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2021 PRODUCT GUIDE

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A MESSAGE TO OUR CUSTOMERS.

THANK YOU FOR YOUR BUSINESS. WE HIGHLY VALUE YOUR TRUST IN OUR PRODUCTS & SERVICE.

To Our Valued Customers,

On behalf of SEEDWAY, LLC we would like to thank you for your continued trust and loyalty in SEEDWAY in these uncertain times. Our commitment toward you has never been stronger as we face the global Covid-19 pandemic. The health and well-being of our customers, suppliers, associates, their families, and the communities where we operate are of utmost importance.

We are in the midst of a pandemic like none of us, our parents, and our grandparents have ever had to face. Not only are we contending with a virus that has altered the way we live our lives, it has changed the way we do everything.

There are many uncertainties about what is to come, but one thing is certain **Agriculture Is Essential.**

Many of you run the world's most essential industry – agriculture. Your acts of selflessness to remain and continue to play a vital role in the food supply chain does not go unnoticed.

In our industry we are no stranger to the term adversity, but more so we are also no stranger to the term perseverance. For 57 years, SEEDWAY has and will continue to be at the ready for you when the industry presents challenges and opportunities.

Thank you for your ongoing trust in SEEDWAY – in good times, and even more so in challenging times.

With warm regards,



JOHN BOZEMAN
CHIEF OPERATING OFFICER



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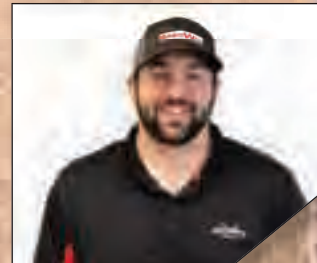
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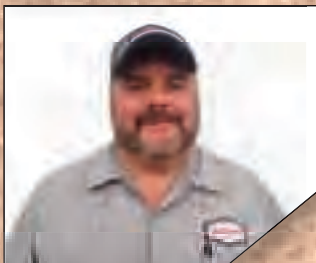
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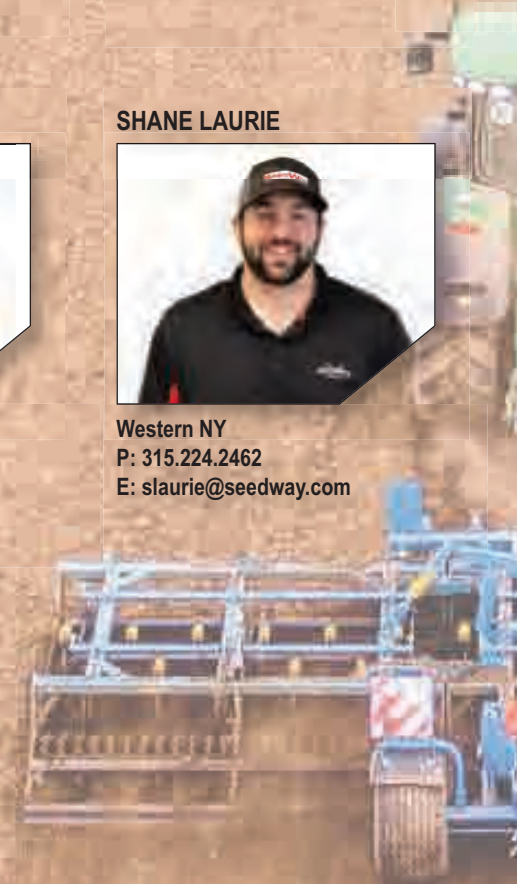


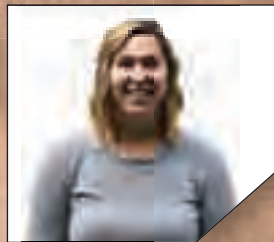
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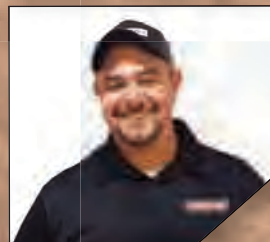
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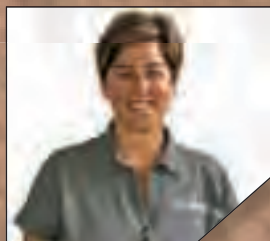
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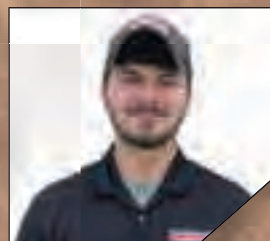
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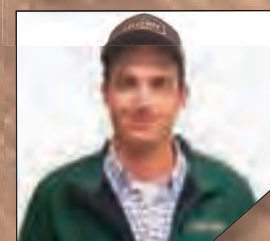
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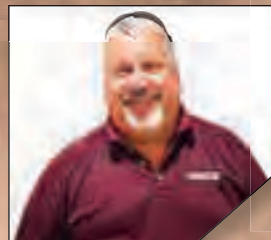
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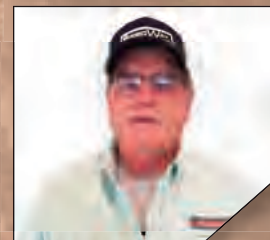
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FLEXIBILITY THAT FITS YOUR FARM.



JOHN DEERE
FINANCIAL

Mutli-use accounts are a service of John Deere Financial, f.s.b. John Deere Financing is available.

Ask about special financing that may be available to qualified customers.



We know **farming**. We know **finance**. We know **you**.

Get your financing from someone who knows as much about farming as they do about financing. We take a straight-forward approach to operational financing with time and money saving benefits.

- **Convenient and easy application process**
- **No penalties on early repayment**
- **Competitive interest rates**

Contact us for more details on all our financing programs!

*All applications are subject to credit approval by FS Agri-Finance underwriting.

**Must meet program requirements to be eligible for offer(s) on qualified products.

CONTACT YOUR SEEDWAY TERRITORY FIELD MANAGER
or the SEEDWAY Credit Department for more information at (585) 526 - 6391.









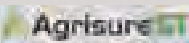


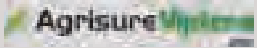

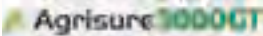

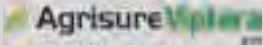



LIMITED WARRANTY

SEEDWAY, LLC warrants for one year from the date of sale that the seeds and plants sold conform to the label description, as required by state and federal seed laws. SEEDWAY, LLC MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, WHICH EXTEND BEYOND THE LABEL DESCRIPTION. LIABILITY FOR DAMAGES FROM ANY CAUSE, INCLUDING BUT NOT LIMITED TO, BREACH OF WARRANTY OR NEGLIGENCE, WITH RESPECT TO SUCH SEEDS OR PLANTS IS LIMITED TO A REFUND OF THE PURCHASE PRICE. THIS REMEDY IS EXCLUSIVE. Should purchaser wish to obtain different rights than set forth herein, it may negotiate with Seedway, LLC to obtain such additional rights at an increase in the purchase price of the seeds or plants. **IN NO EVENT SHALL SEEDWAY, LLC BE LIABLE FOR ANY INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS.** Any controversy or claim arising out of this sale shall be settled by arbitration, in Syracuse, New York, in accordance with the rules of the American Arbitration Association, and the decision of the arbitrators shall be final and binding upon both parties, and any judgement upon any award rendered may be entered in any court having competent jurisdiction. Any claim must be brought in connection with this transaction within one (1) year after the seeds or plants are sold. This limited warranty shall be interpreted and construed in accordance with the laws of the state of New York. These terms shall not be modified or amended except in writing, signed by both parties. By acceptance of the seeds or plants, purchaser acknowledges the terms of this limited warranty and limitation on damages and remedies. The terms of this limited warranty constitute the entire limited warranty between the parties regarding the sale of seeds or plants.

GRAIN CORN PRODUCTS

CORN TECHNOLOGY

CORN HYBRID TRAITS

SEEDWAY® BRAND	TRAIT NAME	TRAIT	INSECT & WEED CONTROL  
CONVENTIONAL	None	Non-GMO (no trait insertion) or Organic Prod. System	Variable / depending on native resistance of base genetics.
RR2	Roundup Ready® Corn 2		Glyphosate tolerant. Variable / depending on native resistance of base genetics.
GENVT2P (RIB)	VT Double PRO® RIB Complete® Corn Blend	 	Dual modes of action for above-ground insects and maximum protection against corn earworm, RIB (Refuge in the Bag).
GENSS (RIB)	SmartStax® RIB Complete® Corn Blend	  	Eight modes of action and herbicide control. Roundup Ready® 2 Technology and LibertyLink® RIB (Refuge in the Bag).
GT	Agrisure® GT		Glyphosate tolerant. Variable / depending on native resistance of base genetics.
GTCBLL	Agrisure® GT/CB/LL	 	Glyphosate tolerant, Corn Borer control, Glufosinate tolerant.
VIP 3110	Agrisure Viptera® 3110	 	Comprehensive above-ground insect control, Glyphosate tolerant, Glufosinate tolerant.
3000GT	Agrisure® 3000GT	 	Corn Borer control, Corn Rootworm control, Glyphosate tolerant, Glufosinate tolerant.
VIP 3111	Agrisure Viptera® 3111	 	Above-ground and below-ground insect control for higher-quality grain, increased yield potential. Glyphosate and Glufosinate tolerant.
Duracade 5222 EZ Refuge	Agrisure Duracade® 5222 E-Z Refuge®	 	Multiple modes of action against corn rootworm, corn borer and ear-feeding insects; E-Z Refuge, Glyphosate and Glufosinate tolerant.

CORN HYBRID TRAITS

LIBERTYLINK® PATENT STATEMENT



Seed products with the LibertyLink® (LL) trait are resistant to the herbicide glufosinate ammonium, an alternative to glyphosate in corn, and combine high-yielding genetics with the powerful, non-selective, post emergent weed control of Liberty® herbicide for optimum yield and excellent weed control. LibertyLink®, Liberty® and the Water Droplet logo are registered trademarks of BASF Corporation.

INSECT RESISTANCE MANAGEMENT® STATEMENT

Before opening a bag of seed, be sure to read and understand the stewardship requirements, including applicable refuge requirements for insect resistance management, for the biotechnology traits expressed in the seed set forth in the technology agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation to comply with those stewardship requirements.

Monsanto Company is a member of Excellence Through Stewardship® (ETS). Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops. Commercialized products have been approved for import into key export markets with functioning regulatory systems. 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. Excellence Through Stewardship® is a registered trademark of Excellence Through Stewardship

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. It is a violation of federal and state law to use any pesticide product other than in accordance with its labeling. NOT ALL formulations of dicamba or glyphosate are approved for in-crop use with Roundup Ready 2 Xtend® soybeans. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR SUCH USE IN THE STATE OF APPLICATION. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for in-crop use with Roundup Ready 2 Xtend® soybeans or cotton with XtendFlex® Technology.

B.t. products may not yet be registered in all states. Check with your seed brand representative for the registration status in your state.

IMPORTANT IRM INFORMATION: RIB Complete® corn blend products do not require the planting of a structured refuge except in the Cotton-Growing Area where corn earworm is a significant pest. See the IRM/Grower Guide for additional information. Always read and follow IRM requirements.



Agrisure® Technology incorporated into these seeds is commercialized under license from Syngenta Seeds, Inc. Herculex® Technology incorporated into these seeds is commercialized under license from Dow AgroSciences LLC. HERCULEX® and the HERCULEX Shield are trademarks of Dow AgroSciences LLC.

Roundup Ready® 2 Technology contains genes that confer tolerance to glyphosate. Roundup Ready 2 Xtend® soybeans contain genes that confer tolerance to glyphosate and dicamba. Products with XtendFlex® Technology contains genes that confer tolerance to glyphosate, glufosinate and dicamba. Glyphosate will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Glufosinate will kill crops that are not tolerant to glufosinate. Contact your seed brand dealer or refer to the Monsanto Technology Use Guide for recommended weed control programs.

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Before opening a bag of seed, be sure to read and understand the stewardship requirements, including applicable refuge requirements for insect resistance management, for the biotechnology traits expressed in the seed set forth in the technology agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligation to comply with those stewardship requirements.



CORN

PESTS

CORN ROOTWORM

- Corn rootworm beetles are yellow with black stripes down the back, sometimes appear greenish in color. CRW feeding on roots causes reduced uptake of nutrients and moisture. Depleted root systems can cause lodging during windy or wet conditions, commonly at pre-tassel, and will “goose-neck” back upright. Any injury to the roots allows other bacteria and fungi to come in and take harbor on the plant for further yield impact down the road (CRW can also feed on the silks of the ear causing a reduction in yield and quality by reducing pollination). Favorable conditions are moist soils near egg laying time and mild winters. Some natural enemies exist but CRW can easily overcome pressures to their populations (crop rotation has the largest impact in reducing CRW populations). Control the larvae by using an insecticide at planting or in the seed treatment and look for traited hybrids that control CRW. If silk feeding is the issue, there is an economic threshold for spraying the cost of insecticide application is usually justified once there are 20 beetles per plant feeding on the silks, or the silks are trimmed to about ½ inch long with 50% of the pollen to be shed.



Corn Rootworm^

EUROPEAN CORN BORER

- European corn borer mature larvae are around 1 inch in length and are a creamy/grayish color with rows of small marks or circles running down the length of the body. The larvae will feed on all above ground parts of the plant, most commonly found inside the whorl and leaf mid-rib before tassel. In times of later feeding you will find insects in the leaf collar and silks as they begin to tunnel into the ear and stalks. Yields will be reduced as nutrient and water uptake is inhibited, and kernels become damaged. Ear tunneling opens up pathways for other bacteria and fungi to impact the plant, especially molds and mycotoxins which cause after harvest issues. The use of varieties with traits to control ECB- Bt traits, and insecticides partially control ECB. Crop rotation is not an effective management strategy as they can feed on an alternative host crops including soybeans and grasses.



European Corn Borer^

WESTERN BEAN CUTWORM

- Larvae of western bean cutworm are tan/brown color with an orange “cap” on the head with no lines or markings down the back. Adults lay eggs on the upper side of the leaves in the upper canopy. You can see them as you walk through and look up. They are a black/purple color but the larvae eat them once they hatch so you may never see egg masses. Once hatched, they make their way from the leaf to the ear, never feeding on the leaves directly. Direct feeding on the ear reduces quality and yield, and allows for other fungi and bacteria to attack—especially molds and mycotoxins. This may cause issues after harvest in feed out and marketing of the grain. You can find more than one in an ear as they are not cannibalistic. When looking to control WBC, look for varieties that have the Viptera trait as this is the only effective method of control. There are some insecticides labeled for use but are hard when it comes to timing as the larvae must come in contact with the insecticide.



Western Bean Cutworm^

BLACK CUTWORM

- Black cutworms can grow to be about 1 5/8 inches in length and are dark brown/black in color. When scouting for them, they can be found in soil or near the surface. Black cutworm chew small holes in the leaves, and cut plants depending on the weather conditions. This mostly occurs above ground in wet soils and below ground in dry soils. Regrowth can occur as long as the damage occurs above the growing point of the plant. Moths are brought up to our region when storms occur before planting and tillage. Tillage should be a common practice in fields with known populations, and some high rates of insecticide will provide moderate control. Broadcast pesticides or baits may be used as a rescue treatment in heavily infested fields, but traited corn will provide the best control against cutworm.



Black Cutworm^

PESTS

COMMON ARMYWORM

- Armyworm larvae are about 1½ inches long with two orange stripes along their sides and 2 black stripes down their backs. They have 4 pairs of abdominal legs and their head has 2 vertical bars on the face. They feed only on leaf margins—the mid-rib will remain intact, they do not exhibit tunneling behaviors. Plants will recover from feeding unless the growing point of the plant has been damaged. Black/brown residue may be found around the whorl which is indicative of armyworm feeding. Economic damage is rarely seen. In conventionally tilled fields, reduced till, and heavy grass; the injury may be higher as moths lay eggs in grass prior to corn. For control, select varieties with Bt, manage for the grassy weedy patches near or in the field. Liquid insecticide can also be applied, but only if the larvae are less than 1 ½ inches and there is significant defoliation.



Common Armyworm[^]

FLEA BEETLE

- Flea beetles are tiny pinhead sized black insects. Most commonly found before the V5 stage in corn. Most damage will occur when plants are growing slowly due to poor growing conditions. Flea beetles strip away the top layer of plant tissue leaving lines or “tracks” on the surface. This will allow bacteria to get into the plant tissue- most commonly Stewart’s bacterial wilt. Stewart’s can then cause leaf wilt and reduce yields. Mild winters will increase flea beetle populations. Flea beetles lay their eggs in weeds and other crops near the host plant. Make sure to manage for weedy patches near the field, especially if the winter was milder than normal.



Flea Beetle[^]

DISEASES

CROWN ROT

- Standing water or waterlogged soil is where you typically see crown rot. Crown rot causes lodging and usually is associated with other stalk diseases such as fusarium and anthracnose. Cool soils and compaction also favor crown rot. Affected plants may be lighter in test weight, causing difficulty harvesting and yield loss. Commonly the crown of the plant, when split longitudinally, will show a brown/tan coloration near the crown when it should be healthy white. Usually other stalk diseases accompany crown rot as it decreases the health of the plant and weakens the stalk. Roots of infected plants are often weak and will break off causing poor stability with limited nutrient uptake. This is commonly seen during dry years that are followed by extended wet periods. It may be found sporadically around the field due to varying soil conditions.



Crown Rot[^]

CORN

DISEASES

GRAY LEAF SPOT

- Early lesions are small spots that have a necrotic halo around the edges. It is very hard to differentiate between several of the other fungal leaf diseases at an early age as they may look very similar. As it progresses, GLS lesions become rectangular with straight edges between the leaf veins. Lesions turn a grayish color and can merge together to take over large portions of the leaf. This disease is commonly found before silking and progresses from the lower leaves to the upper canopy. The pathogen builds up in residue over time, and is favored by hot temperatures and high humidity. Periods of extended leaf wetness enhance infection and spread. If the area of the leaf affected is large yield may also be impacted, especially before grain fill. Stalk rot may increase in heavily infested areas causing lodging and harvest loss. Look for varieties that show resistance to GLS, no hybrid is completely immune but it will slow development and impact of the disease. Susceptible hybrids may be sprayed with foliar fungicides if GLS is suspected in the area. Crop rotation will help but is not a total solution. The use of tillage will break down residues that harbor GLS, decreasing risk of infection the following year.



Gray Leaf Spot^A

NORTHERN CORN LEAF BLIGHT

- Early lesions are gray/green in appearance and elliptical becoming tan as they enlarge to a classic cigar shaped lesion. They are unrestricted by leaf veins, unlike GLS. In moist conditions, the lesions produce dark gray spores that give the plant a dirty appearance. As they progress the lesions can coalesce and cover almost the entire leaf margin causing heavy blighting. NCLB survives on corn debris and can build up over time especially in high residue and no till. This disease loves humid areas and is favored by heavy dews and frequent rain showers. Rain causes spores to be splashed onto the crop and temperatures above 65 degrees allow the onset of the disease. Generally, it will begin to manifest on the lower leaves and work its way up the plant. Yield loss can occur due to decreased leaf area for photosynthesis and limited ear fill may occur. Other stalk rots may move in secondarily and cause difficult harvest due to lodging. However, if the onset is late or after ear fill, yield loss will be minimal. For control, select hybrids that are resistant or show tolerance. Make sure to rotate crops and break up residues with tillage to decrease chances of survival. Some fungicide applications may reduce yield loss if disease is severe.



Northern Corn Leaf Blight^A

ANTHRACNOSE STALK ROT

- The same fungus that causes stalk rot can cause foliar disease early in the season. Mid-season you may see top dieback where plant death from the top down occurs a few weeks after tasseling. Late season infection is when shiny black discoloration occurs on the outside of stalks by the nodes. Infected stalks will easily be crushed when squeezed, this may cause an increase in lodging. If a microscope or hand lens is used you can find small hair like structures on the outside of the stems for positive identification. This disease is favored by plant stress, following pollination and may cause a reduction in yield with harvest difficulty if plants begin to fall over and lodge. When attempting to manage anthracnose try to rotate for at least one year, and look for varieties that show resistance.



Anthracnose Stalk Rot^A



**For More Information Contact Your
Territory Field Manager or Retail Sales Manager**

DISEASES

STEWART'S WILT

- Stewart's wilt is vectored in the gut of flea beetles. It can cause early season wilt and late season blight. Early season wilt has yellow or bleached leaf streaks, internal vascular discoloration, and the crown may begin to decay and start rotting. Eventually this can lead to plant death. Late season infection occurs after tasseling and shows large elongated lesions on the leaves. Commonly these lesions are narrow with wavy margins and tend to have a yellowish border. Late infection rarely results in plant death but may contribute to more stalk rots. It looks similar to NCLB but lesions are long and wavy, and only cause yield loss if stands are weakened early on or if the foliar infection takes over a large portion of the leaves, reducing photosynthesis. The best management technique is to focus on controlling flea beetle populations, insecticide treatment may help with this, and foliar insecticides may be used in cases when an economic threshold is reached.



Stewart's Wilt^

MYCOTOXINS IN CORN

- Mycotoxins in corn can be an issue in both grain and silage markets. Some years we see an increased presence of mycotoxins whereas others we don't see any issues. The reason we see mycotoxin issues in corn revolves around ear molds. Mycotoxins are produced by molds, but not all molds produce mycotoxins. The commonly seen mycotoxin DON or vomitoxin, is produced by gibberella ear mold. DON is one mycotoxin that causes corn to be rejected or docked at ethanol plants.
- When an ear has suffered damage from birds, hail, or insects; this allows molds to begin inside the husk and ear. Just because an ear has mold on it, even mycotoxin producing mold, does not mean there will be mycotoxins present. If a mold is growing on an ear and is not disturbed or stressed, it will continue to grow and reproduce. Once the mold is stressed by environmental factors it will begin to produce mycotoxins in defense. The longer corn remains in the field and subject to stress, the greater the chance of mycotoxins.
- When it comes to grain corn, drying will not remove mycotoxins, but will slow down their development. In silage, mycotoxins can be harmful if fed to animals, especially DON. Livestock are affected by the following molds and their corresponding mycotoxins produced: fusarium, gibberella, penicillium, and aspergillus. If potentially feeding infected silage research feeding guidelines for the appropriate toxic levels.

GRAIN CORN PRODUCT KEY

RATINGS

1 = Best

PLANT HEIGHT

T = Tall
MT = Medium - Tall
M = Medium
MS = Medium - Short

EAR HEIGHT

M = Medium
M+ = Medium Plus

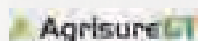
GRAIN CORN HYBRIDS

SW 1994GT

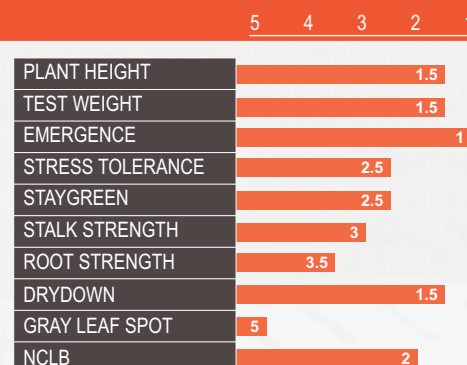
Singe trait glyphosate short season winner for Northern zones where good plant and ear size fit dual purpose acres. Maintains stature across variable conditions. Population flexible. Good early vigor, fast drydown, good test weight, and oil content for high quality feed.

LIMITATIONS: Adequate roots for general use. Roots may not be adequate for muck soils.

MANAGEMENT: Use for short maturity, strong emergence, high grain yield in maturity, and ability to produce across variable soil types. Structured refuge option.



80 DAY RM <small>*RM: Northern Rating</small>	
FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	FLEX
EAR HEIGHT	M-H
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	EXCELLENT



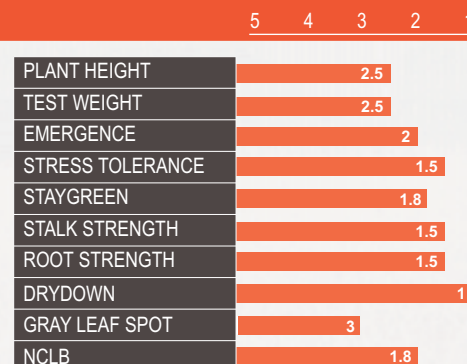
NEW SW 2190GENSS (RIB)

Consistent yields for good and variable soils with strong agronomics. SmartStax (RIB) for broad acre use in longer corn rotations. Premier rootworm product under 85 days RM.

MANAGEMENT: Good fit for corn on corn acres.



83 DAY RM <small>*RM: Northern Rating</small>	
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	VERY GOOD
EAR PICKING	GOOD



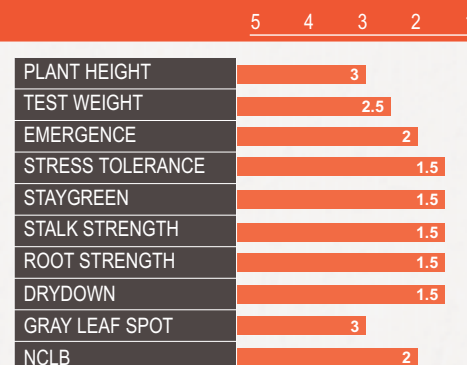
'SW 2369 3000GT

Good 3000GT grain yield with potential for profitable northern grain production. Well adapted in eastern highland areas of Maryland and Pennsylvania to the Canadian border. Handles Eyespot well in years that the disease was present.

MANAGEMENT: 3000GT is best used for longer corn rotations in very high yield potential locations.



84 DAY RM <small>*RM: Northern Rating</small>	
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	GOOD



SW 2840GENVT2P (RIB)

Excellent top end yield for ideal and variable yield environments. Very good stand establishment and early vigor for early planting and reduced tillage. RIB - no refuge requirements. Common Rust resistant. Above average tolerance to NCLB.

LIMITATIONS: Fixed ear. Use with higher populations.

MANAGEMENT: Ideal fit for first and second year corn.



87/86 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD

PLANT HEIGHT	3
TEST WEIGHT	2.5
EMERGENCE	1.5
STRESS TOLERANCE	1.5
STAYGREEN	1.5
STALK STRENGTH	2
ROOT STRENGTH	1.5
DRYDOWN	2.5
GRAY LEAF SPOT	3.5
NCLB	2

NEW SW 3590GENVT2P (RIB)

New grain yield champion to rival and eventually replace proven SW 3600GENSS (RIB). Grain and silage yield performance leads industry in maturity. Must try hybrid for broad acre use on short and medium corn rotations. Adaptable across locations in research trials.

MANAGEMENT: Target first or second year corn acres.



90/89 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	INTERMEDIATE
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	M
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	VERY GOOD
EAR PICKING	VERY GOOD

PLANT HEIGHT	1.5
TEST WEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	2
STALK STRENGTH	2
ROOT STRENGTH	2
DRYDOWN	2.5
GRAY LEAF SPOT	3.5
NCLB	1.5

SW 3110GENSS (RIB) • SW 3110GENVT2P (RIB)

Big grain yield potential with SmartStax® and VT Double Pro® options on same base genetics. SmartStax® RIB Complete® for broad acre use and longer corn rotations, Double Pro® for first and second year corn. Very good stand establishment and early vigor for early planting and reduced tillage.

LIMITATIONS: The LibertyLink™ option is only available for the SW 3110GENSS RIB option. Not the SW 3110GENVT2P RIB option.

MANAGEMENT: Good yield fit to high, medium, and low yield acres. Flexible.



90/89 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD

PLANT HEIGHT	1.5
TEST WEIGHT	2.5
EMERGENCE	1.5
STRESS TOLERANCE	2
STAYGREEN	2
STALK STRENGTH	2
ROOT STRENGTH	2
DRYDOWN	2.5
GRAY LEAF SPOT	4
NCLB	2.5

GRAIN CORN HYBRIDS

SW 3664RR

Extremely productive dual purpose hybrid for grain and silage with grain drydown. Holds plant size well across environments with ear flex seldom seen in the maturity. Nice snapper and husker with ear flex to accommodate a wide range of populations. Elite dual purpose hybrid for HMC, snaplage, silage and support use for grain.

LIMITATIONS: No GMO insect trait protection - rootworm protection unsuitable for long corn rotations.

MANAGEMENT: Exceptional choice where ear flex is an advantage. Recommend medium to high populations in high fertility environments. Structured refuge option.



91/90 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	FULL-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	EXCELLENT

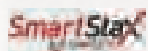
PLANT HEIGHT	2
TEST WEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	3
STAYGREEN	2.5
STALK STRENGTH	3.5
ROOT STRENGTH	3
DRYDOWN	1.5
GRAY LEAF SPOT	4
NCLB	3

SW 3600GENSS (RIB)

High and stable grain yield for northern grain production with cooler temperatures. Can yield with longer season maturities and dry faster. Long rotation fit with rootworm and corn borer protection. Medium plus hybrid in stature, holding plant size across variable conditions. Excellent stalks and roots for harvest flexibility.

LIMITATIONS: Average Gray Leaf Spot resistance.

MANAGEMENT: Use for any position in the corn rotation, including late cycle where corn borer and rootworm risk increase significantly.



92/91 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	VERY GOOD
EAR PICKING	GOOD

PLANT HEIGHT	2
TEST WEIGHT	2
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	3
STALK STRENGTH	1.5
ROOT STRENGTH	1.5
DRYDOWN	1.5
GRAY LEAF SPOT	4
NCLB	1.5

NEW SW 3624RR

Single trait Roundup Ready® Corn 2 with excellent north/south adaption for easy placement. Versatile across soil types and harvest methods. Nice grain or silage fit on Roundup Ready® acres. Excellent consistency of performance over locations and years.

MANAGEMENT: Best fit on first and second year corn acres.



92/91 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	BELOW AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	VERY GOOD
EAR PICKING	GOOD

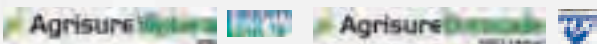
PLANT HEIGHT	2
TEST WEIGHT	2
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	3
STALK STRENGTH	2
ROOT STRENGTH	1.5
DRYDOWN	2.5
GRAY LEAF SPOT	3.5
NCLB	1.8

SW 3569VIP 3110 • SW 3569DC 5222

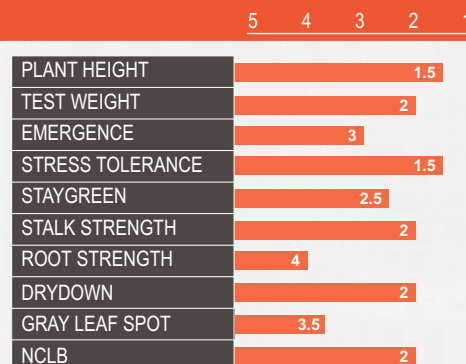
High and stable yielding grain hybrid with the Agrisure Viptera® 3110 and Agrisure Duracade® 5222 E-Z Refuge® trait stacks. Holds plant size well across environments with very good fit for silage. SW 3569 3110 best fits first and second year corn. SW 3569 5222 best fits second year corn and longer corn rotations. Highly productive for grain and silage. Excellent choice for droughty acre.

LIMITATIONS: Cold conditions late season may slow grain finish in extreme northern zones.

MANAGEMENT: Strong performing broad acre product that can rise to highest yield levels when good conditions enable peak performance.



	93/92 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	3110 - VERY GOOD 5222 - EXCELLENT
SHELLING EASE	VERY GOOD
EAR PICKING	GOOD



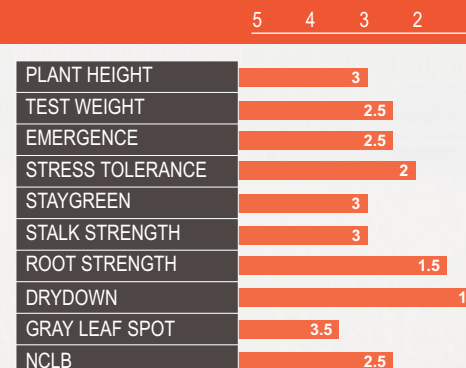
SW 3750

Conventional grain profile hybrid with good silage production at higher populations. Exceptional drydown including northern environments and cooler locations at elevation. Efficient plant profile for good water utilization. Good stand establishment history suited for minimum tillage and early planting. Dries well in field, reducing drying cost and boosting grain profitability.

LIMITATIONS: May show late foliar lesions - has not affected grain fill or test weight. Not glyphosate tolerant.

MANAGEMENT: Strongest performance in first and second year corn. Very good yield history following soybeans. Structured refuge option.

	93/92 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	L - M
FOLIAR/STALK ANTHRACNOSE	AVERAGE+
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	EXCELLENT



SW 3854RR

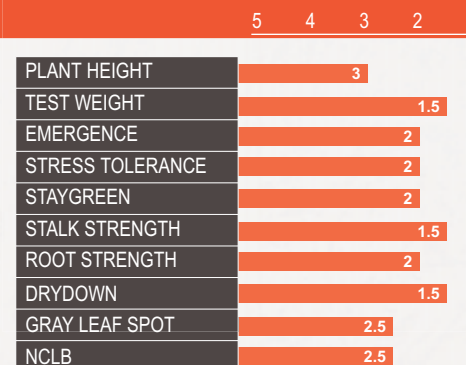
Single trait Roundup Ready® Corn 2 with excellent southern and northern adaptation for easy placement. Versatile across soil types and harvest methods. Also versatile for grain, snaplage, silage, and any type of harvest. Native Anthracnose Stalk Rot resistance.

LIMITATIONS: No trait insect protection.

MANAGEMENT: All uses, adds genetic diversity while fitting most rotation needs - performed in high residue conditions. Structured refuge option.



	94/93 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	FLEX
EAR HEIGHT	M-S
FOLIAR/STALK ANTHRACNOSE	AVERAGE++
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD



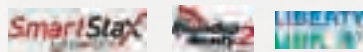
GRAIN CORN HYBRIDS

SW 3768GENSS (RIB)

Big grain yield potential with solid eastern U.S. adaptation. SmartStax® RIB Complete® for broad acre use and longer corn rotations. Solid agronomics round out this leading product good for high residue acres. Exceptional top end grain yield.

LIMITATIONS: Fast growth, heavy draw on nutrients. In poor drainage situations evaluate nitrogen supply, sidedress nitrogen if denitrification occurs.

MANAGEMENT: SmartStax® recommended for longer rotations and excellent in high residue conditions. Excellent response to high fertility.



95/94 DAY RM *RM: NY/CCB	
FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	EXCELLENT

	5	4	3	2	1
PLANT HEIGHT			3		
TEST WEIGHT				2	
EMERGENCE				2	
STRESS TOLERANCE				2	
STAYGREEN					1.5
STALK STRENGTH				2	
ROOT STRENGTH			3		
DRYDOWN					1.5
GRAY LEAF SPOT		4			
NCLB					2

SW 3770VIP 3110

Above average grain performance in early environments. Contains the Agrisure Viptera® 3110 trait stack for broad lepidopteran insect protection. Likes high yield environments. Medium stature, erect leaves, and lower ear placement. Good seedling vigor and early growth. Adequate drydown. Good test weight. More performance consistency in better drained soils.

MANAGEMENT: Better fit for first and second year corn acres. Harvest on time.



95/94 DAY RM *RM: NY/CCB	
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD

	5	4	3	2	1
PLANT HEIGHT			3		
TEST WEIGHT			3		
EMERGENCE				2.5	
STRESS TOLERANCE			3		
STAYGREEN				2.5	
STALK STRENGTH			3		
ROOT STRENGTH				3.5	
DRYDOWN				3	
GRAY LEAF SPOT		4.5			
NCLB					3

SW 3874RR

Single trait Roundup Ready® Corn 2 widely adapted with good plant height for grain and silage use. Versatile across soil types and harvest methods. Fits grain, snaplage, silage and any type of harvest. Native Anthracnose stalk rot resistance.

LIMITATIONS: No GMO insect trait protection - rootworm protection unsuitable for long corn rotations.

MANAGEMENT: Use as a broad acre single trait glyphosate choice for grain and dual purpose acres. Structured refuge option.



98/97 DAY RM *RM: NY/CCB	
FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	FLEX
EAR HEIGHT	M+
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M+
PEST TOLERANCE	VERY GOOD
SHELLING EASE	VERY GOOD
EAR PICKING	EXCELLENT

	5	4	3	2	1
PLANT HEIGHT					1
TEST WEIGHT				1.5	
EMERGENCE				1.5	
STRESS TOLERANCE				2	
STAYGREEN				2	
STALK STRENGTH					1.5
ROOT STRENGTH			3		
DRYDOWN				2.5	
GRAY LEAF SPOT					2
NCLB					2

NEW SW 3960GENSS (RIB)

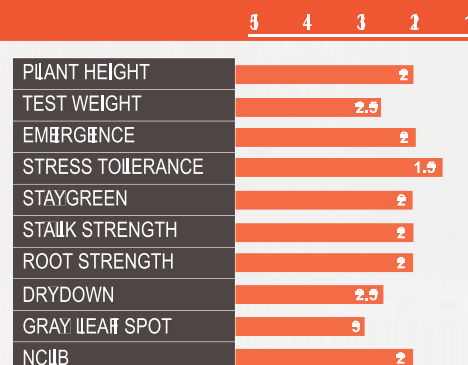
Excellent top end grain yield with wide area of adaption. Better southern movement than SW 4000GENSS and others in this maturity. SmartStax® RIB Complete for broad acre use in longer corn rotations. Excellent season long eye appeal and late season staygreen for maturity. More ear flex than most hybrids at 98 RM.

MANAGEMENT: Flexible use in rotations.

98/97 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	MEDIUM WITH FLEX
EAR HEIGHT	M+
FOLIAR/STALK ANTHRACNOSE	M -
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	VERY GOOD
EAR PICKING	GOOD



SW 4000GENSS (RIB) & SW 4000GENVT2P (RIB)

Grain yielder with drydown in SmartStax® RIB Complete® package. Plot topping history in high yield locations. SmartStax® RIB Complete® for broad acre use and longer corn rotations. Good performance in zone and north of zone. ASR gene for Stalk Anthracnose resistance.

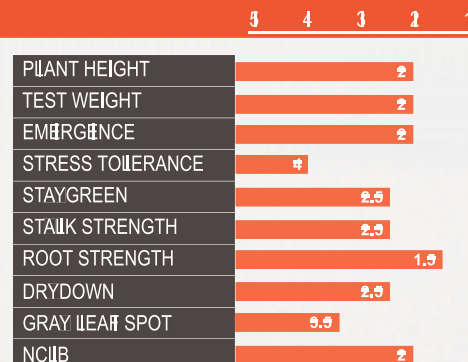
LIMITATIONS: Moderate Western Bean Cutworm protection.

MANAGEMENT: Point to high yielding acres.

99/98 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD



SW 4010GENSS (RIB)

Proven eastern yielder with drydown. SmartStax® RIB Complete® for broad acre use, including longer corn rotations. Combination of yield, agronomics and drydown make for profitable grain production.

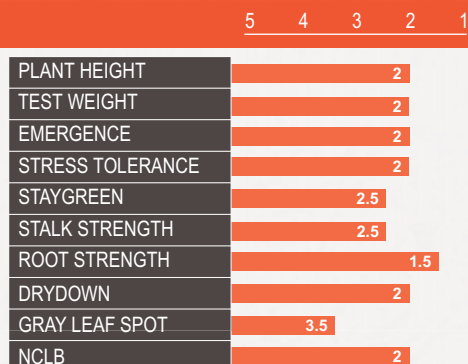
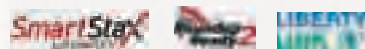
LIMITATIONS: Average Gray Leaf Spot tolerance.

MANAGEMENT: Moderate fungicide response due to solid disease package; with best fungicide response under early and heavy disease pressure.

100/99 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD



GRAIN CORN HYBRIDS

SW 4030GENSS (RIB) • SW 4030GENVT2P (RIB) • SW 4030

New grain yield champions at 100 RM with wider adaptability across soil types than predecessors. SmartStax® RIB Complete option for broad acre use in longer corn rotations. VT Double PRO® RIB Complete® version for short rotations. Conventional hybrid option. Flex style ear adapts to moderate planting populations and maintains high row count.



100 DAY RM <small>*RM: CCB</small>	
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	MEDIUM
PLANT POPULATION	M - H
PEST TOLERANCE	SS - EXCELLENT CV - GOOD 2P - VERY GOOD
SHELLING EASE	VERY GOOD
EAR PICKING	VERY GOOD

	5	4	3	2	1
PLANT HEIGHT				2.5	
TEST WEIGHT				2.5	
EMERGENCE				2	
STRESS TOLERANCE				1.5	
STAYGREEN				2.5	
STALK STRENGTH				1.5	
ROOT STRENGTH					1
DRYDOWN				1.5	
GRAY LEAF SPOT				3.5	
NCLB					2

SW 5410

Erect leaved conventional grain hybrid with consistent performance for grain and dual purpose acres. Exceptional drydown and test weight, including northern environments and cooler locations. Grain matures well when planted early and late, including the north.

LIMITATIONS: May show late season Northern Corn Leaf Blight of certain races - good record maintaining yield in presence of NCLB over years. Not glyphosate tolerant.

MANAGEMENT: Good choice across variable soils. Free native genetic resistance to first generation corn borer. Like other conventionals has limited resistance to second generation corn borer. Exceptional root strength, including compacted soils.

104/103 DAY RM <small>*RM: NY/CCB</small>	
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	L-M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	EXCELLENT

	5	4	3	2	1
PLANT HEIGHT				2.5	
TEST WEIGHT					1
EMERGENCE				1.5	
STRESS TOLERANCE				1.5	
STAYGREEN				2.5	
STALK STRENGTH				2.5	
ROOT STRENGTH					1
DRYDOWN					1
GRAY LEAF SPOT				3	
NCLB				2.5	

SW 5440GENSS (RIB) • SW 5440GENVT2P (RIB) • SW 5440

Exceptional grain yield potential. Proven performers in wide area of adaptation. Moves south well and consistently north. High and consistent grain performance in the mid-south. Leader hybrid. A conventional version joins GENSS and GENVT2P for 2021 planting.

LIMITATIONS: Low populations could limit yield potential. The LibertyLink™ option is only available for the SW 5440GENSS (RIB) option. Not the SW 5440GENVT2P (RIB) or SW 5440 cv options.

MANAGEMENT: Plant populations should be on the high side for the soil resource and managed for high yield.



106/105 DAY RM <small>*RM: NY/CCB</small>	
FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT (SS & 2P) GOOD - CV
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD

	5	4	3	2	1
PLANT HEIGHT				2.5	
TEST WEIGHT				2.5	
EMERGENCE				2	
STRESS TOLERANCE				2	
STAYGREEN				2	
STALK STRENGTH				2	
ROOT STRENGTH				2	
DRYDOWN				1.5	
GRAY LEAF SPOT				3	
NCLB					2

SW 5554GT

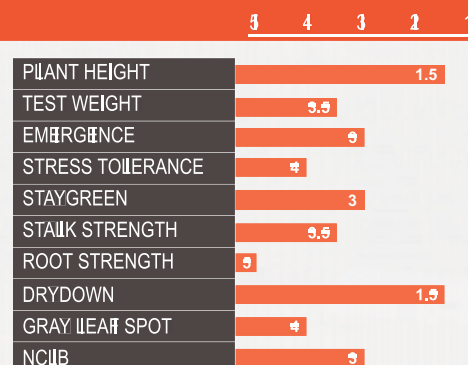
Single trait Glyphosate hybrid with strong dual purpose profile and wide adaptation. Versatile across soil types and harvest methods. Also versatile for grain, snaplage, silage and any type harvest. Consistent performer year to year.

LIMITATIONS: Moves south better than north where grain is to be harvested - more flexible northern fit for dual purpose & silage acres.

MANAGEMENT: Solid flex ear hybrid for wide use on any acre.



	106/105 DAY RM
	*RM: NY/CCB
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	FLEX
EAR HEIGHT	M+
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	EXCELLENT



SW 5569 3000GT

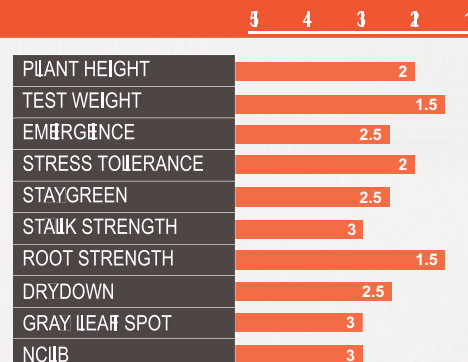
Northeast regionally adapted, moving north & south well. Good stand establishment history which makes for consistency over acres. Replaces SW 5559GTRW with more grain yield potential, especially north. Larger style plant with rugged architecture.

LIMITATIONS: Yields in presence of NCLB.

MANAGEMENT: Excellent option on corn after corn and rotated acres. Resistant to most races of FNCLB. It will show late lesions.



	106/105 DAY RM
	*RM: NY/CCB
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M+
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M+
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	EXCELLENT



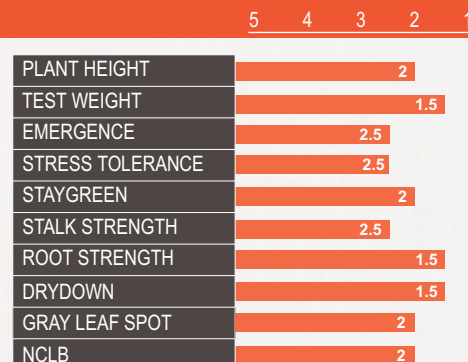
NEW SW 6340GENVT2P (RIB)

Top end grain yield potential east and west with excellent health scores including Gray Leaf Spot in heavy infestations. Good test weight enabled by Gray Leaf Spot, Northern Corn Leaf Blight, and broad spectrum disease resistance. Deep and dense kernels hide yield.

MANAGEMENT: Use on shorter rotation acres.



	107/106 DAY RM
	*RM: NY/CCB
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M+
PEST TOLERANCE	VERY GOOD
SHELLING EASE	VERY GOOD
EAR PICKING	GOOD



GRAIN CORN HYBRIDS

SW 6540GENSS (RIB) & SW 6540GENVT2P (RIB)

Yield champion in testing, both high yield and variable locations. Combines yield and agronomics with health to work in zone and south. Go to hybrid for genetic Anthracnose Stalk Rot and Gray Leaf Spot Resistance. New GENSS (RIB) for corn after corn acres.

LIMITATIONS: Limited ear flex.

MANAGEMENT: Keep populations in the medium to high range.



	108/107 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M-H
PEST TOLERANCE	SS - EXCELLENT VT2P - VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD

	5	4	3	2	1
PLANT HEIGHT				2.5	
TEST WEIGHT				2	
EMERGENCE				1.5	
STRESS TOLERANCE				2	
STAYGREEN			3		
STALK STRENGTH				1.5	
ROOT STRENGTH				1.5	
DRYDOWN				2.5	
GRAY LEAF SPOT				1.5	
NCLB				1.5	

NEW SW 6610GENSS (RIB)

Top end grain yield performance for Eastern and Central U.S. locations. Good plant stature and robustness for grain and silage. SmartStax® RIB Complete® Corn Blend for broad acre use where Corn Borer and Rootworm protection are needed.

MANAGEMENT: Use on short or long rotation acres.



	110/109 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	H
EAR TYPE	FLEX
EAR HEIGHT	M - M+
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD

	5	4	3	2	1
PLANT HEIGHT					1.5
TEST WEIGHT				2.5	
EMERGENCE				2.5	
STRESS TOLERANCE			3		
STAYGREEN			3		
STALK STRENGTH				1.5	
ROOT STRENGTH				1.5	
DRYDOWN				1.5	
GRAY LEAF SPOT				3	
NCLB					2

SW 6614RR

Single trait Roundup Ready® Corn 2 hybrid with superb yield punch across locations. Wide area adaptation including Mid-Atlantic, Coastal US, into the deep south. Versatile for grain, snaplage and silage with an especially strong yield history behind soybeans in the rotation.

LIMITATIONS: Single trait Roundup® best suited to first and second year corn.

MANAGEMENT: Consistent grain performer with wide acre suitability. Structured refuge option.



	110/109 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	GOOD

	5	4	3	2	1
PLANT HEIGHT					2
TEST WEIGHT				3	
EMERGENCE				2.5	
STRESS TOLERANCE				2	
STAYGREEN				2.5	
STALK STRENGTH				2.5	
ROOT STRENGTH				2	
DRYDOWN				2.5	
GRAY LEAF SPOT				3	
NCLB					2

SW 6630GENSS (RIB)

Versatile SmartStax® hybrid with consistent yield and performance on more stress prone soils. Nice appearance late season with solid agronomics making a complete package. Good choice for variable soils, though it should not be limited to these sites.

LIMITATIONS: Fungicide protection may provide additional boost in performance in corn after corn rotations, especially in the Mid-Atlantic, southward.

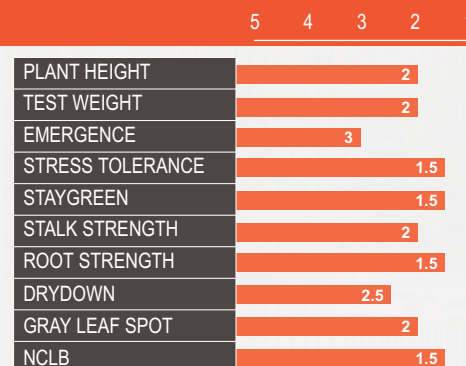
MANAGEMENT: Nice finishing hybrid for maturity. Monitor grain moistures to prevent harvest losses as moistures can dip below optimum harvest ranges.



110/109 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	EXCELLENT



SW 6760GENSS (RIB)

Widely adapted with consistent high grain yield. SmartStax trait brings rootworm control to continuous corn acres. ASR gene for Anthracnose Stalk Rot resistance. Handles medium-high populations. Good ear girth and kernel depth. A new level of SmartStax performance at this maturity.

LIMITATIONS: Average-adequate test weight.

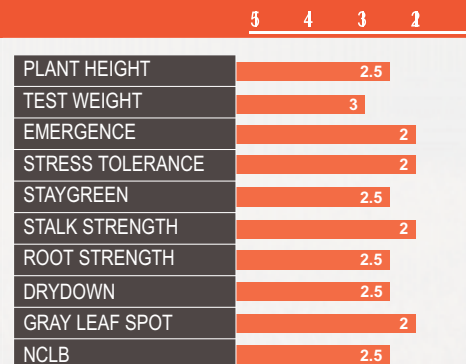
MANAGEMENT: Better silage option in the maturity than sister hybrid SW 6780GENVT2P (RIB).



113/112 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD



SW 6780GENVT2P (RIB)

Exceptionally wide area of adaptation from southern PA to mid-south without east/west limits. Strong yield performer responding to higher management on ideal and variable sites. Anchor hybrid for the maturity, supplement with complementary hybrids to minimize production risk.

LIMITATIONS: Not as well adapted in the deep south.

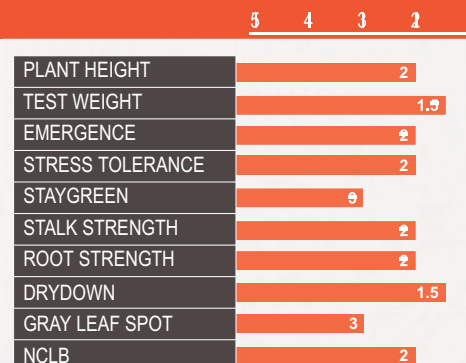
MANAGEMENT: Corn after corn with fungicide. This is an "in zone hybrid" that should not be pushed south of zone. ASR gene for Anthracnose Stalk Rot Resistance



113/112 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD



GRAIN CORN HYBRIDS

SW 6790GENVT2P (RIB)

Exceptional yield in strip trials and on farm testing. Good drydown supports profitable grain production. Strong agronomic package with balanced style ear and good husk coverage. New "go to" hybrid for wide acre use. Hard top yield of this hybrid.

LIMITATIONS: None known.

MANAGEMENT: High populations for grain. Has ASR gene for acres prone to Anthracnose.



FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD

113/112 DAY RM
*RM: NY/CCB

PLANT HEIGHT	2
TEST WEIGHT	1.5
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	3
STALK STRENGTH	2
ROOT STRENGTH	2
DRYDOWN	1.5
GRAY LEAF SPOT	3
NCLB	2

SW 7000

Conventional hybrid with excellent grain and silage yield potential. Widely adapted north/south and east/west across soil types and cultural practices. Tough conventional hybrid that can handle Mid-Atlantic and Mid-South heat stress and disease pressure.

LIMITATIONS: No insect protection. Not glyphosate tolerant.

MANAGEMENT: Any acre fit.

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M+
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	GOOD - VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD

114 DAY RM
*RM: CCB

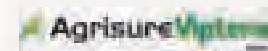
PLANT HEIGHT	2.5
TEST WEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	2.5
STALK STRENGTH	2
ROOT STRENGTH	1.5
DRYDOWN	2.5
GRAY LEAF SPOT	2.5
NCLB	2.5

SW 7559VIP 3110

Well adapted southern Pennsylvania to Florida and the coastal US. Total package with grain yield, test weight, and agronomics. Good vigor and growth for a late hybrid. Consistently good performance where Gray Leaf Spot is present. Fancy grain near food grade level. Exciting new genetic platform.

LIMITATIONS: Average drydown.

MANAGEMENT: Use where exceptional agronomics are needed to support high yield.



FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FIXED
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	VERY GOOD
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	VERY GOOD
EAR PICKING	VERY GOOD

115 DAY RM
*RM: CCB

PLANT HEIGHT	2
TEST WEIGHT	1.5
EMERGENCE	2.5
STRESS TOLERANCE	2
STAYGREEN	1.5
STALK STRENGTH	1.5
ROOT STRENGTH	1.5
DRYDOWN	2.5
GRAY LEAF SPOT	2
NCLB	2.5

SW 7560GENVT2P (RIB)

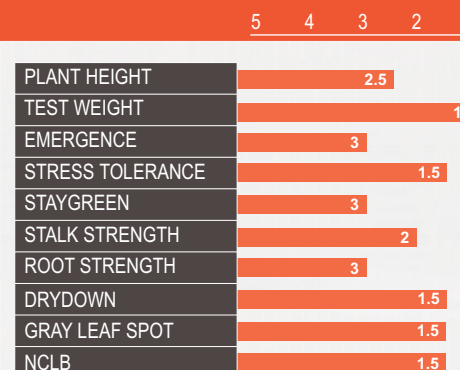
Extremely wide adaptation demonstrated from PA to Florida without east/west limitations. High and stable yield potential with steady performance across varying stress levels and soil conditions. Excellent wide acre hybrid for the deep south.

LIMITATIONS: None known.

MANAGEMENT: Use on any acre. Has ASR gene for acres prone to Anthracnose.

115 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD



SW 7700GENSS (RIB)

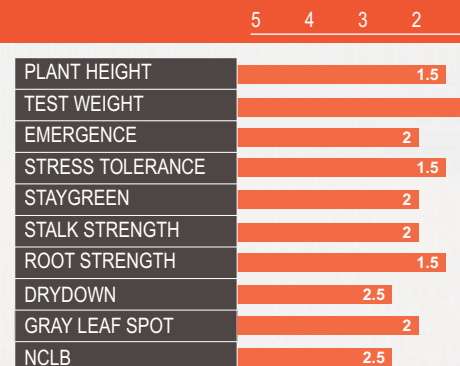
High yield history SmartStax® hybrid with exceptional test weight. Adapted widely from the southern PA border to the Gulf Coast, east or west.

LIMITATIONS: Fungicide protection may provide additional boost in performance in corn after corn rotations, especially in the Mid-Atlantic, southward.

MANAGEMENT: Nice finishing hybrid for maturity. Monitor grain moistures to prevent harvest losses as moistures can dip below optimum harvest ranges.

116 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M+
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M
PEST TOLERANCE	EXCELLENT
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD



SW 8000

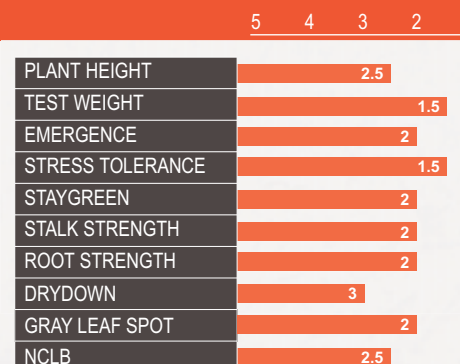
Conventional hybrid with excellent grain and silage yield potential in southern locations. Yield enhanced by girthy ear and higher populations. Works across soil types and cultural practices. Tough conventional hybrid that has handled Mid-Atlantic and Mid-South heat stress and disease pressure.

LIMITATIONS: Lower yield potential at low populations. Not glyphosate tolerant.

MANAGEMENT: Any acre fit including stress locations.

117 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M+
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD
SHELLING EASE	EXCELLENT
EAR PICKING	VERY GOOD



GRAIN CORN HYBRIDS

SW 8009VIP 3111

Strong grain and silage performance in full season hybrid, including the deep south. Well adapted from southern PA to Florida and the Coastal US to the eastern corn belt. This hybrid is widely adapted, including the stress prone acre.

LIMITATIONS: Moves south to the hotter zone better than north to the cooler zone.

MANAGEMENT: Use widely across tough and good acres.



117 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	FLEX
EAR HEIGHT	M
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	VERY GOOD
EAR PICKING	GOOD

PLANT HEIGHT	2.5
TEST WEIGHT	1.5
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	2
STALK STRENGTH	2
ROOT STRENGTH	2
DRYDOWN	3.5
GRAY LEAF SPOT	2
NCLB	2

NEW SW 8100GENSS (RIB)

Exceptional yield potential with agronomics and high test weight corn. SmartStax® RIB Complete® with good East / West / Northern movement in addition to Southern movement. Premier product for continuous corn acres with above average disease resistance. This hybrid has a test weight that is considered elite! Get to know this hybrid quickly!



117 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M+ (occasionally higher)
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	VERY GOOD
EAR PICKING	VERY GOOD

PLANT HEIGHT	2
TEST WEIGHT	1
EMERGENCE	3
STRESS TOLERANCE	2.5
STAYGREEN	1
STALK STRENGTH	1
ROOT STRENGTH	1.5
DRYDOWN	3
GRAY LEAF SPOT	2
NCLB	2

SW 8109VIP 3111

Strong full season grain and silage performance, including the deep south. Well adapted from southern PA to Florida and the Coastal US to the eastern corn belt. A very full season hybrid with northern limits. Maryland and northward grain drydown slows noticeably, though yield is maintained. Exceptional late season health contributes to slower drydown, though an asset in the mid and deep south.

LIMITATIONS: Not as well suited to northern long season sites. Caution north of the Mason-Dixon line. Okay Southeast corner of PA.

MANAGEMENT: Use on productive land to maximize yield potential. Plant in warm soils.



117 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
EAR HEIGHT	M+
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT
SHELLING EASE	VERY GOOD
EAR PICKING	VERY GOOD

PLANT HEIGHT	2.5
TEST WEIGHT	1.5
EMERGENCE	2.5
STRESS TOLERANCE	1.5
STAYGREEN	1
STALK STRENGTH	2
ROOT STRENGTH	2.5
DRYDOWN	2.5
GRAY LEAF SPOT	2
NCLB	2

PRODUCTS	RM	PLANT HEIGHT	EAR HEIGHT	EAR TYPE	TEST WEIGHT	EMERGENCE	STRESS TOLERANCE	STAYGREEN	STALK STRENGTH	ROOT STRENGTH	DRYDOWN	GRAY LEAF SPOT	NORTHERN CORN LEAF BLIGHT	PLANT POPULATION	TRAITS
ADDITIONAL GRAIN SEED CORN HYBRIDS															
SW 3760	94/93	M	M	SEMI-FLEX	2	2	2	2	2	2.5	1.5	3	2	M-H	CONV.
SW 3820	96/95	M	M	SEMI-FIXED	2	1.5	2	3	2	3	2	3	3	M-H	CONV.
SW 6720	112/111	T	M+	FLEX	1.5	1.5	2.5	2.5	3	1.5	3	3	2	M	CONV.
SW 6770GENSS (RIB)	112/111	M	M	SEMI-FIXED	3	2.5	1.5	2.5	2	3	1.5	1.5	1.5	M-H	SSTAX, LL

****LIMITED SUPPLY OF ADDITIONAL HYBRIDS YOU HAVE PREVIOUSLY GROWN MAY BE AVAILABLE. PLEASE CONTACT YOUR SEEDWAY PARTNER OR SEEDWAY TERRITORY FIELD MANAGER FOR AVAILABILITY.**



GRAIN CORN HYBRIDS

HYBRID CORN SEED SIZES & PLANTING RECOMMENDATIONS*

ALWAYS MAKE FIELD CHECKS TO INSURE PROPER SETTINGS

HEAVIER DROP		NON-PLATE-TYPE PLANTERS (INITIAL SETTINGS)				LIGHTER DROP
KERNELS PER POUND	1500 OR FEWER	1501-1700	1701-1950	1951-2300	2301-2750	2751 OR MORE
JOHN DEERE (1) & KINZE FINGER PICK UP	RECOMMENDED SPEED	RECOMMENDED SPEED	RECOMMENDED SPEED	REDUCE SPEED 10%	REDUCE SPEED 30%	REDUCE SPEED 30%
JOHN DEERE VACUUM	DISC: A50617 VAC: 9.0-11.0	DISC: A50617 VAC: 8.0-9.0	DISC: A50617 VAC: 6.5-8.0 DISC: A43215 VAC: 9.5-11.0	DISC: A43215 VAC: 7.5-9.5	DISC: A43215 VAC: 4.5-7.5	DISC: H136478 VAC: 9.5-12.5
CASE-IH (2) 1200 SERIES ASM	11-14 oz. BRUSH: FULL DOWN	10-11 oz. BRUSH: HALF DOWN	9-10 oz. BRUSH: HALF DOWN	8-9 oz. BRUSH: FULL UP	8-9 oz. BRUSH: FULL UP	8-9 oz. BRUSH: FULL UP
WHITE 5100/6100	DISC: 852434 AIR: 2.0-2.5 DISC: 852435 AIR: 2.0-2.5	DISC: 852435 AIR: 1.8-2.2	DISC: 852435 AIR: 1.5-1.8 DISC: 852436 AIR: 3.4-3.8	DISC: 852436 AIR: 2.8-3.4	DISC: 852436 AIR: 2.2-2.8	DISC: 852437 AIR: 1.5-2.1

REFER TO PLANTER
MANUALS FOR
DETAILED PLANTER
SETTINGS

- 1) JD/KINZE - EXCESSIVE SPEED OR WEAR ON BRUSHES & BACK PLATE CAN CAUSE OVERDROP.
- 2) CASE-IH - RECOMMENDED SEED HOPPER PRESSURES.

* NOTE: SEE ANALYSIS TAG OR BAG FLAP FOR KERNELS PER POUND

PLANTER PLATE SUGGESTIONS: FLATS/ROUNDS

SIZE	CELLS	PLASTIC JD - AC OL - FORD	PLAS- TIC INT CASE	JOHN DEERE	INT	WHITE OLIVER	ALLIS CHALM	FORD	CASE	MASSEY FERG	SIZE	CELLS	PLASTIC JD - AC OL - FORD	PLAS- TIC INT CASE	JOHN DEERE	INT	WHITE OLIVER	ALLIS CHALM	FORD	CASE	MASSEY FERG
F1	16	---	C90-16	697	3236	245500	302614	---	425	---	R6	16	---	C3-16	---	---	---	---	---	---	---
	16	---	C9-16	1268	3546	245502	558777	---	447	---		16	---	C30-16	---	---	---	---	---	---	---
	20	---	C20-16	---	---	---	---	---	---	---		20	---	---	---	---	---	---	---	---	---
	24	B20-24	C20-24	---	---	---	---	109788	---	442995		24	---	---	16238	---	---	555140	---	---	---
	24	B190-24	C90-24	30070	480190	---	555142	222529	---	---		24	B30-24	C3-24X	---	480178	---	---	---	---	---
	24	---	C9-24	30025	480691	---	555140	---	---	---		24	B3-24	C30-24	---	---	---	---	---	---	---
F2	16	---	---	694	622174	245506	309431	---	1275	---	R7	16	---	C2X-16	2043	3313	245526	302609	---	34799	---
	16	---	---	---	1977	---	---	---	---	---		16	---	C25-16	---	3561	---	302602	---	---	---
	20	---	---	---	---	---	---	109788	---	440789		20	---	---	---	---	---	---	---	---	440796
	24	B9-24X	C9-24	1302	485473	245542	555132	222531	---	---		24	B25-24	C2X-24	10853	480177	---	346048	108957	---	---
	24	B6-24X	C6-24	---	469809	---	---	---	---	---		24	B2-24	C25-24	---	489436	---	555130	108953	---	---
F3	16	---	---	1932	1977	245508	309431	---	1275	---	R8	16	B1-16X	C1X-16	1933	3042	245528	302602	---	34797	---
	16	---	---	---	---	245506	309425	---	426	---		16	---	---	1071	---	---	302609	---	429	---
	20	---	---	---	---	---	---	109786	---	44796		20	---	---	---	---	---	---	---	---	---
	24	B7-24X	C7-24	2848	485473	245542	555132	222531	---	440309		24	B1-24X	C1X-24	10853	3043	245543	555136	108957	2296	442996
	24	B11-24X	C11-24	---	480189	---	---	---	---	---		24	---	---	2824	---	---	555130	---	---	---
F4	16	---	C8-16	2156	1978	245510	309425	---	425	---	R9	16	---	C0X-16	1071	3042	245531	302602	108952	34797	---
	16	---	C11-16	2503	1977	245511	309438	---	426	---		16	B0-16, B58-16	---	2044	---	245528	-	---	---	---
	20	---	---	---	---	---	---	126785	---	---		20	---	---	---	---	---	---	---	---	442997
	24	B8-24X	C8-24	2594	485474	---	555132	---	---	440791		24	B0-24	C0X-24	2712	485478	245543	555130	---	---	440314
	24	B5-24X	C11-24	2847	485473	---	---	---	---	440310		24	---	---	---	---	---	34713	---	---	---

SUGGESTIONS ONLY - TEST IN YOUR PLANTER

SOYBEANS

TECHNOLOGY



No dicamba may be used in-crop with seed in the Roundup Ready® Xtend Crop System unless and until approved or specifically permitted by the U.S. EPA and the appropriate state agency for such use. As of 7/6/2020, no dicamba formulations are currently registered by the U.S. EPA for in-crop use with seed in the Roundup Ready® Xtend Crop System in the 2021 season.*

*No dicamba may be used in-crop with seed in the Roundup Ready® Xtend Crop System, unless and until approved or specifically permitted by the U.S. EPA and the appropriate state agency for such use. As of 7/6/2020, no dicamba formulations are currently registered by the U.S. EPA for in-crop use with seed in the Roundup Ready® Xtend Crop System in the 2021 season. Current stocks of low-volatility dicamba herbicides XtendiMax® herbicide, Engenia® herbicide and Fexapan® herbicide previously approved for in-crop use with seed in the Roundup Ready® Xtend Crop System may not be used after July 31, 2020. Dicamba may harm crops that are not tolerant to dicamba. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicides products for in-crop use with seed in the Roundup Ready® Xtend Crop System.

NOTICE: DO NOT APPLY ANY HERBICIDE TO SEED IN THE ROUNDUP READY® XTEND CROP SYSTEM UNLESS IT HAS A PRODUCT LABEL SPECIFICALLY AUTHORIZING THAT USE. TO USE A HERBICIDE IN ANY MANNER INCONSISTENT WITH ITS LABELING IS A VIOLATION OF FEDERAL LAW. REFER TO THE BAYER TECHNOLOGY USE GUIDE FOR DETAILS AND RECOMMENDATIONS ON USING APPROVED ROUNDUP® AND LIBERTY® BRANDED HERBICIDES ON SEED IN THE ROUNDUP READY® XTEND CROP SYSTEM.

Seed containing a patented trait can only be used to plant a single commercial crop from which seed cannot be saved and replanted. Examples of seed containing a patented trait include but are not limited to Roundup Ready 2 Yield® soybeans and Roundup Ready 2 Xtend® soybeans. Additional information and limitations on the use of these products are provided in the Monsanto Technology Stewardship Agreement and the Monsanto Technology Use Guide. U.S. patents for Monsanto technologies can be found at the following webpage: <http://www.monsantotechnology.com>

XtendFlex® soybeans have received full approval for planting in the United States but are pending approval in certain export markets. For 2020, XtendFlex® soybeans will be available as part of a stewarded introduction only to growers who have signed a 2020 XtendFlex® Stewardship Agreement and agree to follow the stewardship requirements. Commercial availability in 2021 is dependent upon regulatory approval.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. It is a violation of federal and state law to use any pesticide product other than in accordance with its labeling. NOT ALL formulations of dicamba or glyphosate are approved for in-crop use with Roundup Ready 2 Xtend® soybeans. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR SUCH USE IN THE STATE OF APPLICATION. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicide products for in-crop use with Roundup Ready 2 Xtend® soybeans or cotton with XtendFlex® Technology.



Dow AgroSciences is a member of Excellence Through Stewardship® (ETS). Dow AgroSciences products are commercialized in accordance with ETS product launch stewardship guidance and Dow AgroSciences Product Launch Stewardship Policy. No crop or material produced from this product can be exported to, used, processed or sold 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. For further information about your crop or grain marketing options, contact DAS at 877-4-Traits (877-487-2487). Information regarding the regulatory and market status of agricultural biotechnology products can be found at: www.biotradestatus.com.

Seeds containing the Enlist, Herculex and PowerCore traits are protected under numerous US patents. Seeds containing patented traits can only be used to plant a single commercial crop and cannot be saved or replanted. You acknowledge and agree to be bound by the terms and conditions of the following documents in effect at the time of planting of this seed: (i) the Technology Use Agreement and (ii) the Product Use Guides for all technologies in this seed, including the Herbicide Resistance Management (HRM), and Use requirements detailed therein www.corteva.us/Resources/trait-stewardship.html). To plant Enlist, Herculex and PowerCore seed, you must have a limited license from Corteva Agriscience (or other appropriate affiliates). In consideration of the foregoing, Corteva Agriscience grants to the Grower the limited license to use its technology to produce only a single commercial crop in the United States under the terms and conditions set forth in the Technology Use Agreement in effect at the time of planting of this seed. Always read and follow herbicide label directions prior to use: Enlist® products contain the Enlist trait that provides crop safety for use of labeled over-the-top applications of glyphosate, glufosinate and 2,4-D herbicides featuring Colex-D® technology when applied according to label directions. Following burndown, the only 2,4-D containing herbicide products that may be used with Enlist® crops are products that feature Colex-D technology and are expressly labeled for use on Enlist crops. 2,4-D products that do not contain Colex-D technology are not authorized for use in conjunction with Enlist products.

The transgenic soybeans event in Enlist E3® soybeans is jointly developed and owned by Dow AgroSciences LLC and M.S. Technologies, L.L.C. ®™ Enlist, Enlist E3, the Enlist E3 logo, and Colex-D are trademarks of The Dow Chemical Company ("Dow") or an affiliated company of Dow. Excellence Through Stewardship is a registered trademark of Excellence Through Stewardship.

Enlist E3® soybean seeds containing the Enlist® trait can only be used to plant a single commercial crop. It is unlawful to save and replant Enlist E3® soybeans. Additional information and limitations on the use of these products are provided in the Corteva Agriscience Technology Use Agreement and Enlist® Soybean Product Use Guide. U.S. patents for Dow AgroSciences technologies can be found at the following webpage: www.corteva.us/Resources/trait-stewardship.html

SOYBEAN PRODUCT KEY

RATINGS	PLANT HEIGHT	PLANT TYPE	PUBESCENCE	FLOWER COLOR	HILUM COLOR
1 = Best	T = Tall	M = Medium	TW = Tawny	W = White	Y = Yellow
	MT = Medium - Tall	MB = Medium - Bushy	LT = Light Tawny	P = Purple	Bl = Black
	M = Medium	Int. B = Intermediate Bushy	G = Gray	G = Gray	IB = Imperfect Black
		DET = Determinate			Bu = Buff
					Br = Brown

TECHNOLOGY

Increase your yield benefits of **SEEDWAY® SG Brand Soybeans** by loading with the protection of seed treatment. Our Seed Treatments will help ensure your seed investment is well covered when it matters.

SEEDWAY carries multiple soybean seed treatment options from inoculant, fungicide, insecticide and biological. For more details on soybean seed treatment options and availability, please contact your nearest **SEEDWAY** office or Territory Field Manager to discuss what is best for your operation.

PLANTING SOYBEANS FOR VALUE AND PERFORMANCE

SEEDS PER FOOT ROW				
ROW SPACING	DESIRED SEEDS PER ACRE			
	125,000	140,000	150,000	160,000
7"	1.7	1.9	2.0	2.4
10"	2.4	2.7	2.9	3.4
15"	3.6	4.0	4.3	5.2
30"	7.2	8.0	8.6	10.3
POUNDS SEED PER ACRE				
SEEDS PER LB	DESIRED SEEDS PER ACRE			
	125,000	140,000	150,000	160,000
2,000	62.5	70.0	75.0	90.0
2,100	59.5	66.7	71.4	85.7
2,200	56.8	63.6	68.2	81.8
2,300	54.3	60.9	65.2	78.3
2,400	52.1	58.3	62.5	75.0
2,500	50.0	56.0	60.0	72.0
2,600	48.1	53.8	57.7	69.2
2,700	46.3	51.9	55.6	66.7
2,800	44.6	50.0	53.6	64.3
2,900	43.1	48.3	51.7	62.1
3,000	41.7	46.7	50.0	60.0
3,100	40.3	45.2	48.4	58.1
3,200	39.1	43.8	46.9	56.3
3,300	37.9	42.4	45.5	54.5

The Enlist™ System – Get Control of Tough Weeds



- New 2,4-D Choline
- Glyphosate
- Glufosinate

Following burndown, Enlist Duo® and Enlist One® with Colex-D® technology are the only herbicides containing 2,4-D that are labeled for preemergence and postemergence use with Enlist E3™ soybeans.



HERBICIDE

- Convenient blend of 2,4-D choline and glyphosate
- Two modes of action to deliver control and help prevent resistance in your fields



HERBICIDE

- Straight-goods 2,4-D choline with additional tank-mix flexibility
- Ability to tank-mix with Liberty® herbicide and other qualified herbicides, customizing the ratio of herbicides to match each farm's needs

On-Target Applications

- 90% less drift than traditional 2,4-D
- 96% less volatile than 2,4-D ester



TECHNOLOGY

No dicamba may be used in-crop with seed in the Roundup Ready® Xtend Crop System unless and until approved by the U.S. EPA and the appropriate state agency for such use. As of 7/6/2020, no dicamba formulations are currently registered by the U.S. EPA for in-crop use with seed in the Roundup Ready® Xtend Crop System in the 2021

THE NEXT BIG THING.

X TENDFLEX
SOYBEANS
EXPECTED SOON

**PROVEN PERFORMANCE.
NOW WITH THE ADDITION
OF GLUFOSINATE TOLERANCE.**

Talk to your dealer to learn more and visit us online at XtendFlexSoy.com



*No dicamba may be used in-crop with seed in the Roundup Ready® Xtend Crop System unless and until approved by the U.S. EPA and the appropriate state agency for such use. As of 7/6/2020, no dicamba formulations are currently registered by the U.S. EPA for in-crop use with seed in the Roundup Ready® Xtend Crop System in the 2021 season. Current stocks of dicamba herbicides previously approved for in-crop use with seed in the Roundup Ready® Xtend Crop System may not be used for the 2021 growing season. Dicamba may harm crops that are not tolerant to dicamba. Contact the U.S. EPA and your state pesticide regulatory agency with any questions about the approval status of dicamba herbicides products for in-crop use with seed in the Roundup Ready® Xtend Crop System.

NOTICE: DO NOT APPLY ANY HERBICIDE TO SEED IN THE ROUNDUP READY® XTEND CROP SYSTEM UNLESS IT HAS A PRODUCT LABEL SPECIFICALLY AUTHORIZING THAT USE. TO USE A HERBICIDE IN ANY MANNER INCONSISTENT WITH ITS LABELING IS A VIOLATION OF FEDERAL LAW. REFER TO THE BAYER TECHNOLOGY USE GUIDE FOR DETAILS AND RECOMMENDATIONS ON USING APPROVED ROUNDUP® AND LIBERTY® BRANDED HERBICIDES ON SEED IN THE ROUNDUP READY® XTEND CROP SYSTEM.

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ALWAYS READ AND FOLLOW GRAIN MARKETING AND ALL OTHER STEWARDSHIP PRACTICES AND PESTICIDE LABEL DIRECTIONS. See the Products Use Notice for "Next Big Thing" advertisement for XtendFlex® printed in this publication. All trademarks are the property of their respective owners. ©2020 Bayer Group. All rights reserved.

SOYBEAN PRODUCTS

SOYBEANS

PESTS

SOYBEAN CYST NEMATODE

- Effect: Roots will be stunted, nodules fewer, may allow for other diseases to come in and infect the plant, can cause stunting and yellowing of plants usually in an oval or circular pattern in the field it is commonly confused with iron deficiencies, drought stress, herbicide injury, or other diseases.
- ID: Associated with sandy, dry soils, found on the roots of the plants, smaller than nitrogen nodules. They start as yellow and then turn to a tan color as they mature and form cysts; like high pH soils as well.
- Control: Rotate with a non-host crops such as corn and alfalfa, select for resistant or more tolerant varieties. Once they are present in the soil they can never be eliminated but they can be managed. Make sure fields are adequately fertilized.

APHIDS

- Effects: Yellowing edges of leaves, which commonly looks like a potassium deficiency, curled leaves & stunted plants. Removes moisture needed for growth and nutrients needed for seed production, they can transmit other viruses.
- ID: Oval or pear shaped, less than 1mm in length, usually a light/lime green, found on the underside of the leaves in the upper canopy.
- Control: Lady beetles are natural predators, low temperatures promote reproduction, neonicotinoids should be considered in stands that are planted late in the season, economic threshold- should be sprayed before there are 1,000 per plant at R5 stage.

SPIDER MITES

- Effects: Feeds on the plant juices and cause moisture and nutrients to be removed, causing the leaves to appear yellow/whitish in color on the top side, large populations and heavy infestation may cause stippling of leaves.
- ID: Extremely small ranging from 1/60-1/80 of an inch (about the size of a grain of salt), greenish/yellow and will have 6 or 8 legs, found on the underside of the leaves in the upper canopy, have a piercing/sucking mouth that feeds on plant juices, more prevalent in droughty or drought prone areas, start at the field edge in a half circle pattern and begin to spread out- creating a larger and larger half circle if left unchecked.
- Control: Natural predators such as thrips and fungi will keep populations in check, spraying is recommended if leaves are covered 20-50% before pod set or 10-15% after pod set, spraying pyrethroids may affect natural predator populations as well.

BEAN LEAF BEETLE

- Effects: Causes reduction in quality and yield, causes green stem and a delay at harvest, defoliates plant leave.
- ID: Adults are about 1/5 inches long, range from a dark yellow to an orange or red, their wings will often have rectangular marks- normally 4 but some only have 2 and some don't have any, identifying mark is the triangle that is right behind the head/neck region, the larvae resemble corn root worm and are found near the soil with a white body and black head, commonly can be found feeding on nodules of the bean plant.
- Control: More commonly found in the south as they overwinter in hedge rows and fence lines but are killed if exposed to temperature below 14 degrees, there are no varieties that show resistance to this pest, consider the use of an insecticide if the field has a history of BLB and consider rotation with no-host crops.



Soybean Cyst Nematode[^]



Soybean Aphids[^]



Spider Mites[^]



Brown Leaf Beetle[^]

PESTS

JAPANESE BEETLE

- Effects: Defoliates the crop, leaving a lattice appearance on the leaves, usually heaviest impact is seen on the uppermost leaves, severely injured crops will turn brown and drop their leaves, the larvae will feed on the root hairs causing injury to the roots and a decrease uptake in nutrients.
- ID: About ½ inch long, metallic green with a bronze color for the wings. Eggs are a translucent to creamy white and as they mature begin to turn cylindrical. The larvae (also known as grubs) are about 1 inch long and are creamy white with a brown head; commonly confused with white grubs at the larval stage but can be identified by the V shaped pattern of the bristles on the raster.
- Control: Very challenging to manage this pest as they are difficult to predict where they will be. A large presence of larvae does not mean that high feeding will occur. For the adults scouting should be a priority as there are economic thresholds—40-50% defoliation up to V7 stage, 15-20% defoliation during pod development and fill, >25% from pod fill to harvest. There are several labeled insecticides for controlling Japanese beetle in soybeans, be sure to weigh the economics of it as they usually don't cause a lot of economic loss, but it will control the white grub population the following year (if corn is in rotation).



Japanese Beetle^



Phytophthora Root Rot^

DISEASES

PHYTOPHTHORA ROOT ROT

- Caused by a soil borne fungus, many different races, wet field conditions favor the onset of this, 3 different stages of impact—seed rot, seedling blight, and root or stem rot, can attack beans at any time during the season, favored by high potash applications, survives in the soil and the bean residues.
- Impact: PRR can kill bean plants at any stage of growth, causes stand reduction and yield loss, plants will wilt and become brown and die off, seed infection causes seeds to be brown and mushy. Seedling blight is considered damping off with rapid decay of plant health, brown or black discolorations appear on the stem near the soil line, root and stem rot stage causes a brown discolored taproot, minimal nodulation, stunted and uneven plant stands, dark brown or reddish lesions progressing up the stem and tissues inside the stem will be brown and diseased.
- Management: Look for varieties with stronger resistance on field tolerance, improve field drainage or plant in fields less prone to water logging, planting early may help in heavy soils or no till conditions.

WHITE MOLD

- Fungus that can live in the soil for up to 10 years, favored by cool wet conditions, infection occurs at a water soaked lesion at a node that remains water soaked, disease can quickly spread by contact with other plants.
- Impact: Yield loss, lodging, diminished seed quality, seeds will be shriveled and black.
- Management: Select varieties that have a greater resistance since there is no absolute resistance to it, control weeds in the field that may be a host for the fungus, spraying fungicide has shown to reduce the severity of white mold. Some may find disadvantage in planting early and planting in narrow rows as it promotes reduced aeration through canopy and quick canopy closure all of which favor white mold. Rotation is important but due to the longevity of it in the soil, it is hard to rotate and completely take care of the disease.



White Mold^

SOYBEANS

DISEASES

SUDDEN DEATH SYNDROME

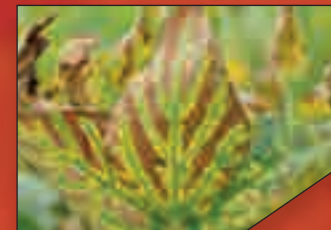
- Blue coloration on the outer surface of the roots may occur, the fungal colonies only take habitat at the crown of the plant, splitting the root will show a white pith but the outer layers will be a grayish/brown color, leaves will appear to have yellow spots- appearing on the upper canopy first, these will form chlorotic blotches between the leaf veins which will then turn brown and die, leaves will twist and curl and begin to fall off the plant as they die, flowers and pods will be aborted and those that remain will have small seeds, symptoms are very similar to that of brown stem rot—you really need to split the stems, cool and moist conditions favor this disease, especially heavily compacted areas of a field and if SCN is present the disease will cause a heavier impact.
- Impact: Soybean leaves will die off and pods will abort, roots begin to deteriorate which reduces water and nutrient uptake. Yield and stand will be depleted.
- Management: The fungus remains in the soil and survives on residues, it can enter the plant relatively early in the growing season but may not show effect until midseason, look at planting resistant varieties, reduce compaction in the field and other stresses to the crop, foliar fungicides will not protect the crop

BROWN STEM ROT

- Split the stem of the plant, the pith will be brown and the surrounding tissues will remain green (opposite of SDS), commonly found between nodes and closer to the soil line. Infection occurs early in the season but the impact isn't seen until later during reproduction. High temperatures inhibit the spread of BSR. Low pH favors the disease, moist soils also favor this disease due to restriction of nutrients leaves will become chlorotic, which causes yellow patches between leaf veins and browning of the edges until they fully become brown die off. Stems will also turn brown.
- Impact: Infects roots and impacts uptake of nutrients and water, causing premature plant death and yield loss.
- Management: Fungus survives in soybean residues. Soybeans are the only known host crop. BSR can continue to produce throughout the winter to infect early in spring, rotation is important, tillage may help bury infected residues.

CERCOSPORA BLIGHT AND PURPLE STAIN

- Fungus favored by hot temperatures especially during pod fill and high humidity. It affects both the leaves and the seeds.
- Impact: Cotyledons may become infected and die off, plant may be stunted, leaves may become infected and decreasing of leaf tissue and defoliation may occur. Purple staining on the seed may reduce the quality and ability of it to be sold to elevators. Seeds only become infected if the fungus invades the pods through the upper veins, but just because the leaves are infected doesn't mean the seeds will be. The longer the plant stays in the field and is infected, the greater the chance of seed staining occurring. Leaves in the upper canopy will be those that are affected first, they will show a bronze or purple discoloration between the leaf veins. Severely infected leaves will become necrotic and may drop off the plant, but the remainder of the plant will stay green.
- Management: Survives on soybean residues and infected seeds. Tillage and rotation are important if this was an issue the previous year. Seed treatments help protect against the seed and soil borne disease, some fungicides are also labeled for use if the infected warrants action to be taken. Timing is important in order to target the disease and reduce impact.



Sudden Death Syndrome^



Cercospora Blight^



Purple Seed Stain^

DISEASES

DOWNY MILDEW

- Seldom causes yield loss. Small yellow lesions appear on the leaves, shown on the youngest leaves first, lesions vary in size and can range from pale to bright yellow. The older the leaf the larger the spots may be, as they vary in size. Older lesions will turn necrotic and die off. Fuzzy growth on the underside of the leaf may also be an indicator during humid conditions. Favored by cool humid weather conditions.
- Impact: Can affect the seed, and the seed quality but not usually yield. Seeds that are affected may appear to be white and dull with some cracks in the seed coat.
- Management: Look for varieties that show resistance. Bury the crop residue and rotate crops.



Downy Mildew^

FROGEYE LEAF SPOT

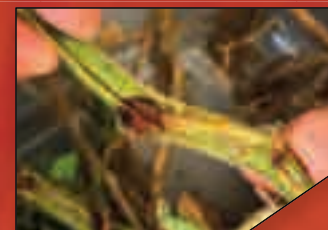
- Small circular lesions begin on the upper surface of the canopy. Water soaked spots turn into brown lesions that have red/dark brown margins and may coalesce together and become very large irregular spots on the leaf. Tissues may die and the leaf may drop off the plant in heavily diseased areas, pods may develop lesions that are similar to those on leaves but will be more of a dark brown or reddish color as well as on the stems too.
- Impact: On the pods the fungus may cause the seed coats to crack and open up leading to some seed discoloration, yield loss may occur.
- Management: Overwinters in soybean residues and seeds, rain or wind spread. Dry weather limits the development of the disease, and it is favored by warm humid conditions, varieties may have some resistance to this disease, rotate crops and consider tilling the residue to break it up and inhibit overwintering, foliar fungicides might be helpful if threshold is reached.



Frogeye Leaf Spot^

STEM CANKER

- Reddish/brown lesions develop on the stem that resemble phytophthora but are higher up from the soil surface, turn from brown to black as they mature, leaves will die but remain attached to the stem, wet weather aids in the development of this fungus, depends on how much rain is received during early plant development as the rain will splash the spore from the debris onto the plant.
- Impact: Lesions surround the stem and cut off water and nutrient flow to the plant, which can cause premature plant death.
- Management: Stays on soybean debris so tillage may be an option, look for varieties that show some resistance to it. Rotate crops so the potential for overwintering is reduced.



Stem Canker^

CHARCOAL ROT

- Usually start seeing symptoms during the reproductive stages of soybeans, may include smaller than normal leaves, reduced vigor, yellowing and wilting of the top leaves, on the lower stem a gray discoloration may appear, prefers soils with high temperatures and dry conditions, seeds may crack and shrivel up, pods can be dropped.
- Impact- plants will die prematurely, reduction in yield, seed quality may be reduced, infection occurs when the spring is moist as it overwinters in the soil and soybean residues.
- Management- rotation can help to a certain extent but will not eliminate the issue, there are no varieties that show resistance to this fungus, control weeds, make sure the soil is kept moist if possible, there is no chemical control for this, make sure the field is not nutrient deficient and the seeding rates are not excessive.



Charcoal Rot^

SOYBEANS

SOYBEAN PRODUCT PORTFOLIO

SOYBEAN PRODUCT KEY

RATINGS	PLANT HEIGHT	PLANT TYPE
1 = Best	T = Tall MT = Medium - Tall M = Medium	M = Medium MB = Medium - Bushy Int. B = Intermediate Bushy DET = Determinate

PUBESCENCE	FLOWER COLOR	HILUM COLOR
TW = Tawny LT = Light Tawny G = Gray	W = White P = Purple G = Gray	Y = Yellow BI = Black IB = Imperfect Black Bu = Buff Br = Brown

SG 1077XT

1.0 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Excellent standability for this Early-Group I variety. Clean and uniform emergence. Rock star performer with broad range of adaptability. 2018 testing showed a 2-3 bushel advantage over SG 1076 and SG 1194XT. Must plant soybean!

PLANT HEIGHT	M	STANDABILITY	2
PLANT TYPE	MB	STRESS TOLERANCE	2.5
PUBESCENCE	LT	PHYTO FIELD TOL	1.5
HILUM COLOR	Br	WHITE MOLD	2.5
FLOWER COLOR	P	BROWN STEM ROT	2
PHYTO GENE	-	FROGEYE LEAF SPOT	N/A
SCN	R3, MR14		

NEW SG 0720XT

0.7 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Tall, medium bushy plant-type with excellent adaptation over various soil types. Above average White Mold tolerance with good standability. Shows excellent emergence. Seed treatment should be used in high Phytophthora Root Rot pressure fields.

PLANT HEIGHT	T	STANDABILITY	2
PLANT TYPE	MB	STRESS TOLERANCE	1.5
PUBESCENCE	LT	PHYTO FIELD TOL	3
HILUM COLOR	BI	WHITE MOLD	2
FLOWER COLOR	P	BROWN STEM ROT	N/A
PHYTO GENE	-	FROGEYE LEAF SPOT	N/A
SCN	RESISTANT		

SG 1194XT

1.1 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Light tawny/tan with the complete disease resistance package! Very good standability. Proven performer in Early-Group I maturity. Step change in IDC tolerance. Very good White Mold tolerance. Excellent Brown Stem Rot resistance.

PLANT HEIGHT	M	STANDABILITY	1.5
PLANT TYPE	MB	STRESS TOLERANCE	1.5
PUBESCENCE	LT	PHYTO FIELD TOL	2
HILUM COLOR	Br	WHITE MOLD	2
FLOWER COLOR	P	BROWN STEM ROT	1
PHYTO GENE	HRps 3a	IDC	2
SCN	R3, MR14		

No dicamba may be used in-crop with seed in the Roundup Ready® Xtend Crop System unless and until approved or specifically permitted by the U.S. EPA and the appropriate state agency for such use. As of 7/6/2020, no dicamba formulations are currently registered by the U.S. EPA for in-crop use with seed in the Roundup Ready® Xtend Crop System in the 2021 season.*

SOYBEAN PRODUCT PORTFOLIO

SG 1455E3

1.4 RM



ENLIST E3® SOYBEANS

Gorgeous gray/tan with excellent standability. Excellent lodging resistance. Provides clean and uniform look. SCN and Brown Stem Rot resistant. Strong Phytophthora field tolerance. Works well in narrow or wide row systems.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				2	
PLANT TYPE	Int. B	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL					1
HILUM COLOR	IB	WHITE MOLD			3		
FLOWER COLOR	P	BROWN STEM ROT					1
PHYTO GENE	-	SCN					1
SCN	-						

SG 1543XT

1.5 RM



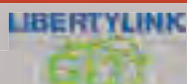
ROUNDUP READY 2 XTEND® SOYBEANS

Standability, White Mold tolerance, disease tolerance – it's the complete package! 70% win ratio against the competition in its maturity range.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	LT	PHYTO FIELD TOL				2	
HILUM COLOR	Br	WHITE MOLD				1.5	
FLOWER COLOR	P	BROWN STEM ROT					1
PHYTO GENE	Rps1c	FROGEYE LEAF SPOT					N/A
SCN	R3, MR14						

NEW SG 1708GTLL

1.7 RM



LIBERTYLINK® GT27™ SOYBEANS

Excellent standability and emergence in this light tawny plant-type. Outstanding White Mold tolerance. Has a complete disease package including Brown Stem Rot resistance. Broadly adapted and holds its yield potential across different environments.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY					1
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	LT	PHYTO FIELD TOL				2	
HILUM COLOR	Br	WHITE MOLD				2	
FLOWER COLOR	P	BROWN STEM ROT					N/A
PHYTO GENE	Rps1k	SDS					2.5
SCN	R3, MR14						

SG 1776

1.7 RM



ROUNDUP READY 2 YIELD® SOYBEANS

A MUST PLANT SOYBEAN. Good White Mold resistance. Excellent resistance to Phytophthora Root Rot, Brown Stem Rot and Sudden Death Syndrome. Excellent standability.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE				1.5	
PUBESCENCE	G	PHYTO FIELD TOL				2	
HILUM COLOR	IB	WHITE MOLD				2	
FLOWER COLOR	P	BROWN STEM ROT				2.5	
PHYTO GENE	Rps1k	FROGEYE LEAF SPOT				2	
SCN	R3, MR14						

SOYBEAN PRODUCTS

SOYBEANS

SOYBEAN PRODUCT PORTFOLIO

SG 1863XT

1.8 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Rock star on yield and standability. Broad adaption across Late-Group I. Outstanding White Mold tolerance. 76% win rate against mid to Late-Group I beans. 2019 NYS Central Regional Winner (72.92 bu/acre).

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL			3		
HILUM COLOR	Bu	WHITE MOLD				1.5	
FLOWER COLOR	P	BROWN STEM ROT			3		
PHYTO GENE	Rps1a, Rps3a	FROGEYE LEAF SPOT			3		
SCN	R3, MR14						

NEW

SG 1945E3

1.9 RM



ENLIST E3® SOYBEANS

With a win rate of over 80% for yield in White Mold environments, this is a must plant soybean. Medium-tall plant with excellent resistance to White Mold and medium resistance to Brown Stem Rot. Consistent yields over a wide geography.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				1	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL				2	
HILUM COLOR	IB	WHITE MOLD				2	
FLOWER COLOR	P	SOUTHERN STEM CANKER				1	
PHYTO GENE	-	SDS				3	
SCN	R3, MR14						

SG 2055XT

2.0 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Later version of SG 1863XT, with White Mold tolerance equal to S20-T6, S20-J5X, and SG 1863XT. New level of yield performance.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL				1.5	
HILUM COLOR	Bu	WHITE MOLD				1.5	
FLOWER COLOR	P	BROWN STEM ROT				1.5	
PHYTO GENE	-	FROGEYE LEAF SPOT				N/A	
SCN	R3, MR14						

NEW

SG 2209E3

2.2 RM



ENLIST E3® SOYBEANS


Excellent yield performance across multiple years and test sites. Attractive gray/tan plant with impressive standability. Complete disease and agronomic package for an Early-Group II variety. Brown Stem Rot resistant.

			5	4	3	2	1
PLANT HEIGHT	M+	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL				2	
HILUM COLOR	Bu	WHITE MOLD				2	
FLOWER COLOR	P	SOUTHERN STEM CANKER				1	
PHYTO GENE	Rsp1k	SDS				3	
SCN	R3, MR14						

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SOYBEAN PRODUCT PORTFOLIO


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NEW SG 2422E3 2.4 RM 

ENLIST E3® SOYBEANS

Dominate performance everywhere tested in 2018 and 2019. With excellent emergence this is a must plant variety for 2021! SG 2422E3 has all of the desired agronomic characteristics and disease protection, will not disappoint. Southern Stem Canker and Brown Stem Rot resistance.


		5 4 3 2 1					
PLANT HEIGHT	MT	STANDABILITY	2.5				
PLANT TYPE	M	STRESS TOLERANCE	1				
PUBESCENCE	G	PHYTO FIELD TOL	1.7				
HILUM COLOR	IB	WHITE MOLD	2.5				
FLOWER COLOR	P	SDS	2.5				
PHYTO GENE	-	FROGEYE LEAF SPOT	1.5				
SCN	R3, MR14						

SG 2445XT 2.4 RM 

ROUNDUP READY 2 XTEND® SOYBEANS

SG 2445XT is a variety you can plant with confidence! Great plant style and standability for all soil types. Good BSR and IDC tolerance. 70% win rate against all national brands in the 2.2 - 2.5 RM in 2018.


		5 4 3 2 1					
PLANT HEIGHT	MT	STANDABILITY	2.5				
PLANT TYPE	MB	STRESS TOLERANCE	2				
PUBESCENCE	G	PHYTO FIELD TOL	2				
HILUM COLOR	IB	WHITE MOLD	2.5				
FLOWER COLOR	P	BROWN STEM ROT	2				
PHYTO GENE	Rps1c	FROGEYE LEAF SPOT	N/A				
SCN	R3, MR14						

NEW SG 2787E3 2.7 RM 

ENLIST E3® SOYBEANS

Broadly adapted medium tall plant type that handles stress soils but also works in high yield environments. 104% of the mean for yield was confirmed in the northeast, along with its strong agronomic traits makes this a key product in a Late-Group II class.

		5 4 3 2 1					
PLANT HEIGHT	MT	STANDABILITY	1.5				
PLANT TYPE	M	STRESS TOLERANCE	1				
PUBESCENCE	G	PHYTO FIELD TOL	1.5				
HILUM COLOR	IB	WHITE MOLD	2				
FLOWER COLOR	P	BROWN STEM ROT	N/A				
PHYTO GENE	-	FROGEYE LEAF SPOT	N/A				
SCN	R3, MR14						

SG 2832XT 2.8 RM 

ROUNDUP READY 2 XTEND® SOYBEANS

Broadly adapted. 85% win rate against all major competitors in its maturity range. Medium tall gray brown plant with excellent standability and disease tolerance. Two years of outstanding yield performance in many environments positions this SEEDWAY variety as the number one seller in late group II relative maturity.

		5 4 3 2 1					
PLANT HEIGHT	MT	STANDABILITY	1.5				
PLANT TYPE	MB	STRESS TOLERANCE	1				
PUBESCENCE	G	PHYTO FIELD TOL	1.5				
HILUM COLOR	IB	WHITE MOLD	2				
FLOWER COLOR	P	BROWN STEM ROT	1.5				
PHYTO GENE	Rps1c	FROGEYE LEAF SPOT	2.5				
SCN	R3, MR14						

SOYBEANS

SOYBEAN PRODUCT PORTFOLIO

SOYBEAN PRODUCT KEY

RATINGS	PLANT HEIGHT	PLANT TYPE
1 = Best	T = Tall MT = Medium - Tall M = Medium	M = Medium MB = Medium - Bushy Int. B = Intermediate Bushy DET = Determinate
PUBESCENCE	FLOWER COLOR	HILUM COLOR
TW = Tawny LT = Light Tawny G = Gray	W = White P = Purple G = Gray	Y = Yellow BI = Black IB = Imperfect Black Bu = Buff Br = Brown

SG 3042XT

3.0 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Yield leader in an Early-Group III soybean. Paired with SG 2832XT and SG 3000XT for a dynamic triple play. Gorgeous light tawny plant with excellent standability.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				1.5	
PLANT TYPE	M	STRESS TOLERANCE					1
PUBESCENCE	LT	PHYTO FIELD TOL				1.5	
HILUM COLOR	B	WHITE MOLD				2	
FLOWER COLOR	P	BROWN STEM ROT				1.5	
PHYTO GENE	Rps1c	FROGEYE LEAF SPOT					2.5
SCN	R3, MR14						

SG 3000XT

3.0 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Top end yield potential. Excellent upright intermediate branching type plant. Phytophthora and SCN resistant; reliable defense. Broad adaptation with very reliable performance.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				1.5	
PLANT TYPE	Int. B	STRESS TOLERANCE					1
PUBESCENCE	G	PHYTO FIELD TOL				2	
HILUM COLOR	IB	WHITE MOLD				2	
FLOWER COLOR	P	BROWN STEM ROT	N/A				
PHYTO GENE	Rps1c	FROGEYE LEAF SPOT	N/A				
SCN	R3, MR14						

NEW

SG 3085E3

3.0 RM




ENLIST E3® SOYBEANS

Consistent must plant variety, combining outstanding yields, disease tolerance, emergence, and standability. Excellent Southern Death Syndrome, White Mold, Brown Stem Rot, and Phytophthora tolerance. Also resistant to Southern Stem Canker.







			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY					1
PLANT TYPE	MB	STRESS TOLERANCE					1
PUBESCENCE	G	PHYTO FIELD TOL				1.5	
HILUM COLOR	IB	WHITE MOLD				1.5	
FLOWER COLOR	P	FROGEYE LEAF SPOT				1.5	
PHYTO GENE	-	SDS				1.5	
SCN	R3, MR14						


SOYBEAN PRODUCT PORTFOLIO

NEW SG 3393E3 3.3 RM 

ENLIST E3® SOYBEANS






Medium-tall light tawny plant widely adapted across soils, yield environments and regions. 84% win rate in the east. Above average lodging scores from heavily lodged locations over two years. Combines top end yields and solid defense. Excellent emergence and resistant to Southern Stem Canker.


			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY					
PLANT TYPE	MB	STRESS TOLERANCE					
PUBESCENCE	LT	PHYTO FIELD TOL					
HILUM COLOR	Br	WHITE MOLD					
FLOWER COLOR	P	BROWN STEM ROT					
PHYTO GENE	-	FROGEYE LEAF SPOT					
SCN	R3, MR14						

NEW SG 3433GTLL 3.4 RM 

LIBERTYLINK® GT27™ SOYBEANS





Key variety with adaptability over a broad foot print. Light tawny plant with good standability, excellent tolerance to SDS, SCN and PRR.


			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY					
PLANT TYPE	MB	STRESS TOLERANCE					
PUBESCENCE	LT	PHYTO FIELD TOL					
HILUM COLOR	B	EMERGENCE					
FLOWER COLOR	P	FROGEYE LEAF SPOT	N/A				
PHYTO GENE	-	SDS					
SCN	R3, MR14						

NEW SG 3445XT 3.4 RM 

ROUNDUP READY 2 XTEND® SOYBEANS






Tall plant type with superior yield performance from east to west. Excellent agronomics and disease package. 107% of the mean for yield when compared to the top 3.2 - 3.6 maturity soybeans in the East.

			5	4	3	2	1
PLANT HEIGHT	T	STANDABILITY					
PLANT TYPE	B	STRESS TOLERANCE					
PUBESCENCE	G	EMERGENCE					
HILUM COLOR	IB	PHYTO FIELD TOL					
FLOWER COLOR	P	WHITE MOLD					
PHYTO GENE	Rps1c	SDS					
SCN	RESISTANT						

SG 3475E3 3.4 RM 

ENLIST E3® SOYBEANS

The perfect Enlist® E3 line with Northeast adaptation. Medium-tall plant height with excellent standability. Attractive, upright appearance that finishes off clean. Excellent Sudden Death Syndrome resistance.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY					
PLANT TYPE	Int. B	STRESS TOLERANCE					
PUBESCENCE	G	PHYTO FIELD TOL					
HILUM COLOR	IB	WHITE MOLD	N/A				
FLOWER COLOR	P	BROWN STEM ROT					
PHYTO GENE	-	SUDDEN DEATH SYN.					
SCN	-						

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SOYBEAN PRODUCTS

SOYBEANS

SOYBEAN PRODUCT PORTFOLIO

SG 3494XT

3.4 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Consistent performance across it's maturity range. Medium-tall gray plant, with good standability and disease resistance. Handles stress very well.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY			3		
PLANT TYPE	M	STRESS TOLERANCE			3		
PUBESCENCE	G	PHYTO FIELD TOL			3		
HILUM COLOR	IB	WHITE MOLD	N/A				
FLOWER COLOR	P	BROWN STEM ROT				2	
PHYTO GENE	-	SUDDEN DEATH SYN.				2	
SCN	R3						

NEW

SG 3566XT

3.5 RM



ROUNDUP READY 2 XTEND® SOYBEANS

New level of yield performance in Mid-Group III, 2.5 Bu better than SG 3322XT. Very widely adapted over many soil types, with good standability, excellent emergence, and overall disease package. Resistance to Southern Stem Canker and Brown Stem Rot.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE			2		
PUBESCENCE	G	PHYTO FIELD TOL			2		
HILUM COLOR	IB	SDS				2.5	
FLOWER COLOR	P	BROWN STEM ROT				2	
PHYTO GENE	Rps1c	FROGEYE LEAF SPOT	N/A				
SCN	MR3						

SG 3783XT

3.7 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Roundup Ready 2 Xtend® soybeans with Phytophthora Root Rot and Soybean Cyst Nematode resistance. Moderate resistance to Brown Stem Rot. Dominates plots for yield on the East Coast. Excellent early season vigor, standability and stress tolerance.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE			2		
PUBESCENCE	G	PHYTO FIELD TOL			2		
HILUM COLOR	IB	WHITE MOLD				1	
FLOWER COLOR	P	BROWN STEM ROT				1	
PHYTO GENE	Rps1c, Rps3a	FROGEYE LEAF SPOT				2	
SCN	R3, MR14						

SG 3799E3

3.7 RM



ENLIST E3® SOYBEANS

Near perfect agronomic package. A line that brings plant height and excellent lodging. Offers Southern Stem Canker resistance and STS tolerance! Outstanding yield performance over a wide footprint.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2	
PLANT TYPE	MB	STRESS TOLERANCE			2		
PUBESCENCE	G	PHYTO FIELD TOL				1.5	
HILUM COLOR	Bu	WHITE MOLD	N/A				
FLOWER COLOR	W	BROWN STEM ROT				3.5	
PHYTO GENE	Rps1k	IDC					1.5
SCN	R3, MR14						

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SOYBEAN PRODUCT PORTFOLIO

SG 3886XT

3.8 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Excellent vigor, good standability, stacked with STS and also is an excluder. 2016 yields were 106% of the plot mean in all east coast testing locations.



			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				2	
PLANT TYPE	Int. B	STRESS TOLERANCE			3		
PUBESCENCE	LT	PHYTO FIELD TOL				2	
HILUM COLOR	Bl	WHITE MOLD	N/A				
FLOWER COLOR	W	BROWN STEM ROT					1
PHYTO GENE	Rps1c	FROGEYE LEAF SPOT					2
SCN	R3, MR14						

SG R381

3.8 RM

GLYPHOSATE TOLERANT SOYBEANS

Solid defensive package to SCN, Phytophthora Root Rot, and Sudden Death Syndrome. Attractive light tawny pubescence. Consistent performance over years of testing.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				2	
PLANT TYPE	Int. B	STRESS TOLERANCE				2	
PUBESCENCE	LT	PHYTO FIELD TOL			3		
HILUM COLOR	B	WHITE MOLD	N/A				
FLOWER COLOR	P	BROWN STEM ROT				2.5	
PHYTO GENE	-	FROGEYE LEAF SPOT					2
SCN	-						

SG 3972E3

3.9 RM



ENLIST E3® SOYBEANS

Dominating Late-Group III - Enlist E3® variety. Medium-tall plant height with solid lodging scores. Stem Canker resistant, very good SDS, and “best in test” Phytophthora Root Rot field tolerance. The complete package.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2	
PLANT TYPE	Int. B	STRESS TOLERANCE					1
PUBESCENCE	G	PHYTO FIELD TOL				1.5	
HILUM COLOR	Bu	WHITE MOLD	N/A				
FLOWER COLOR	W	BROWN STEM ROT					2
PHYTO GENE	-	FROGEYE LEAF SPOT					2
SCN	-						

SG 4223XT

4.2 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Dominant yield performance in independent and university testing with a 70% win ratio. Stacked with STS. Gray tan plant with solid width with upward branching. A must plant variety.



			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL				2	
HILUM COLOR	IB	WHITE MOLD	N/A				
FLOWER COLOR	P	BROWN STEM ROT				1.5	
PHYTO GENE	-	FROGEYE LEAF SPOT					2
SCN	R3, MR14						

SOYBEAN PRODUCTS

SOYBEANS

SOYBEAN PRODUCT PORTFOLIO

SG 4230E3

4.2 RM



ENLIST E3® SOYBEANS

Nice Early-Group IV variety. STS tolerant. Medium plant type that fits well on lighter loam soils. 74% win rate against all national brands in the Early-Group IV maturity.



			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				2	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL	N/A				
HILUM COLOR	Bu	WHITE MOLD	N/A				
FLOWER COLOR	W	BROWN STEM ROT	N/A				
PHYTO GENE	-	FROGEYE LEAF SPOT				3	
SCN	R3, MR14						

SG 4476XT

4.4 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Light tawny Medium-Tall plant with the ability to handle the stress of the mid-south. STS and Stem Canker resistant. Excellent Frogeye leaf spot tolerance. Outstanding yield performance across a wide footprint.



			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE				1.5	
PUBESCENCE	LT	PHYTO FIELD TOL				2	
HILUM COLOR	B	WHITE MOLD	N/A				
FLOWER COLOR	P	BROWN STEM ROT				2.5	
PHYTO GENE	Rps1c	FROGEYE LEAF SPOT					1
SCN	R3, MR14						

NEW SG 4520E3

4.5 RM



ENLIST E3® SOYBEANS

Medium-tall gray/brown plant with excellent tolerance to Stem Canker, SDS and Frogeye Leaf Spot. Outstanding yield performance from a soybean that will handle all soil types.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2	
PLANT TYPE	MB	STRESS TOLERANCE				1.5	
PUBESCENCE	G	EMERGENCE					1
HILUM COLOR	IB	WHITE MOLD	N/A				
FLOWER COLOR	P	SDS				1	
PHYTO GENE	-	FROGEYE LEAF SPOT					1
SCN	-						

NEW SG 4533XTF

4.5 RM



XTENDFLEX® SOYBEANS

Triple stack, light tawny medium bush type plant with excellent disease package. Yield performance will be similar to SG 4223XT, but in a Mid-Group IV. Resistant to Southern Stem Canker.



			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				2	
PLANT TYPE	MB	STRESS TOLERANCE				1.5	
PUBESCENCE	LT	EMERGENCE					1
HILUM COLOR	BI	PHYTO FIELD TOL				1.5	
FLOWER COLOR	W	BROWN STEM ROT				1.5	
PHYTO GENE	Rps	FROGEYE LEAF SPOT					2
SCN	MR3						

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SOYBEAN PRODUCT PORTFOLIO

SG 4619XT

4.6 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Works best for Mid-South and East coast. Excluder and Stem Canker resistant. Excellent Green Stem Tolerance. Excellent Standability.



			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2.5	
PLANT TYPE	Int. B	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL				2	
HILUM COLOR	IB	WHITE MOLD				N/A	
FLOWER COLOR	P	BROWN STEM ROT					1
PHYTO GENE	Rps1c	SCN					2

SG 4621E3

4.6 RM



ENLIST E3® SOYBEANS

Tall plant type. Nice fit for clay soils. STS tolerant variety. Excluder variety for high salt situations. Excellent early season vigor.



			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2.5	
PLANT TYPE	B	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL				N/A	
HILUM COLOR	IB	WHITE MOLD				N/A	
FLOWER COLOR	P	STEM CANCER					1
PHYTO GENE	-	SCN					2

NEW SG 4666XTF

4.6 RM



XTENDFLEX® SOYBEANS

Light tawny, medium bushy, tall plant type with excellent disease package. Outstanding yield performance in a new triple stack trait yielding with the best Xtend® soybeans in the Group V class. SCN and Southern Stem Canker resistant.



			5	4	3	2	1
PLANT HEIGHT	T	STANDABILITY				3	
PLANT TYPE	MB	STRESS TOLERANCE				2.5	
PUBESCENCE	LT	EMERGENCE					1
HILUM COLOR	B	PHYTO FIELD TOL				2	
FLOWER COLOR	P	STEM CANCER				N/A	
PHYTO GENE	Rps1c	SDS					2
SCN	RESISTANT						

NEW SG 4745E3

4.7 RM



ENLIST E3® SOYBEANS

Medium-tall tawny plant with STS tolerance, excluder for high salt situations best on light soils, will shorten up on heavy clay soils. Resistant to Southern Stem Canker and excellent resistance to Frogeye Leaf Spot.



			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2.5	
PLANT TYPE	MB	STRESS TOLERANCE				1.8	
PUBESCENCE	T	EMERGENCE				2.5	
HILUM COLOR	Br	PHYTO FIELD TOL				2.5	
FLOWER COLOR	W	SDS				2.5	
STS	YES	BROWN STEM ROT				2.5	
SCN	R3, MR14						

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SOYBEAN PRODUCTS

SOYBEANS

SOYBEAN PRODUCT PORTFOLIO

SG 4833XT

4.8 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Excellent Phytophthora Root Rot tolerance. Tall plant type. Good early season vigor and emergence. Very good fit on clay type soils.



			5	4	3	2	1
PLANT HEIGHT	T	STANDABILITY				2.5	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	LT	PHYTO FIELD TOL				1	
HILUM COLOR	BI	WHITE MOLD	N/A				
FLOWER COLOR	P	STEM CANKER				2	
PHYTO GENE	-	FROGEYE LEAF SPOT				2	
SCN	R3, MR14						

NEW

SG 4877E3

4.8 RM



ENLIST E3® SOYBEANS

Solid performance on the east coast. Tall, aggressive plant type that wins against 75% of the checks. Excellent tolerance to Metribuzin and handles stress very well. Resistant to Southern Stem Canker.

			5	4	3	2	1
PLANT HEIGHT	T	STANDABILITY				2.5	
PLANT TYPE	MB	STRESS TOLERANCE				1.5	
PUBESCENCE	G	PHYTO FIELD TOL	N/A				
HILUM COLOR	Bu	EMERGENCE				2	
FLOWER COLOR	W	SDS				2.5	
STS	YES	FROGEYE LEAF SPOT				1	
SCN	-						

SG 5221

5.2 RM



ROUNDUP READY 2 YIELD® SOYBEANS

Light tawny pubescence with medium-tall plant height. Excellent emergence for early planting. Indeterminate, STS and excluder. Resistance to Stem Canker and moderate resistance to Sudden Root knot. Excellent Sudden Death Syndrome tolerance and metribuzin resistance.



			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2.5	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	TW	PHYTO FIELD TOL				2	
HILUM COLOR	BI	WHITE MOLD	N/A				
FLOWER COLOR	P	BROWN STEM ROT				2	
PHYTO GENE	Rps1c	SCN				1	
SCN	R3, MR14						

SG 5366XT

5.3 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Indeterminate potential yield topper! STS stack with resistance to Stem Canker and very nice appearance.



			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				2	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	G	PHYTO FIELD TOL				3	
HILUM COLOR	Bu	WHITE MOLD	N/A				
FLOWER COLOR	W	SDS				2	
PHYTO GENE	-	FROGEYE LEAF SPOT				2	
SCN	-						

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SOYBEAN PRODUCT PORTFOLIO

SG 5718XT

5.7 RM



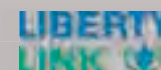
ROUNDUP READY 2 XTEND® SOYBEANS

Determinate variety well adapted to East Coast growing conditions. Root Knot Nematode and Stem Canker resistance. Outstanding yield performance.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				2	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	T	PHYTO FIELD TOL			2.5		
HILUM COLOR	BI	WHITE MOLD	N/A				
FLOWER COLOR	W	BROWN STEM ROT			2.5		
PHYTO GENE	-	FROGEYE LEAF SPOT	N/A				
SCN	R3						

SG 6017LL

6.0 RM



LIBERTYLINK® SOYBEANS

Determinate variety. Tawny pubescence. Tan pod. Very good lodging resistance. Moderate resistance to Sudden Death Syndrome. Root Knot Nematode resistance. Metrobuzin tolerant. Excellent standability and good yields!

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				1.5	
PLANT TYPE	DET	STRESS TOLERANCE				2	
PUBESCENCE	TW	PHYTO FIELD TOL			2.5		
HILUM COLOR	BR	WHITE MOLD	N/A				
FLOWER COLOR	-	BROWN STEM ROT			2		
PHYTO GENE	-	FROGEYE LEAF SPOT			2		
SCN	-						

SG 6088XT

6.0 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Determinate variety adapted to East Coast. RKN resistance for Root Knot situations. Good SDS tolerance. Excellent standability, emergence, and stress tolerance.

			5	4	3	2	1
PLANT HEIGHT	M	STANDABILITY				2	
PLANT TYPE	MB	STRESS TOLERANCE				2	
PUBESCENCE	T	PHYTO FIELD TOL			3		
HILUM COLOR	BI	WHITE MOLD	N/A				
FLOWER COLOR	W	SDS	N/A				
PHYTO GENE	-	FROGEYE LEAF SPOT	N/A				
SCN	R3						

SG 6985XT

6.9 RM



ROUNDUP READY 2 XTEND® SOYBEANS

Determinate variety. Outstanding yield potential. Very attractive line for North Carolina, which is a salt excluder. Excellent Frogeye tolerance.

			5	4	3	2	1
PLANT HEIGHT	MT	STANDABILITY				1.5	
PLANT TYPE	MB	STRESS TOLERANCE				2.5	
PUBESCENCE	TW	PHYTO FIELD TOL			2.5		
HILUM COLOR	B	WHITE MOLD	N/A				
FLOWER COLOR	W	BROWN STEM ROT	N/A				
PHYTO GENE	-	FROGEYE LEAF SPOT					1
SCN	-						

SOYBEANS • SMALL GRAINS

CONVENTIONAL SOYBEAN PRODUCTS

NEW SG 155c 1.5 RM

CONVENTIONAL SOYBEANS

Exciting new Mid-Group I soybean yielding 106% of the mean in plots with traited soybeans. Medium-tall light tawny plant with complete agronomic and disease package.

		5	4	3	2	1
PLANT HEIGHT	MT					
PLANT TYPE	MB					
PUBESCENCE	LT					
HILUM COLOR	Br					
FLOWER COLOR	P					
PHYTO GENE	Rps1k					
SCN	R3, MR14					
STANDABILITY					1.5	
STRESS TOLERANCE					1	
PHYTO FIELD TOL					1.5	
WHITE MOLD					2	
BROWN STEM ROT					1.5	
SDS					2	

SG 206c 2.0 RM

CONVENTIONAL SOYBEANS

Yellow hilum with above average protein. Resistant to SCN and strong IDC scores. Moves south very well.

		5	4	3	2	1
PLANT HEIGHT	M					
PLANT TYPE	MB					
PUBESCENCE	G					
HILUM COLOR	Y					
FLOWER COLOR	W					
PHYTO GENE	Rps1c					
SCN	R3, MR14					
STANDABILITY					2.5	
STRESS TOLERANCE					3	
PHYTO FIELD TOL					3	
WHITE MOLD					2.5	
BROWN STEM ROT					1.5	
SDS						

SG 285c 2.8 RM

CONVENTIONAL SOYBEANS


Significantly outyields a host of high yielding late maturity Group II and Group III lines. A "must have" for your Late-Group II conventional lineup.

		5	4	3	2	1
PLANT HEIGHT	M					
PLANT TYPE	MB					
PUBESCENCE	LT					
HILUM COLOR	BI					
FLOWER COLOR	P					
PHYTO GENE	-					
SCN	-					
STANDABILITY					2	
STRESS TOLERANCE					2	
PHYTO FIELD TOL					2	
WHITE MOLD	N/A					
BROWN STEM ROT					2	
SDS					1.5	

NEW SG 351c 3.5 RM

CONVENTIONAL SOYBEANS

Medium-tall light tawny bushy plant type with STS. Excellent agronomics and disease package. Outstanding yield performance the last 2 years in testing, - 105% and 107% of the mean.



		5	4	3	2	1
PLANT HEIGHT	MT					
PLANT TYPE	B					
PUBESCENCE	LT					
HILUM COLOR	B					
FLOWER COLOR	P					
PHYTO GENE	Rps1k					
SCN	RESISTANT					
STANDABILITY					1.5	
STRESS TOLERANCE					1.5	
PHYTO FIELD TOL					1.5	
FROGEYE LEAF SPOT					2	
BROWN STEM ROT					2	
SDS					1.5	

DISEASES

FUSARIUM HEAD SCAB/BLIGHT

- Fusarium head blight (scab) is caused by a fungus that affects the seed head. Infected heads will be dead or have bleached out florets; some of the floret may remain green as the blight may only affect a portion of the head. This is commonly seen scattered throughout the field and most prevalent in high humidity and high moisture conditions. Plants in the flowering stages are the most susceptible. Infected seeds will be pink or salmon colored and black spores may develop as it progresses. The infected seeds may be contaminated with vomitoxin, shriveled, and will result in a lower test weight. These seeds should not be saved to plant the following year. Corn and barley are other hosts for this fungus. It can live in the residues of these host crops for years, so management of debris and crop rotation is critical for controlling this fungus. Appropriate fungicides can be used for control as well. Some wheat varieties also have resistance to this fungus, so be conscious of the cultivars chosen if fusarium head blight is an issue in your area.



Fusarium Head Scab/Blight^

POWDERY MILDEW

- Powdery mildew, as seen on soybeans, will cause patches of cottony/whitish/gray patches on the upper leaf surface. As it develops, it will turn a gray/brown color with black fruiting bodies becoming visible on the mildew. Leaves opposite the fungus may show chlorotic patches. Powdery mildew is a fungus that likes high nitrogen situations, high humidity, and cool temperatures. For control, fungicides may be effective and controlling residues is important as it overwinters in them.



Powdery Mildew^

RUSTS

- Rust can be seen in three different forms; leaf rust, stem rust, and stripe rust. It will appear as chlorotic or brown spots on the leaves or stems. Stripe rust will appear as yellow streaks down the leaves or have patches of raised orange pustules. Rust is caused by a fungus that thrives in cool, wet conditions. For control, fungicides may be used but the most effective methods are planting early maturing varieties, destroying alternative hosts in and around the field.



Stem Canker^

BARLEY YELLOW DWARF VIRUS

- Barley yellow dwarf virus is a virus that can be transmitted by a few species of aphids. The flag leaves of infected plants will begin to yellow at the tips and leaf margins, possibly turning red, orange, green or brown in color. These plants will be stunted with shorted internodes. Spreading of this virus is completely dependent on aphids which are more prevalent in cool, wet conditions. Make sure to control grassy weeds in and along the field.



Barley Yellow Dwarf Virus^

SMALL GRAINS

DISEASES

SEPTORIA GLUME SPOT

- Septoria glume spot is a fungus that causes seeds to shrivel and shrink and have a low test weight. Commonly found when septoria leaf blotch is present, glume spot will turn the glume and chaff dark brown to black, with a purplish tint. The glume may look water soaked and turn gray as fruiting bodies begin to form. This fungus can survive in the residues of infected crops and spores can be spread far by wind. The development is favored during times of moderately warm weather with frequent rainfall and humid conditions. Effective ways of control include crop rotations, managing crop residues and infected seeds.

SEPTORIA LEAF BLOTCH

- Very similar to septoria glume spot, the fungus infects leaves in the lower canopy first, slowly progressing up the canopy. Leaves will have chlorotic specks that will eventually enlarge to become irregular with brown/reddish center and a yellow halo. This is a common precursor for septoria glume spot. Conditions of warm weather, frequent rain and humidity conditions favor the development of this fungus. Control infected crop residues to minimize impact.

SOIL BORNE MOSAIC VIRUS

- Soil borne mosaic virus (SBMV), infects the root hairs and penetrates the roots. As described in the name, it survives in the soil and thrives in wet areas or areas with poor drainage. Cool temperatures along with short days will favor the virus. Once temperatures get to be over 75 degrees Fahrenheit, the virus will be subdued. Infected plants will have yellow/pale green mosaic mottling and streaking, varying in degree throughout the field. Normally found in irregular patches, scattered around the field. Effective methods of control include planting as close to the optimum date for your region as possible. Avoid planting too early.



Septoria Glume Spot^



Septoria Leaf Blotch^



Aphids^



Soil Borne Mosaic Virus^

PESTS

APHIDS

- Small, oval shaped, nearly transparent insects. Commonly found on soybeans but are also a pest in wheat. There can be many different species present so it is important to identify which species you have. Some are vectors of the barley yellow dwarf virus which is very damaging to wheat. By themselves, they do little to no direct damage to the wheat plant. Their feeding habits can cause yellowing of leaves, but their main impact is being a vector for barley yellow dwarf virus and other viruses.

ARMYWORM

- Young armyworm larvae begin a pale green to yellow color and as they mature, they become a darker green with a line developing along the side of their body. Much like their impact in corn, armyworms will defoliate the plant. Leaves will be entirely consumed or have notches eaten out of them. This will impact the plants ability to photosynthesize. For controlling armyworms, chemical methods have and can be used, but the most common method of control is biological control.

PESTS

HESSIAN FLY

- A dangerous pest when it comes to wheat, the Hessian fly can drastically reduce yields if the pressure is high enough. The Hessian fly is 3-4 mm long with a black head and a pinkish or yellow-brown abdomen. The larvae feed off juices from the plant tissue; affected plants may be stunted, stands may thin & the potential for lodging will also increase. When planting wheat in the fall, be conscience of the Hessian fly free date for area.



Hessian Fly^

THRIPS

- Thrips are extremely small insects, only about 1 mm in length. They are brown or black with a tapering abdomen and a pair of two narrow wings. Normally, thrips are found on the sheath of a flag leaf and will feed on the stem. If the pressure is heavy enough to cause severe damage, the affected leaves will take on a silvery color. Heavy rain events will destroy the thrip population if present.



Thrips^

CEREAL LEAF BEETLE

- Cereal leaf beetles are 4-5 mm long with a black head and a blue-green wing cover with parallel lines of small dots. The larvae are bright yellow and begin to take on a slimy appearance as they accumulate black fecal residue on their backs. They will overwinter here and emerge in the spring, feeding on the leaves. Leaves will have longitudinal stripes where the beetles have fed. If leaves have fine hairs on them, they are less likely to be affected by cereal leaf beetle feeding.



Cereal Leaf Beetle^

SLUGS

- Common slugs can be more impactful in no-till, reduced till and in cover crop situations where their populations have not been disturbed. They will feed on the leaves, chewing longitudinally and leaving a glistening slime trail behind. If underground, they can also feed on the seedling biting it off before it gets a chance to mature. Slug control is difficult. There are baits and some sprays but control may be difficult as slugs are more prevalent at night.



Slugs^

SMALL GRAINS

WHEAT

NEW SW 36 Soft Red Winter Wheat - Ideal for South Carolina and further south

Medium-early maturity with an awned head type. Good standability, medium height, and outstanding test weight. 2019 SC Statewide trials – 129% of the mean for yield and 103% for test weight.

MATURITY	MEDIUM-EARLY	DISEASE RATING	VERY GOOD
HEAD TYPE	AWNED	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	EXCELLENT	STRAW STRENGTH	VERY GOOD
HEIGHT	M		

SW 46SR Soft Red Winter Wheat

Awed head type. Very early maturity. Great candidate for early harvest in areas that double crop with soybeans. Medium to short plant height. Excellent test weight, standability and disease ratings.

MATURITY	VERY EARLY	DISEASE RATING	EXCELLENT
HEAD TYPE	AWNED	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	EXCELLENT	STRAW STRENGTH	EXCELLENT
HEIGHT	M-S		

SW 49SR Soft Red Winter Wheat

Very uniform appearance with smooth head type. Early maturity - great choice for double crop. Excellent head scab tolerance, phenomenal yield potential and excellent standability. Should be planted at higher populations for maximum yields.

MATURITY	EARLY	DISEASE RATING	EXCELLENT
HEAD TYPE	SMOOTH	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	VERY GOOD	STRAW STRENGTH	EXCELLENT
HEIGHT	M		

NEW SW 51SR Soft Red Winter Wheat

Large smooth head type. Top end yields with FHB1 Gene for head scab resistance. Medium-tall plant with good standability and medium-early maturity.

MATURITY	MEDIUM-EARLY	DISEASE RATING	EXCELLENT
HEAD TYPE	SMOOTH	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	VERY GOOD	STRAW STRENGTH	VERY GOOD
HEIGHT	M-T		

SW 62SR Soft Red Winter Wheat

Consistent top performance. Excels on multiple soil types. Excellent disease resistance package. Strong agronomic package. Heavy test weight with excellent yield. Awed head type. FHB1 Type II Scab resistance.

MATURITY	MEDIUM	DISEASE RATING	EXCELLENT
HEAD TYPE	AWNED	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	EXCELLENT	STRAW STRENGTH	EXCELLENT
HEIGHT	M		

WHEAT

SW 64SR Soft Red Winter Wheat

Awnead head type with medium-early maturity. Medium plant height and excellent standability and winter hardiness. Good test weight and widely adapted. Scab resistant gene for fusarium head blight tolerance.

MATURITY	MEDIUM-EARLY	DISEASE RATING	EXCELLENT
HEAD TYPE	AWNED	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	VERY GOOD	STRAW STRENGTH	GOOD
HEIGHT	M		

NEW SW 65SR Soft Red Winter Wheat

Broadly adapted with medium maturity and awnead head type. FHB1 Gene for head scab resistance. Medium height with excellent standability.

MATURITY	MEDIUM	DISEASE RATING	EXCELLENT
HEAD TYPE	AWNED	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	VERY GOOD	STRAW STRENGTH	EXCELLENT
HEIGHT	M		

SW 70SR Soft Red Winter Wheat

Smooth head with medium maturity. Widely adapted. Scab resistant gene for fusarium head blight tolerance. Excellent standability, test weight and overall disease resistance.

MATURITY	MEDIUM	DISEASE RATING	EXCELLENT
HEAD TYPE	SMOOTH	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	EXCELLENT	STRAW STRENGTH	EXCELLENT
HEIGHT	M		

Visit www.seedway.com
to find the latest tech sheets on
your favorite SEEDWAY products
and compare varieties
side by side.



SMALL GRAINS

WINTER BARLEY

KWS SCALA WINTER MALTING BARLEY

Two-row variety, strong plant health and resistance to major barley diseases. Medium height and excellent test weight. Strong yields. Good winterhardiness. Can be a top producer in many production systems. Plant on time on well drained soils.

** Meets needs of growers, maltsters, and brewers.*

VIOLETTA WINTER MALTING BARLEY

Two-row winter barley. Early maturing, short stature plant height. Selected for its malting quality, earliness, winter hardiness and resistance to Barley Yellow Mosaic Virus. Shows excellent tolerance to Leaf Rust, Powdery Mildew, and Net Blotch. Plant on time on well drained soils.

** Meets needs of growers, maltsters, and brewers.*

SB 151 WINTER FEED BARLEY

Early maturity, tall height with excellent standability, excellent winter hardiness and disease resistance.

MATURITY	MEDIUM
HEAD TYPE	SMOOTH
BUSHEL WEIGHT	VERY GOOD

HEIGHT	TALL
WINTER SURVIVAL	EXCELLENT
STRAW STRENGTH	VERY GOOD

NEW

SB 255 WINTER FEED BARLEY

Medium maturity, that shows competitive yields compared to Secretariat. Excellent test weight and standability. Significantly better resistance to Head Scab than Secretariat.

MATURITY	MEDIUM
HEAD TYPE	AWNED
BUSHEL WEIGHT	EXCELLENT

HEIGHT	TALL
WINTER SURVIVAL	EXCELLENT
STRAW STRENGTH	EXCELLENT



SPRING BARLEY

NEW LCS ODYSSEY SPRING MALT BARLEY

LCS Odyssey is a must-have variety for distillers, as it is the only malting barley variety available in the United States today rated as non-GN (zero glycosidic nitrile content). Excellent resistance to Cereal Cyst Nematode.

NEW AC CYANE SPRING FEED BARLEY

Six row bearded head type that has an extremely high yield potential. The large grain makes AC Cyane great for feed use. Easy to harvest and adapts well to most soil types. Excellent tolerance to Powdery Mildew and Leaf Rust.

NEW ORWELLE SPRING FEED BARLEY

New spring 6-row feed barley. Limited supply for 2021. Excellent standability and good overall disease resistance. Testing has confirmed 4-6 Bu/ac advantage over Cyane.

MATURITY	MODERATE/EARLY	HEIGHT	MEDIUM
HEAD TYPE	AWNED	WINTER SURVIVAL	EXCELLENT
BUSHEL WEIGHT	EXCELLENT	STRAW STRENGTH	EXCELLENT

RYE

DANKO Rye

Danko is a winter rye cultivar with higher yield, better lodging resistance, better winter survival, with plump kernels and high test weight. Good winter hardiness. Medium-long awns. Suitable for feed, baking, distilling and cover crop.

Hybrid Rye

A hybrid rye will also be available in the 2021 product offering. Please contact your local SEEDWAY Farm Seed Representative for further information on varieties and availability.

SILAGE CORN HYBRIDS

Chew on these well known constants. . . and these new updates from science!

Several factors shape harvest & quality each season;



ENVIRONMENTAL INFLUENCES VARY EACH SEASON

- Amount of rainfall during key development stages affects grain / stover relationship.
- Temperature influences maturation rate of the crop, particularly fiber.



ADVANCES IN LAB TESTING TECHNOLOGY

- Fiber and starch nutrient content of silage.
- Digestibility of fiber and starch components individually.



Fiber digestibility has been discussed as a key characteristic of corn silage quality. Penn State did an extensive study in 2016-17 on 24 farms. They determined individual farms with highest and lowest fiber digestibility had similar break even costs. Fiber digestibility alone did not determine how a cow would perform. Wait, there's more . . .

We know energy content of corn silage is primarily determined by amount and digestibility of fiber. Grain content also affects energy. It has been shown that a silage with less than 30% grain can have more energy content than a silage with more than 50% grain. This is due to differences in fiber digestibility. Clearly grain percentage of silage is not a reliable indicator of energy content. Since milk production closely follows energy content, generating digestible fiber as well as grain content of silage is important.

Starch content and digestibility has received much current attention. Starch digestibility usually increases in storage, peaking at about six months. Many producers plan to carry six months of silage inventory to avoid feeding new crop silage until it has cured.

It is possible to get around low starch content and digestibility by increasing ration supplementation. This does increase ration cost and reduce profitability.



PHYSICAL PROPERTIES OF SILAGE HAVE EFFECTS ON COWS

- Particle size distribution.
- Kernel processing score.

A positive linear relationship has been shown between forage particle size and chewing time, ruminating time, and NDF (fiber) digestibility. However, differences were found for these positive characteristics when separately investigated. It was concluded that TMR mix components affected individual outcomes. A bit complex. The body of research generally shows adequate particle size positively effects ruminant milk production and health. (*Animal Feed Science and Technology; 9 year Meta Analysis of 24 complete feeding studies*)

Paying attention to kernel processing score can be helpful. However, in the Penn State study the highest and lowest producing herds had excellent processing scores proving processing score alone did not make a quality corn silage.

In the end - nutrient content (fiber & grain) as well as good digestibility of each component is needed. Adequate particle size and good processing scores further enhance milk production and herd health.



STORAGE MATTERS

- Starch digestibility often increases with time in storage.
- Freedom from molds and mycotoxins are important.

**Fortunately we know much more about quality in corn silages than we did years ago.
Unfortunately there is no single measurment that easily defines quality.**

Touch Points For Growing High Quality Corn Silage

Test hybrids for grain yield to assure high grain production potential.

Test the same hybrids in silage trials for silage yield & component digestibility.

Plant hybrids with a high rating of 1 or 2 for forage quality.

Monitor crop development closely and harvest at physiological maturity.

If you process, use industry guidlines for processing and storage.

Consider an inoculant.

Finer points.

SEEDWAY	GROWER	
✓		Multiple replicated trials.
✓		Multiple forage quality replications.
✓		See data presented in this literature.
	✓	Time harvest using moisture content.
	✓	Packing bunks well is money in the bank.
	✓	Retain dry matter and quality.
	✓	Over-processing leads to reduced particle size and lessened fiber effectiveness.

SILAGE CORN HYBRIDS

SW 1994GT

Agrisure® GT version of this short season silage yield winner for all areas of the North-east. Strong seedlings with good early season vigor. Maintains growth and stature across variable conditions which boosts silage yield. Population flexible, flex ear, good starch production in silage.

LIMITATIONS: Adequate roots. Roots may not be suitable for sands or muck soils.

MANAGEMENT: Use for shortest maturity, emergence in cold soils, and high silage yield potential in maturity. Structured refuge option.



80 DAY RM
*RM: NY

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	FLEX
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

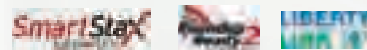
PLANT HEIGHT	1.5
EMERGENCE	1
STRESS TOLERANCE	3
STAYGREEN	3
ROOTS	5
SILAGE YIELD	3
GRAIN DIGESTIBILITY	1.5
FIBER DIGESTIBILITY	2.5
GRAY LEAF SPOT	3
NCLB	2

5 4 3 2 1

SW 2190GENSS (RIB)

Consistent yields for good and variable soils with strong agronomics. SmartStax® RIB Complete® Corn Blend for broad acre use in longer corn rotations with continuous silage. Premier rootworm product under 85 days RM. Good seedling vigor with very consistent ear development at various planting populations.

MANAGEMENT: Flexible to use in any rotation.



83 DAY RM
*RM: NY

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

PLANT HEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	2
ROOTS	2
SILAGE YIELD	2.5
GRAIN DIGESTIBILITY	N/A
FIBER DIGESTIBILITY	N/A
GRAY LEAF SPOT	4.5
NCLB	2

5 4 3 2 1

SW 2369 3000GT

Good silage yield with potential for profitable northern silage production at higher populations. Well adapted in eastern highland areas of Maryland and Pennsylvania to the Canadian border. Handles Eyespot well in years that the disease is present. The Agrisure® 3000GT version is an excellent choice for continuous corn acres.

LIMITATIONS: Short plant.

MANAGEMENT: Plant high populations for best silage yield.



84 DAY RM
*RM: NY

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	BELOW AVERAGE
PLANT POPULATION	H
PEST TOLERANCE	EXCELLENT

PLANT HEIGHT	3
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	1.5
ROOTS	1.5
SILAGE YIELD	1.5
GRAIN DIGESTIBILITY	1.5
FIBER DIGESTIBILITY	2.5
GRAY LEAF SPOT	5
NCLB	2.5

5 4 3 2 1

SW 3590GENVT2P (RIB)

Highly competitive silage yield performance at maturity. Must try hybrid for broad acre use on short and medium corn rotations. Adaptable across locations in research trials.

MANAGEMENT: Target first and second year corn acres.



90/89 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	INTERMEDIATE
FOLIAR/STALK ANTHRACNOSE	M
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

N/A

PLANT HEIGHT	1.5
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	2
ROOTS	2
SILAGE YIELD	1.5
GRAIN DIGESTIBILITY	2
FIBER DIGESTIBILITY	1.5
GRAY LEAF SPOT	0.5
NCLB	1.5

SW 2840GENVT2P (RIB)

Very good silage option for long rotation silage at high populations. RIB - no refuge requirements. Common Rust resistance.

LIMITATIONS: Fixed ear. Use with higher populations.

MANAGEMENT: Ideal fit for corn after corn acres.



87/86 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	3
EMERGENCE	1.5
STRESS TOLERANCE	1.5
STAYGREEN	1.5
ROOTS	1.5
SILAGE YIELD	2.5
GRAIN DIGESTIBILITY	1.5
FIBER DIGESTIBILITY	3
GRAY LEAF SPOT	4
NCLB	2

SILAGE CORN PRODUCT KEY

RATINGS

1 = Best

PLANT POPULATION

M = Medium
M-H = Medium to High
H = High



KEY CORN

Superior Silage Product
365 Days Of The Year



SILAGE CORN HYBRIDS

SW 3110GENSS (RIB) & SW 3110GENVT2P (RIB)

Solid silage yield potential with SmartStax® and VT Double Pro® options on same base genetics. SmartStax® RIB Complete® for broad acre use in longer corn rotations, and Double Pro for first and second year corn. Very good stand establishment and early vigor for early planting and reduced tillage.

LIMITATIONS: The LibertyLink™ option is only available for the SW 3110GENSS RIB option. Not the SW 3110GENVT2P RIB option.

MANAGEMENT: Maximize silage yield with higher populations.



90/89 DAY RM <small>*RM: NY/CCB</small>	
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	H
PEST TOLERANCE	EXCELLENT

	5	4	3	2	1
PLANT HEIGHT				2	
EMERGENCE				1.5	
STRESS TOLERANCE				2	
STAYGREEN				2	
ROOTS				2	
SILAGE YIELD				2	
GRAIN DIGESTIBILITY				1.5	
FIBER DIGESTIBILITY				2	
GRAY LEAF SPOT		4			
NCLB			3		

SW 3664RR

Extremely productive dual purpose hybrid for silage. Holds plant size well across environments with ear flex seldom seen in the maturity. Nice snapper and husker. Accommodates a wide range of populations. Elite dual purpose hybrid for high moisture corn, snaplage, and silage.

LIMITATIONS: No GMO insect trait protection - rootworm protection unsuitable for long corn rotations.

MANAGEMENT: Exceptional choice where ear flex is an advantage. Recommend medium to high populations in high fertility environments. Structured refuge option.



91/90 DAY RM <small>*RM: NY/CCB</small>	
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	FULL-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M
PEST TOLERANCE	GOOD

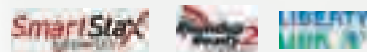
	5	4	3	2	1
PLANT HEIGHT				2	
EMERGENCE				2	
STRESS TOLERANCE			3		
STAYGREEN			3		
ROOTS			3.5		
SILAGE YIELD				1	
GRAIN DIGESTIBILITY				1	
FIBER DIGESTIBILITY				1	
GRAY LEAF SPOT		4			
NCLB			2.5		

SW 3600GENSS (RIB)

Exceptional consistency of performance for grain and silage. Rootworm and corn borer protected for continuous corn silage acres. One of the most versatile SmartStax® hybrids we have seen across eastern and northern environments. Holds plant size well across varying soils.

LIMITATIONS: Average Gray Leaf Spot resistance.

MANAGEMENT: Use on long term corn silage acres where corn after corn requires trait insect protection. Good for the reduced tillage acre.



92/91 DAY RM <small>*RM: NY/CCB</small>	
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

	5	4	3	2	1
PLANT HEIGHT				2	
EMERGENCE				2	
STRESS TOLERANCE				1.5	
STAYGREEN			3		
ROOTS				1.5	
SILAGE YIELD				2	
GRAIN DIGESTIBILITY				1.5	
FIBER DIGESTIBILITY				1	
GRAY LEAF SPOT		4			
NCLB				1.5	

NEW SW 3624RR

Single trait Roundup Ready® Corn 2 with excellent north/south adaption for easy placement. Versatile across soil types for silage and grain on Roundup Ready® acres. Excellent consistency of performance over locations and years.

MANAGEMENT: Keep populations in the medium to high range.



92/91 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	2
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	3
ROOTS	1.5
SILAGE YIELD	2
GRAIN DIGESTIBILITY	2
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	4
NCLB	2

SW 3569VIP 3110 & SW 3569VIP 5222

High yield, stable yielding silage hybrid with Agrisure Viptera® 3110 trait stack and Agrisure Duracade® 5222 trait stack options. Holds plant size well across environments. SW 3569 3110 best fits first and second year corn, and SW 3569 5222 is best for second year corn and longer corn rotations. Excellent choice for droughty acre.

LIMITATIONS: SW 3569 3110 no rootworm protection.

MANAGEMENT: Use on any silage acre.

93/92 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	3110 - VERY GOOD 5222 - EXCELLENT

PLANT HEIGHT	2
EMERGENCE	3
STRESS TOLERANCE	1.5
STAYGREEN	2.5
ROOTS	4
SILAGE YIELD	1
GRAIN DIGESTIBILITY	2.5
FIBER DIGESTIBILITY	2.5
GRAY LEAF SPOT	3.5
NCLB	2.5

SW 3750

Strong conventional grain yield contributes to high quality silage in northern environments. Medium stature, excellent roots. SW 3750 flowers early for maturity with fast maturation rate in northern zones and at elevation. Adequate foliar blight resistance, will show light/late symptoms without affecting yield.

LIMITATIONS: Conventional without trait insect protection. Not glyphosate tolerant.

MANAGEMENT: Strongest performance in first and second year corn. Structured refuge option.

93/92 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE+
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	3
EMERGENCE	2.5
STRESS TOLERANCE	2
STAYGREEN	3
ROOTS	1.5
SILAGE YIELD	2
GRAIN DIGESTIBILITY	1
FIBER DIGESTIBILITY	1
GRAY LEAF SPOT	3.5
NCLB	2.5

SILAGE CORN HYBRIDS

SW 3854RR

Strong, versatile single trait RR product with extremely wide adaptation. Performing nicely north / south handling foliar blights while maintaining silage with high grain content. More ear flex than most hybrids of the maturity. SW 3854RR flowers early for good northern silage performance. Lead dual purpose hybrid at this maturity.

LIMITATIONS: No trait insect protection.

MANAGEMENT: Versatile, all uses, adds genetic diversity while fitting most rotation needs - performed in high residue conditions. Structured refuge option.



94/93 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE++
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	3
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	2
ROOTS	2
SILAGE YIELD	1.5
GRAIN DIGESTIBILITY	1
FIBER DIGESTIBILITY	1
GRAY LEAF SPOT	2.5
NCLB	2

SW 3768GENSS (RIB)

SmartStax® hybrid with complete insect protection package for continuous silage acres. Strong grain performance contributes to quality silage. Good Northern Corn Leaf Blight resistance and agronomics, performing well north and south. Leader product where insect protection is needed on continuous silage acres.

LIMITATIONS: Fast growth, heavy draw on nutrients. In poor drainage situations evaluate nitrogen supply, sidedress nitrogen if denitrification occurs.

MANAGEMENT: Excellent in high residue conditions.



95/94 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

PLANT HEIGHT	3
EMERGENCE	2.5
STRESS TOLERANCE	2
STAYGREEN	1.5
ROOTS	2
SILAGE YIELD	2
GRAIN DIGESTIBILITY	2.5
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	4
NCLB	2.5

SW 3770VIP 3110

Above average silage performance in early environments. Contains the Agrisure Viptera® 3110 trait stack for broad lepidopteran insect protection. Likes high yield environments. Medium stature, erect leaves, and lower ear placement. Good seedling vigor and early growth. Best performance consistency in better drained soils.

MANAGEMENT: No Rootworm control, use in short rotations.



95/94 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	3
EMERGENCE	2.5
STRESS TOLERANCE	3
STAYGREEN	2.5
ROOTS	3.5
SILAGE YIELD	3.5
GRAIN DIGESTIBILITY	N/A
FIBER DIGESTIBILITY	N/A
GRAY LEAF SPOT	4.5
NCLB	3

SW 3937BMR

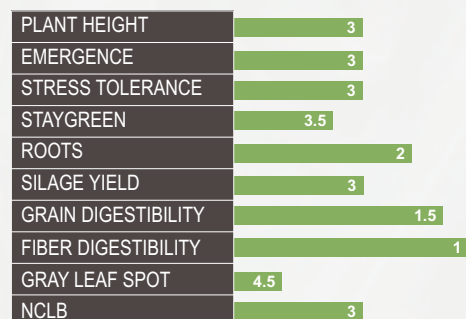
Medium yield potential with elevated silage digestibility. Non GMO brown midrib bm3 gene. Exceptional roots and good bmr agronomics for a truly early brown midrib hybrid. Consistently superb silage digestibility with elevated animal intake potential.

LIMITATIONS: Like all bmr's can lose staygreen late season. Not glyphosate tolerant.

MANAGEMENT: Medium stature requires high populations for best silage yield potential.

98/94 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE+
PLANT POPULATION	H
PEST TOLERANCE	AVERAGE



SW 3904LRR

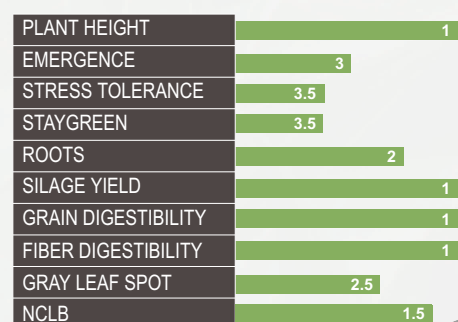
Leafy hybrid with the widest adaptation to northern silage acres we have ever seen. This hybrid combines grain yield, and silage quality into one package for any first or second year corn acre. Add grain mold, native first generation corn borer, and North Corn Leaf Blight resistance.

LIMITATIONS: Average Gray Leaf Spot resistance.

MANAGEMENT: Use in first and second year corn for maximum yield and forage quality. Solid in reduced tillage. Structured refuge option.

98/94 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	M
EAR TYPE	FLEX+
FOLIAR/STALK ANTHRACNOSE	AVERAGE+
PLANT POPULATION	M
PEST TOLERANCE	VERY GOOD



SW 3914LRR

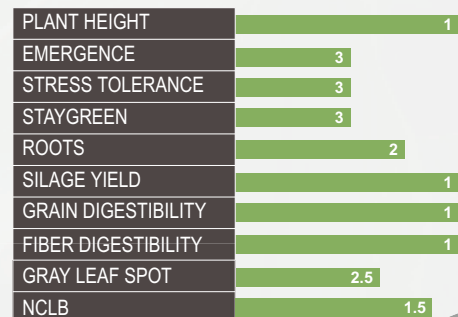
Bluechip research performance in silage trials when compared with SW 3904LRR (above), in side by side comparisons over four years. SW 3914LRR is available only as single trait RR. It has slightly more yield from a girthier ear than SW 3904LRR. Improved ear package/husk cover. Must try silage hybrid.

LIMITATIONS: Like other large stature leafy's - can run out of nutrients when nutrient supply is inadequate for high silage yield levels.

MANAGEMENT: Longer grain fill window than SW 3904LRR which makes it easier to manage at silage harvest time. Structured refuge option.

98/94 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	M
EAR TYPE	FLEX+
FOLIAR/STALK ANTHRACNOSE	AVERAGE++
PLANT POPULATION	M
PEST TOLERANCE	VERY GOOD



SILAGE CORN HYBRIDS

SW 3874RR

Single trait Roundup Ready® Corn 2 for any dual purpose or silage acre in first or second year corn. Solid disease package including Stalk and Foliar Anthracnose resistance. Good agronomics with medium plus stature and strong ear flex for maximum population flexibility. Effective across soils and management. Late season finisher making high quality silage.

LIMITATIONS: No GMO insect trait protection.

MANAGEMENT: Solid where ear flex is an advantage. Tolerates medium to high populations. Structured refuge option.



98/97 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	MEDIUM
EAR TYPE	FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

	5	4	3	2	1
PLANT HEIGHT					1
EMERGENCE				2	
STRESS TOLERANCE				2	
STAYGREEN				2	
ROOTS			2.5		
SILAGE YIELD					1
GRAIN DIGESTIBILITY				1.5	
FIBER DIGESTIBILITY				1.5	
GRAY LEAF SPOT				2	
NCLB				2	

NEW SW 3960GENSS (RIB)

Better southern movement than SW 4000GENSS and others in this maturity. SmartStax® (RIB) for broad acre use in longer corn rotations. Excellent season long eye appeal and late season staygreen for maturity. More ear flex than most hybrids at 98 RM.

MANAGEMENT: Good fit on corn on corn acres.



99/98 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	MEDIUM WITH FLEX
FOLIAR/STALK ANTHRACNOSE	M
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

	5	4	3	2	1
PLANT HEIGHT					2
EMERGENCE			3.5		
STRESS TOLERANCE				1.5	
STAYGREEN				2	
ROOTS				2	
SILAGE YIELD				1.5	
GRAIN DIGESTIBILITY				2	
FIBER DIGESTIBILITY				2	
GRAY LEAF SPOT				3	
NCLB				2	

SW 4000GENSS (RIB) • SW 4000GENVT2P (RIB)

SmartStax® RIB Complete® for broad acre use in longer corn rotations with good performance in zone and north of zone. Long rotation silage choice. GENVT2P version only for first and second year corn silage acres.

LIMITATIONS: Moderate Western Bean Cutworm protection (GENSS).

MANAGEMENT: Point to Northern high yield potential acres. Do not move south of zone.



99/98 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	GENSS - EXCELLENT VT2P - VERY GOOD

	5	4	3	2	1
PLANT HEIGHT					2
EMERGENCE				2	
STRESS TOLERANCE				2	
STAYGREEN				2	
ROOTS				1.5	
SILAGE YIELD				1.5	
GRAIN DIGESTIBILITY				1.5	
FIBER DIGESTIBILITY				2	
GRAY LEAF SPOT				3.5	
NCLB				2	

SW 4030GENSS (RIB) • SW 4030GENVT2P (RIB) • NEW SW 4030

SmartStax® (RIB) option for broad acre use in longer corn rotations. VT Double Pro® version for short rotations. Conventional hybrid option. Flex style ear adapts to moderate planting populations - maintains high row count. Goe south better than SW 4000GENSS (RIB).

100/99 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	FLEX
FOLIAR/STALK ANTHRACNOSE	M
PLANT POPULATION	M - H
PEST TOLERANCE	GENSS - EXCELLENT VT2P - VERY GOOD CV - GOOD

PLANT HEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	2.5
ROOTS	1
SILAGE YIELD	3.5
GRAIN DIGESTIBILITY	3.5
FIBER DIGESTIBILITY	3.5
GRAY LEAF SPOT	3.5
NCLB	2



SW 4010GENSS (RIB)

Proven high yield grain hybrid with good roll over silage performance for any acre in the maturity. Complete insect package with rootworm protection for corn after corn silage acres. Widely adapted north to south with deep kernel. Silage yields improve with higher populations.

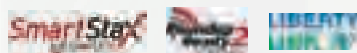
LIMITATIONS: Medium robust plant for silage.

MANAGEMENT: Keep populations on the higher side for best silage yield on pre-planned silage acres.

100/99 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

PLANT HEIGHT	2
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	2.5
ROOTS	1.5
SILAGE YIELD	2.5
GRAIN DIGESTIBILITY	2
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	3.5
NCLB	2



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For more information see pages 115-116.

SILAGE CORN HYBRIDS

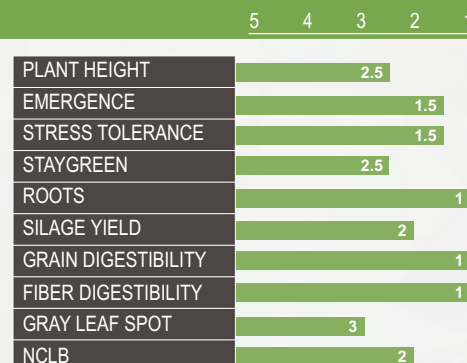
SW 5410

Conventional corn hybrid with stable high side yield potential, including stress sites. Outstanding root strength. Medium stature with very erect leaves, SW 5410 is ideally suited to high plant densities making efficient use of sunlight and nutrients in silage production. Performs well across variable conditions & management styles.

LIMITATIONS: Like other conventionals it is susceptible to second generation corn borer. Not glyphosate tolerant.

MANAGEMENT: Free native resistance to first generation corn borer. This is not a transgenic trait.

	104/103 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD



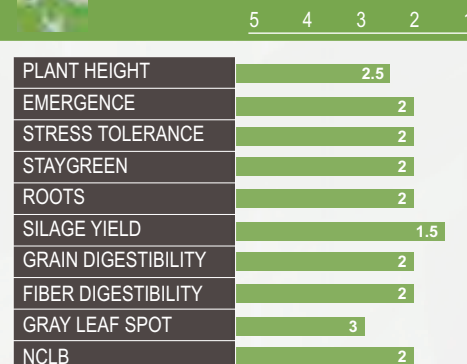
SW 5440GENSS (RIB) • SW 5440GENVT2P (RIB) • SW 5440

Exceptional grain content silage potential and proven performer across a wide area of adaptation. Moves south better than predecessor SW 5430. Consistent silage performance including the mid-south.

LIMITATIONS: Avoid low populations for silage. The LibertyLink™ option is only available for the SW 5440GENSS (RIB) option. Not the SW 5440GENVT2P (RIB).

MANAGEMENT: Put on better ground to utilize the full genetic yield potential of the product.

	106/105 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	GENSS - EXCELLENT VT2P - VERY GOOD CONV. - AVERAGE



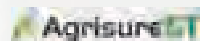
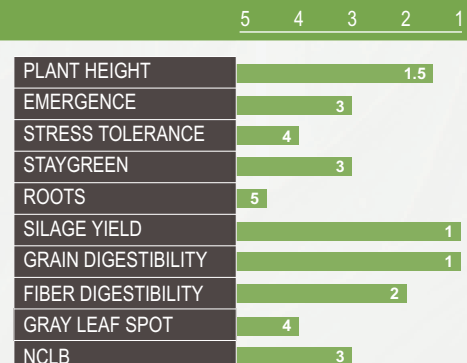
SW 5554GT

Proven, versatile, performs in presence of disease. Brings additional ear flex and yield stability to dual purpose acres where soil types and conditions vary. Strong eastern cornbelt hybrid. Widely adapted mid-south into New York where the maturity is grown. Good plant size for very high silage yield.

LIMITATIONS: Moves south better than north where dual purpose use is in play. Nice silage fit in the north.

MANAGEMENT: Solid flex ear for wide use on silage acres. No insect protection, use on first and second year corn acres.

	106/105 DAY RM <small>*RM: NY/CCB</small>
FUNGICIDE RESPONSE	AVERAGE+
EAR TYPE	FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE+
PLANT POPULATION	M - H
PEST TOLERANCE	GOOD



SW 5569 3000GT

Northeast regionally adapted, moving north & south well. Good stand establishment history which makes for consistency over acres. Replaces SW 5559GTRW with equal silage yield potential, and added corn borer protection. Larger style plant with rugged architecture.

LIMITATIONS: Silage only - north.

MANAGEMENT: Strong dual purpose fit for longer corn rotations. Push silage yield at higher populations.

106/105 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	AVERAGE+
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE+
PLANT POPULATION	M+
PEST TOLERANCE	EXCELLENT - - -

PLANT HEIGHT	2
EMERGENCE	2.5
STRESS TOLERANCE	2
STAYGREEN	2.5
ROOTS	1.5
SILAGE YIELD	1
GRAIN DIGESTIBILITY	1
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	3
NCLB	3



SW 6340GENVT2P (RIB)

Excellent health scores including Gray Leaf Spot in heavy infestations. Solid silage performer in the Mid-Atlantic. Special fit in Susquehanna River Basin due to plant health.

MANAGEMENT: Best fit on short rotation acres.

107/106 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	M
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	2
EMERGENCE	2.5
STRESS TOLERANCE	2
STAYGREEN	2
ROOTS	1.5
SILAGE YIELD	2.5
GRAIN DIGESTIBILITY	3
FIBER DIGESTIBILITY	3
GRAY LEAF SPOT	2
NCLB	2



SW 6540GENSS (RIB) & SW 6540GENVT2P (RIB)

Combines yield, agronomics, health to work in zone and south. This is the go to hybrid for genetic Anthracnose Stalk Rot and Gray Leaf Spot resistance. Good silage performance in the maturity.

LIMITATIONS: No rootworm protection on GENVT2P version.

MANAGEMENT: Above average with fungicide on corn after corn acres.

108/107 DAY RM

*RM: NY/CCB

FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	GENSS - EXCELLENT VT2P - VERY GOOD

PLANT HEIGHT	3
EMERGENCE	1.5
STRESS TOLERANCE	2
STAYGREEN	3
ROOTS	1.5
SILAGE YIELD	1
GRAIN DIGESTIBILITY	2.5
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	1.5
NCLB	1.5



SILAGE CORN HYBRIDS

NEW SW 6610GENSS (RIB)

Good plant stature and robustness for dual purpose and silage. SmartStax® (RIB) for broad acre use where Corn Borer and Rootworm protection are needed.

MANAGEMENT: Use on short or long corn rotations.



FUNGICIDE RESPONSE	HIGH
EAR TYPE	FLEX
FOLIAR/STALK ANTHRACNOSE	M
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

110/109 DAY RM
*RM: NY/CCB

	5	4	3	2	1
PLANT HEIGHT					2
EMERGENCE				3	
STRESS TOLERANCE				3	
STAYGREEN				3	
ROOTS				2	
SILAGE YIELD				1.5	
GRAIN DIGESTIBILITY				2	
FIBER DIGESTIBILITY				2	
GRAY LEAF SPOT				3	
NCLB				2	

SW 6614RR

Single-trait Roundup Ready® Corn 2 hybrid for any acre except where insect protection is needed. Versatile and consistent across the eastern cornbelt with adequate southern movement. Excellent for moderate cost input acres and silage. Simple to manage Roundup® system with no conventional herbicide yield drag.

LIMITATIONS: Not as well adapted to the deep south, especially coastal.

MANAGEMENT: Consistent silage and grain performer with wide acre suitability. Excellent after soybeans. Structured refuge option.



FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	GOOD

110/109 DAY RM
*RM: NY/CCB

	5	4	3	2	1
PLANT HEIGHT					2
EMERGENCE				2.5	
STRESS TOLERANCE				2	
STAYGREEN				2.5	
ROOTS				2	
SILAGE YIELD				2	
GRAIN DIGESTIBILITY				1.5	
FIBER DIGESTIBILITY				2.5	
GRAY LEAF SPOT				3	
NCLB				2	

SW 6630GENSS (RIB)

SmartStax® hybrid with maximum insect protection package. Versatile, SW 6630 works consistently in high yield environments and stress prone eastern sites. Nice agronomics, late season health, staygreen; protecting silage yield. Must plant silage hybrid where rootworm protection is needed.

LIMITATIONS: Fungicide protection may provide additional boost in performance in corn after corn rotations, especially in the Mid-Atlantic, southward.

MANAGEMENT: Nice finishing hybrid for the maturity. Monitor moistures at harvest for silage.



FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

110/109 DAY RM
*RM: NY/CCB

	5	4	3	2	1
PLANT HEIGHT					2
EMERGENCE				3	
STRESS TOLERANCE				1.5	
STAYGREEN				1.5	
ROOTS				1.5	
SILAGE YIELD				1	
GRAIN DIGESTIBILITY				1.5	
FIBER DIGESTIBILITY				2	
GRAY LEAF SPOT				2	
NCLB				1.5	

SW 6780GENVT2P (RIB)

Adapted southern PA to mid-south without east/west limitations. Average/adequate Gray Leaf Spot tolerance. Resistant to Northern & Southern Leaf Blight.

LIMITATIONS: Adequate for silage in deep south.

MANAGEMENT: Corn after corn with fungicide. This is an "in zone hybrid" that should not be pushed far south of zone.

113/112 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	2
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	3
ROOTS	2
SILAGE YIELD	2.5
GRAIN DIGESTIBILITY	2.5
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	3
NCLB	2



SW 6760GENSS (RIB)

Widely adapted with consistent silage production. SmartStax version brings rootworm control to continuous corn acres. ASR gene for Anthracnose Stalk Rot resistance. Handles medium-high populations. Good ear girth and kernel depth.

MANAGEMENT: Better silage option than sister hybrid SW 6780GENVT2P.

113/112 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

PLANT HEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	2.5
ROOTS	2.5
SILAGE YIELD	2
GRAIN DIGESTIBILITY	1.5
FIBER DIGESTIBILITY	1.5
GRAY LEAF SPOT	2
NCLB	2.5



SW 6790GENVT2P (RIB)

Hybrid with exceptional yield in testing. Strong agronomic package plus balanced style ear with good husk coverage. Try a few bags of this hybrid for top silage yield potential!

MANAGEMENT: High side populations for silage.

113/112 DAY RM
*RM: NY/CCB

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	EXCELLENT
PLANT POPULATION	H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	2
EMERGENCE	1.5
STRESS TOLERANCE	2
STAYGREEN	3
ROOTS	2
SILAGE YIELD	1.5
GRAIN DIGESTIBILITY	1.5
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	3
NCLB	2



SILAGE CORN HYBRIDS

SW 7000

Extremely wide eastern adaptation with stress tolerance across soil types. A proven performer, typically outperforming conventional hybrid expectations.

LIMITATIONS: Move to another hybrid for insect protection. Not glyphosate tolerant.

MANAGEMENT: Corn after corn with fungicide.

FUNGICIDE RESPONSE	AVERAGE+
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE+
PLANT POPULATION	M - H
PEST TOLERANCE	GOOD-VERY GOOD

114 DAY RM
*RM: CCB

PLANT HEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	2.5
ROOTS	1.5
SILAGE YIELD	2.5
GRAIN DIGESTIBILITY	2
FIBER DIGESTIBILITY	2.5
GRAY LEAF SPOT	2.5
NCLB	2.5

SW 7559VIP 3110

Well adapted southern Pennsylvania to Florida and the coastal US. Total package with grain content and agronomics. Good vigor and growth for a late hybrid. Consistently good performance where Gray Leaf Spot is present.

LIMITATIONS: Hard kernels.

MANAGEMENT: First choice silage option for Gray Leaf Spot areas.

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FIXED
FOLIAR/STALK ANTHRACNOSE	VERY GOOD
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

115 DAY RM
*RM: CCB

PLANT HEIGHT	2
EMERGENCE	2.5
STRESS TOLERANCE	2
STAYGREEN	1.5
ROOTS	1.5
SILAGE YIELD	1.5
GRAIN DIGESTIBILITY	N/A
FIBER DIGESTIBILITY	N/A
GRAY LEAF SPOT	2
NCLB	2.5



SW 7560GENVT2P (RIB)

Adapted from southern PA to FL without east/west limitation. High silage yield potential and stable across this broad range. Solid across varying soils, steady in dry conditions. Very good on foliar leaf blight resistances required in this region - Gray, Northern & Southern. Strong for traitle silage.

LIMITATIONS: Move to another hybrid for Rootworm protection.

MANAGEMENT: Corn after corn with fungicide. Use on any silage acre.

FUNGICIDE RESPONSE	H
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	H
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

115 DAY RM
*RM: CCB

PLANT HEIGHT	2.5
EMERGENCE	3
STRESS TOLERANCE	1.5
STAYGREEN	3
ROOTS	3
SILAGE YIELD	1.5
GRAIN DIGESTIBILITY	2
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	1.5
NCLB	1.5



SW 7700GENSS (RIB)

SmartStax® hybrid with maximum insect protection package for continuous corn on the silage acre. From the southern PA border to the Gulf Coast, east or west, this hybrid is extremely well adapted. Good Gray & Northern Corn Leaf Blight resistance plus very good Southern Corn Leaf Blight.

LIMITATIONS: Glyphosate is first choice herbicide. Use growth regulator, pigment inhibitor, or sulfonyleurea herbicides in moderation.

MANAGEMENT: Recommended for continuous silage corn acres.

116 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	AVERAGE
PLANT POPULATION	M
PEST TOLERANCE	EXCELLENT

PLANT HEIGHT	1.5
EMERGENCE	2
STRESS TOLERANCE	2
STAYGREEN	1.5
ROOTS	1.5
SILAGE YIELD	2
GRAIN DIGESTIBILITY	1.5
FIBER DIGESTIBILITY	1
GRAY LEAF SPOT	2
NCLB	2.5

SW 8000

Proven conventional for full season use. Healthy for wide adaptation including the deep south. Attractive seed pricing, well adapted to all soil types, and above average native insect tolerance at no extra cost. Handles the southern disease complex well and fits the tough acre.

LIMITATIONS: Moves south to hotter zones better than north to cool zones. Not glyphosate tolerant.

MANAGEMENT: Use widely across acres where a tough hybrid is needed. Fine on good acres, too.

117 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	M
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	H
PLANT POPULATION	M - H
PEST TOLERANCE	VERY GOOD

PLANT HEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	2
ROOTS	2
SILAGE YIELD	2.5
GRAIN DIGESTIBILITY	2
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	2
NCLB	2.5

SW 8009VIP 3111

Same base genetics as SW 8000 with the addition of Agrisure Viptera® 3111 trait stack package. Fits southern PA to the Deep South. Southern adapted disease response and toughness under stress, including heat stress. Nice late season health enables extra silage acres to roll over to high moisture or dry shell corn harvest.

LIMITATIONS: Moves south to hotter zones better than north to the cooler zone.

MANAGEMENT: Use widely across the tough and the good acre.

117 DAY RM
*RM: CCB

FUNGICIDE RESPONSE	M
EAR TYPE	FLEX
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT

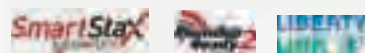
PLANT HEIGHT	2.5
EMERGENCE	2
STRESS TOLERANCE	1.5
STAYGREEN	2
ROOTS	2
SILAGE YIELD	2.5
GRAIN DIGESTIBILITY	2
FIBER DIGESTIBILITY	2
GRAY LEAF SPOT	2
NCLB	2.5

SILAGE CORN HYBRIDS

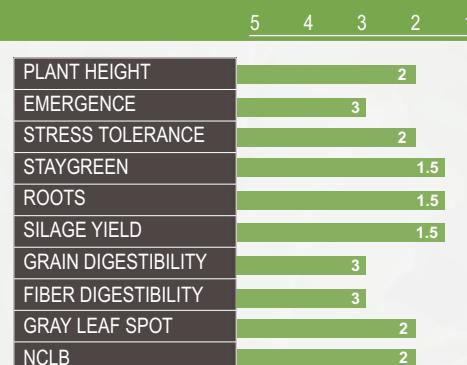
NEW SW 8100GENSS (RIB)

Exceptional silage yield potential with agronomics. SmartStax® (RIB) with good East / West / Northern movement in addition to Southern movement. Premier product for continuous corn acres with above average disease resistance.

MANAGEMENT: Flexible to use in short or long rotations.



	117 DAY RM *RM: CCB
FUNGICIDE RESPONSE	ABOVE AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	M
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT



SW 8109VIP 3111

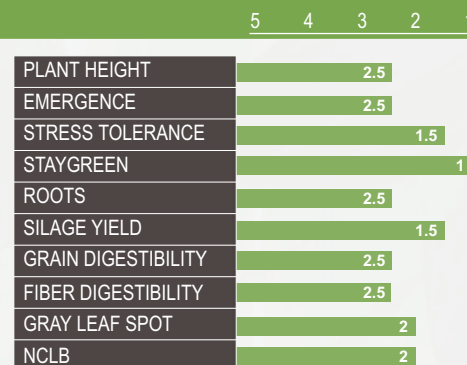
Full season yield with fully supporting plant health and season ending staygreen. Suited for high residue "corn after corn" production. High row count 16-18 row ears with deep kernels for high grain content silage. Combines Northern Corn Leaf Blight and Gray Leaf Spot resistance.

LIMITATIONS: Not as well suited to northern long season sites. Caution north of the Mason Dixon line. Okay southeast corner of PA.

MANAGEMENT: Use on productive land to maximize yield potential. Plant in warm soils.



	117 DAY RM *RM: CCB
FUNGICIDE RESPONSE	AVERAGE
EAR TYPE	SEMI-FLEX
FOLIAR/STALK ANTHRACNOSE	ABOVE AVERAGE
PLANT POPULATION	M - H
PEST TOLERANCE	EXCELLENT



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YEARS OF SILAGE RESEARCH MEANS

SHE WON'T MISS A MEAL!

PRODUCTS	RM	PLANT HEIGHT	EAR HEIGHT	EAR TYPE	TEST WEIGHT	EMERGENCE	STRESS TOLERANCE	STAYGREEN	STALK STRENGTH	ROOT STRENGTH	DRYDOWN	GRAY LEAF SPOT	NORTHERN CORN LEAF BLIGHT	PLANT POPULATION	TRAITS
ADDITIONAL SILAGE SEED CORN HYBRIDS															
SW 3760	94/93	M	M	SEMI-FLEX	2	2	2	2	2	2.5	1.5	3	2	M-H	CONV.
SW 3820	96/95	M	M	SEMI-FIXED	2	1.5	2	3	2	3	2	3	3	M-H	CONV.
SW 6720	112/111	T	M+	FLEX	1.5	1.5	2.5	2.5	3	1.5	3	3	2	M	CONV.
SW 6770GENSS (RIB)	112/111	M	M	SEMI-FIXED	3	2.5	1.5	2.5	2	3	1.5	1.5	1.5	M-H	SSTAX, LL



USES

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

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

Wildlife: Alfalfa is an excellent food source for many wildlife species. High in minerals, vitamins, and proteins it is one of the most nutritious crops that can be utilized in any forage situation including wildlife plots.

ESTABLISHMENT

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

Alfalfa seeded at 15 to 20 pounds of coated or non-coated inoculated seed per acre evenly drilled 1/4-inch deep on adapted, properly prepared sites will produce adequate stands. A combination drill and packer is desirable. Cultipacking soil before and after seeding is helpful to stand establishment. Seeding depth should be no greater than 1/2 inch on sandy soils. Spring seedings can be made before the average date of the last killing frost. Alfalfa can also be successfully seeded during the late summer. Allow time for adequate growth prior to the first killing frost.

DESCRIPTION

Alfalfa is a long-lived perennial legume. Flowers vary in color from purple to yellow and are borne in loose clusters. Pods from alfalfa range from the sickle type to those that are twisted into spirals. Each pod contains several kidney-shaped seeds. Alfalfa is indeterminate and stems can reach several feet in length. New growth occurs from buds in the crown. The plant has a tap root which may penetrate 25 feet deep into the soil. Compound leaves are alternately arranged on the stem and are normally trifoliate although there are commercial varieties that have multifoliate leaves. There are approximately 225,000 seeds/pound.

MANAGEMENT

In general, graze or cut for hay when alfalfa is in early bloom. Graze or cut to about a 2-inch height. Successive cuttings for hay should occur at 1/4-inch bloom stage. Alfalfa can best withstand grazing if rotated frequently or grazed in small strips. The last cutting of alfalfa should be made 3 to 4 weeks before the last killing frost date. Alfalfa may cause livestock to bloat. Care should be used in managing such grazing to reduce the possibility of this hazard.

ADAPTATION AND DISTRIBUTION

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

FALL DORMANCY (FD) AND RATINGS

- Fall dormancy is a rating scale of 1 to 9.
 - Dormancy is triggered by the hours of sunlight.
- The lower the dormancy the less Fall growth.
 - FD 1 goes dormant very early in the Fall and comes out of dormancy very late in the spring. It requires the most sunlight to function.
 - FD 9 is actually non-dormant and tries to continue to grow constantly.

FD RATING	DESCRIPTION
1, 2	Very dormant
3, 4	Dormant
5	Moderately dormant
6, 7	Semi-dormant
8, 9	Non-dormant
10, 11	Very non-dormant

WINTERHARDINESS SCALE

The winterhardiness rating indicates how well a product will survive cold temperatures, thus, winterhardiness is an indication of the potential longevity of the stand. The lower the winterhardiness rating, the greater the ability of the product to withstand cold temperatures (table below). In the northern United States, winterhardiness is the primary factor in determining alfalfa stand longevity and forage yield.

SCORE	CATEGORY
1	Extremely winterhardy
2	Very winterhardy
3	Winterhardy
4	Moderately winterhardy
5	Slightly winterhardy



- FALL DORMANCY 2/3
- FALL DORMANCY 3/4
- FALL DORMANCY 4/5
- FALL DORMANCY 6/7/8
- FALL DORMANCY 8/9

PESTS

POTATO LEAFHOPPER

Potato Leafhoppers are a common mid to late season alfalfa pest that cause yield and quality damage to our alfalfa stands. The adults are a yellow or lime green color with a wedge shaped body that is only about 1/8 of an inch in size. Adults can fly or jump when they are disturbed whereas the nymphs can only crawl. Nymphs are smaller in size and paler in color. Both developmental stages affect alfalfa plants. They are equipped with a piercing/sucking mouth that extracts sap from the phloem of alfalfa leaves. This causes leaves to show chlorosis or a yellow V shaped burn at the tip of the leaves, especially in the upper canopy. Severely infected plants will have leaves turning a reddish/bronze color and the plants themselves will appear stunted.

Once this “hopperburn” (V shaped chlorosis) is detected, the damage is already done to that cutting of alfalfa. No corrective action can be taken for that cutting, but you can manage them for subsequent cuttings. It is common to see the biggest impact from potato leafhoppers on new seedlings as well as 2nd and 3rd cuttings of alfalfa.

Potato leaf hopper resistant alfalfas are on the market to help reduce the insect impact and yield loss. PLH alfalfas have glandular hairs on the stem that inhibit the adults’ mouths to penetrate the stem and the nymphs get caught in the sticky hairs.

Thresholds for potato leaf hoppers are as follows:

Under 3 inches = 20 adult potato leafhoppers per 100 sweeps

3 to 8 inches = 50 adult potato leafhoppers per 100 sweeps

8 to 12 inches = 100 adults or nymphs per 100 sweeps

Over 12 inches = 200 adults or nymphs per 100 sweeps



DISEASES

APHANOMYCES 1 & 2: Aphanomyces is a common disease of wet soils. This disease is an oomycete that causes plants to become yellow and stunted. Infected seedlings will have yellow cotyledons and emerging leaflets that will begin to turn yellow. Seedlings will begin to then die back and become stunted. Established plants that are infected will have dead, decaying roots that are gray and water-soaked in appearance and then turning a light to dark brown. This will lead plants to have much smaller root masses and to exhibit symptoms that commonly resemble a nitrogen deficiency. It is not uncommon to see nodules decaying as well or even absent in some cases. Struggling to regrow after cutting may also be an indicator of aphanomyces. Aphanomyces has several different strains that affect plants, race 1 being the most common and the most common for plants to have resistance to.



Aphanomyces[^]

ANTHRACNOSE: Anthracnose is a fungus that affects alfalfa plants and can cause up to 25% yield loss. Warm, moist conditions favor the onset of this disease. Plants that are susceptible to this typically show large, sunken, diamond shaped lesion on the lower portions of the stems. These lesions will have white centers and brown edges. Lesions can grow and join together and kill the stems. Young dead shoots that have been killed by the disease exhibit a “shepherds hook” appearance. Affected plants will be scattered around the field and should not be confused with frost damage. Crowns that become infected with this disease will get a blue/black color and will not produce stems as well as a healthy plant would. Eventually the infected plants will begin to die off.



Anthracnose[^]

DISEASES CONTINUED

FUSARIUM WILT: Fusarium wilt is a fungus that may commonly be confused with bacterial wilt. Unlike bacterial wilt, this disease does not cause the plants to become stunted. Fusarium wilt causes shoots and plants to wilt during the day but they will seem to recover overnight. Leaves and stems of infected plants will turn yellow and then become bleached or have a reddish tinge. This however, will be seen on only one side of the plant. The plant will die off as the disease progresses and encompasses the root of the plant. This causes a gradual thinning of the alfalfa stand. Good fertility and control of alfalfa pests such as pea aphids and potato leafhoppers will help in controlling the impact of this disease.

VERTICILLIUM: Verticillium wilt is a fungus that can severely affect plant stands and cause large economic loss. Some of the first symptoms to show up include yellowing V shaped patterns at the tips of the upper leaflets. As the disease progresses, the leaflets will begin to wilt and turn brown and die while the stem of the plant remains green. The disease will slowly progress down to the crown of the plant where it will then cause the plant to slowly die over the course of several months. The vascular tissues in the root may show internal browning as well. It is important to plant resistant varieties or rotate with non host crops to control this disease.

PHYTOPHTHORA ROOT ROT: Phytophthora root rot is a fungus that affects both seedlings and established plants in cool, water saturated soils. This disease occurs as plants emerge in wet soils. Affected roots will be a yellow-brown color; lesions may be seen just above the surface. In severely affected plants, they turn black as they begin to rot off and die. Leaves of infected plants will show a chlorotic color or reddish leaves that will begin to drop off the plant. This is especially seen in the lower leaves. It is difficult to detect this disease until the soils dry up and the plants begin to wilt due to their infected root masses. Crop rotation will provide little relief for this disease. Good management practices such as high fertility and insect control will keep the plants less stressed and susceptible to disease.

BACTERIAL WILT: Bacterial wilt is commonly seen in second and third year stands. This disease is usually seen scattered throughout the field, causing plants to show chlorotic symptoms. If a plant is severely infected, it may become stunted and have spindly stems and may begin to die off. It is easiest to detect this disease after a cutting as it is trying to regrow. Older stands that are 3-5 years in will be much more effected and have a much higher incidence of stand loss.

SCLEROTINIA CROWN AND ROOT DISEASE: Sclerotinia crown and stem rot disease usually causes most damage in fall-seeded stands, but single or groups of plants in stands of any age can be killed. Sclerotinia usually occurs when the fall is cool with wet weather in the late fall and snow cover in the winter. The disease can easily go unnoticed if only scattered plants or small patches in fields are killed and may be mistaken for winterkill. Watch for the disease in April to May the following year. Plants appear dead or wilting. Look for white moldy growth and sclerotinea on the stems. They will appear as small black, round to elongated fungi. The crown of the plant can also be infected and have the white moldy growth and if you open the crown it will have a yellow to brown color. Wilted or dead stems can also be infected. Splitting the stem with a knife, they will be discolored. Management of Sclerotinia crown and stem rot of alfalfa is based on site selection, planting date, crop rotation, and tolerant varieties. If possible, new fields of alfalfa should be established where there is no history of the disease. Spring planting allows the plants to develop resistance prior to the time that most infection occurs in the late fall.



Fusarium Wilt^



Verticillium^



Phytophthora Root Rot^



Bacterial Wilt^



Sclerotinia Crown and Root Disease ^

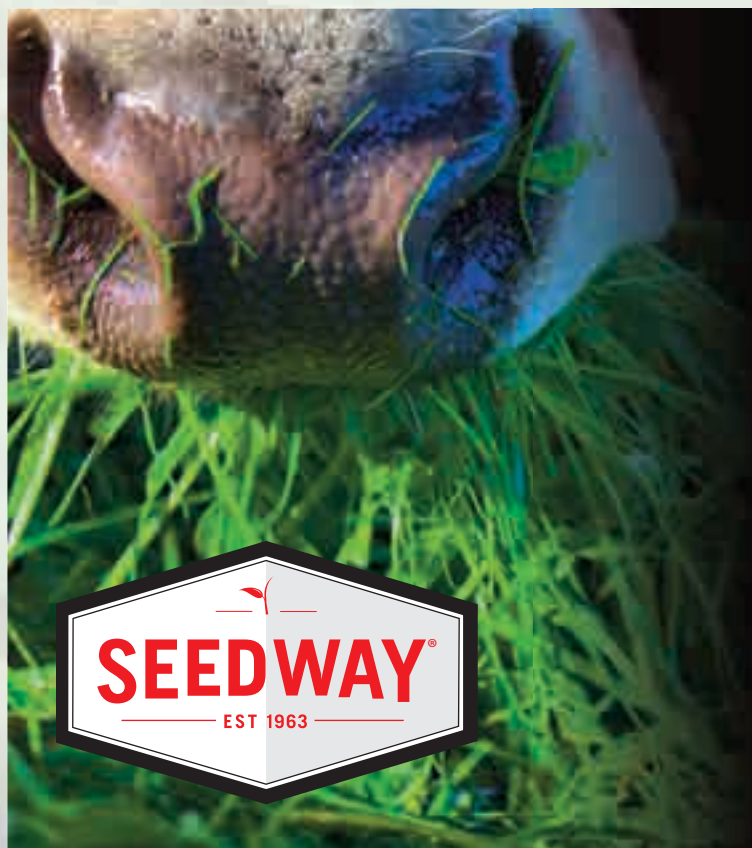
TECHNOLOGY



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.

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 Excellence Through Stewardship.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Roundup Ready® crops contain genes that confer tolerance to glyphosate. Glyphosate herbicides 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 The Samuel Roberts Noble Foundation, Inc



DOES REGIONAL ADAPTATION MAKE A DIFFERENCE IN FORAGE VARIETIES?

**YOU BET
IT DOES!**

BETTER GENETICS.

BETTER PRODUCTIVITY.

BETTER PROFITABILITY.

Fill their plate with the feed they need!

For 57 years SEEDWAY® has brought over 95 forage products specifically adapted to the producer. With regional product adaptation in mind we select only the top forage products for your operation.

Better genetics, better productivity, better profitability describes our goal to bring you forage products that are both balanced and profitable.

KEY Disease Ratings: HR = Highly Resistant R = Resistant S = Susceptible NR = No Rating

SW ALFAMAX HD™ 2 PLUS Brand Alfalfa

ALFAMAX HD® 2 PLUS is a highly digestible alfalfa with excellent forage quality, high yields, and Branch Root which makes AlfaMax HD® 2 Plus an excellent choice for any situation. AlfaMax HD® 2 Plus has a superior disease and pest resistance package.

HD® is a registered trademark of Legacy Seeds, Inc.

FALL DORMANCY	4	ANTHRACNOSE	HR
WINTER HARDINESS	1.4	APHANOMYCES RACE 1	HR
BACTERIAL WILT	HR	APHANOMYCES RACE 2	HR
VERTICILLIUM WILT	HR	POTATO LEAF HOPPER	NR
FUSARIUM WILT	HR	PHYTO ROOT ROT	HR

SHOCKWAVE BR

Shockwave BR combines a BRANCH ROOTED trait with excellent disease resistance to deliver outstanding performance. Performs better in higher water tables. High forage yield makes it a productive variety in both normal and wetter conditions. 3-4 cut management. Seed at 18-20 lbs. alone, 8-12 lbs. in mixes.

FALL DORMANCY	4	ANTHRACNOSE	HR
WINTER HARDINESS	1.4	APHANOMYCES RACE 1	HR
BACTERIAL WILT	HR	APHANOMYCES RACE 2	R
VERTICILLIUM WILT	HR	POTATO LEAF HOPPER	NR
FUSARIUM WILT	HR	PHYTO ROOT ROT	HR

NEW DYNAMO

Dynamo combines explosive forage yield with superior forage quality. High multifoliate leaf expression and rapid regrowth with a dense canopy and dark green foliage. Shows improved crude protein content, exceptional feed value, and higher milk production.

FALL DORMANCY	4	ANTHRACNOSE	HR
WINTER HARDINESS	1.3	APHANOMYCES RACE 1	HR
BACTERIAL WILT	HR	APHANOMYCES RACE 2	R
VERTICILLIUM WILT	HR	POTATO LEAF HOPPER	NR
FUSARIUM WILT	HR	PHYTO ROOT ROT	HR



FSG 415BR

Farm Science Genetics®. BRANCH ROOT variety with an excellent disease package. High yield and quality potential on both wet and well drained soils. Offers flexibility on less than ideal soil conditions. Seed at 18-20 lbs. alone, 8-12 lbs. in mixes.



FALL DORMANCY	4
WINTER HARDINESS	1.5
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	HR
POTATO LEAFHOPPER	NR
PHYTO ROOT ROT	HR

FSG 421LH

Farm Science Genetics®. The newest genetics with very high resistance to POTATO LEAFHOPPER. Highly resistant to all major alfalfa diseases. Excellent yield potential and forage quality. Excellent winter hardiness. 3-4 cut management. Seed at 18-20 lbs. alone, 8-12 lbs. in mixes.



FALL DORMANCY	4
WINTER HARDINESS	2.0
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	HR
POTATO LEAFHOPPER	HR
PHYTO ROOT ROT	HR

FSG 426

Farm Science Genetics®. Exceptional for yield and superior forage quality. Excellent disease package that features high resistance to Aphanomyces Race 1 and 2. Seed at 18-20 lbs. alone, 8-12 lbs. in mixes.



FALL DORMANCY	4
WINTER HARDINESS	2.0
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	HR
POTATO LEAFHOPPER	NR
PHYTO ROOT ROT	HR

Visit www.seedway.com
to find the latest tech sheets on your
favorite SEEDWAY products and compare
varieties side by side.



FSG 438RR

Farm Science Genetics®. The newest genetics are now available with Roundup resistance. High resistance to Aphanomyces Race 1 and 2. Ability to produce weed-free hay. Well-adapted to a wide range of soil types, environmental conditions and management programs. 3-4 cut management. Seed at 18-20 lbs, 8-12 lbs. in mixes.



FALL DORMANCY	4
WINTER HARDINESS	1.0
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	HR
POTATO LEAFHOPPER	NR
PHYTO ROOT ROT	HR

FSG 431RRLH

Farm Science Genetics®. Roundup Ready® Alfalfa. The newest genetics are now available with Roundup resistance combined with very high resistance to POTATO LEAFHOPPER. Excellent disease package and winterhardiness provides ability to produce weed free hay. 3-4 cut management. Seed at 18-20 lbs. alone, 8-12 lbs. in mixes.

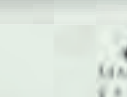


FALL DORMANCY	4
WINTER HARDINESS	1.4
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	NR
POTATO LEAFHOPPER	HR
PHYTO ROOT ROT	HR

FSG 440HVX.RR

The industry's first genetically enhanced alfalfa technology developed to maximize quality compared to conventional alfalfa at the same stage of maturity, by reducing the amount of lignin in the plant. HarvXtra® technology provides unprecedented flexibility by widening cutting windows giving growers the ability to better manage the yield-versus-quality tradeoff. Roundup Ready® Alfalfa.



FALL DORMANCY	4
WINTER HARDINESS	1.0
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	NR
POTATO LEAFHOPPER	NR
PHYTO ROOT ROT	HR

FSG 527

Farm Science Genetics®. High forage yield and quality. Excellent winterhardiness and persistence. High multi-foliate leaf expression. Outstanding disease and pest resistance. Fast recovery after cutting. Seed at 18-20 lbs. alone, 8-12 lbs. in mixes.



FALL DORMANCY	5
WINTER HARDINESS	1.0
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	R
APHANOMYCES RACE 1	NR
APHANOMYCES RACE 2	NR
POTATO LEAFHOPPER	NR
PHYTO ROOT ROT	HR

WL 349HQ

Outstanding yield potential and agronomic performance under 4 - 5 cut management systems in various locations throughout dormant alfalfa use areas. Superb winterhardiness; 349HQ delivers excellent cold tolerance and persistence. HQ" High Quality Selected for forage quality and feed value. Enhanced disease package offers expanding yield advantages over competitive checks with added years in production. Delivers fast recovery in an FD4 package.



FALL DORMANCY	4
WINTER HARDINESS	1.7
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2/3	HR
POTATO LEAFHOPPER	NR
PHYTO ROOT ROT	HR

WL 356HQRR

High Quality Selected for forage quality and feed value. Roundup Ready® Alfalfa. Tolerance to Roundup® non-selective herbicide. Very high yielding. Unique wet soil disease resistance package. WL 356HQ.RR exhibits strong potential to deliver higher feed intake, improved milk production, and increase profitability when fed. 3 - 5 cut management. Seed at 18-20 lbs. alone, 8-12 lbs. in mixes.



FALL DORMANCY	4
WINTER HARDINESS	1.6
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	HR
POTATO LEAFHOPPER	NR
PHYTO ROOT ROT	HR

WL 358LH

Eighth-generation POTATO LEAFHOPPER resistance with HopperShield™ protection. Superb yield potential and agronomic performance with or without leafhopper pressure. Dark green, fine-stem and a highly digestible variety. 3 - 5 cut management. Seed at 18-20 lbs. alone, 8-12 lbs. in mixes.



FALL DORMANCY	4
WINTER HARDINESS	2.0
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	NR
POTATO LEAFHOPPER	HR
PHYTO ROOT ROT	HR

WL 365HQ

Very high yield potential and agronomic performance under 4 - 6 cut harvest management systems, and now our highest-yielding winterhardy conventional HQ released to date. HQ forage-quality levels make an ideal variety for cash hay or dairy producers.



FALL DORMANCY	5
WINTER HARDINESS	1.1
BACTERIAL WILT	HR
VERTICILLIUM WILT	HR
FUSARIUM WILT	HR

ANTHRACNOSE	HR
APHANOMYCES RACE 1	HR
APHANOMYCES RACE 2	NR
POTATO LEAFHOPPER	NR
PHYTO ROOT ROT	HR

AN ALFALFA THAT GIVES YOU OPTIONS. NOT LIMITS.



The HarvXtra® Alfalfa trait is the most advanced alfalfa trait on the market, developed to maximize quality by reducing the amount of lignin in the plant compared to conventional alfalfa at the same stage of maturity.

For growers, this means they have the flexibility to produce higher-quality forage or extend harvest to maximize yield potential, depending on weather or operational needs. HarvXtra® Alfalfa also includes the Roundup Ready® Alfalfa trait unsurpassed weed control and crop safety.

PRODUCTS	FALL DORMANCY	WINTER HARDINESS	BACTERIAL WILT	VERTICILLIUM WILT	FUSARIUM WILT	ANTHRACNOSE	APHANOMYCES RACE 1	APHANOMYCES RACE 2/3	POTATO LEAFHOPPER	PHYTO ROOT ROT
ADDITIONAL WL ALFALFA										
WL 341HVX.RR	4	2.1	HR	HR	HR	HR	HR	NR	NR	HR
WL 354HQ.RR	4	1.6	HR	HR	HR	HR	HR	Race 2 Only	NR	HR
WL 359LH.RR	4	2.2	HR	HR	HR	HR	HR	NR	HR	HR
WL 372HQ.RR	5	1.8	HR	HR	HR	HR	HR	NR	NR	HR
WL 375HVX.RR	5	2.1	HR	HR	HR	HR	HR	HR	HR	HR

KEY Disease Ratings: HR = Highly Resistant R = Resistant S = Susceptible NR = No Rating

RED CLOVER

Uses: Red clover is used for hay, silage, pasture and soil improvement. It is a quick growing crop, easily established, and produces high quality forage. Tolerance of shade allows red clover to be used effectively as a cover crop under silage corn. Newer varieties of medium red clover can be productive for 3 years or more under proper management.

Description: Red clover, is a short-lived perennial that grows as one of two types: medium (double-cut) or mammoth (single-cut). Red clover plants grow from crowns. Plants have hollow, hairy stems and branches. Stem lengths of medium and mammoth types average 18 inches and 24 to 30 inches, respectively. Medium types have about 4 branches per stem; mammoth have 6. Each leaf consists of a slender stalk bearing 3 leaflets. The taproot of red clover is extensively branched. Flowers are borne in compact clusters or heads and are usually rose-pink in color. Seed pods are small, short, and contain kidney-shaped seeds that vary in color from yellow to deep violet. There are approximately 272,000 seeds per pound. Mammoth red clover matures later than medium types; only one crop of mammoth red clover is harvested each season since recovery is slow.

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

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

Management: Graze or cut for hay when red clover is 1/4 to 1/2 bloom. A second cutting or successive grazings should occur when red clover is 1/4 in bloom. Leave at least 2 to 3 inches of growth after each harvest. Care should be taken to eliminate or appreciably reduce bloating of livestock when grazing. Keep lime and fertilizers (phosphorus and potash) at the proper level.



WHITE CLOVER

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

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

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

Description: White clover, is a perennial legume that originated in Europe and has become one of the most widely distributed legumes in the world. It has a prostrate, stoloniferous growth habit. The leaves are composed of three leaflets, which may or may not have a "crescent" or "water mark" on the upper surface. Leaves and roots develop along the stolon at the nodes. The three general types of white clover usually recognized are (1) large or ladino, (2) intermediate, and (3) small. The flower heads, each consisting of 40 to 100 florets, are borne on long stalks from the leaf axils. Florets are white but may have a pink hue. There are approximately 768,000 seeds per pound.

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

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

Management: Management for forage is aimed at maintaining 40% to 50% clover. Close grazing (2 inch stubble height) favors clover, whereas light grazing favors grass. Wellfertilized grass will outgrow clover in fall and winter and could smother the clover. Spring applications of nitrogen will stimulate grass and provide early feed, but excessive rates are detrimental to the clover stand. Phosphate applications are broadcast in fall or spring according to soil tests. Sulfur, boron or magnesium may be needed for maximum production on some soils in the western part of white clover's range.



CRUSADE White Clover

Improved winter regrowth. Extended grazing potential during colder months. Early and vigorous flowering. Disease resistance and strong regrowth after cutting. Seed at 5-8 lbs. alone, 2 lbs. in mixes.

PINNACLE Ladino Clover

High yield potential. Excellent seedling vigor and stolon activity. Resists leaf diseases and field viruses. Superior persistence. Drought tolerant, widely adapted, ideal for pastures. Seed at 5-8 lbs. alone, 2 lbs. in mixes.

402 Brand Red Clover

High yield potential, unmatched forage quality, excellent disease resistance, superior persistence. Highly resistant to Northern and Southern anthracnose and powdery mildew. Performs across wide geography and variable conditions. Seed at 10-12 lbs. alone, 4-8 lbs. in mixes.

BEARCAT Red Clover

Complimented by aggressive regrowth and a superior disease resistance package, it has shown outstanding stand persistence and high forage yield. With its strong disease resistance, hardiness, and aggressive regrowth it's proven to be consistently productive in adverse environments. Seed at 10-12 lbs. alone, 4-8 lbs. in mixes.

ADDITIONAL CLOVERS AVAILABLE

- CRIMSON
- MAMMOTH
- ALSIKE
- WHITE DUTCH

Contact Your **SEEDWAY**
Territory Field Manager For
More Information

STAMINA White Clover

A new intermediate- type white clover with high stolon density helping it spread aggressively and rootdown avoiding hoof and grazing pressure. Excellent yield and persistence for a long haul clover. Seed at 5-8 lbs. alone, 2 lbs. in mixes.



FROSTY Berseem Clover

Berseem clover, *Trifolium alexandrinum*, is a cool-season annual legume. Featuring salt tolerance, high nitrogen fixation, and a synergistic relationship to alfalfa. Frosty, while preserving its Mediterranean genetics, has been bred for later maturity, cold tolerance, productivity, and nutritional value. Frosty has very low hard seed counts, allowing for quick establishment and lessening its potential to become a weed. Seed at 20 lbs. alone, 12-15 lbs. drilled, 12 lbs. in mixes



AGRONOMICS CHART Clover

Variety	Maturity	Cutting Management	Yield Potential	Hay/Haylage	Pasture	Comment
CRUSADE White Clover	Medium	Multiple	M	Yes	Yes	Extended grazing in colder months - disease resistant.
STAMINA White Clover	Medium	Multiple	H+	Yes	Yes	Very persistent, Large leaf. Excellent grazer.
FROSTY Berseem Clover	Medium Late	Multiple	H	Yes	Yes	Excellent regrowth and improved cold-tolerance.
PINNACLE Ladino Clover	Medium	Multiple	H	Yes	Yes	Excellent seedling vigor with good stolon growth.
402 Brand Red Clover	Medium	Multiple	H+	Yes	Yes	High resistance to Northern and Southern Anthracnose.
BEARCAT Red Clover	Medium	Multiple	H+	Yes	Yes	High resistance to Northern and Southern Anthracnose.

BIRDSFOOT TREFOIL

Uses: Forage: Birdsfoot trefoil is used as a high quality, non-bloating legume for pastures, hay and stock-piling.

Erosion control: Birdsfoot trefoil is often used for mine reclamation and other sites with marginal soils.

Wildlife: Birdsfoot trefoil is used in wildlife mixes and is an excellent food source for deer.

Description: Birdsfoot trefoil is a short-lived, non-bloating perennial legume which has the ability to reseed itself under proper management. Stems are smaller in diameter and less rigid than alfalfa stems and can grow to a height of 12 to 30 inches depending on whether it is a prostrate or erect variety. Flowers are bright yellow (4 to 8 per stem) with each flower producing one seed pod. Seed pods radiate from the flower stalk, resembling a bird's foot. Leaves are compound with five oval leaflets. Birdsfoot trefoil has a well developed tap root with numerous lateral branches in the upper 15 inches of soil. There are approximately 370,000 seeds per pound.

Adaptation and Distribution: Birdsfoot trefoil is found from the south central United States to southern Canada. It is most productive in fertile, well drained soils with a close to neutral pH. However, birdsfoot trefoil can be grown on low pH (5.5) soils with low fertility and will tolerate short periods of flooding better than alfalfa. It can tolerate periods of drought and is more suited to soils prone to heaving. Alfalfa will out produce birdsfoot trefoil by 50 to 80 percent on well drained, fertile soils limiting birdsfoot trefoil to areas where alfalfa is difficult to produce.

Establishment: Birdsfoot trefoil should be inoculated before planting to ensure sufficient nodulation of the root system for nitrogen fixation. A smooth, firm seedbed is recommended. Seeding depth should not be more than 1/4 inch. The seeding rate is 8 to 10 pounds per acre for pure stands and 2 to 8 pounds per acre in mixes, depending on the cool season grasses utilized. Early spring seeding is generally more successful than late summer seeding.

Management: When harvested for hay, the first cutting should be taken at 1/10 bloom with a second cutting in mid to late August. To maintain a stand of birdsfoot trefoil, it is necessary to use a management system that provides sufficient regrowth between cuttings and allows the plant to reseed itself. Heavy grazing may be needed in the spring to reduce growth but close, continuous grazing is not recommended because summer regrowth depends on energy supplied by top growth not root reserves like alfalfa. Leave 3 to 4 inches of top growth when grazing. Avoid haying or grazing between September 1st and the first killing frost to allow root reserves to accumulate for better winter survival and spring growth.

Birdsfoot trefoil is well suited for stockpiling since it maintains its leaves at maturity and after frosts. Birdsfoot trefoil responds to proper fertility management which should be determined by soil testing.

TIMOTHY

Uses: Livestock: Timothy is used mainly for hay, but also for pasture and silage. It is palatable and nutritious. It makes an excellent companion grass for alfalfa, trefoil or clover since it does not compete with legumes.

Erosion control: Timothy can be used with legumes and/or other grasses in a mix for cover purposes, filter strips, waterways and other critical area applications.

Wildlife: Timothy is commonly found in wildlife mixtures for nesting, brood cover and escape.

Description: Timothy is a relatively short-lived, cool-season perennial that grows in stools or clumps and has a shallow, compact and fibrous root system. It grows in erect clumps 20 to 40 inches tall. Leaves vary in length from a few inches to a foot and are about 1/4 inch wide, narrowing gently toward the tip. Heads are spike-like and dense, from 2 to 6 inches in length. Seed is very small and usually remains enclosed in the glumes. There are approximately 1,152,000 seeds per pound. Timothy is different from most other grasses in that 1 or occasionally 2 of the basal internodes of the stem swell into a bulblike growth. This characteristic is often used for identification of the plant during the early stages of growth.

Adaptation and Distribution: Timothy is adapted to a cool and humid climate. Timothy thrives best on rich, moist bottom lands and on finer textured soils, such as clay loams. It does not do well on coarser soils. It prefers a pH of 5.5 to 7.0. Timothy will grow for a time on soils low in fertility, but it is better adapted to a high fertility soil. It is not well adapted to wet, flat land where water stands for any considerable time. Under limited moisture conditions, it makes a poor recovery and does not tolerate drought or prolonged high temperatures. Timothy is very winter hardy and has high tolerance to cold temperatures and ice encasement.

Establishment: Timothy is usually seeded in mixtures with legumes. This mixture may be drilled with a small grain drill. If planted with a winter grain, the timothy is seeded with it, and the legume is planted early the following spring. Seeding depth of timothy should be 1/2 inch. A firm, weed-free seedbed is a key to a successful planting. Common seeding rates are 8 to 10 pounds per acre when seeded alone and 4 to 6 pounds per acre when seeded in mixtures.

Management: Timothy is highly responsive to fertilizers, which should be applied frequently in ample quantities. Fertilizer, especially nitrogen, is important when legumes have almost disappeared from the hay or pasture mixture. Timothy stands become weak under close and continuous grazing. A fundamental reason for the decline of timothy under poor grazing practices is injury to the corms. These corms form in the spring at the same time the stem elongates. Food materials are stored in them, and they may be destroyed by trampling of grazing animals. Timothy can be initially grazed before jointing and again between early head to full head. Second and successive grazing should also occur before jointing and when basal sprouts appear at the soil surface. After the second grazing, plants usually do not joint. Timothy should be cut for hay or silage from early to full head. Make successive harvests for hay and silage when basal sprouts appear at the soil surface. Sterile seed heads may be 15 to 20 inches up the stems when sprouts appear at the time of second cutting. Growing points stay below ground after a second cutting. Graze or cut to a minimum height of 3 inches or more.

BIRDSFOOT TREFOIL

SEEDWAY carries multiple trefoil varieties. Legacy varieties such as the prostrate statured Empire and the semi-erect Viking have been replaced by improved varieties such as Cornell released Pardee, which is an upright type with high yields and strong persistence. Other improved varieties include Exact, Leo, and Norcen. Please contact your local SEEDWAY Territory Field Manager for available varieties.

SADDLEBRED® BRAND Timothy

Saddlebred Timothy is selected for its' earlier maturing characteristics. It is well suited for the farmer looking for the many advantages of Climax, but would like earlier maturity. Saddlebred has been bred in competition with other grasses and legumes, and therefore, makes it reliable in all grass mixtures. Saddlebred, in dry matter yield tests has out yielded other timothy varieties, including Climax, by 5-10%. Saddlebred is highly resistant to leaf rust, leaf spot and purple eyespot. Seed at 8-10 lbs. alone, 4-6 lbs. in mixes.

NEW CONQUEST Timothy

Conquest is an early maturing variety that is the hay and pasture choice for horses and other livestock owners who demand high quality forage. Bred for higher forage yields, greater foliar disease resistance, faster spring green up, and improved summer regrowth.

CATAPULT Timothy

Bred for spring vigor and summer regrowth, Catapult comes out of the ground fast with rapid recovery after cutting. Its superior stand persistence lasts all-season and continues year after year. Ideal companion for legumes, other forage grasses, or as a pure stand. Seed at 8-10 lbs. alone, 4-6 lbs. in mixes.

SUMMERGRAZE Timothy

Late maturing timothy for high quality hay and pasture application. Selected for high yields, winter survival and persistence. It combines high leaf expression and good Spring vigor that blends very well with legumes and other grasses. Seed at 8-10 lbs. alone, 4-6 lbs. in mixes.

NEW EXPRESS II Timothy

Late maturing timothy that exhibits explosive Spring vigor and regrowth. With high yields and excellent forage quality, Express II is ideal for premium horse and livestock hay.

AGRONOMICS CHART Timothy

Variety	Maturity	Cutting Management	Yield Potential	Hay/Haylage	Pasture	Comment
SADDLEBRED Timothy	Early	2 - 3	H	Yes	Yes	Good summer regrowth.
CONQUEST Timothy	Early	2 - 3	H	Yes	Yes	Excellent spring vigor and Very winter hardy.
CATAPULT Timothy	Medium	1 - 2	H	Yes	Yes	Large leaf.
SUMMERGRAZE Timothy	Late	1 - 2	H	Yes	Yes	Good spring vigor. Very leafy plant.
EXPRESS II Timothy	Late	2 - 3	H	Yes	Yes	Excellent spring vigor and plant health.

Cereal Rust Mites in Timothy

Cereal rust mites are very small and sometimes hard to see with the naked eye. Using hand lens will aid in searching for the mite. Mites are of a small elongated shape (~1 mm) ranging in color from white, pale yellow to orange. Scouting should take place before green up for the eggs and/or adults. Select random plants from across the field and inspect the leaves of the plant, especially between the leaf veins.

Cereal rust mites overwinter in the adult and egg stage and overwinter in the lower portion of the Timothy plant. Eggs hatch sometime in March and peak in early April feeding on the lower portion of the young plant. Most damage is found during this time until first cutting. Cereal rust mites exhibit a piercing mouth part, which pierce the cells and damage the cell. Once cells are damaged, the leaf will appear drought stressed and rolled, and the plant may appear stunted and slightly yellow in color. A general threshold for treatment of cereal rust mites would be approximately twenty-five percent infestation of the plants selected. Consult your regional chemical representative for approved insecticides

SPECIALTY FORAGES & GRASSES

BRASSICA

USES: Pasture: Brassicas allow the flexibility to increase livestock carrying capacity and extend the grazing season into late fall and winter.

Cover Crop: Brassicas have many agronomic benefits when used as cover crops such as erosion control, nutrient recycling, enhanced soil tilth, reducing soil compaction and building organic matter.

Wildlife: Brassicas are nutritious and desirable food sources for deer and other wildlife during the winter months when other food supplies are scarce.

DESCRIPTION: Brassicas are a species of plants in the mustard family (Brassicaceae). The members of this genus are collectively known as cruciferous vegetables, cabbages, or mustards. Brassicas are fast growing annual or biennial crops that are highly nutritious, productive and digestible. This large group includes cabbages, mustards, kale, swede (rutabaga), rape, turnip, radish and others. Crude protein levels range from 15-25% in the herbage and 8-15% in the roots depending on weather and fertilization.

ADAPTION & DISTRIBUTION: Brassicas can be utilized in most areas of the U.S. depending on the species and are best adapted to well-drained soils with a pH ranging from 5.3 to 6.8.

ESTABLISHMENT: A firm seedbed is desired but not often practical when planting brassicas as a cover crop. Seed can be planted with a no-till drill, conventional drill, by airplane or broadcasting. Increase seeding rates if broadcasting or flying seed on. Seeding rates vary by species and whether the seed is being planted alone or in a mix. In general, seeding depths are ¼ to ½ inch. Fertilizer should be applied at planting following soil test recommendations. Some species require split applications of nitrogen for best results.

MANAGEMENT: Brassica management will vary depending on species and even varieties within each species. Each brassica species has advantages and disadvantages, but in regards to livestock grazing, all brassicas have the potential for causing bloat, nitrate poisoning and other disorders. These disorders can be avoided by adhering to the following management rules.

Introduce grazing animals to brassica pastures slowly. Don't turn hungry animals that are not used to brassicas into a brassica pasture. Brassicas should not make up more than 75% of the animal's diet. Supplement with dry hay or allow access to grass pastures.

SPECIALTY FORAGE OPTIONS

SEEDWAY carries multiple brassica and other specialty forage varieties. These include but are not limited to Jackpot Forage Turnip, Vivant Hybrid Brassica, Dwarf Essex Rape, Impact Collard Greens, Endure Chicory, and Dessie Teff. Please contact your local SEEDWAY Territory Field Manager and visit www.seedway.com for available varieties and further technical information.

DISEASES

Leaf Spot: When Leaf Spot or Blotch is prevalent, the infected leaves turn brown, wither, and die. The lower 30 to 40 percent of a severely damaged plant is often completely defoliated. Uncut plants are usually affected to a greater extent.

Anthracnose: Spot causing fungal disease which causes summer depression of grasses. The lesions are at first water-soaked small spots and then expands to faint reddish brown to orange. Fungal tissues are produced in the center of the old lesion and looks black and moldy. Orange masses of spores are formed on the lesion under wet conditions and they disperse by wind and rain. The disease often occurs from the end of a rainy spring season into summer.

Brown Stripe: The spot causing fungal disease prohibits the seed production. The lesion are brown to purple brown, short line shaped that appears between the leaf veins at first. They gradually expand to and fuse one another. The whole leaf becomes ash white and killed. The spores which look like small black molds are produced on the old lesion, and they disperse and spread. The pathogen can also affect other grasses like Timothy.

Powdery Mildew: The lesions are at first small and white to gray moldy in the leaf appearing before the rainy season. When the disease advances, the entire plant body looks like it's being covered with white powder. The white powder are spores and they disperse by wind and rain. When it rains, they are washed off and yellowish brown, irregular-shaped lesions appear. The disease prefers the cool condition and occurs when it is cloudy and insufficient sunshine continues.

Rust: Occurs from late spring to early summer. The disease produces reddish brown, oval swelling lesions on the surface of the leaf and sheaf. The surface of the lesion tears when maturing and disperses spores. The disease is typically found on the back of the leaf and becomes yellow to brown.



Rust ^



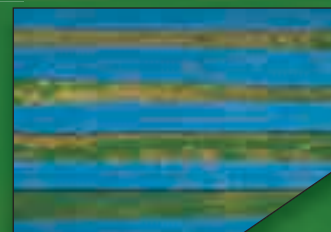
Powdery Mildew ^



Brown Stripe ^



Leaf Spot ^



Anthracnose ^

SEEDWAY
2018-2019

BROMEGRASS

SEEDWAY

Uses: Livestock: Smooth brome may be used for hay, pasture, silage or stockpiling. It is compatible with alfalfa or other adapted legumes. The grass is highly palatable and is high in protein content and relatively low in crude-fiber content.

Erosion control: Since the plant has a massive root system and is a sod former, it can be used effectively for critical area planting and waterways if the areas can be irrigated or where annual precipitation exceeds 20 inches.

Description: Smooth brome, is a leafy, sod-forming, perennial, cool season grass that spreads by rhizomes. The stems vary in height from 2 to 4 feet. The plant produces numerous basal and stem leaves that vary in length from 4 to 10 inches. Frequently, the leaves are marked by a transverse wrinkle resembling a "W" a short distance below the tip. The flower head develops a characteristic rich purplish-brown color when mature. The seed is produced in semi-compact 5 inch long panicles with ascending branches. The flat compressed seed is usually awnless, about 1/3 inch long and smooth. There are approximately 135,000 seeds per pound. Smooth brome is the most widely used of the cultivated brome grasses and has been cultivated in the U.S. since the early 1880s.

Adaptation and Distribution: Smooth brome is best adapted to cooler climates and is generally harder than tall fescue or orchardgrass. It is resistant to drought and extremes in temperature. Smooth brome is susceptible to disease in areas of high humidity. Smooth brome grows best on slightly acidic to slightly alkaline well-drained clay loam soils with high fertility but it will also grow well on lighter textured soils where adequate moisture and fertility are maintained. Smooth brome performs best in a pH range of 6.0 to 7.5. Stands are difficult to obtain and growth is poor on soils high in soluble salts.

Establishment: A clean firm seedbed is needed. Due to the slow germination and establishment of smooth brome, spring seedings are especially preferred in the northern states. In southern areas, late summer seedings are a second option. Fall seedings should be made at least 6 weeks before a killing frost is expected. Seeding rates are typically 3 to 8 pounds per acre in mixtures, and about 15 to 20 pounds per acre when seeded alone. When smooth brome is seeded in a mixture with alfalfa, the alternate row method will give the best results. Seeding depth is approximately 1/2 inch. If broadcast, increase the seeding rate and cultipack after planting.

Management: Smooth brome requires heavy early spring and fall applications of nitrogen to maintain high yields in a pure stand. Mixtures with alfalfa will require less nitrogen but the alfalfa will usually need phosphorus each year to maintain vigor. Best forage production is obtained from smooth brome when used in a planned cropping system and plowed out after 3 to 4 years. Its heavy sod makes it an excellent soil conditioning crop when included in cropping systems. In deep, well-drained soils, it will root to 4 feet. Smooth brome performs best in grassed waterways, field borders and other conservation uses where the forage can be cut and removed while in early bloom. Do not graze the new seeding; cut the first crop for hay. In brome grass-legume pastures, allow the legume to go to bud or early-bloom stage before turning cattle in to avoid bloat hazard, and manage thereafter for optimum regrowth of the legume. Pastures should not be grazed prior to smooth brome attaining a minimum height of 10 inches at the beginning of the grazing season. Grazing pressures should be adjusted throughout the season to avoid grazing this grass to less than a minimum height of 4".

PEAK Smooth Brome grass

Peak is Cornell University developed. Earlier maturity and higher yield potential than Saratoga. High forage yield especially after first cut. Improved forage quality, producing fewer heads, good eye appeal in dry hay. Leave a 4" stubble for best regrowth. Seed at 15-20 lbs. alone, 3-8 lbs. in mixes.

ARID Smooth Brome grass

Arid Smooth Brome is a new generation of smooth brome developed to be more drought tolerant, less aggressive rhizomes, high yielding and with good regrowth potential. Due to its high forage yield and quality, Arid is great for hay production or green chop. Developed to have less aggressive rhizomes than other smooth bromes, Arid works great in pastures with other species too. Seed at 15-20 lbs. alone, 3-8 lbs. in mixes.

ADMIRAL Meadow Brome grass

Admiral is a high yielding spring forage that's extremely winter hardy. Very palatable with an aggressive re-growth. Dark green in color. Seed at 20-25 lbs. alone, 10 lbs. in mixes.

AGRONOMICS CHART Brome grass

Variety	Maturity	Cutting Management	Yield Potential	Hay/Haylage	Pasture	Comment
PEAK Smooth Brome grass	EARLY	2 - 3	H	Yes	Yes	Good summer regrowth.
ARID Smooth Brome grass	MEDIUM	3 - 4	H	Yes	Yes	Excellent winterhardiness.
ADMIRAL Meadow Brome grass	EARLY	2 - 3	H	Yes	Yes	Exceptional rust tolerance.

ORCHARDGRASS

SEEDWAY

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

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

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

Description: Orchardgrass is a persistent, cool season bunchgrass. Under dryland conditions, it usually develops distinct clumps and flower culms 15 to 18 inches tall. Leaves are usually less than 12 inches in height. When grown under irrigation or in more moist situations, it attains a height of 24 to 28 inches. No vegetative spread has been observed. Orchardgrass is one of the earliest species to grow in the spring, making tremendous growth during cool conditions. Due to deep roots, it also is capable of strong summer growth when conditions are favorable. Orchardgrass has 416,000 seeds per pound.

Adaptation and Distribution: Orchardgrass is found from Canada to the Gulf coast states and from the Atlantic coast to the Pacific coast. However, orchardgrass is not as winter hardy as smooth brome or timothy. Orchardgrass performs well on different textured soils ranging from clay to gravelly loams and on shallow to deep soils. It does not grow well in saline soils and areas with high water tables. It has the ability to establish and persist in areas that receive as little as 11 inches of annual precipitation. Orchardgrass performs best in a pH range of 5.8 to 7.0.

Establishment: A clean, firm, weed-free seedbed is recommended. Range and erosion control seedings should be made in the late fall or very early spring. Do not seed after the spring moisture period is well advanced or a failure may occur because of drought and hot summer conditions before the grass is well established. A deep furrow or range drill with press wheels may be used. Orchardgrass is easily established with grain drills or by broadcast seeding. The seeding rate is 8 to 12 pounds per acre. For range and critical area treatment, a seeding rate of 3 to 4 pounds per acre is recommended. If broadcast, double the seeding rate. Adjustments in seeding rate should be made when seeding in mixtures. Seeding depth should not be more than 1/2 inch.

Management: Under irrigation and higher rainfall areas, orchardgrass should be cut at boot stage for the first cutting and then at 4 to 6 week intervals depending on regrowth. Rotational grazing is best for production, persistence and quality. Fields should be grazed heavily and frequently during the spring, but do not overgraze. Leave a 3 to 4 inch stubble so plants can recover quickly. Heavy grazing during the late fall should be avoided to prevent depletion of root reserves. Under dryland conditions, orchardgrass should not be grazed until late summer or fall of the second growing season. The plants may be severely damaged by overgrazing especially in the seedling year. Use no more than 60% of the annual growth during the winter season or 50% during the growing season. This plant responds well to rotational grazing systems. Orchardgrass responds to good fertility management. One strategy, to even out the forage production, is to fertilize the stand after the first and second cutting or grazing to boost late spring and summer production. Apply fertilizer based upon soil tests.

BOUNTY II Orchardgrass

Early maturity variety and outstanding yield potential. Ideal for hay production or pastures. Excellent plant vigor, quick recovery after cutting with great palatability. Drought tolerance and improved foliar disease resistance. Straight stands or grass and legume mixtures. EXCELLENT FOR GRAZING! Seed at 15-20 lbs. alone, 3-6 lbs. in mixes.

RUSHMORE II Orchardgrass

An early maturing orchardgrass ideal for use in grazing and hay operations. Rushmore II exhibits excellent winter hardiness making it an ideal fit for colder northern climates. With improved disease resistance, excellent establishment and persistence, Rushmore II can withstand grazing well. Seed at 15-20 lbs. alone, 3-6 lbs. in mixes.

TRAILBURST Orchardgrass

A tall and high yielding and persistent orchardgrass with a very dense and aggressive regrowth. Great seedling vigor. Medium-Late Maturing. Dual purpose for hay and grazing. Seed at 15-20 lbs. alone, 3-6 lbs. in mixes.

EXTEND Orchardgrass

Late maturity with superior yield potential. Good maturity fit with alfalfa. Excellent plant vigor, increased stand persistence, drought tolerance, stem rust resistance and great palatability. Seed at 15-20 lbs. alone, 3-6 lbs. in mixes.

ALPINE II Orchardgrass

Later maturing with very good persistence and winter hardiness. Produces high yields cutting after cutting and under hard intensive grazing. Dense and aggressive, tolerates heat, poor fertility and low soil moisture. Good resistance to foliar rust and leaf spot diseases. Seed at 15-20 lbs. alone, 3-6 lbs. in mixes.

DEVOUR Orchardgrass

Developed to withstand the rigors of intensive grazing systems which can destroy lesser varieties. Extended periods of hoof traffic and feeding won't deter Devour. Quick to establish, out competing weeds, and producing a better, high yielding pasture. Late maturing can be seeded with clover or alfalfa. High NDFD- very palatable. Seed at 15-20 lbs. alone, 3-6 lbs. in mixes.



See Additional Orchardgrass Varieties and Agronomic Characteristic Charts On Page 91

ORCHARDGRASS • RYEGRASS

SWF955 Easy Sow Orchardgrass

Farm Science Genetics® Medium maturity. HULLED ORCHARDGRASS with the same characteristics as standard orchardgrass, but without the seed hulls, easier to mix with alfalfa or other seed. Best choice for air or hydro-seeding. Seed at 15-20 lbs. alone, 3-6 lbs. in mixes.

AGRONOMICS CHART Orchardgrass

Variety	Maturity	Cutting Management	Yield Potential	Hay/Haylage	Pasture	Comment
BOUNTY II Orchardgrass	EARLY	2 - 3	H	Yes	Yes	Quick regrowth after cutting.
RUSHMORE II Orchardgrass	EARLY	2 - 3	H	Yes	Yes	High traffic tolerance with high yields.
SWF955 Easy Sow Orchardgrass	MEDIUM	2 - 3	H	Yes	Yes	Great choice for air or hydro-seeding. Good companion with alfalfa.
TRAILBURST Orchardgrass	MEDIUM - LATE	2 - 3	H	Yes	Yes	Exceptional Rust tolerance.
EXTEND Orchardgrass	LATE	2	H	Yes	Yes	Late maturity alfalfa companion. High grazing tolerance.
ALPINE II Orchardgrass	LATE	2	H	Yes	Yes	Ideal option for grazing or hay. High yields with high protein content.
DEVOUR Orchardgrass	LATE	2	H	Yes	Yes	Suitable for intense grazing and high traffic pressure.

ANNUAL RYEGRASS

Uses: Annual ryegrass is primarily used for pastures and quick cover in erosion control plantings. In the South, it is used as a winter annual for overseeding warm season grasses.

Description: Annual ryegrass is quite similar to perennial ryegrass except it is an annual or biennial, depending on climate and/or length of growing season. It may grow a little taller than perennial ryegrass, from 2 to 3 feet tall. Annual ryegrass is a bunchgrass, with numerous long, narrow, stiff leaves near the base of the plant. The under surfaces of leaves are bright, glossy and smooth. Inflorescence stems are nearly naked. There are approximately 227,000 seeds per pound.

Adaptation: These grasses have a wide range of adaptability to soils, but thrive best on fertile soils with a pH between 5.5 and 6.5. They produce well in regions having mild climates. They do not withstand hot, dry weather or severe winters. They will stand fairly wet soils with reasonably good surface drainage. Annual ryegrass is distributed throughout the entire United States.

Establishment: Seed should be planted 1/4 to 1/2 inch deep in a well prepared seedbed. Spring seedings of ryegrass may occur in March, April or May. Annual ryegrass may also be seeded mid-August to early November, depending on the location. Generally, a rate of 20 to 25 pounds per acre is used if ryegrass is seeded alone. In mixtures, 4 to 8 pounds per acre is recommended, depending upon uses and companion species. In general, the annual ryegrass component of a mix should be 20% or less since it is very competitive, due to rapid germination and good seedling vigor.

Management: Ryegrass is generally cut for hay when seed heads start to emerge. Annual ryegrass-clover pastures should be rotationally grazed when spring growth is 3 to 6 inches high. Allowing 7 to 10 inches of regrowth between grazings will benefit yield and persistence. On new seedings, harvest or grazing should be delayed until plants are 10 to 12 inches tall. Ryegrass responds well to good management, such as intensive rotational grazing and fertilizer applications.

BIG BANG Annual Ryegrass

A tetraploid selected for early heading, yield and disease resistance. It provides high quality forage, consistent yields and excellent regrowth. Big Bang is highly adaptable for use as a cover crop, its deep roots build soil structure and increase organic matter. Seed at 20-25 lbs. alone, 4-8 lbs. in mixes.

CENTURION Annual Ryegrass

The ideal diploid annual ryegrass choice for dairies, beef and hay operations. Excellent winter-hardiness and will not linger long into the summer. When fall planted it will survive the early onslaught of cold, wet weather to provide cover and offer biodiversity following non-grass crops. High quality excellent forage yield. Seed at 20-25 lbs. alone, 4-8 lbs. in mixes.



FRIA Annual Ryegrass

Endophyte-free ANNUAL diploid. Late maturity with superior cold tolerance and excellent palatability. Improved resistance to crown rust, gray leaf spot and helminthosporium leaf spot. Seed at 20-25 lbs. alone, 4-8 lbs. in mixes.

PERENNIAL RYEGRASS

SEEDWAY

Uses: Forage: Perennial ryegrass is a valuable forage and soil stabilization plant. This species is the predominant forage grass in Europe and is used extensively in the United States. Perennial ryegrass is used for pasture and hay in sheep, dairy and beef production. It is often used in mixes with alfalfa, clovers and other grasses. Perennial ryegrass has the highest forage quality of all cool season grasses.

Description: Perennial ryegrass is a bunchgrass which grows from 1 to 2 feet tall, and has medium longevity. There are numerous long, narrow, stiff leaves near the base of the plant. The under surfaces of leaves are bright, glossy and smooth. Inflorescence stems are nearly naked. Seedheads are spikes with spikelets growing edgewise to the seedhead stem. Seeds do not have awns (bristles). There are approximately 227,000 seeds per pound.

Adaptation: These grasses have a wide range of adaptability to soils, but thrive best on fertile soils with a pH between 5.5 and 6.5. They produce well in regions having mild climates. They do not withstand hot, dry weather or severe winters. They will stand fairly wet soils with reasonably good surface drainage. Perennial ryegrass is distributed throughout the entire United States.

Establishment: Seed should be planted 1/4 to 1/2 inch deep in a well prepared seedbed. Spring seedings of ryegrass may occur in March, April or May. Perennial ryegrass may also be seeded mid-August to early September.

Generally, a rate of 20 to 25 pounds per acre is used if ryegrass is seeded alone. In mixtures, 4 to 8 pounds per acre is recommended, depending upon uses and companion species. In general, the perennial ryegrass component of a mix should be 20% or less since it is very competitive, due to rapid germination and good seedling vigor.

Management: Ryegrass is generally cut for hay when seed heads start to emerge. Established perennial ryegrass-clover pastures should be rotationally grazed when spring growth is 3 to 6 inches high. Allowing 7 to 10 inches of regrowth between grazings will benefit yield and persistence. On new seedlings, harvest or grazing should be delayed until plants are 10 to 12 inches tall. Ryegrass responds well to good management, such as intensive rotational grazing and fertilizer applications.

ELENA Perennial Ryegrass

High yield potential. Excellent seedling vigor and stolon activity. Resists leaf diseases and field viruses. Superior persistence. Drought tolerant, widely adapted, ideal for pastures. Seed at 20-25 lbs. alone, 4-8 lbs. in mixes.

TETRASWEET Perennial Ryegrass

Highly palatable, fast establishing, tetraploid perennial rye. Tillers extensively, rapid recovery, excellent choice for all types of forage production. Can be grazed. High digestibility leads to increased animal performance and increased producer profits. Seed at 20-25 lbs. alone, 4-8 lbs. in mixes.

tetra sweet

AGRONOMICS CHART Ryegrass

Variety	Maturity	Cutting Management	Yield Potential	Hay/Haylage	Pasture	Comment
FRIA Annual Ryegrass	Latc	2 - 4	++	Yes	Yes	Excellent forage quality.
BIGBANG Annual Ryegrass	Latc	3 - 4	M - ++	Yes	Yes	Good winterhardiness.
CENTURION Annual Ryegrass	Latc	2 - 3	++	Yes	Yes	Excellent winterhardiness.
TETRASWEET Perennial Ryegrass	Medium-Latc	2 - 3	++	Yes	Yes	A very wide leaf with high yields.
ELENA Perennial Ryegrass	Medium	2 - 3	++	Yes	Yes	Rust and leaf disease resistance.
TETRAMAG Hybrid Ryegrass	Latc	2 - 3	++	Yes	Yes	Hybrid lasting 3 - 5 years.
TETRAPRIME Italian Ryegrass	Early	2 - 3	++	Yes	Yes	Short rotation grass.

TETRAMAG Hybrid Ryegrass

Excellent yield potential and stand-life expectancy of 3-5 years. Highest ranking entry in Cornell University and University of Kentucky forage trials. This yield potential is due in part to TetraMag's unparalleled seedling vigor. Provides improved forage quality and continues to produce all season long. Seed at 20-25 lbs. alone, 4-8 lbs. in mixes.

tetramag

TETRAPRIME Italian Ryegrass

Selected for grazing applications, TetraPrime has excellent grazing tolerance and can be closely grazed without jeopardizing the integrity of the field. This close-graze ability allows for total forage usage. Excellent drought tolerance and improved winterhardiness. Seed at 20-25 lbs. alone, 4-8 lbs. in mixes.

tetra prime

TALL FESCUE

Uses: For decades, KY31 tall fescue was planted widely as a forage and erosion control plant because it is widely adapted, easy to establish and long lived under harsh conditions and mistreatment. It is now recognized that the presence of a toxic endophyte contributed to both the tough nature of KY31 and the poor performance of grazing animals in the warmer months. It is suspected that endophyte infected KY31 has been deleterious to wildlife as well.

Today, there are many varieties of tall fescue that are low endophyte or endophyte free, which can be used for hay or pastures without any of the animal health concerns posed by endophyte infected KY31. Tall fescue testing services are available to have existing stands of this grass evaluated for endophyte presence.

Description: Tall fescue is a robust long-lived, comparatively deep rooted, bunchgrass. The broad flat leaves are smooth and shiny on the underside, with pronounced ribs on the upper surface. The stems are 3 to 4 feet tall, supporting a nodding panicle that is 4 to 12 inches long. There are approximately 227,000 seeds per pound.

Adaptation and Distribution: Tall fescue is adapted to cool and humid climates and most soils with a pH of 5.5 to 7.0. Tall fescue will grow fairly well on soils low in fertility, but it is better adapted to fertile conditions. Tall fescue will produce top growth when soils are as cold as 40° F, and it continues growth into late fall in the South.

Establishment: Tall fescue is easy to establish due to its rapid germination and good seedling vigor. It may be planted by any common method such as grass seeders, hydroseeding and broadcasting. Seeding rates are 15 to 20 pounds per acre if drilled and 20 to 25 pounds per acre if broadcast. The seeding depth is 1/2 inch.

Management: While tall fescue is tolerant of abuse and low fertility, it does respond to fertilizer inputs. Follow the soil test recommendations. Endophyte-infected tall fescue will tolerate grazing abuse better than most cool season grasses. If the tall fescue is an endophyte-free variety, it should not be grazed closer than 3 inches, and will not tolerate overgrazing. Tall fescue can be grown with white clover, red clover and alfalfa. First cutting for hay should be at the late boot stage with further cuttings as regrowth allows. Tall fescue is one of the best grasses for stockpiling in the fall.

TETON II Tall Fescue

Teton II is fast establishing, exceptionally high yielding, medium maturing, soft leaf tall fescue that is an upright variety with a broad crown, very resistant to diseases. Teton II is well adapted for hay and pasture production and shows excellent persistence. Teton II is endophyte free. Teton II is best suited to high fertility and heavy soils and can withstand acid, alkaline as well as poorly drained soils. Seed at 15-20 lbs. drilled, 20-25 lbs. alone, 5-10 lbs. in mixes.



SWAJ Soft Leaf Tall Fescue

Bred for its winterhardiness and selected for soft-leaved palatability and feed quality, improved digestibility and more pounds of gain. SWAJ has a bunch type growth habit, average flag leaf size and tall plant height delivering more biomass. A strong disease package includes resistance to Crown Rust.

DOMINATE Tall Fescue

Dominare is an endophyte free variety. Outstanding regrowth and color during the summer which maximizes grazing and hay production. Use in pure stands or in combination with legumes. Great for winter stockpiling. Excellent adaptability to varying soil types. Seed at 15-20 lbs. drilled, 20-25 lbs. alone, 5-10 lbs. in mixes.

MARQUISE Meadow Fescue

Exhibits many facets to out shine other grass varieties. Excellent drought tolerance for dry season conditions. Exceptional forage quality. Ideal for wetter soils. Wide soft leaf. When you use Marquise Meadow Fescue your PROFITS are measured in DIAMONDS! Seed at 35-40 lbs. alone, 15-20 lbs. in mixes, 3-8 lbs. with legumes.

AGRONOMICS CHART Fescue

Variety	Maturity	Cutting Management	Yield Potential	Hay/Haylage	Pasture	Comment
TETON II Tall Fescue	Medium	2 - 3	H	Yes	Yes	Exceptionally high yielding. Endophyte-free.
SWAJ Soft Leaf Tall Fescue	Medium	2 - 3	H	Yes	Yes	Strong disease package. Excellent winterhardiness.
DOMINATE Tall Fescue	Medium	2 - 3	H	Yes	Yes	Tolerates wet soils. Excellent digestibility.
MARQUISE Meadow Fescue	Medium	2 - 3	H	Yes	Yes	Good for hay, haylage, and grazing. Tolerates wet soils.

FESTULOLIUM

SEEDWAY
EAST WYOMING

Uses: Festulolium is a hybrid cross between the Festuca and Lolium species. The agronomic benefits of festulolium started to gain acceptance in the late 1950's with demand steadily increasing over the years. Festulolium is mainly utilized in pastures for grazing and stockpiling, either in mixes or pure stands. Silage and green chop are other major uses. Benefits include higher forage yields than perennial ryegrass, forage quality similar to perennial ryegrass, increased mid summer growth compared to other cool season grasses, high disease resistance, winterhardiness and persistence.

Description: Festulolium is a perennial bunchgrass which has the combined traits of the Festuca and Lolium species. The expression of these traits varies by variety. There are approximately 227,000 seeds per pound.

Adaptation and Distribution: Festulolium is adapted to cool humid climates as well as less humid climates with supplemental irrigation. Festulolium does well on fertile soils with a pH of 5.5 to 7.0 but is not recommended for poorly drained soils or soils with poor fertility.

Establishment: Festulolium is easy to establish due to its rapid germination and seedling vigor. Seeding rates are 25 to 45 pounds per acre if seeded alone and 8 to 20 pounds if used in mixtures. Seeding depth is 1/4 inch.

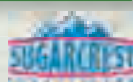
Management: In general, 150 pounds of nitrogen per acre per year will be adequate to maintain a good stand of festulolium. The rule of thumb is to apply 1/3 of the nitrogen in the spring with the balance evenly applied after each harvest or grazing period. Festulolium performs best under a rotational grazing system and should be grazed down to 3 to 4 inches when plants reach a height of 10 to 12 inches. For silage or green chop, festulolium needs to be cut before seed heads emerge for optimum forage quality.

GAIN Festulolium

Great yield potential, pasture or silage. Rapid establishment, vigorous growth, excellent with legumes or slower starting grasses. Leafy, palatable, nutritious for all livestock and horses. Performs best on moist, fertile soils. Hybrid of Italian Ryegrass and Meadow Fescue. Seed at 25-40 lbs. alone, 8-20 lbs. in mixes.

SUGARCREST Festulolium

A new tetraploid perennial ryegrass x meadow fescue festulolium that establishes quickly and has fast regrowth, yielding more tonnage per acre than the competition. Excellent persistence provides a highly palatable feed for years. Combined with improved winter-hardiness and disease resistance, Sugarcrest is unsurpassed for quality and longevity. Seed at 25-40 lbs. alone, 8-20 lbs. in mixes.



AGRONOMICS CHART Festulolium

Variety	Maturity	Cutting Management	Yield Potential	Hay/Haylage	Pasture	Comment
GAIN Festulolium	Early - Medium	2 - 3	M - H	Yes	Yes	Rapid establishment. Good companion with legumes or slower starting grasses.
SUGARCREST Festulolium	Medium	2 - 3	H	Yes	Yes	Excellent winterhardiness and drought tolerance.

REED CANARYGRASS

Uses: Forage: Reed canarygrass is primarily adapted for permanent hay or pasture on sites too wet for good performance of other forage plants. The forage should be grazed or mowed prior to heading as both quality and palatability decline rapidly after heading. A common mistake is to use reed canarygrass on wet sites where timely harvest is not possible. Make sure to use low alkaloid varieties for increased forage quality and palatability.

Erosion control: The extensive, rhizomatous root system and dense growth of reed canarygrass provide excellent erosion control, especially along stream banks, shorelines and waterways. Reed canarygrass invades wet areas so its use along ditches, canals and drains can create maintenance problems; it can also be troublesome in wetland habitats.

Wildlife: This grass provides excellent nesting and escape cover and the shattered seeds are readily eaten by many species of birds.

Description: Reed canarygrass is a vigorous, productive, long-lived, perennial, sodforming grass. It is a widespread species native to North America, Europe and Asia. The numerous broad, moderately harsh, erect leaves are dominantly basal. The coarse, erect stems may reach a height of 6 to 8 feet. Seed is borne in an open panicle which ripens from the top down and shatters readily as it matures. There are approximately 480,000 seeds/pound. The seed has a short storage life and should be checked for germination within 6 months of its use. Reed canarygrass has excellent frost tolerance and is well suited to wet soils that are poorly drained or are subject to flooding. It also has good drought tolerance. Growth begins in early spring and continues through the growing season. Regrowth following mowing or grazing is rapid on fertile sites. Forage quality is good prior to heading but then declines rapidly.

Adaptation and Distribution: Reed canarygrass is adapted to soils too wet for brome grass, fescue and orchardgrass. It is very cold tolerant and will withstand temperatures well below 30°F. It is moderately drought tolerant but requires 18 inches annual precipitation or irrigation for good performance. It is adapted to a wide range of soil conditions but its major use is on poorly drained soils or those subject to inundation. Once established, it will withstand continuous inundation for 60 to 70 days. It does well on soils that range from moderately acidic to weakly saline-alkaline. It will tolerate saltier soils with frequent irrigation or natural flooding.

Establishment: A firm, moist, clean seedbed is needed for good emergence. The seed germinates readily but is somewhat slow to establish. Seed pure stands at a rate of 14 pounds/acre and 6 to 8 pounds/acre for mixtures. Seeding should be done in late fall or early spring. Plant shallow, no deeper than 1/2 inch. If necessary, irrigate to maintain surface moisture until plants are well established.

Management: New seedlings should not be grazed until fully established. It is best to harvest for hay 1 to 2 times before grazing. To maintain plant vigor and promote rapid regrowth, leave a stubble of 3 to 4 inches after mowing or grazing. Start spring grazing after plants reach a height of 10 to 12 inches. Maintain grass height below 12 inches during rapid spring growth. Harvest hay when the first seedheads appear. Reed canarygrass will persist under close, frequent use, but yield will be greatly reduced. Its persistence under heavy use makes it well suited for calving, lambing, holding areas or other special-use pastures. To maintain good yields, an annual application of fertilizer will be required on most fields depending on soil test results.

RIVAL/BELLEVUE Canarygrass

High yields, improved palatability and very low alkaloid content. Promotes better intake and greater weight gains over common reed canarygrass. Excellent for wet + dry ground with superior performance over older varieties. Will utilize repeated manure applications throughout the growing season. Seed at 12-15 lbs. alone, 4-8 lbs. in mixes.

AGRONOMICS CHART Canarygrass

Variety	Maturity	Cutting Management	Yield Potential	Hay/Haylage	Pasture	Comment
RIVAL/BELLEVUE Canarygrass	Late	1 - 2	H	Yes	Ok	Improved palatability. Very low alkaloid content.

****Varieties listed for forage and pasture mixes may be substituted with comparable varieties based on availability.
Custom mixes are available with an additional mix charge for growers desiring specific varieties or different mix ratios**

SEEDWAY 100

Long lasting mixture of high performing alfalfa and an endophyte free tall fescue to give persistence and traffic tolerance. (20 lbs./acre)

90% High Yielding Alfalfa
10% Endophyte - Free Forage Tall Fescue

SEEDWAY 200

A mixture that will tolerate wetter soils as well as well drained soils and provide excellent forage yields and quality. (20 lbs./acre)

50% Branch Root Alfalfa
30% Meadow Fescue
20% Forage Tall Fescue

SEEDWAY 325

Ideal for wetter than normal soils. Suitable for river bottom fields and low lying areas. High yielding with excellent forage quality. (30 lbs./acre)

35% Teton / Dominate Tall Fescue
35% Marquise Meadow Fescue
20% Sugarcrest / Duo Festulolium
10% Bearcat / 402 Red Clover

SEEDWAY 400

A red clover based mix with enough timothy to balance the ration and provide an excellent stand for three years. (18 lbs./acre)

60% Red Clover
40% Timothy Variety

SEEDWAY 500

Perennial grass mixture that has excellent forage quality and yield. Mixture will tolerate a multitude of soil types and conditions. (20 - 30 lbs./acre)

35% Festulolium
35% Forage Perennial Ryegrass
15% Annual Ryegrass
15% Red Clover

SEEDWAY 150

High forage quality combining top ranking alfalfa with timothy to provide higher yields. (20 lbs./acre)

85% High Yielding Alfalfa
15% Timothy Variety

SEEDWAY 250

An alfalfa and grass mixture that will produce on a wide range of soil types and conditions. (20 lbs./acre)

65% High Yielding Alfalfa
25% Endophyte Free Tall Fescue
10% Timothy

SEEDWAY 350

High yielding mixture that will dry down fast and provide excellent feed quality hay. (30 lbs./acre)

35% Endophyte - Free Forage Tall Fescue
30% Orchardgrass
15% Red Clover
10% Perennial Ryegrass
10% Festulolium

SEEDWAY 450

Economical mix to cover the basic needs for a legume and grass mixture. (18 lbs./acre)

50% Alfalfa
35% Timothy
15% Medium Red Clover

SEEDWAY 550

High yielding all grass mixture for both hay and grazing. Quick dry down, persistent, and suitable for all soil conditions. (30 lbs./acre)

40% Endophyte - Free Forage Tall Fescue
30% Orchardgrass
20% Festulolium
10% Late Maturing Timothy

PASTURE MIXES • FORAGES

ULTIMATE GRAZER Pasture Mix

Mixture designed for the intense grazer. Provides high forage quality and digestibility. If you need to increase milk pounds or body weight...this one will satisfy all of your needs! (25 lbs./acre)

- 35% Devour Orchardgrass
- 30% SugarCrest Festulolium
- 25% TetraSweet Perennial Ryegrass
- 5% Stamina White Clover
- 5% Bearcat Red Clover

ALFA-SOW™ Hay/Pasture Mix

FSG 426 alfalfa and Extend "Easy Sow" hulled orchardgrass makes the perfect blend for your high production hay acres. These varieties will help ensure the perfect blend that will not bridge in your drill like regular orchardgrass. Don't waste your time blending your seed at the planter or worrying about two separate seed boxes - JUST FILL YOUR SEED BOX AND SOW YOUR FIELDS! FSG 426 alfalfa is treated with both All-Vantage™ and Aquabond™ to promote germination and stand establishment. (20 lbs./acre)

- 90% FSG 426 Alfalfa
- 10% Extend Hulled Orchardgrass

TAR Economy Mix*

Combination of grass and clover to be used as a plow down mixture to increase green manure, reduce erosion, and fix nitrogen. (30 lbs./acre)

- 50% Timothy
- 30% Medium Red Clover
- 20% Alsike/White Clover

*** WARNING** TAR MIX NO 1 contains Alsike clover, which has been associated with certain metabolic disorders in horses. DO NOT pasture horses in fields seeded with this mixture or any mixture containing Alsike.

CUSTOM BLENDING

Don't see it here? SEEDWAY, LLC will custom blend forage mixes to fit the needs and demands of your particular operation.

Call your SEEDWAY office or Territory or Retail Field Manager today for details.

PRO HORSE Pasture Mix

Professional Horse Pasture Mixture is a forage blend specially formulated to meet the nutritional needs of horses while withstanding their intense grazing pressure. (25 lbs./acre)

- 45% Orchardgrass
- 30% Perennial Ryegrass
- 10% Festulolium
- 10% Timothy
- 5% Kentucky Bluegrass

PRO DAIRY Pasture Mix

Maximize the performance of dairy cattle. Grasses and clover provide yield, nutrition, stand persistence and disease resistance. (25 lbs./acre)

- 25% Orchardgrass
- 20% Perennial Ryegrass
- 15% Festulolium
- 15% Timothy
- 10% Branch Root Alfalfa
- 10% Red Clover
- 5% Ladino White Clover

PRO BEEF Pasture Mix

Maximize beef animal per acre return. High quality ingredients blended in the proper ratios. (25 lbs./acre)

- 40% Tall Fescue
- 23% Orchardgrass
- 10% Intermediate Ryegrass
- 10% Perennial Ryegrass
- 6% Timothy
- 6% Red Clover
- 5% Ladino White Clover



SPRINT MAXX Forage Mixture

Sprint Maxx is a forage mixture of Haywire Brand Oats and Stockade Brand Peas. It produces high yields of high quality forage in dairy and beef areas throughout the Northern United States. Sprint-Maxx provides a quick source of forages within 60 days of planting and can be used as companion crop to establish alfalfa or it can follow winter wheat if planted within the first 2 weeks of August. Seed at 80 - 120 lbs. per acre.

TRI-MAX Forage Mixture

This mixture consists of Maxum forage peas, Forage Plus forage oats and Hays barley. TRI-MAX is truly superior, producing higher yields with more energy and higher digestibility than other companion crops. This blend will tolerate more heat than pea/triticale mixes; however, optimum performance is still achieved with earlier planting. Seed at 80 - 120 lbs. per acre.

TRICAL® 336 Winter Forage Triticale

An awned annual cereal forage which exhibits a very dense canopy of long leaves designed for use in double-crop systems that intend to maximize annual forage production. With a high leaf to stem ratio at the flag leaf and early boot stages exhibits a high nutritional value. A semi-erect growth habit and sensitivity to grazing make it a secondary choice for intensive grazing. Seed at 90 - 120 lbs. per acre.

HYOCTANE Winter Forage Triticale

HyOctane is a winter triticale variety that has shown favorable forage yield and winter hardiness across the East Coast. HyOctane makes a great option for fall grazing on ensiling in the spring before corn planting. Reduced awned variety to aid livestock palatability. Good early-season vigor and earlier heading date than traditional varieties. Medium straw strength. Very short awns. Very high leaf to stem ratio. Seed at 90 - 120 lbs. per acre.

KARA Forage Oats

Kara forage oat is a tall, leafy, forage style oat selected to replace SkyHi™ Forage oat. With excellent yield and improved resistance to leaf rust, it topped the 2018 Penn State Forage trials. Seed at 120 - 150 lbs. per acre.



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PROPER SUMMER ANNUAL SELECTION

Summer annual forage crops such as hybrid sudangrass, millets, forage sorghums, and sorghum-sudan hybrids are grasses that grow well in our region. Some of the advantages with summer annuals included rapid germination and emergence, rapid growth under warmer and drier conditions, high productivity and flexibility in utilization (grazing, hay or silage/baleage).

Planting should wait until soil temperature remains above 65 to 70 degrees. This will be late May to mid-June “in most years”. Exposing young seedlings to cool air (<50 degrees) or soil temperatures (<60 degrees) can permanently slow growth, greatly reducing seasonal forage production, or even take out the stand.

Compared to corn, summer annual forages require 30- 40% less water which making them more drought tolerant. Brown midrib varieties of forage sorghum and sorghum-sudan hybrids are available that have improved NDF digestibility and energy content. BMR indicates lower lignin content in the plants' cell walls. Lignin is the fibrous component of plants that animals cannot easily digest. Lodging can be a problem with BMR varieties, especially with forage sorghum, so adhere to suggested fertility seeding rates. With the incorporation of Dry Stalk genetics, the crop will generally dry down 8-10 hours quicker to help get it made.

Forage Sorghums: Can grow from 6 to 15 feet tall, drought tolerant and usually preferred for forage production because of higher yield potential. They can be grazed, hayed or harvested for green chop or silage. Forage sorghums tend to be adapted to well-drained soils with a pH of 5.5 or above while production is optimized if pH is maintained above 6.0. They should be planted at a rate of 7-10 lbs/ac and a seeding depth of 1 to 1.5 inches. In general, apply 50 pounds of nitrogen per acre after emergence followed by an extra 50 pounds of nitrogen per acre after harvest or intensive grazing. Phosphorus and potassium should be applied based on soil test recommendations. To reduce any chances of prussic acid, forage sorghums should be grazed when they reach 30 to 36 inches in height and do not graze closer than 8 inches. If hay or silage is to be produced, harvest the forage sorghum at the late boot to dough stage.

Sorghum - Sudangrass Hybrids: Sorghum - Sudangrass Hybrids are generally a multi cut or graze system. Yields are generally less than forage sorghums on a single cut but multiple cuts will have an advantage in yield. Sorghum sudangrass tend to be adapted to well-drained soils with a pH of 5.5 or above while production is optimized if pH is maintained above 6.0. They should be planted at a rate of 40-45 lbs/ac and a seeding depth of 1 to 1.5 inches. In general, apply 50 pounds of nitrogen per acre after emergence followed by an extra 50 pounds of nitrogen per acre after harvest or intensive grazing. Phosphorus and potassium should be applied based on soil test recommendations. To reduce any chances of prussic acid, sorghum- sudangrass should be grazed when they reach 30 to 36 inches in height and do not graze closer than 8 inches. If hay or silage is to be produced, harvest the sorghum- sudangrass at the late boot to early head stage. Sorghum-sudangrass hybrids should not be grazed until they reach a height of at least 24 to 30 inches. The first grazing can occur 45-50 days after emergence for Sorghum-sudangrasses. Do not graze closer than 8 inches.

Hybrid Sudangrass: Hybrid Sudangrass can be planted at a rate of 25 to 30 lb/ac at a depth of 0.5 to 1.0 inch. These grasses do not tolerate low pH and a minimum pH of 6.0 is required for optimum production. Sudangrass can be adapted from well to poorly drained soils. Apply 50 pounds of nitrogen per acre after emergence followed by an extra 50 pounds of nitrogen per acre after harvest or intensive grazing. Phosphorus and potassium should be applied based on soil test recommendations. Hybrid Sudangrass should not be grazed until they reach a height of at least 24 to 30 inches. The first grazing can occur 30-35 days after emergence for Hybrid Sudan grass. Do not graze closer than 8 inches.

Pearl Millet: Pearl Millet is sometimes preferred because it does not accumulate prussic acid. It is also better adapted to more acid soils with optimum production above a soil pH of 6.0. Apply 50 pounds of nitrogen per acre after emergence followed by an extra 50 pounds of nitrogen per acre after harvest or intensive grazing. Phosphorus and potassium should be applied according to soil test recommendations. Pearl millet should be planted at a rate of 25 to 30 pounds per acre in a firm bed and a seeding depth of 0.5 to 1.0 inch. Grazing should begin when pearl millet has reached a height of 18 to 24 inches. To allow regrowth, do not graze closer than 12 inches. Hay harvest should occur at the late boot to early head stage and a mower conditioner is recommended to crush the stems.

PRUSSIC ACID POTENTIALS

When grazing or greenchopping species with prussic acid potential this fall, follow these guidelines:

- Do not graze on nights when frost is likely. High levels of the toxic compounds are produced within hours after a frost.
- Immediately after frost, remove the animals until the grass has dried thoroughly. Generally, the forage will be safe to feed after drying five to six days.
- Do not graze wilted plants or plants with young tillers or new regrowth. If new shoots develop after a frost they will have high poisoning potential, sudangrass should not be grazed until the new growth is at least 18 to 20 inches (24 to 30 inches for sorghum-sudangrass).

Best management is to allow the final, killing freeze to kill the crop, and then wait five to six days before grazing. Other practical managements may be to harvest as hay or silage since. In most cases, adequate growth for safe grazing cannot be obtained after a later, killing freeze occurs.

Don't allow hungry or stressed animals to graze young growth of species with prussic acid potential.

Green-chopping the frost-damaged plants will lower the risk compared with grazing directly, because animals have less ability to selectively graze damaged tissue; however, the forage can still be toxic, so feed with great caution. Feed greenchopped forage within a few hours, and don't leave greenchopped forage in wagons or feed bunks overnight.

When making hay or silage from sorghum species this fall, consider the following:

- Frosted/frozen forage should be safe once baled as dry hay. The forage can be mowed any time after a frost. It is very rare for dry hay to contain toxic levels of prussic acid. If the hay was not properly cured, it should be tested for prussic acid content before feeding.
- Waiting five to seven days after a frost to chop frosted forage for silage will limit prussic acid risks greatly.

Delay feeding silage for eight weeks after ensiling. If the forage likely contained high HCN levels at time of chopping, hazardous levels of prussic acid might remain and the silage should be analyzed before feeding. Other common forages such as alfalfa, clovers and cool-season perennial grasses do NOT produce toxic compounds after a frost and can be fed safely. The only concern is a slightly higher potential for bloat when grazing legumes within a day or two after a killing frost.

SUMMER ANNUAL COMPARISON CHART

Variety Name	BMR/Gene	Stalk	Growth Habit	Maturity	Recovery After Cutting	Silage	Hay	Grazing	Seeding Rate lbs./acre
Forage Sorghum: Performs best in moderate to well drained soils with pH range of 5.5 - 7.0. Drought tolerance is high. Requires 1/3 less water than corn.									
SSA 171 BMR6 DS	Yes / 6	Dry	Upright	75 Day To Soft Dough	Fair	Excellent	Fair	No	7 - 11 lbs.
SSA 181 BMR6 DS	Yes / 6	Dry	Upright	85 Day To Soft Dough	Fair	Excellent	Fair	No	7 - 11 lbs.
SSA 191 BMR6 BD	Yes / 6	Juicy	Brachytic Dwarf	95 Day To Soft Dough	Fair	Excellent	Fair	No	7 - 11 lbs.
SSA Cow Vittles II	No	Juicy	Upright	100 Day To Soft Dough	Fair	Good	Fair	No	6 - 12 lbs.
Sorghum Sudan: Multiple cut system to fast regrowth. Yield is generally less than forage sorghum. Large stems make drying for hay difficult.									
SSA 251 BMR6 DS	Yes / 6	Juicy	Upright	55 Day To Boot	Very Good	Very Good	Very Good	Very Good	35 - 50 lbs.
SSA 252 BMR6	Yes / 6	Dry	Upright	55 Day To Boot	Very Good	Very Good	Very Good	Very Good	35 - 50 lbs.
SSA GreenGrazer	No	Juicy	Upright	65 Day To Boot	Good	Good	Good	Good	35 - 50 lbs.
Hybrid Sudan: Smaller leaves and finer stems, making drydown more efficient. Hybrids available that are slightly larger and higher yielding.									
SSA M31 BMR6 DS	Yes / 6	Dry	Upright	35 Day To Boot	Excellent	Excellent	Excellent	Excellent	25 - 30 lbs.
SSA M32 BMR6 DSBD	Yes / 6	Dry	Dwarf	50 - 65 Day To Boot	Excellent	Excellent	Excellent	Excellent	25 - 30 lbs.
Pearl Millet: Bushy type with high yield potential. Widely adapted. No prussic acid concerns. Forage produced is virtually all leaves.									
SSA Leafy PM	No	Juicy	Leafy	60 - 65 Day To Boot	Very Good	Excellent	Excellent	Good	15 - 25 lbs.
SSA Dwarf BMR PM	Yes	Juicy	Dwarf	60 - 65 Day To Boot	Very Good	Excellent	Excellent	Good	15 - 25 lbs.
German Millet	No	Juicy	Upright	50 - 55 Day To Boot	Fair	Good	Good	Good	20 - 25 lbs.

Variety Name	Grain Color	Days To Mid Bloom	Plant Height	Head Type	Anthracnose	Powdery Mildew	Seeding Rate lbs./acre
Grain Sorghum: Primary use is for feed produced from grain. Exceptional yield performance with wide area of adaptability. Popular for wildlife cover and food source.							
SGS 117	Red	55 Day	30 - 36"	Semi Open	Very Good	Good	10 lbs.
SGS 251	Red	55 Day	40 - 45"	Semi Closed	Good	Good	10 lbs.
SGS 255C	Cream	58 Day	38 - 45"	Semi Open	Good	Very Good	10 lbs.
SGS 425	Red	65 Day	40 - 45"	Semi Open	Very Good	Excellent	10 lbs.

KEY**SSA = SEEDWAY Summer Annuals****M = Multiple****DS = Dry Stalk BD = Brachytic Dwarf****SSA 181 BMR6 DS****85 Day • Forage Sorghum**

Male sterile hybrid, volunteer growth is not an issue provided there is adequate isolation from pollen fertile sorghums. Dry stalk gene improved harvestability timing. Significantly lower stem lignin concentration. Improved digestibility and palatability. Requires 1/3 less water than corn. Male sterile hybrid.

Seed at 7-11 lbs. per acre.

SSA COW VITTLES II**100 Day • Hybrid Forage Sorghum**

Cow Vittles II is a conventional hybrid forage sorghum with high yield potential. A dense lush leaf type with a large grain head. Cow Vittles II sets the standard for forage sorghums. Generally used South of I80.

Seed at 7-11 lbs. per acre.

SSA 252 BMR6**50-55 Day • Hybrid Sorghum - Sudangrass**

SSA 252 BMR6 produces some of the highest dry matter yields of any BMR and non-BMR hybrid sorghum-sudangrass commercially available with excellent nutritional quality and vigor. Highly digestible, increased drought tolerance and improved animal utilization due to reduced lignin. Excellent choice for grazing, hay, green chop and silage.

Seed at 35-50 lbs. per acre.

SSA M31 BMR6 DS**35-40 Leafy BMR 6 Hybrid Sudangrass**

SSA M31 BMR6 DS is a BMR 6 Hybrid Sudangrass. The BMR 6 gene added to a sudangrass hybrid adds the high quality to a plant that has fine stems and quick regrowth. This hybrid will have fast dry down so it can be used in areas that have trouble putting sorghum sudan up as dry hay. Seed at 25-30 lbs. per acre.

SSA 171 BMR6 DS**75 Day • Forage Sorghum**

Male sterile hybrid, volunteer growth is not an issue provided there is adequate isolation from pollen fertile sorghums. Significantly lower stem lignin concentration. Improved digestibility and palatability equals milk production of corn. Requires 1/3 less water than corn for the same production. Dry stalk gene improves harvest time.

Seed at 7-11 lbs. per acre.

SSA 191 BMR6 BD**95 Day • Brachytic Dwarf Forage Sorghum**

Dwarfing gene increases leaf to stem ratio and provides superior standability. Significantly lower stem lignin concentration. Improved digestibility and palatability. Equals milk production of corn. Grain producing hybrid.

Seed at 7-11 lbs. per acre.

SSA 251 BMR6 DS**90-95 Day • Dry Stalk Hybrid Sorghum-Sudan**

Produces high tillering, high quality forage with excellent early vigor. The high leaf-to-stem ratio equals high protein. Digestibility has been increased by 20% due to the BMR 6 trait. Dry stalk gene allows for more timely harvest and helps get the crop out of the field quickly. Typically used in a rotation grazing or 1-2 cutting systems allowing growers to produce the maximum amount of forage. Seed at 30-40 lbs. per acre.

SSA GREENGRAZER**63-65 Day • Hybrid Sorghum - Sudangrass**

Small seeded three way cross with thin stems that are highly palatable. Very fast regrowth after cutting. Possesses the Green Top trait, which allows for further extension of the plant. Planting at higher populations will result in a finer stemmed forage. Finer stems will allow the forage to dry faster for higher quality hay than is possible with thick stemmed types. Seed at 35-50 lbs. per acre.

SSA M32 BMR6 DSBD**50-65 Day BMR Dwarf Hybrid Sudangrass**

SSA M32 BMR6 DSBD is the first BMR-6, brachytic dwarf hybrid sudangrass to hit the market. The BMR-6 gene adds high digestibility to a plant that has very fine stems and tremendous regrowth. The brachytic dwarf trait adds a much tighter distance between internodes, allowing for a lower cutting/grazing height and better standability. The dry stalk trait allows for quick dry down, making this one of the most versatile forage products on the market. Seed at 25-30 lbs. per acre.

Early planting is NOT an option with sorghum and sorghum x sudan products. They must be planted in warm soils. May 20 is the absolute earliest after soils are warm. Also observe sorghum / sudan feed warnings to prevent Prussic Acid Poisoning.

- (1) Avoid larger nitrogen applications prior to expected drought period.
- (2) 2, 4-D increases Prussic Acid for several weeks after application.
- (3) Do not harvest drought damaged plants within 4 days of good rain.
- (4) Allow at least 7 days killing frost before chopping.
- (5) Cut at higher stubble height, nitrates accumulate in the lower stalks.
- (6) Wait 6 weeks after ensiling to allow Prussic Acid to dissipate.

GRAIN SORGHUM

Uses:

Feed: Grain sorghum is used primarily for feed produced from the grain although grain sorghum can be used for silage if necessary. It is not recommended for grazing.

Wildlife: Grain sorghum is a favorite food source for upland game birds, migratory birds and other non game birds.

Description: Grain sorghum originated in northeast Africa. It is a coarse stemmed warm season annual grass that can grow 4 feet tall and typically has large seed heads. The leaves are similar to corn but are shorter and sometimes wider. Seed is produced on a panicle which is compact to semi-open and erect. There are approximately 15,000 seeds per pound.

Adaptation and Distribution: Grain sorghum is adapted throughout the United States and southern Canada. Grain sorghum performs best in moderate to well drained soils with a soil pH between 5.5 and 7.5. Drought tolerance is high with the water requirement being approximately 1/3 less than corn.

Establishment: Planting rates vary from 4 to 20 pounds per acre with the lower seeding rates based on average annual rainfall for dryland conditions and the higher seeding rates for irrigated acreage. Planting dates are usually from May to July but can be earlier in the deep South. Soil temperature needs to be a minimum of 60 degrees Fahrenheit for germination. Seeding depth should be 1 inch.

Management: For maximum grain production, moderate to high fertility is suggested although grain sorghum will grow on lower fertility soils with better results than corn. Fertilize using soil test recommendations. If a soil test is not available, fertilize at similar rates to grain corn. Grain sorghum can produce moderate amounts of silage and should be harvested when seed is in the milk to hard dough stage which is the proper moisture level for ensiling. Avoid possible nitrate and prussic acid poisoning by not applying heavy rates of nitrogen prior to expected drought periods; do not harvest drought damaged plants within 4 days following a good rain; do not cut within 7 days of a killing frost; cut at a higher stubble height if under stress since nitrates accumulate in the lower stalk, and delay feeding silage 6 to 8 weeks after ensiling to allow prussic acid to dissipate. Never feed forage from grain sorghum to horses.

SGS 117 52-55 Day • Hybrid Grain Sorghum

Widely adapted from north to south across soil types and environmental conditions. Good emergence and early vigor help SGS 117 get off to a fast start, while exceptional stress tolerance allows for dependable yield performance under adverse conditions. If an early maturity hybrid with high yield potential is needed, SGS 117 is the variety to ask for. Red colored grain. Seed at 8-12 lbs./acre.

SGS 251 55 Day • Grain Sorghum

SGS 251 is widely adaptable north to south across various soil types and conditions of the medium-early maturity zones. Exceptional stress tolerance allows for dependable yield performance under adverse conditions. Good emergence score and early vigor help SGS 251 get a fast start in spring. Red grain color. Seed at 8-12 lbs./acre.

SGS 255C 54-58 Day • Grain Sorghum

SGS 255C is widely adaptable north to south across extraneous soil types and conditions of the medium-early maturity zones. Exceptional stress tolerance allows for dependable yield performance under adverse conditions. Good emergence score and early vigor help SGS 255C get a fast start in spring. Cream colored grain. Very popular for wildlife applications. Seed at 8-12 lbs./acre.

SGS 425 62-65 Day • Hybrid Grain Sorghum

SGS 425 is widely adapted from north to south across soil types and environmental conditions. Good emergence and early vigor help SGS 425 get off to a fast start, while unmatched stress tolerance allows for dependable yield performance under adverse conditions. If you need a medium maturity hybrid with high yield potential, SGS 425 is the variety to ask for. Red colored grain. Seed at 8-12 lbs./acre.

PEARL MILLET

Uses:

Forage: Pearl millet is used primarily for grazing, green chop and silage.

Description: Pearl millet is an erect, annual grass that can grow over 8 feet tall. Seed is produced on a thick cylindrical spike. Leaves are long and pointed with finely serrated margins. Pearl millet does not produce prussic acid, however; nitrate poisoning can be a concern under certain conditions. There are approximately 60,000 seeds per pound.

Adaptation and Distribution: Pearl millet is adapted throughout the United States and southern Canada but it is grown primarily in the South due to its tolerance to pathogens, acidic soils and high humidity. Pearl millet performs best in moderate to well drained soils with a soil pH between 5.5 and 7.5. Drought tolerance is high.

Establishment: Planting rates vary from 15 to 25 pounds per acre depending on whether the seed is broadcast or planted in rows. Planting dates are usually from May to July but can be earlier in the deep South. Soil temperature needs to be a minimum of 65 degrees Fahrenheit for germination. Seeding depth should be 1/2 inch.

Management: For optimum forage production, moderate fertility is suggested although pearl millet will grow on lower fertility soils. Fertilize using soil test recommendations. If a soil test is not available, fertilize at similar rates to other annual grass crops. Grazing pearl millet should begin when the plants are between 18 to 30 inches tall and grazed down to 8 inches within 10 days. After grazing, the residue needs to be clipped to a minimum uniform height of 8 inches to ensure high quality forage production for the next grazing period in 3 to 4 weeks. Do not graze after a killing frost until the plants turn completely brown (7 days). If the plants are frost damaged, wait until the regrowth is at least 18 inches high before grazing again. Green chop harvesting should begin when the pearl millet is 18 inches tall and should be completed before the plants head out. Silage should be harvested when the plants are 36 to 48 inches tall or in the boot to early head stage. At this stage, moisture is usually high and the plants should be allowed to partially dry in the field before ensiling. Avoid possible nitrate poisoning by avoiding large applications of nitrogen prior to expected drought periods; do not harvest drought damaged plants within 4 days following a good rain; do not cut or graze within 7 days of a killing frost; cut at a higher stubble height if under stress since nitrates accumulate in the lower stalk. If you suspect that there are high nitrate levels in your forage or silage, have it tested by a forage testing laboratory.



SSA Leafy Pearl Millet

63 Day

SSA Leafy Pearl Millet is a bushy type hybrid pearl millet with high yield potential which is achieved very quickly being only 63 days to the boot stage. It has a high level of tolerance to many pathogens and high humidity, but cannot tolerate standing surface water. Can be grown on as little as 16 inches of water, however, greater tonnage will be produced with greater water availability. The bushy type plant stature means that the forage produced is virtually all leaves. This greater leaf mass gives SSA Leafy Pearl Millet high crude protein concentrations and high TDN values. Seed at 20-25 lbs./acre.

SSA Dwarf BMR Pearl Millet

60-65 Day

SSA Dwarf BMR Pearl Millet is a new concept in hybrid pearl millets with BMR and Dwarfing gene technology. The BMR gene reduces plant lignin versus conventional pearl millets resulting in a highly digestible forage with improved nutritional quality for superior animal performance. The Dwarfing gene increases the leaf to stem ratio for higher forage quality, improves standability in the field and allows heavier grazing pressure with its extensive tillering. With high yield and quality potential, an excellent disease resistance package, drought stress tolerance and rapid growth, ideal for the grower who wants the flexibility of grazing, hay or silage. Seed at 20-25 lbs./acre.

FORAGE SEED INFORMATION CHART

VARIETY	APPROX. SEEDS/LB	LBS/BU	PLANTING RATE (LBS/ACRE)	PLANTING RATE IN MIX (LBS/ACRE)	SEEDING DEPTH (INCHES)	SUGGESTED PLANTING DATES	EMERGENCE TIME (DAYS)	PRIMARY USE	LIFE CYCLE
Alfalfa	227,000	60	15 - 20	8 - 10	1/4 - 1/2	March-May, August-September	7	Hay, Silage, Pasture	Perennial
Barley	14,000	48	90 - 120	60 - 90	1 - 2	March-April, August-October	7	Pasture	Annual
Bermudagrass (Hulled)	2,071,000	40	5 - 10	-	1/8	April-June, August-September	21	Hay, Pasture	Perennial
Birdsfoot Trefoil	370,000	60	8 - 10	4 - 8	1/4	February-May, August-September	7	Pasture	Perennial
Bluegrass, Kentucky (Forage)	2,177,000	14	10 - 15	4 - 10	1/4	February-May, August-September	28	Pasture	Perennial
Bluestem, Big	165,000	22	5 - 12 PLS	-	1/4 - 1/2	May-June	28	Hay, Pasture	Perennial
Bluestem, Little	237,000	-	5 - 8 PLS	-	1/4 - 1/2	May-June	28	Pasture	Perennial
Brome, Meadow	93,000	-	12 - 20	4 - 8	1/4 - 1/2	March-May, August-September	14	Hay, Pasture	Perennial
Brome, Smooth	138,000	14	15 - 20	3 - 10	1/4 - 1/2	March-May, August-September	14	Hay, Pasture	Perennial
Buckwheat	15,000	52	40 - 55	-	1/2 - 1	June-July	7	Hay, Grain, Wildlife	Annual
Buffalograss	49,000	-	40 - 80 PLS	-	1/2	May-June	14 - 21	Pasture	Perennial
Chicory	426,000	-	4 - 5	2 - 3	1/8 - 1/4	April-May-August-September	7 - 21	Pasture, Wildlife	Perennial
Clover, Alsike	728,000	60	7 - 8	1 - 3	1/4 - 1/2	February-May, August-October	7	Hay, Pasture	Perennial
Clover, Arrowleaf	400,000	60	5 - 10	-	1/8 - 1/2	August-October	7	Hay, Pasture	Annual
Clover, Berseem	207,000	60	10 - 20	-	1/4 - 1/2	May-June, August-October	7	Hay, Pasture	Annual
Clover, Crimson	150,000	60	20 - 30	-	1/4 - 1/2	August-October	7	Hay, Pasture	Annual
Clover, Kura	227,000	60	10	4 - 6	1/4 - 1/2	April-May, August	7	Hay, Pasture	Perennial
Clover, Landino White	768,000	60	4 - 6	2 - 4	1/8 - 1/4	February-May, August-October	7 - 10	Hay, Pasture	Perennial
Clover, Mammoth Red	272,000	60	8 - 12	4 - 8	1/4 - 1/2	February-May, August-October	7	Hay, Silage, Pasture	Perennial
Clover, Medium Red	272,000	60	8 - 12	4 - 8	1/4 - 1/2	February-May, August-October	7	Hay, Silage, Pasture	Perennial
Clover, New Zealand White	768,000	60	4 - 6	2 - 4	1/8 - 1/4	February-May, August-October	7 - 10	Pasture	Perennial
Clover, White Dutch	768,000	60	6 - 8	2 - 4	1/8 - 1/4	February-May, August-October	7 - 10	Pasture	Perennial
Crownvetch	138,000	60	20 - 40	5 - 10	1/2	March-May, August-September	14	Erosion Control	Perennial
Dropseed, Prairie	224,000	-	5 PLS	-	1/2	March-June	-	Pasture	Perennial
Dropseed, Sand	5,300,000	-	2 - 4 PLS	-	1/2	March-June	-	Pasture	Perennial
Eastern Gamagrass	724,000	-	8 - 10 PLS	-	1/2	May-June	14	Hay, Pasture	Perennial
Fescue, Hard	592,000	-	5 - 10	-	1/4 - 1/2	February-May, August-September	14	Erosion Control	Perennial
Fescue, Meadow	227,000	19	8 - 12 PLS	-	1/4 - 1/2	March-May, August-September	14	Pasture	Perennial
Fescue, Tall	227,000	25	10 - 30	-	1/4 - 1/2	March-May, August-September	14	Hay, Pasture, Erosion Control	Perennial
Festulolium	227,000	-	25 - 45	8 - 20	1/4	March-May, August-September	14	Hay, Pasture	Perennial
Grama, Blue	724,000	-	4 - 10	-	1/4 - 1/2	May-July	14	Pasture	Perennial
Grama, Sideoats	160,000	-	6 - 12	-	1/2	May-June	28	Pasture	Perennial
Hairy Vetch	16,000	60	20 - 25	-	1	August-October	14	Hay, Pasture	Annual
Indiangrass	200,000	10	6 - 12	-	1/2	May-June	28	Pasture	Perennial
Kales	200,000	-	3.5 - 4	2 - 3	1/2	May-June	7	Pasture	Annual
Lespedeza, Korean (Hulled)	238,000	25	25 - 35	-	1/4 - 1/2	March-April	14	Hay, Pasture, Erosion Control	Annual
Lespedeza, Striate (Kobe)	200,000	25	25 - 35	-	1/4 - 1/2	March-April	14	Hay, Pasture, Erosion Control	Annual
Millet, Browntop	142,000	50	10 - 30	-	1/2 - 1	May-July	10	Hay, Pasture	Annual

VARIETY	APPROX. SEEDS/LB	LBS/BU	PLANTING RATE (LBS/ACRE)	PLANTING RATE IN MIX (LBS/ACRE)	SEEDING DEPTH (INCHES)	SUGGESTED PLANTING DATES	EMERGENCE TIME (DAYS)	PRIMARY USE	LIFE CYCLE
Millet, Foxtail (German)	220,000	50	20 - 25	-	1	May-July	10	Hay	Annual
Millet, Japanese	143,000	35	15 - 30	8 - 12	1	April-July	10	Hay, Wildlife, Erosion Control	Annual
Millet, Pearl	60,000	52	15 - 25	-	1/2	May-July	7	Pasture, Silage	Annual
Millet, Proso	80,000	56	20 - 30	-	1	May-July	10	Grain, Wildlife	Annual
Oats, Spring, Fall	16,000	32	64 - 120	60 - 90	1 - 2	March-April, August-September	10	Hay, Pasture	Annual
Orchardgrass	416,000	14	10 - 20	3 - 6	1/4 - 1/2	March-May, August-September	18	Hay, Pasture	Perennial
Peas, Austrian Winter	2,000	60	30 - 40	20 - 30	1/2 - 1	March-April, September-October	7	Hay, Pasture, Silage	Annual
Peas, Cow	3,000	60	75 - 120	-	1/4 - 1/2	May-June	8	Hay, Pasture, Silage	Annual
Rape	145,000	50	5 - 8	4 - 6	1/2	April-August	7	Pasture	Annual
Red Top	4,990,000	14	4 - 5	1 - 2	1/4	March-May, August-September	10	Pasture, Erosion Control	Perennial
Reed Canarygrass	480,000	47	8 - 10	4 - 8	1/4 - 1/2	March-May, August-September	21	Hay, Pasture	Perennial
Rye, Grain	18,000	56	90 - 120	60 - 90	1 - 2	March-April, August-September	7	Hay, Pasture	Annual
Ryegrass, Annual	227,000	24	30 - 40	6 - 10	1/4 - 1/2	February-May, August-September	14	Hay, Pasture, Erosion Control	Annual
Ryegrass, Perennial	227,000	24	30 - 40	6 - 10	1/4 - 1/2	February-May, August-September	14	Hay, Pasture	Perennial
Sainfoin	30,000	55	30 - 45	15	1/2 - 3/4	March-April	10	Hay, Pasture, Wildlife	Perennial
Sorghum, Forage	17,000	56	15 - 50	-	1	May-July	10	Silage	Annual
Sorghum, Forage BMR	17,000	56	6 - 8	-	1	May-July	10	Silage	Annual
Sorghum, Grain	15,000	50	4 - 20	-	1	May-July	10	Grain, Wildlife	Annual
Sorghum-Sudangrass	21,000	56	20 - 40	-	1	May-July	10	Hay, Pasture	Annual
Sorghum-Sudangrass BMR	21,000	56	20 - 40	-	1	May-July	10	Hay, Pasture	Annual
Sudangrass	43,000	40	20 - 45	-	1/2 - 1	May-July	10	Hay, Pasture	Annual
Sunflowers, Peredovik	7,000	32	8 - 40	-	1	May-July	7	Wildlife	Annual
Swedes	200,000	-	2 - 3	-	1/4 - 1/2	May-June	7	Pasture	Annual
Sweetclover, White Blossom	259,000	60	6 - 15	3 - 8	1/4 - 1/2	February-May, August-October	7	Pasture	Biennial
Sweetclover, Yellow Blossom	259,000	60	6 - 15	3 - 8	1/4 - 1/2	February-May, August-October	7	Pasture	Biennial
Switchgrass	389,000	55	4 - 8 PLS	-	1/2	April-May	21	Hay, Pasture	Perennial
Teff	1,300,000	-	4-6 raw / 8-12 coated	-	1/8 - 1/4	May-July	3 - 6	Hay	Annual
Timothy	1,152,000	45	6 - 12	2 - 6	1/4 - 1/2	March-May, August-September	10	Hay, Pasture	Perennial
Triticale	15,000	48	90 - 120	60 - 90	1 - 2	March-April, August-October	7	Hay, Pasture	Annual
Turnips	220,000	55	2 - 8	1 - 2	1/2	April-August	7	Pasture	Annual
Weeping Lovegrass	1,482,320	60	3 - 5	1 - 2	1/2	May-June	7	Hay, Pasture	Perennial
Wheat	11,000	60	60 - 120	60 - 90	1 - 2	March-April, August-October	7	Pasture	Annual
Wheatgrass, Crested	175,000	22	10 - 12 PLS	-	1/2	March-June	10 - 14	Pasture	Perennial
Wheatgrass, Intermediate	88,000	-	12 - 18 PLS	-	1/2	March-June	10 - 14	Pasture	Perennial
Wheatgrass, Pubescent	90,000	-	12 - 18 PLS	-	1/2	March-June	10 - 14	Pasture	Perennial
Wheatgrass, Slender	160,000	-	10 - 12 PLS	-	1/2	March-June	10 - 14	Pasture	Perennial
Wheatgrass, Tall	79,000	-	15 - 20 PLS	-	1/2	March-June	10 - 14	Pasture	Perennial
Wheatgrass, Western	110,000	-	8 - 15 PLS	-	1/2	March-June	10 - 14	Pasture	Perennial

SEEDWAY has developed a progressive cover crop program to benefit growers by providing seed of individual species and mixtures that are high quality, professionally tested, and legally tagged. These mixtures of grass and legume species provide the potential for increased crop yields, disruption of disease & pest cycles, reduced soil erosion, increased water infiltration and nutrient recycling. In addition to the soil benefits that cover crops provide, many species provide opportunities for grazing, haying, or ensiling a nutritious forage crop.

COVER CROP BENEFITS

- **Weed Control** – Seeding at higher rates or selecting species with dense leaf canopies will help suppress weeds.
- **Reduce Soil Compaction** – Certain species create pilot holes to promote soil aeration, water infiltration and better root penetration while others simply shatter the soil layers with their high density root system.
- **Nutrient Mining** – Some cover crops can capture up to 200 pounds of nitrogen before winterkill occurs.
- **Nematode Control** – Natural bio fumigants are produced by a few plant species that can decrease nematode populations.
- **Organic Matter** – Increase soil organic matter using species that produce a large amount of biomass that can be incorporated into the soil.
- **Erosion Control** – Selecting species with quick germination and excellent ground cover will help eliminate wind and water erosion issues.



COVER CROP HELP DESK

covercrops@seedway.com

Email SEEDWAY with questions on products, utilization, availability, pricing and more. A timely response will be given to your inquiry.

COVER CROP PRODUCTS

**** SEE PAGE 113 FOR COVER CROP
RECOMMENDATIONS CHART ****

DAIKON RADISH

Eco-Till radish is a true variety that ensures consistency and produces more root mass than turnips or mustards. This extra large root system allows Eco-Till to pull nitrogen and other nutrients from deep within the soil and bring them back to the surface. Upon decomposition, the nitrogen and other nutrients become available to the next cash crop. Eco-Till radish reduces soil compaction and increases soil organic matter.

ANNUAL RYEGRASS

Fria is a late maturing, widely adapted diploid annual ryegrass with exceptional cold tolerance and improved disease resistance. As a cover crop, Fria can break up natural and manmade hardpans with its deep root penetration when planted in a continuous no-till cropping rotation. Its fibrous root system provides the ability to capture and keep nitrogen and phosphorus in the soil profile following manure applications preventing nutrient runoff. Large amounts of biomass can be returned to the soil to improve organic matter, or can be utilized as a fall and spring forage source for livestock.

HAIRY VETCH

Purple Bounty is a winter hardy, early maturing hairy vetch variety developed for high nitrogen fixation, increased biomass for a thicker mulch and earlier flowering for more flexibility in planting succeeding crops. Hairy vetch forms ground cover slowly in the fall, but root development continues throughout the winter with substantial biomass production in the spring. For best results, Purple Bounty should be in full bloom to allow for peak nitrogen contribution and to mow, roll or spray for maximum vetch kill. Spring oats or winter grains can also be planted with Purple Bounty to act as a protective cover for improved winter survival and increased erosion control. Purple Bounty is an excellent cover crop for nitrogen fixation, erosion control, biomass, and weed suppression.

PHACELIA

Phacelia is native to the United States but was adopted and improved by Europeans for use as a cover crop. Phacelia is quick to establish and will winter kill at 18° F. Phacelia is an excellent source of high quality nectar and pollen which increases the population and diversity of beneficial insects. Phacelia will begin to flower 6-8 weeks after emergence and will continue to flower for 4-6 weeks. Phacelia is comparable to buckwheat in many ways, but is more tolerant to cold and drought. Phacelia can also be used for forage, a green manure crop, nematode control and a nitrogen trap crop.

CRIMSON CLOVER

Crimson clover is an annual clover that has erect stems, grows more quickly and has larger seeds than the more commonly used red clover. Crimson clover's primary advantages are rapid growth during cool weather and shade tolerance. Crimson clover can be planted early in the spring or fall for weed control, overseeded in corn at second cultivation or in soybeans at leaf drop. Because of its shade tolerance, crimson clover is also effective as a living ground cover in orchards. Crimson clover has been used effectively to suppress weeds when planted in the early fall, following a short-season crop such as potatoes, snap beans, vegetables or following winter wheat. Planting with a grass or cereal gives additional weed control in these situations.



DAIKON RADISH^A



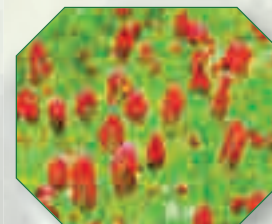
ANNUAL RYEGRASS^A



HAIRY VETCH^A



PHACELIA^A



CRIMSON CLOVER^A

COVER CROPS & MIXTURES

COVER CROP PRODUCTS

SURVIVOR WINTER PEA



Survivor Winter Pea has been bred for advanced cold tolerance, providing more confidence and consistent results on the farm. It also provides greater biomass production which translates into higher Nitrogen production. This cool season annual is capable of producing 200 pounds of Nitrogen per acre. Peas are one of the most moisture efficient crops at producing biomass. Their root system improves water infiltration and the holding capacity of the soil.

TRITICALE

Triticale is a true breeding small forage grain developed initially from the hybridization of wheat and rye. The name 'triticale' is derived from the combined scientific names of the two crop species wheat and rye. The versatility that triticale offers as forage, straw and cover crop, adds to the economic viability that sustains the interest in this crop.

OATS

Oats are very versatile as they can be planted during various times of the season and used as an excellent cover and forage crop. Oats work well alone, but especially well in mixes with radishes, turnips, berseem clover, crimson clover and Austrian winter peas. Oats perform well for erosion control and are very good nutrient scavengers. Oats (and mixes with radishes or turnips) work very well for manure nutrient management.

BUCKWHEAT

Buckwheat, when used as a cover crop, can reduce both the emergence and growth of weeds, thereby providing an easy and economical alternative to herbicides. Buckwheat is a short-duration, broad-leaved, annual species which provides effective weed suppression due to its rapid early growth that establishes a canopy faster than many weeds. Residue breaks down easily.

SUNN HEMP

Sunn Hemp is typically utilized as a green manure crop due to its nitrogen accumulation along with high fiber content. The large amount of biomass that is produced can be used as a nontoxic forage source for animals. Sunn hemp has a vigorous growth habit and is somewhat drought tolerant giving it the opportunity to thrive under various soil and environmental situations. Its value as a cover crop is due to its biomass production, N accumulation, reduced pest and pathogen infestations and weed suppression. Residue can be very fibrous.



SURVIVOR WINTER PEA^



TRITICALE^



OATS^



BUCKWHEAT^



SUNN HEMP^

COVER CROP MIXTURES

SW-PR 25 lbs. per acre

80% Survivor Winter Pea • 20% Eco-Till™ Radish

- Rapid establishment to prevent wind and water erosion.
- Fixes atmospheric nitrogen to increase soil nitrogen levels.
- Improves soil permeability for increased air and water penetration, reduces soil compaction, and increases root development potential.
- Recycles nutrients that would have been lost to leaching or runoff.
- Potential forage for fall grazing.



SW-PR^

SW-RYR 25 lbs. per acre

80% Fria Annual Ryegrass • 20% Eco-Till™ Radish

- Improves soil permeability for increased air and water penetration, reduces soil compaction, and increases root development potential.
- Recycles nutrients that would have been lost to leaching or runoff.
- Holds surface soil in place.
- Improves soil tilth which can benefit any crop that follows.
- Potential forage production for fall grazing.



SW-RYR^

SW-RYC 25 lbs. per acre

60% Fria Annual Ryegrass • 40% Crimson Clover

- Rapid establishment to prevent wind and water erosion.
- Improves soil permeability for increased air and water penetration, reduces soil compaction and increases root development potential.
- Fixes atmospheric nitrogen to increase soil nitrogen levels.
- Potential forage for fall and spring grazing, spring silage or hay.



SW-RYC^

*Cover crop mixture varieties may be substituted subject to availability.

COVER CROP MIXTURES

SW-TCR 50 lbs. per acre

80% Triticale • 10% Crimson Clover • 10% Eco-Till™ Radish

- Rapid establishment to prevent wind and water erosion.
- Recycles nutrients that would have been lost to leaching or runoff.
- Fixes atmospheric nitrogen to increase soil nitrogen levels.
- Improves soil permeability for increased air and water penetration, reduces soil compaction and increases root development potential.
- Best used prior to corn, wheat or other crops requiring significant nitrogen inputs.
- Potential forage for fall and spring grazing, spring silage or hay.

SW-POR 50 lbs. per acre

50% Survivor Winter Peas • 40% Jerry Oats • 10% Eco-Till™ Radish

- Rapid establishment to prevent wind and water erosion.
- Improves soil permeability for increased air and water penetration, reduces soil compaction, and increases root development potential.
- Recycles nutrients that would have been lost to leaching or runoff.
- Fixes atmospheric nitrogen to increase soil nitrogen levels.
- Potential forage for fall and spring grazing, spring silage or hay.

SW-TRY 100 lbs. per acre

80% Triticale • 20% Fria Annual Ryegrass

- All grass mix.
- Excellent forage for fall and spring grazing.
- Improves soil tilth which can benefit any crop that follows.
- Rapid establishment to prevent wind and water erosion.



SW-TCR^



SW-POR^



SW-TRY^

***Cover crop mixture varieties may be substituted subject to availability.**

COVER CROP PRODUCTS

PURPLE BOUNTY Hairy Vetch

Early maturing, winter-hardy, cover crop capable of fixing up to 50% of subsequent crop's nitrogen needs. Increased biomass, thicker mulch, earlier flowering, flexibility in planting succeeding crop. Fall planted. Seed at 20-25 lbs per acre.

Plant with Eco-Till™ radish for a two-phase approach to soil improvement and nitrogen fixation.

ECO-TILL™ Radish

A true registered variety with superior deep penetrating tap root can reach up to 24" or more. Reduces soil compaction. Builds organic matter. Improves nutrient recycling. Enhances soil tilth with excellent weed suppression. Specifically developed for fall/winter cover crop application. Seed at 2-10 lbs per acre.



NEMATODE-RESISTANT OPTIONS

NEMATODE-RESISTANT OIL RADISH

Beyond sugarbeet cyst nematodes, multi-resistant Oil radish varieties like CONTROL and CONCORDE also reduce other nematodes as well as many crop rotation diseases. That's why multi-resistant Oil Radish varieties make ideal cover crops for healthy beet, potato and vegetable crop rotations.

CONTROL Nematode-Resistant Oil Radish

Officially tested resistance against *Meloidogyne chitwoodi* (up to 99%) and resistance against BCN up to 90%. Control radish can decrease CRKN up to 99%. Fast early development, good weed suppression. Seed at 25 lbs per acre.

CONCORDE Nematode-Resistant Oil Radish

Fast, early development with low flowering tendencies makes Concorde ideal for later plantings. Reduces BCN up to 90%. Concorde radish can decrease CRKN up to 90%. Seed at 25 lbs per acre.

NEMATODE-RESISTANT WHITE MUSTARD

The planting period for MASTER MUSTARD begins later than that of Oil Radish varieties due to the flowering tendency of Master. For the late planting dates in mid-September, vigorous and fast early development is the most important selection criterion, which is precisely why MASTER was developed.

MASTER MUSTARD Nematode-Resistant White Mustard

Fast growing. Delayed flowering for earlier plantings. Rapid maturity for later plantings. Use when bio-mass considerations are most important to your operation. Reduces BCN up to 80%. Reduces CRKN up to 80%. Seed at 70 lbs per acre.

NEMATODE-RESISTANT BLACK OAT

Pratex Black oats, *Avena strigosa*, offer a wide planting window, giving you season-long flexibility as a cover crop. Not frost tolerant, so avoid later plantings approaching normal frost dates.

PRATEX Nematode-Resistant Black Oat

Effectively reduces Root Lesion and Stubby Root nematodes. Performs well in all soil types. Good biomass producer that can be used for grazing livestock. Rapid development makes for ideal weed suppression. Seed at 70-90 lbs per acre.



RECOMMENDATIONS FOR A SPECIFIC USE

For Specific Purpose	SW-PR	SW-POR	SW-TCR	SW-RyR	SW-RyC	SW-TRY	Daikon Radish	Brassicas	Buckwheat	Winter Peas	Cereal Rye	Annual Ryegrass	Oats	Triticale	Crimson Clover	Hairy Vetch	Phacelia	Sunn Hemp
Organic Matter	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
N Fixation	X	X	X		X					X					X	X	X	X
Nutrient Recapture	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Requires No Herbicide To Kill	X	X					X	X		X						X		X
Reduce Soil Compaction	X	X	X	X	X	X	X	X				X				X		X
Quick Forage/Graze	X	X	X	X	X	X	X	X			X	X	X	X	X			
Droughty Soils									X									X
Hay Crop				X		X					X		X	X	X			
Weed Control	X	X	X	X	X	X	X	X	X		X			X		X		X
Enhance No-Till		X	X	X	X	X	X	X			X	X	X	X		X		
Prevent Soil Erosion	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Tolerate Wet Soils			X	X							X	X	X	X	X			
Cold Tolerant			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Nurse Crop									X		X		X	X				
Broadcast Seeding		X	X	X	X	X	X	X			X	X	X	X	X	X		X
Nematode Control	X	X	X	X			X	X									X	
Seeding Rate Alone	25#/A	50#/A	50#/A	25#/A	25#/A	100#/A	8-15#/A	2-8#/A	50-60#/A	40-50#/A	90-120#/A	30-40#/A	64-120#/A	90-120#/A	20-30#/A	20-30#/A	7-18#/A	30-50#/A
Seeding Rate In Mix							2-7#/A	2-6#/A	5-10#/A	20-30#/A	60-90#/A	15-20#/A	20-90#/A	40-90#/A	5-10#/A	10#/A	5-9#/A	10-20#/A
Seeding Depth	1/4" - 1/2"	1/4" - 1/2"	1/4" - 1/2"	1/4" - 1/2"	1/4" - 1/2"	1/4" - 1/2"	1/4" - 1/2"	1/4" - 1/2"	1/2" - 1"	1/2" - 1"	1" - 2"	1/4" - 1/2"	1" - 2"	1" - 2"	1/4" - 1/2"	1"	1/4"	1/2"

POLLINATOR MIXES

Honey bees and other beneficial pollinators are responsible for the pollination of our crops and vegetables. With the decline in population of pollinators, it is our responsibility to help provide the habitat needed to ensure that pollinators succeed. SEEDWAY, LLC has three pollinator mixtures available to help provide that beneficial habitat.

SW ANNUAL POLLINATOR MIX Annual Pollinator Mix

SW Annual Pollinator Mix is formulated to be a beneficial pollinator mix, but an excellent cover crop mix that will build the soil with nitrogen and organic matter. Since the mix is annual, timing is important for proper planting time and should be sown early enough to have bloom for the pollinator species. Spring planting or early fall is ideal. Seed at 25-30 lbs. per acre.



Monarch Butterfly Mix



Eastern Pollinator Mix^



EASTERN POLLINATOR MIX Annual/Perennial Pollinator Mix

Formulated for the eastern United States and southeast Canada where pollinator conservation is desired. Best times to plant are spring, early summer, and fall. Seed at 11-22 lbs. per acre.

MONARCH BUTTERFLY MIX Annual/Perennial Pollinator Mix

This mixture is composed of nectar producing flowers for adult butterflies as well as milkweed which will provide egg-laying sites and food for monarch caterpillars. Plant in spring, early summer, and fall. Seed at 11-22 lbs. per acre.

THE NUTRIENT SCORECARD™

The difference between a dairy operation and a smarter dairy farm operation is often the ability to collect data, analyze it, and then act on insights. CHR Hansen has the tools to help you get the most out of data analysis so you can improve starch and fiber digestion, minimize forage loss, and increase bottom line profitability. We call it “The Nutrient Scorecard™.” This program gives farmers a scientific scorecard summary of the status of their silage and their herds nutritional performance, along with recommendations for improving milk production and herd digestion. With The Nutrient Scorecard™ you will know the score and can identify specific problems. It gives you the data and insights you need to make measurable improvements in your operations.

*A PROGRAM THAT
PROTECTS YOUR
PROFITS*



ASK US ABOUT OUR INOCULANT QUICK TIPS !



Biomax®

Biomax® is a versatile inoculant to enhance fermentation and reduce spoilage organisms. Contains the well-proven *Lactobacillus plantarum* CH6072 from our Biomax® and SiloSolve® brands, and features enhanced acidification from *Lactobacillus plantarum* LSI. In addition we have included *Pediococcus pentosaceus* P6 to speed the fermentation process.

*Available in a 500g canister (500tt)

Benefits

- Improves fermentation
- Performs exceptionally well in corn silage
- Inhibits a range of yeasts and molds

Crops

- Corn Silage
- HMSC/ HMEC
- Earlage
- Snaplage

SiloSolve® MC

Microbial Control

Clostridia grow in wet silage when there is a lack of oxygen. Growth of clostridia leads to breakdown of protein and butyric-acid production. Silage with clostridia has a strong butyric-acid smell and elevated pH, which can reduce palatability. SILOSOLVE® MC contains three strains of lactic-acid bacteria. One patented strain reduces undesirable micro-organisms such as clostridia. The others improve overall fermentation.

*Available in a 200g canister (100tt) or 1000g canister (500tt)

Benefits

- Reduced clostridial fermentation
- Improved dry matter recovery
- Improved fermentation and digestibility
- Reduced ammonia and protein degradation
- Improved palatability

Crops

- Haylage
- Small Grain Silage
- Corn Silage

SiloSolve® AS

Aerobic Stability

Most farmers experience heating of silage largely due to growth of yeast and mold. Good management, including proper compaction, reduces the heat. However, some crops, such as corn, heat more often than other crops. Yeasts & molds are fungi that grow well in the presence of oxygen. Yeasts initiate the heating of silage and molds usually follow. Certain molds produce harmful mycotoxins. Mycotoxins may compromise production and health of animals.

*Available in a 200g canister (100tt) or 1000g canister (500tt)

Benefits

- Reduced heating and dry matter loss
- Improved silage stability
- Reduced growth of yeast and mold
- Improved silage quality

Crops

- Haylage
- Corn Silage
- HMSC/ HMEC
- Earlage
- Snaplage

SiloSolve® FC

Fungal Control

Heating of silage largely due to the growth of yeast and mold is problematic for feed out. Certain molds produce harmful mycotoxins which may compromise production & health of animals. Another challenge could be feed shortage, forcing farmers to initiate feed out well in advance of the optimum 90 days of fermentation. This is problematic as it will not allow the silage to reach a stable stage. The risk of heating & loss of valuable nutrients may jeopardize milk production & could lead to a severe economic impact.

*Available in a 200g canister (100tt) or 1000g canister (500tt)

Benefits

- Excellent fermentation and aerobic stability obtained even at early feed out
- Fast growing and competitive lactic acid bacteria that dominate and control the fermentation
- Oxygen scavenging ability

Crops

- Haylage
- Small Grain Silage
- Corn Silage
- HMSC/ HMEC
- Earlage & Snaplage

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