the following year.
- This clover is good for shortterm rotations with good persistence.



Untreated Seed

Loosen Soil Good Excellent

FULAYE VALUE	Excellent
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	Good
N Production	V. Good

Yellow Blossom Sweet Clover ZONES: 1, 2, 3, 4, 5, 6

- Yellow Blossom is a summer biannual with a very deep root system (up to 5 feet deep).
- Seeded at 8-15 lbs./A, it can produce 2.5 tons of dry matter the first year; winter-hardy and drought-tolerant.



Organic Coating Seed

Loosen Soil	Excellent
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	Excellent
N Scavenger	Fair
N Production	Excellent

FIELD PEAS

Description

Field peas are excellent nitrogen fixers and establish quickly, providing good ground cover. Peas are usually mixed with oats, barley or triticale and are an excellent source of high-protein forage.

Field peas are divided into two types. Keystone winter peas can be planted in the fall and usually overwinter south of Interstate 70. The other peas, like the Arvika spring pea, do best planted as early as you can get in the field in the spring.

Management

Peas like cool weather and languish in heat and drought. Peas also like a wide variety of well-drained soils. They are almost always planted with small grains such as oats and are usually used as a dual-purpose cover and forage crop. Inoculate to ensure good nitrogen production.

Establishment

Plant peas 1 inch deep at 30-100 lbs./A depending on the mix. If nitrogen and protein are the goal, plant more peas than small grains. Plant fall peas by mid-August to mid-September; peas need to be 4-6 inches tall before going dormant for the winter. Plant spring peas as soon as you can work the fields. Expect peas to grow rapidly in the spring and to be ready for harvest or incorporation in about 60 days.



4010 or Arvika Field Peas ZONES: 1, 2, 3, 4, 5, 6 V. Good **Loosen Soil** These spring peas have rapid spring growth; plant as early as V. Good **Forage Value** you can get in the field. They are excellent forage V. Good **Ground Cover** and produce over 100 lbs. of nitrogen. **Soil Builder** V. Good **N** Scavenger Fair USD/ **N** Production V. Good Untreated Seed

Keystone Winter Peas ZONES: 4, 5, 6 V. Good Loosen Soil Keystone winter peas compete very well with winter annual **Forage Value** V. Good weeds because of good early vigor in the fall growth. **Ground Cover** V. Good They are a white-flowered pea for better palatability **Soil Builder** V. Good and digestibility. Fair **N** Scavenger V. Good **N** Production Untreated Seed

Survivor Winter Peas NEW ZONES: 2, 3, 4, 5, 6

- Survivor is bred for advanced cold tolerance, providing more confidence for winter survival.
- This pea provides good biomass production for higher nitrogenfixing potential.

· · · · ·	
Loosen Soil	V. Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	Fair
N Production	V. Good

Untreated Seed

Montech Peas

ZONES: 1, 2, 3, 4, 5, 6

- This is a semi-leafless, erect yellow grain pea with medium maturity.
- Fix nitrogen and build soil health with this non-shattering grain pea.

Untreated Seed

Loosen Soil	V. Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	Fair
N Production	V. Good

Rating scale: POOR | FAIR | GOOD | VERY GOOD | EXCELLENT

THE BENEFITS OF COVER CROPS

From Transitioning to Organic Production (SASE, USDA)

There's no doubt that cover crops are important, not just in organic systems but in American farming systems overall. Between 2012 and 2017, cover crop acreage jumped approximately 50 percent, from roughly 10 million acres on 133,500 farms to more than 15 million acres on 153,400 farms, according to USDA census reports. Annual surveys from a collaborative project between SARE, the Conservation Technology Information Center (CTIC) and American Seed Trade Association (ASTA) find that growers who use cover crops are committed to the practice, and that they have data to show that cover crops provide a wide range of benefits.

According to the survey (www.sare.org/covercropsurvey), in drought years, growers reported consistently higher yields in the fields where they planted cover crops. But even in 2019, which was one of the wettest years on record, some growers still reported slight boosts in soybean, corn and wheat yields: 5%, 2% and 2.6%, respectively. This suggests that cover crops build organic matter, which not only improves the water-holding capacity of soils (useful for times of drought) but can also absorb excess moisture (useful during excessively wet seasons).

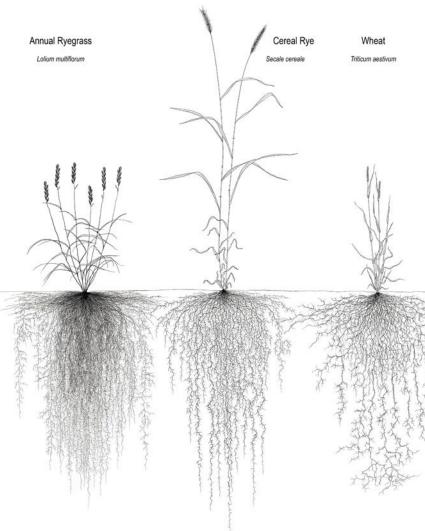
Cover crops can improve the bottom line in 1–3 years.

Growers in the CTIC/SARE survey also report other benefits from cover crops, including weed control, soil health, erosion control and livestock grazing. An economic analysis of survey results found that cover crops improve the bottom line in 1–3 years for commodity farmers when used in these situations (www.sare.org/resources/covercrop-economics):

- Herbicide-resistant weeds are a problem (In fact, this may be a very good reason to transition to organic because individual weeds that have developed herbicide resistance no longer have an advantage in an organic system.)
- Cover crops are grazed
- Soil compaction is an issue
- Covercrops are used to speed up and ease the transition to no-till
- Soil moisture is at a deficit or irrigation is needed
- Fertilizer costs are high, or manure nutrients need to be sequestered
- Incentive payments are received for using cover crops

The well-established benefits of cover crops include:

- Protecting the soil from erosion when there are no cash crops planted
- Building soil organic matter, which builds a store of nutrients that are released in time with crop uptake
- Improving water holding capacity and drainage via increased soil aggregation
- Improving soil structure, which can decrease compaction
- Decreasing weed populations
- Increasing soil microorganisms by providing a greater variety of food sources and by lengthening the portion of the year when living roots are present for soil organisms to feed on
- Providing livestock forage in either late fall or early spring



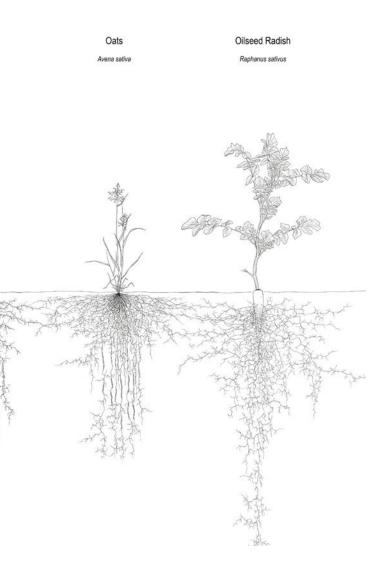
Root graphic compiled by Conservation Cropping Systems Initiative (CCSI)

COVER CROPS FOR A SPECIFIC PURPOSE

From The Ohio State University

Farmers sometimes want to plant cover crops for a specific purpose including the following:

- Cover crops for organic matter (high C:N): Sorghum Sudan grass, cereal rye, annual ryegrass, triticale, oats, wheat, spelt, and barley.
- Cover crops for nitrogen (low C:N): Cowpea, winter pea, red clover, sweet clover, hairy vetch, alfalfa, soybeans, and mung beans.
- Require no herbicide to kill: Oats, cowpea, winter pea, crotalaria, oilseed or tillage radish, turnips.
- Reduce compaction (deep rooted): Sorghum Sudan grass, annual ryegrass-5-6', oilseed or tillage radish-3-30', sweet clover-deep taproot, cereal rye and oats-30".



- Quick forage or can be grazed: Oats, forage radishes, turnips, cereal rye, annual ryegrass, teff for dry fields, Sorghum Sudan grass, and barley.
- Start up or enhance no-till: Oilseed or tillage radish, turnips, Sorghum Sudan grass. Sorghum Sudan grass can result in massive thatch at planting, so chop it well before cold weather sets in to increase decomposition.* Sorghum Sudan grass should be mowed twice, once in early summer to maximize root growth (five times more root growth after first mowing) and once in late summer to increase organic matter decomposition.
- **Prevent soil erosion:** Grasses have fibrous root systems to bind soil, and the best grass cover crops include cereal rye, annual ryegrass, oats, wheat, and barley. Other cover crops include buckwheat with a shallow fibrous root system, cowpea, and winter pea.
- Recapture excess nutrients (nitrogen, phosphorus):
 Oilseed or tillage radish, turnips, annual ryegrass, cereal rye, oats, wheat, Sorghum Sudan grass, and buckwheat, sweet clover, winter pea, cowpea, red clover, hairy vetch. In general, legumes need P for N fixation but are poorer scavengers of P in the soil. Since legumes acidify the soil, they tend to make P more available when P is limiting. In general, grass cover crops store and supply more P than legumes because they have a finer root system and more surface area than legumes with a taproot. In mixed legume-grass pastures, the legume cycles N to the grass and the grass cycles P to the legume.
- Natural herbicides or allelopathic effects for weed suppression: Cereal rye, oilseed or tillage radish, mustard, oats, barley, buckwheat, Sorghum Sudan grass. Annual ryegrass, cereal rye, Sorghum Sudan grass may be used for controlling soybean cyst nematodes.
- Attract beneficial insects: Buckwheat, sweet clover, and red clover.
- **Tolerate wet soils:** Sweet clover, red clover, annual ryegrass, cereal rye, wheat, and oats.
- Tolerate heat and drought: cowpea, hairy vetch, mung beans, sweet clover, Sorghum Sudan grass, buckwheat, barley, teff.
- Cold tolerant: Cereal rye, wheat, spelt, triticale, winter pea, and sweet clover.
- Nurse crop: Oats and cereal rye.

*Note from Byron Seeds: Using a BMR Sorghum Sudan will result in better decomposition.

COWPEAS

Description

Cowpeas, unlike field peas, are a warm-season annual. They cannot be successfully planted until soil temperatures reach 65°F, limiting their usefulness in the North. They are usually used only as a smother or soil-building crop. In our southern regions, cowpeas are used only as a double crop with short-season corn or sorghum. Some would even plant sorghum with cowpeas, but the caution is to not depend on the cowpeas for the sorghum's nitrogen. Their roles are to suppress weeds, build soil, prevent erosion, produce 90-120 lbs. of N and even be used as forage. The N production, though modest, can be accompanied by up to 8,000 lbs./A of biomass. Often, cowpeas are used as a summer soil-building, sacrifice crop/green manure.

Management

Cowpeas can tolerate a wide range of soil types, low fertility, high heat and moist or dry (once germinated) soils. Do not allow cowpeas to go to seed. Mowing or rolling stops plant development but does not kill. Quickly incorporate with light tillage to get fastest release of the plant's nutrients. Cowpeas used for cover crops will unlikely have any problems with pests as might those grown for their grain.

Establishment

Drill at 25-50 lbs./A, 0.5-1 inch deep. Inoculate the seeds for best performance. Cowpeas can tolerate lower pH although they will do best with adequate lime.

Cowpeas	ZONES	: 1, 2, 3, 4, 5, 6
These are a good double crop or companion crop in	Loosen Soil	V. Good
the South; smother crop or soil	Forage Value	Good
builder in the North.Plant after soil temps reach	Ground Cover	V. Good
65°F; excellent quick cover and weed suppression.	Soil Builder	V. Good
weed suppression.	N Scavenger	V. Good
Untreated Seed	N Production	V. Good



RADISHES AND RAPE

Description

Radishes establish very quickly, providing good ground cover, smothering weeds and preventing erosion. The taproot drives deep into the soil, pulling up nutrients otherwise unavailable to shallower-rooted crops. These taproots provide a way for air, water and crop roots to penetrate deeply into the soil. Fall-planted radishes are great for sequestering residual nutrients from the previous crop. Radishes work as a biofumigant, especially if incorporated in the vegetative stage.

Management

Radishes can be planted into existing crops at the beginning of leaf wilt, either by aerial application or by a high boy rigged with a broadcast system. They work well in mixes or can be seeded alone. In mixes, 2 or 3 lbs. is all that's needed. Radishes winter-kill when temperatures reach 23°F.

Establishment

Seed 8-10 lbs./A straight or 2-4 lbs./A in mixes. Drill in rows 6-8 inches apart, 0.25-0.5 inch deep. Radishes can be broadcast and rolled with a cultipacker or aerial-seeded into drying corn. Use higher rates for broadcasting and aerial seeding. Radishes can be no-tilled into grass if the grass has been grazed or mowed very close.

Nitro Radish	ZONES: 1, 2, 3, 4, 5, 6	
Nitro is fast-establishing and	Loosen Soil	V. Good
is bred to grow straight down to penetrate hardpan.	Forage Value	V. Good
It works well mixed with KB Royal annual ryegrass.	Ground Cover	Excellent
	Soil Builder	V. Good
	N Scavenger	Excellent
Untreated Seed	N Production	Poor

Organic Deep Till	ZONES	: 1, 2, 3, 4, 5, 6
A radish that is fast-establishing	Loosen Soil	V. Good
with consistent root growth.It is bred to grow straight	Forage Value	V. Good
down to penetrate hardpan.	Ground Cover	Excellent
	Soil Builder	V. Good
USDA	N Scavenger	Excellent
Organic Coating Seed	N Production	Poor



Essex rape has more lateral
growth than a radish and needs
at least 8 weeks of growth.

It provides good ground cover and is winter-hardy to 20°F.

Untreated Seed

ZONES: 1, 2, 3, 4, 5, 6

V. Good
Good
V. Good
V. Good
V. Good
Poor



FORAGE BRASSICAS

Description

While not always thought of as a cover crop, brassicas often double as a forage and cover crop, usually being mixed with small grains like oats and triticale. Brassicas have a deep root system that allows them to stay green longer than most summer cover crops. These taproots pull up and recycle nutrients that are too deep for crop roots, loosening the soil and providing channels for air, water and crop roots.

Management

Planted in the early fall, brassicas provide a massive amount of dry matter that helps suppress weeds and control erosion, and can be stockpiled for winter forage. This family of forage can be grazed but not easily mechanically harvested.



Some hybrids, like Winfred, are very flexible, working well both as a summer annual during the hot, droughty summer months and as a fall-planted cover crop that can withstand frosty winter conditions. Spring-planted Winfred shows very good regrowth after being cut or grazed. In extreme drought, Winfred will usually go dormant like a forage sorghum, waiting for moisture.

Establishment

Plant 0.125-0.25 inch deep at 4-6 lbs./A straight or 2-4 lbs./A in mixes.

ZONES	: 1, 2, 3, 4, 5, 6
Loosen Soil	V. Good
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor
	Loosen Soil Forage Value Ground Cover Soil Builder N Scavenger

Barkant Turnip

This turnip with vigorous top growth and high bulb yield is cold tolerant to 20°F.

An 8-10 week growth can yield up to 4-6 tons of dry matter.

Untreated Seed

ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil	V. Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

Wi<u>nfred</u>

ZONES: 1, 2, 3, 4, 5, 6

	Winfred has slower upright
	growth (8-12 weeks) with
	no bulb; plant in spring or
	early fall.
_	

It stays green after frost and is winter-hardy to -5°F.

Untreated Seed

n Soil	V. Good
Value	V Good

Forage Value	V. Good
ruraye value	v. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

Loose

MUSTARD

Description

Mustard establishes very rapidly, helping to suppress weeds and act as a ground cover. The taproot grows to a depth of 3 feet, helping break up soil and scavenge nutrients. Mustard works great as a biofumigant and suppresses verticillium in potato.

Management

Mustard is a cover crop that can be planted in early spring or early fall in the South if you want it to overwinter. Mustard kills at about 25°F. It mixes well with triticale, rye and hairy vetch and works extremely well as a nematode suppressor and as a natural biofumigant. Use in rotation with wheat, bean and potato.

Establishment

Drill 0.5 inch deep at 8-10 lbs./A or 3-5 lbs./A in mixes. Can be broadcast at the higher rate and rolled. Incorporate or kill after flowering for best biofumigant effect.

Braco White Mustard	ZONES	: 1, 2, 3, 4, 5, 6
 This mustard suppresses nematodes and weed seed germination; it's a great nitrogen scavenger. It usually winter-kills except in the South and can be frost-seeded. 	Loosen Soil	V. Good
	Forage Value	Poor
	Ground Cover	V. Good
	Soil Builder	V. Good
	N Scavenger	V. Good
Untreated Seed	N Production	Poor

PHACELIA

Description

Phacelia offers fast early development for a quick competitive canopy. It spreads very quickly across the ground and restricts the growth of weeds. Its vibrant flowers attract beneficial insects and it works well as a cool-season soil builder. Its extensive root systems can reach a depth of 30 inches, which is great for breaking up clay soil. Phacelia also scavenges for nitrogen in the soil. It makes a good winter-killed cover crop to prepare the ground for an early spring planting.

Management

Phacelia is comparable to buckwheat but is more tolerant of cold and drought. It is well adapted to most soils. It flowers 6-8 weeks after planting if it still has at least 13 hours of sunlight.

Establishment

Seeding rate is 8-12 lbs./A at a depth of 0.25 inch. Seed in the spring.



Phacelia

- Phacelia develops quickly as a good cool-season soil builder.
- Its deep fibrous root system captures nutrients well and improves tilth.
- It will winter-kill but can tolerate light frosts.

Untreated Seed

ZONES: 2, 3, 4, 5, 6

Loosen Soil	Excellent
Forage Value	Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

BUCKWHEAT

Description

Buckwheat is a short-lived summer annual reaching maturity in just 70-90 days. It is not a grain or even a grass, but an herb. It is one of the fastest and easiest establishing cover crops available. It can produce 2-3 tons of dry matter in just 6-8 weeks, making it an excellent crop for summer weed suppression. Buckwheat is easy to kill and is known for its ability to extract phosphorus from the soil. It is also known for its sweet blossoms that attract beneficial insects. It is very succulent and does not add much to the soil by way of biomass. We offer Lifago and VNS buckwheat.

Management

Buckwheat likes light to medium, well-drained soils, sandy loams, loams, and silty loams. It grows best in cool, moist conditions. Buckwheat is not drought tolerant. It works very well as a nurse crop. Make sure to cut back on the seeding rates. It is very susceptible to frost and kills easily by rolling.

Establishment

Drill VNS buckwheat 35-45 lbs./A (Lifago-25 lbs./A) 0.5-0.75 inch deep when all danger of frost is past. For weed suppression or broadcasting into a firm seedbed, use up to 90 lbs./A. For a nurse crop, use one-third the usual rate.

Lifago Buckwheat

ZONES: 1, 2, 3, 4, 5, 6

- Lifago, a late-maturing buckwheat, is good as a summer crop to suppress weeds, mellow the soil, and attract beneficial insects.
- Lifago is the best buckwheat to use in mixes, since it pairs well with other species because of its late maturity.

Untreated Seed



VNS Buckwheat

- Buckwheat is good as a summer crop to suppress weeds, mellow the soil, and attract beneficial insects.
- It establishes very quickly with a fibrous root system; it's easy to kill, decomposing quickly.

Untreated Seed

USD

ZONES: 1, 2, 3, 4, 5, 6

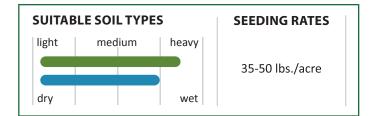
Loosen Soil	Excellent
Forage Value	Good
Ground Cover	Excellent
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor



BMR GENE 6 SORGHUM-SUDAN

Sorghum-sudan is unrivaled for adding organic matter to worn-out soils. This tall, fast-growing, heat-loving summer annual grass can smother weeds, suppress some nematode species and penetrate compacted subsoil if mowed once. Seed cost is modest. Followed by a legume cover crop, sorghum-sudan is a top choice for renovating over-farmed or compacted soils.

Properly fertilized summer annuals produce a boatload of sugary roots that stimulate and feed soil life over the months when heat and drought can limit the building of soil biology. Many of us have seen an explosion of earthworms around the roots of our sorghum plants and, of course, the massive "root balls" that individual plants can produce.



KF SugarPro 55

legumes.

gFishel REPLANT

Expect high yields with tonnage being leaves rather than stalk. Easy to double-crop with coolseason annual grasses and

LONLJ. 2, 3, 4, 3, 0	
Relative Yield	Excellent
Regrowth	Excellent
Disease Tolerance	V. Good
Biobuoo Fotoranoo	
BMR Gene	6

70NES-2 2 / 5 6

Excellent

Treated Seed

Untreated Seed

NDFD



KF Summer Supreme

ZONES: 2, 3, 4, 5, 6

Disease Tolerance Excellent

Excellent

Excellent

Excellent

6

- Summer Supreme is a blend of four premium sorghum-sudans that excel in regrowth, cold tolerance, disease resistance, and drought tolerance.
- This blend brings yield and resilience above what each variety could do by itself.



Treated Seed Untreated Seed

KF Summer Dream ZONES: 2, 3, 4, 5, 6 V. Good **Relative Yield** Summer Dream is a blend of three brachytic dwarf sorghum-sudans. Regrowth Excellent This strategic blend brings the best of brachytic dwarfs for high Good **Disease Tolerance** yield, excellent quality, and fast 6 **BMR Gene** Excellent NDFD

Relative Yield

Regrowth

BMR Gene

NDFD

i**ngFisher**)% REPLANT

rearowth.

Treated Seed Untreated Seed

KF Summer Prince ZONES: 2, 3, 4, 5, 6 Excellent **Relative Yield** Summer Prince is a blend of photoperiod-sensitive sorghum-sudans. V. Good Regrowth The photoperiod-sensitive maturity allows for excellent multicut Disease Tolerance V. Good management. **BMR Gene** 6 In systems that focus on singlecut management, this blend is an NDFD Excellent excellent tonnage producer and can provide some flexibility in harvest timing. i**ngFisher** % REPLANT **Treated Seed** Untreated Seed

Rating scale: POOR | FAIR | GOOD | VERY GOOD | EXCELLENT

FARMERS DON'T WANT ANNUAL RYEGRASS TO HEAD OUT.

If seed heads appear, quality falls and the potential of annual ryegrass taking over the field grows. Annual ryegrass can be tough to manage.

But Byron Seeds is offering **Koga**—a late-maturing annual ryegrass that gives a wide, flexible harvest window so everyone can avoid annual ryegrass seed heads. Koga stays vegetative longer and produces higher quality forage (better NDFD30) than other annual ryegrasses, regardless of when it's harvested.

Koga brings:

- A wide, flexible harvest window (about 2 weeks longer than normal annual ryegrasses)
- Extended energy and quality since it stays vegetative longer
- Fine dense leaves that mellow quickly when terminated as a cover crop
- A more balanced C:N ratio (because of its vegetative state) when terminated as a cover crop

Don't get caught with annual ryegrass seed heads in your field. Order **Koga Annual Ryegrass** for excellent forage or as a cover crop, and your cropping management will get easier.

Koga annual ryegrass, crimson clover, and balansa clover in Missouri



ANNUAL RYEGRASS

Description

Annual ryegrass is one of the best choices for a fall-planted cover crop because of its versatility, ease of establishment, amazing root system, and incredible nutrient-scavenging abilities. It is an excellent soil builder, great at erosion control and weed suppression. The massive root system can add 5,000-9,000 lbs. of organic material per acre, growing down to 54 inches, providing channels for air, water, and following crop root systems. Farmers have reported corn root zones down to nearly 5 feet following ryegrass.

Management

Annual ryegrass has extremely fast emergence and establishes quickly on a variety of soil types. It works well alone or in mixes. In severe winter conditions, annual ryegrass can winter-kill, but roots have usually grown down 24-32 inches, sequestering leftover nutrients and providing a good start for the following crop. Incorporation will work to kill ryegrass if it is completely covered. If spraying, apply a full rate when the days are warm, averaging over 50°F, and the grass is growing vigorously.

Establishment

Drill at 15-20 lbs./A or fly on at 20-25 lbs./A, 0.25-0.5 inch deep, or fly into standing corn at the higher rate. You can also broadcast onto bare soil and roll with a cultipacker. Seed 40 days before killing frost date to help protect from winter-kill. Rates in mixes can be cut to 8-15 lbs.

Fall-planted Koga in Missouri on May 5, 2021

Koga Annual Ryegrass

ZONES: 1, 2, 3, 4, 5, 6

Excellent

Excellent

V. Good

V. Good

V. Good

Loosen Soil

Forage Value

Ground Cover

Soil Builder

N Scavenger

- Koga is a very late-maturing annual ryegrass, giving a flexible harvest window while holding steady on quality.
- Koga establishes very quickly and is very winter-hardy.

Untreated Seed

ZONES: 2, 3, 4, 5, 6

This vigorous annual ryegrass establishes rapidly and has good cold tolerance.

Organic Annual Ryegrass

It gives superior yields with excellent palatability.

Untreated Seed

Loosen Soil	Excellent
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good

KB Crown Annual Ryegrass ZONES: 2, 3, 4, 5, 6

- KB Crown was developed for superior root mass and has good fall growth.
- It can be aerial-seeded, establishes quickly, and is deep-rooting.

Untreated Seed

Loosen Soil	Excellent
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good

Kodiak Annual Ryegrass

ZONES: 1, 2, 3, 4, 5, 6

- This winter-hardy annual ryegrass is selected for very tough growing conditions.
- More forage per acre makes this an economical choice for growers.

Untreated Seed

Loosen SoilExcellentForage ValueV. GoodGround CoverV. GoodSoil BuilderV. GoodN ScavengerV. Good

Rating scale: POOR | FAIR | GOOD | VERY GOOD | EXCELLENT

ITALIAN RYEGRASS

Description

Italian ryegrass (IRG) is a cool-season biannual plant that requires vernalization (a period of cold and reduced day length) to initiate heading. IRG is extremely high yielding and is typically the highest-quality, most-digestible grass of all. Its low cost and ease of seeding make it an excellent choice as either a nurse crop for other species or a great short-term forage in all Upper Midwest growing zones.

IRG is often used as a nurse when seeding alfalfa, tall fescue, orchardgrass and meadow fescue, with only about 2 lbs. of IRG required. IRG makes excellent haylage or baleage, but it does not dry well for hay.

Management

Successful use of IRG requires aggressive management and high fertility. If there are a lot of nutrients on a farm, IRG can be a good choice to utilize and recycle those nutrients. It can be easily used to extend thinning alfalfa or mixed stands for one more year, resulting in high yields of excellent quality forage without the hassle of a total stand renovation. With its soft leaves, clear stands of IRG are better suited to mechanical harvest with a discbine than a sicklebar. IRG also needs to be stored horizontally rather than in a vertical silo. It would be very difficult to fill and to empty. Mixing IRG with other grasses or legumes alleviates these problems.

When IRG is sown in spring, very few seedheads will be observed throughout the seeding year. If IRG is fall sown, the plants will head profusely the following spring.

Establishment

IRG is very fast to establish, making it ideal for a spring nurse crop with other more perennial grasses. Planting depth should be 0.25-0.5 inch. Broadcast sowing into thin stands can sometimes be successful, but no-till drilling is the recommended method to thicken existing stands. Depending on the time of planting and conditions, the first harvest can come as early as 50-60 days after planting, and the first pasturing can take place in about six weeks or when the plant cannot be pulled from the ground.

KF Allegro Italian Ryegrass ZONES: 1, 2, 3, 4, 5, 6

- A Superbowl Grand Champion, this diploid/tetraploid blend can give you the highest-quality feed in just 40 days.
- Best in the North where it can yield as much dry matter as corn silage.





Untreated Seed



BYRON SEEDS TIMOTHY PROGRAM

Although we had to bend the definition of "annual" a bit, timothy is now on our list of winter annuals. Timothy qualifies as an annual when we terminate it after the first harvest and then plant a summer crop like soybeans.

As a winter annual, Timothy offers these seven pluses:

- Great potential for a dry hay crop—Timothy dries more easily than ryegrass, and its cutting window is a few weeks later.
- Spreads out your harvest window in early spring— Timothy is ready for harvest after the small grain forage crops are finished.
- Can increase both quality and yield—You can harvest more acres at optimal quality by using multiple species with differing maturing dates.
- Very winter-hardy—Timothy has proven to tolerate extreme cold better than annual ryegrass.
- Sets the stage for following crops—Good choices after the harvest are no-till soybeans or other summer annuals.
- Very economical to plant Timothy's cost per acre compares to that for annual ryegrass.
- Ideal to plant following corn silage Seed timothy at a rate of 12-15 lbs./A with a drill in the fall. Like all annuals, timothy should be fertilized to achieve top performance.

With our program, you can use timothy as a cover crop over the winter, harvest for dry hay in the spring, and then plant your double crop for the summer. Our Timothy Program offers you two great options.

Option 1: Byron's Haystack Timothy Blend

This strategic blend features the early Zenyatta timothy as its foundation, plus other complementary varieties. This mix brings the advantage of differing maturities for those who want a flexible harvest window.

With Byron's Haystack Timothy Blend, you can harvest when the Zenyatta has headed to satisfy the horse hay buyers and still have high-quality hay, because the other varieties will still be in the optimal pre-head stage.

Option 2: Zenyatta Timothy

Zenyatta is an early-maturing timothy with a high first-cutting yield for dry hay. It's the best choice for a one-cut annual that can be followed by a double crop. Zenyatta has been proven to perform well in the South.

Haystack Blend

- This strategic timothy blend features Zenyatta as its foundation plus other varieties.
- dation plus other varieties.The differing maturities give
a flexible harvest window for
high-quality dry hay.**Digesti**Winter

Untreated Seed

Maturity	Early-Mid
Palatability	Excellent
Digestibility	V. Good
Winter Hardiness	Excellent
Grazing Suitability	Fair

ZONES: 3, 4, 5, 6

ZONES: 4, 5, 6

Zenyatta

- Very early-maturing with a high first cutting yield.
- Great choice for a timothy managed as an annual followed by a double crop.



Maturity	Early
Palatability	Excellent
Digestibility	V. Good
Winter Hardiness	Excellent
Grazing Suitability	Poor



Rating scale: POOR | FAIR | GOOD | VERY GOOD | EXCELLEN

CEREAL RYE

Description

The hardiest of fall-planted cover crops, cereal rye is the "last chance" crop for late-fall plantings. If planted late, it may not provide much winter cover, but if it has germinated, it will show rapid spring growth, suppressing weeds and providing forage or grain for harvest. If planted early enough, it makes for great winter grazing.

Rye is inexpensive and easy to establish. It has a fastgrowing fibrous root system that can take up and hold residual nutrients. It's an excellent source of residual ground cover for no-till systems. Note: It can tie up nitrogen as it decomposes so N is not immediately available; so compensate.

Management

Cereal rye can establish in very cool weather in a variety of soil types. It can be killed by incorporating, spraying or, after boot stage, by mowing or rolling with a stalk chopper. Rye can deplete soil moisture in a dry spring. In a wet spring, it can overwhelm the next crop with residual. Rye has an allelopathy effect, which works on suppressing weeds but may also stunt a following corn crop.

Establishment

Drill 1.0-1.5 inches deep at 60-112 lbs./A or broadcast or aerial-seed onto standing corn at the higher rate from early September to November. Use 50-60 lbs./A in mixes.

Cereal Rye	ZONES:	1, 2, 3, 4, 5, 6
 Cereal rye can be seeded in the fall later than other small grains and used as a forage or cover crop. Its fast-growing fibrous root sys- tem takes up residual nutrients and is good for no-till systems. 	Loosen Soil	V. Good
	Forage Value Ground Cover	V. Good V. Good
	Soil Builder	Good
	N Scavenger	V. Good
Untreated Seed	N Production	Poor

Elbon Rye

ZONES: 1, 2, 3, 4, 5, 6

- Elbon rye matures earlier making it better for crimping sytems.
- Its fast-growing fibrous root system takes up residual nutrients and is good for no-till systems.

Untreated Seed

Loosen Soil	V. Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	Good
N Scavenger	V. Good
N Production	Poor

SMALL GRAINS

OATS

Description

Oats are an inexpensive cover crop and a quick ground cover when fall-seeded, providing weed suppression and erosion control. They typically winter-kill and provide a beautiful killed mulch for spring-seeded crops. Oats are good nutrient scavengers and work well with radishes and turnips to provide fall forage.

Management

It's best to plant oats after wheat or as a spring cover crop. Allow 6-8 weeks before killing frost if the oats are intended as a forage.

Tiger Oats	ZONES:	1, 2, 3, 4, 5, 6
Tiger is a tall forage oat with wide leaves giving excellent	Loosen Soil	Good
dry matter yield.	Forage Value Ground Cover	V. Good V. Good
It has good rust resistance.	Soil Builder	Good
	N Scavenger	V. Good
Untreated Seed	N Production	Poor

Cosaque Black Oats		ZONES: 5,6
This winter-hardy forage oat can be fall planted and will overwinter in southern areas.	Loosen Soil	Good
	Forage Value	V. Good
Black oats make good stockpile feed.	Ground Cover	V. Good
	Soil Builder	Good
	N Scavenger	V. Good
Untreated Seed	N Production	Poor

Jerry Oats

USD/

Jerry is an inexpensive
alternative with a good
fibrous root system.

It has vigorous growth when fall planted and it winter-kills.

Untreated Seed

ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil	Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	Good
N Scavenger	V. Good
N Production	Poor

Disking lightly in the spring will break up the brittle residue, exposing enough soil for warmer soils. No-tilling into oats in the spring works fine. If planted in the spring, oats can be killed by spraying. Mowing and rolling work well at soft dough stage.

Like rye, oats have an allelopathic effect and can cause slow growth in the following crop.

Establishment

Seed 100 lbs./A with a drill or fly onto standing corn.

Panther Oats	ZONES	: 1, 2, 3, 4, 5, 6
Panther is a new, improved forage oat with top shelf yields and quality.	Loosen Soil	Good
	Forage Value	V. Good
It has very good disease	Ground Cover	V. Good
resistance.	Soil Builder	Good
	N Scavenger	V. Good
Untreated Seed	N Production	Poor

Esker Oats		ZONES: 5,6
Esker is the best oat for grain.	Loosen Soil	Good
It is a tremendous yielder,	Forage Value	V. Good
20-30 bushels higher than Jerry.	Ground Cover	V. Good
	Soil Builder	Good
USDA	N Scavenger	V. Good
Untreated Seed	N Production	Poor

TRITICALE

Description

Triticale is a cross between winter wheat and cereal rye. Its winter hardiness allows it to grow later in the fall than other cover crops. Its fibrous roots continue to grow through the winter down 60 inches or more, building soil organic matter. Triticale's rapid growth suppresses winter weeds better than rye. It produces a lot of biomass that is good as a mulch mat, forage or straw. Triticale has an allelopathic effect on weeds and following corn crops.

Management

Triticale can be winter-grazed, plowed under in spring as a green manure, cut and made into baleage, rolled after boot stage to provide a mulch, or allowed to go to grain and combined.

Establishment

Drill or no-till 80-150 lbs./A at a depth of 0.5-1 inch. Triticale can be mixed with hairy vetch, crimson clover and annual ryegrass. Use about 40 lbs./A of nitrogen in the fall to help establish and 70 lbs./A again in the spring if it's going to be used as a forage.

Byron's Spring Triticale

This aggressive triticale has wide leaves, great forage yields and is medium to late maturing.

It's an excellent nurse crop when sown at 35-50 lbs./A.

Loosen Soil	V. Good
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

HyTon Winter Triticale

ZONES: 1, 2, 3, 4, 5, 6

Poor

ZONES: 1, 2, 3, 4, 5, 6

- HyTon has a strong prostrate fallwinter growth habit that suppresses weeds and gives superior soil coverage.
- It has good forage yields with exceptional forage quality; excellent winterhardiness.

Loosen Soil	V. Good
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	V. Good
JUII DUIIUCI	v. 600u
N Scavenger	V. Good

N Production

Untreated Seed

Gainer 154 Winter Triticale ZONES: 1, 2, 3, 4, 5, 6

NEW

- Gainer is early-maturing to fit full-season corn rotations.
- It's winter-hardy enough to be grown in the North; exceptional yields.

Loosen Soil	V. Good
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

Untreated Seed

Feast'nCover

- Feast'nCover is an economical triticale to be used as a cover crop or forage.
- Triticale is a better soil builder then cereal rye; it makes soil more mellow and soft.

Untreated Seed

ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil	V. Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

SMALL GRAIN MIXES

Description

Triticale Plus Fall is a winter annual mixture that combines the strengths of improved forage triticale and Italian or annual ryegrass. The triticale adds agronomic stability for those not experienced with growing ryegrasses and more bulk for easier silo filling and unloading. The ryegrass in the mixture adds higher fiber digestibility (NDFD) and sugar content. This productive mixture can be followed with BMR sorghum-sudan or corn.

Tritical Plus Fall is an excellent choice to no-till fall seed into thinning alfalfa and cut one or two cuttings the following spring. Most growers will use only the ryegrass if they are doing more than one cut since it can be difficult to terminate after only one cut.

Management

Triticale Plus Fall gives flexibility for grazing or haylage or baleage. It works very well for double cropping after corn silage or no-tilled into old alfalfa stands in early fall in order to increase the following year's tonnage and quality in the first cutting.

ZONES: 1, 2, 3, 4, 5, 6	
Loosen Soil	V. Good
Forage Value	Excellent
Ground Cover Soil Builder	V. Good V. Good
N Scavenger	Good
N Production	Poor
	Loosen Soil Forage Value Ground Cover Soil Builder N Scavenger

Triticale Plus Fall

- This mixture of Winter Trit and annual ryegrass has fast growth and is very winter-hardy.
- It is easier to cut with a cutter bar than ryegrass alone and blows into a silo better.



Untreated Seed

ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil	V. Good
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	Good
N Production	Poor

Apply 30 units of N at planting. In early spring, at greenup, apply an additional 40-60 units of N to maximize tonnage and protein.

Caution: Allelopathy could affect the next crop unless either some light tillage is done or a large amount of liquid manure is applied.

Establishment

Seed at 70-100 lbs./A and drill at 0.5-0.75 inch deep.

Tritilage Pro	ZONES: 1, 2, 3, 4, 5, 6	
This mix of Byron's Spring Trit and forage peas provides excellent digestible fiber for energy.	Loosen Soil	V. Good
	Forage Value	Excellent
	Ground Cover	V. Good
The forage peas provide high protein along with nitrogen production.	Soil Builder	V. Good
	N Scavenger	Good
	N Production	Good
Untreated Seed		

Milk Max

ZONES: 1, 2, 3, 4, 5

ZONES: 1, 2, 3, 4, 5

Cood

Milk Max is a mixture of quality	
peas and forage oats.	

It can be used as a nurse crop for alfalfa or seeded alone.

Untreated Seed

Loosen Soli	Good
Forage Value	Excellent
Ground Cover	V. Good
Soil Builder	Good
N Scavenger	Good
N Production	Good

MaxiGro

USDA

MaxiGro is an economical mixture of organic peas and organic Jerry oats.

Untreated Seed

Loosen Soil	Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	Good
N Scavenger	Good
N Production	Good

Spelt

Spelt is a late-maturing grain closely related to wheat. As a forage, it has the potential to yield with triticale. Forage quality is excellent. When harvested for grain, spelt produces an excellent straw. Seed spelt at 110-150 lbs./A.

Champ Spelt	ZONES: 1, 2, 3, 4, 5, 6	
Champ is suitable for forage or grain.	Loosen Soil	V. Good
	Forage Value	V. Good
Champ has a good disease package.	Ground Cover	V. Good
	Soil Builder	V. Good
\sim	N Scavenger	V. Good
USDA	N Production	Poor

Comet Spelt	ZONES	1, 2, 3, 4, 5, 6
Comet is high-yielding, the best	Loosen Soil	V. Good
choice for a grain spelt.	Forage Value	V. Good
A shorter spelt, Comet has excellent standability.	Ground Cover	V. Good
,	Soil Builder	V. Good
	N Scavenger	V. Good
Untreated Seed	N Production	Poor

Sun Gold Spelt

- This unique brown-chaff spelt gets tall with good standability and excellent winter survival.
- The seed is smaller than most spelt making it easier to sow.
- Sun Gold is dual-purpose (forage or grain).

ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil	V. Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

Untreated Seed

Sonic Spelt

- With its tall growth and wide harvest window, Sonic is the best choice for a forage spelt.
- Sonic has vigorous tillering and is very late heading.

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Untreated Seed
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ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil	V. Good
Forano Voluo	Excellent
Forage Value	Excellent
Ground Cover	V. Good
Call Duilder	V. Good
Soil Builder	v. Good
N Scavenger	V. Good
	-
N Production	Poor

WHEAT AND BARLEY FOR GRAIN AND FORAGE

ZONES: 1, 2, 3, 4, 5, 6

ZONES: 1, 2, 3, 4, 5, 6

V. Good

Good

Good

Good Good

Poor

Wheat

Whether grown as a cover crop or for grain, wheat adds rotation to any cropping system. The seeding rate is 100-150 lbs./A for forage and 30-60 lbs./A for cover crop or in mixes. Harvested as a grain crop, wheat offers the option of double cropping with sorghum-sudan, radishes, or other cover crops.

Barley

Barley is gaining popularity in the Midwest for forage because it tends to be high in sugar and very soft and palatable, with high digestibility. The downside is it cannot take very wet areas, and it may winter-kill. As a grain, barley is 10 days earlier than wheat. Great for a double crop.

Pro 410 Winter Wheat	t zones:	1, 2, 3, 4, 5, 6
This wheat is a beardless variety	Loosen Soil	V. Good
with good rust resistance.	Forage Value	V. Good
It has had solid forage performance in the Midwest.	Ground Cover	V. Good
	Soil Builder	V. Good
	N Scavenger	V. Good
Untreated Seed	N Production	Poor

Cover Crop Wheat

This is a more economical	Loosen Soil
wheat for cover crop or forage.	Forage Value
T () () () () ()	I Ulage Value
This wheat is an alternative to	

cereal rye, though not quite as	Ground Cover	۷.
winter-hardy.	Soil Builder	V.
	Juli Dulluci	v.
	N Scavenger	۷.
ntreated Seed	N Production	

Untreated Seed

Lakeview Farms Wheat

Lakeview wheat brings the latest genetics in conventional	Loosen Soil	V. Good
or organic wheat.	Forage Value	Good
Lakeview wheat varieties were among the highest yielding	Ground Cover	V. Good
varieties in 2020 wheat trials by the University of Missouri.	Soil Builder	V. Good
\sim	N Scavenger	V. Good
Usba Untreated Seed	N Production	Poor

P-919 Winter Barley ZONES: 1, 2, 3, 4, 5, 6

Loosen Soil

Forage Value

Ground Cover

Soil Builder

N Scavenger

N Production

Loosen Soil

- P-919 Winter Barley is our only awnless variety.
- This barley is great for fall grazing and forage production.
- It grows tall and has aboveaverage lodging resistance.

Untreated Seed

Secretariat Winter Barley

ZONES: 1, 2, 3, 4, 5, 6

V. Good

V. Good

V. Good

V. Good

V. Good

V Good

Poor

- Secretariat is semi-smooth awn barley with great resistance to powdery mildew and leaf rust.
- It is shorter (about 33 in.) with moderately early heading.

	v. acca
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

Untreated Seed

Haymaker Spring Barley

Haymaker is our highest-yielding forage barley.

Loosen Soil **Forage Value**

Ground Cover

Soil Builder

N Scavenger

N Production

This is very high-quality barley that is earlier than oats.

Untreated Seed

Robust Spring Barley

- This barley is good for grain or forage.
- The plants are taller for more hay or straw.

USDA Untreated Seed

ZONES: 1, 2, 3, 4

ZONES: 1, 2, 3, 4, 5, 6

V. Good

V. Good

V. Good

V. Good

V. Good

Poor

Loosen Soil	V. Good
Forage Value	V. Good
Ground Cover	V. Good
Soil Builder	V. Good
N Scavenger	V. Good
N Production	Poor

COVER CROP PACKAGING OPTIONS

Byron Seeds has a bulk system dedicated to non-GMO, untreated and organic seed. We can custom mix seed to your specifications or help you develop a mix that fits your needs. Packaging options range from hopper-bottom trucks, seed tenders, totes, pro boxes, and bags—all the way down to a single pound. For large orders, we use a custom-designed mixer to mix an entire semi-load at a time. A popular package is a custom mix spouted directly into a hopper bottom semi-truck or seed tender. We can usually load a semi-truck in 40 minutes. Farmers with the trucks and infrastructure to pick up cover crop seed in bulk can save on packaging and shipping costs.







A very popular packaging option for mixes is tote bags—up to 2500 pounds per tote. These can be shipped via LTL trucks straight to your farm, eliminating the time and labor required to open and empty a lot of small bags.





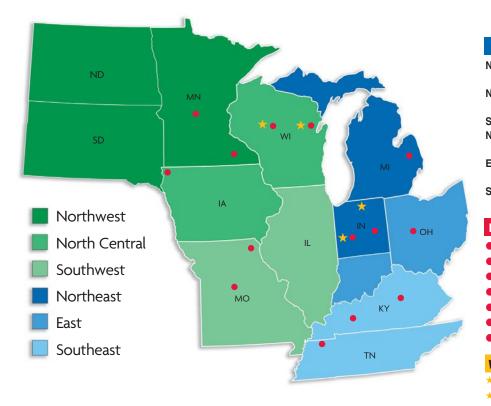
For cover crop advice and service, contact your local Byron Seeds dealer (see pages 34-35).

FORAGE COVER CROP INFORMATION CHART

Сгор	When Planted	When Harvested (as forage)	Approx. Days after Planting to Harvest	Seeding Rate Drilled	Seeding Depth	Forage Quality	Winter Survival	Regrowth	Comments
Spring Triticale	August or Early spring	Oct., Nov., June	60-70 days	100-125 Ibs./A	½ - 1 in.	Excellent Plus!	No	Poor	Excellent nurse crop.
Oats	August or Early spring	Oct., Nov., June	50-60 days	65 -100 Ibs./A (2-3 bu)	½ - 1 in.	Excellent	No	Fair	Allow 6-8 weeks before a killing frost.
Tritilage Pro or Milk Max	August or Early spring	Oct., Nov., June	60-70 days	75-100 lbs./A	1 in.	Very good	No	Fair	Plant in time to harvest before the first frost.
Spring Barley	August	Oct., Nov., June	50-60 days	75-100 lbs./A	1 in.	Very good	Not in North	Fair	Highest quality of small grains.
Winter Wheat or Winter Barley	August, September	Late spring		60-100 lbs./A	1 in.	Very good	Yes	Fair	Follow with a double crop or sum- mer cover.
Fall Triticale	Same as wheat	Late spring		100-125 Ibs./A	Up to 1½ in. later in season	Excellent	Yes	Fair	Great double crop planted after corn silage.
Winter Rye	As late as November	Late spring		60-100 lbs./A	Up to 1½ in. later in season	Very good if harvested on time	Almost guaranteed!	Fair	Hardiest of all fall-planted cover crops.
Spelt	Same as wheat	Late spring		110-150 Ibs./A	1-1½ in.	Very good	Yes	Fair	Highest yielding winter small grain. Later maturing than triticale.
Oats or Spring Barley & Fall Triticale	August	Oats or Spring Barley in Oct., Nov. & Fall Trit. in late spring	Oats or Spring trit in 50-60 days; rye in late spring	80-100 lbs./A of each seed	1 in.	Excellent Plus & Excellent	Spring crop no, Fall crop yes	Fair	Oats are inexpensive.
Oats or Spring Triticale & Winter Rye	August	Oats or Spring Trit. Oct., Nov.; winter rye late spring	Oats in 50 -60 days; Fall trit. in late spring	80-100 lbs./A of each seed	1 in.	Excellent Plus & good if harvested on time	Oats, Spring Triticale – no, Rye – yes	Fair	Oats provide quick ground cover.
Triticale Plus Fall	September As it gets later, switch to straight triticale.	Late spring		70-100 lbs./A	1-1½ in.	Excellent	Fall Triticale — yes, Ryegrass - Usually	Very good	The IRG should produce all summer long. If you won't harvest the IRG all summer, plant straight triticale.
Oats Plus	August or early spring	Oct., Nov., June	50-60 days	70-100 lbs./A	½ in.	Excellent Plus!	Oats — no, Annual Ryegrass - Usually	Very good	Quick to establish for superb yields and quality.
Forage Brassicas — usually planted with oats	Summer	Harvest by fall grazing	8-12 weeks depending on the brassica		1 in.	Excellent	Freezes out between 20°F and 5°F depending on the brassica	Very good	Great late grazing. Roots provide beneficial exudates for the soil.
Timothy	September	Late spring or Early fall		12 lbs./A	1/8 in.	Makes great grass hay in spring	Yes	Fair	This fall planted crop works best south of I-70. Can double crop after first cut.
Sorghum-Sudan, Sudan Hybrids	Once soil temps are 60 degrees and rising	Harvest by grazing until frost, then as baleage	45 days in warm enough ambient temps	35-50 lbs./A	1 in.	Excellent in BMR Gene 6	Stop at first frost	Very good although will stop at frost	Roots provide useful exudates for the soil. Sorghum produces much biomass.
Annual Ryegrass	August	Spring		15-20 lbs./A	1⁄4-1⁄2 in.	Excellent	Usually	Good	Good for aerial seeding
Italian Ryegrass	August	November	45 days	25-40 lbs./A	1⁄4-1⁄2 in.	Excellent	Usually	Good	Usually higher yields than annual ryegrass.

Notes: Planting dates are for Southern Wisconsin. Latitudes north or south should adjust accordingly. Wheat planting times are more generally known in an area than triticale, spelt or barley dates; however, they are the same. The later small grains are planted, seeding depths need to be 1½ in. to allow deeper roots for winter survival. When cover crops are rated for not surviving the winter, we are referring to Northern IL, IN, OH & IA.

When planted in the fall, spring small grains (oats and the spring versions of triticale, wheat and barley) exhibit a different growth pattern than when they are typically planted. In sensing that winter is coming, they will produce less NDF and more sugar to try to survive, even though they won't. The higher sugar and lower NDF in an already highly digestible plant makes it even more digestible. Cool-season grasses also exhibit the same growth pattern for the last cutting in mid to late fall.



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