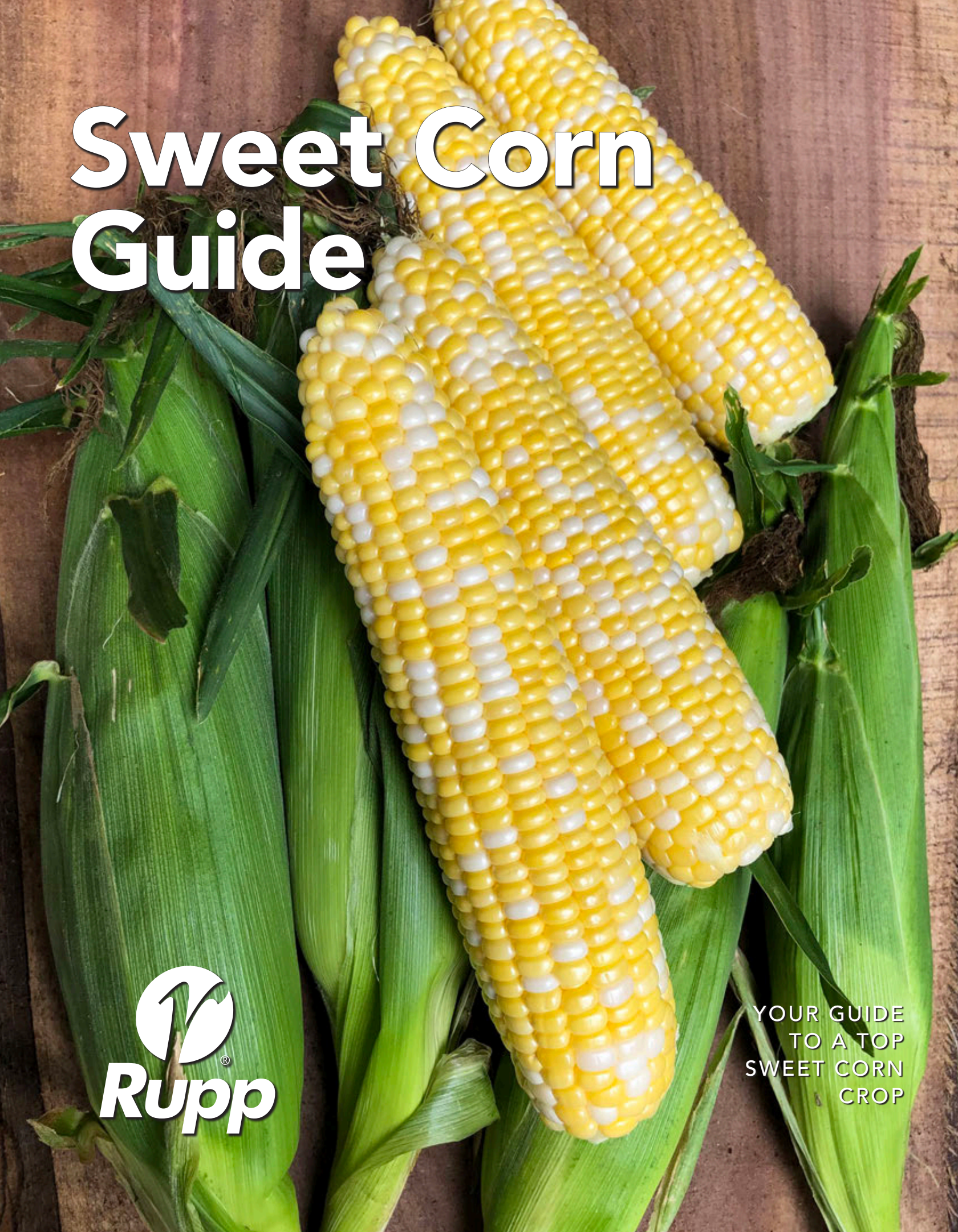


Sweet Corn Guide

Rupp®

YOUR GUIDE TO A TOP SWEET CORN CROP

Since the early 1980's, Rupp Seeds has helped growers produce high quality and flavorful sweet corn for their markets. This guide is intended to help both beginning and experienced growers maximize their full potential in producing one of the most popular vegetables grown in the United States.

Sweet corn hybrids, like many vegetable varieties, have been improved over time for sugar content, flavor, tenderness, appearance, yield, disease resistance, plant structure, insect and herbicide resistance, etc.

Producing and preserving high eating quality is a key factor for success in your market. Having a basic knowledge of genetic types, sweet corn hybrids and management practices is essential as you prepare your cropping plan.

HISTORY

No one can pinpoint the exact origin of sweet corn; however, we know that Native Americans preserved sweet mutations in early corn landraces. Sweet corn was first listed by US seedsmen in 1828 as a "very sweet vegetable". In an 1853 report of the U.S. Patent Office, two varieties of sweet corn were highlighted: Mammoth Sweet and Stowell Late Evergreen. The most important variety of the early open-pollinated types was Golden Bantam which was released in 1902. Prior to the release of Golden Bantam, yellow corn was only thought of as "animal feed". Between the late 1920's and the 1950's, Agricultural Experiment Stations developed the first fresh market hybrid sweet corn varieties. The most important hybrid to emerge during this time was Iochief, released in Iowa in 1951. Iochief was specifically bred for processing with an emphasis on a deep kernel and cut corn yield.

Breeding since the 1930's has improved sweet corn considerably, most notably from the discovery and deployment of new genetic types. Recent releases are characterized by improvements in eating quality, pericarp tenderness, sweeter flavor, and improved disease, insect, and herbicide resistance.

SWEET CORN TYPES

Many new hybrids offered today extol the virtue of being sweet, Sweeter and SWEETEST. Is this just a promotional tool? What does it all mean? Following is a guide to understanding the different genetic types.

NORMAL SUGARY (SU)

This type of sweet corn has a good creamy texture when used in prepared foods such as soups. Su sweet corn converts sugars to starch rapidly at maturity and after harvest, resulting in a harvest window that could be as short as a day or two before eating quality deteriorates. Common varieties of this type include: Butter & Sugar, NK 199, and Silver Queen. For best flavor, isolate from Sh2 and Augmented Shrunkens/Improved Super Sweet types and dent corn, popcorn, and ornamental corn.

SUGAR ENHANCED (SE)

The Se type was discovered by A.M. "Dusty" Rhodes of the University of Illinois in the late 1960's. Sugar Enhanced type sweet corns feature good seedling vigor, a good creamy texture, and an exceptionally tender kernel. Compared with Su sweet corn, these hybrids maintain superior eating quality in the field for two days longer and a few days longer post-harvest. Common varieties of this type of corn include: Ambrosia, Bodacious, Delectable, Incredible, Jackpot, Peaches & Cream, Silver King, and Temptation. For best flavor, isolate from Su, Sh2 and Augmented Shrunkens/Improved Super Sweet types and also dent corn, popcorn, and ornamental corn.

SHRUNKEN 2 (SH2)

In the 1950's, John Laughnan of the University of Illinois described a field corn that contained more sugar than sweet corn. At the time, very few sweet corn breeders shared his enthusiasm for the possibility of a new type of "supersweet" corn. Since this new corn generally had a shriveled appearance when dried down, it was named the Shrunken type. Common varieties include: Honey & Pearl and Illini Xtra Sweet. Sh2 sweet corn typically expresses poor vigor and should not be planted before soil temperatures reach 65 degrees Fahrenheit. However, sweet corn breeders have made big strides on improving cold soil vigor of most varieties compared to the original Shrunken corns. Sh2 varieties have a 10 day window where sugars are at their peak before converting to starch, allowing a longer harvest period compared with Su and Se types.

AUGMENTED SHRUNKENS

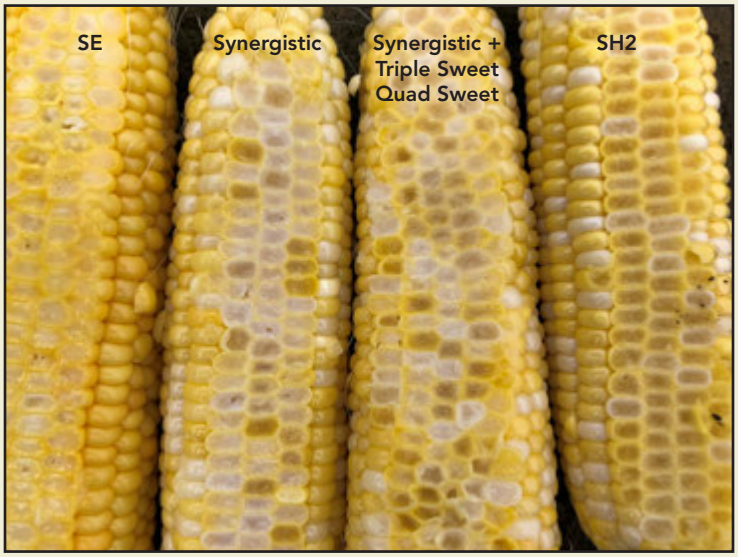
Augmented Shrunkens (also known as Improved Super Sweets) are a subset of the Sh2 type. Augmented Shrunken corns have been bred for a softer kernel and enhanced creaminess. However, the added sugar and creaminess comes at a cost. They tend to be smaller seeds and require warmer soil temperature for emergence. Popular varieties include the Xtra Tender series from IFSI and the Nirvana series from Crookham.

NOTE: Shrunken 2 and Augmented Shrunken are the sweetest of all types. Varieties should be isolated from all other corn types for best eating quality.

SYNERGISTIC (SY)

Synergistic type sweet corn is created when a sugar enhanced (Se) sweet corn is crossed with a Shrunken 2 (Sh2) sweet corn. This hybrid type expresses ~25% Sh2 kernels with ~75% Se kernels (see photo below). Synergistics (Sy) have an elevated sweetness with a tender kernel while maintaining a creamy texture. Common varieties include: Allure, Mattapoisett, Montauk, Honey Select, and Providence. For best flavor, isolate from Su, Sh2 and Augmented Shrunkens/Improved Super Sweet types and also dent corn, popcorn, and ornamental corn.

Within the synergistic class, there is a new segment emerging that includes varieties like Nectar and Primus. These hybrids are technically Sy; however they express approximately 44% Sh2 kernels, leading to higher and long-lasting sugar content.



This photo depicts the number and distribution of Sh2 kernels on ears of the various types. The darker kernels are Sh2.

SWEET CORN PRODUCTION RESOURCES

www.ruppseeds.com/SG21
This is a resource from the Great Lakes Vegetable Working Group and some of the leading researchers in the vegetable industry. It helps identify profit-taking weeds and insects, and discusses best management practices for sweet corn.

www.ruppseeds.com/SG22
This page from the University of Massachusetts offers information about multiple sweet corn pests and diseases.

www.ruppseeds.com/SG23
Developed by Rick Weinzierl, this link discusses insect traps and the economics of scouting.

ISOLATION

We receive a lot of questions every year on what type of isolation is required between the different genetic types of sweet corn. There is a wide array of opinions on this requirement. Typically, we err on the side of caution and suggest 1,000 feet in distance or 14 days in planting. Sometimes, growers use a combination of time and distance, for example by starting in the middle of the field with the first planting and then moving to either side to help maintain a 1,000 foot isolation. It is also important to consider the direction of prevailing winds. When possible, Sh2s should be planted upwind from other genetic types. Alternatively, plant only one genetic type; this eliminates the risk of cross pollination. The kernels will turn starchy if pollinated by other corn types.

MARKETING TIPS

When selecting a genetic type of sweet corn for your market, it is important to consider who your target market is, how soon the corn is going to be consumed or processed, and the corn will be harvested.

When evaluating your customer base, geography and demographics should be considered. Typically, bicolor sweet corn is the most common sweet corn. However, in the northeastern or southeaster U.S., white sweet corn is often preferred. In some pockets of the U.S., yellow sweet corn is popular.

Younger customers typically prefer the higher sugar content of Sh2 type sweet corn. Older customers often choose the more traditional creamy corn flavor that is prominent in the Sy types.

When considering which genetic type to plant, harvest and storage methods should be considered. Under typical growing conditions, Sy hybrids have a 3-5 day harvest window in the field. Sh2s typically have a slower conversion of sugar into starch, resulting in a 5-10 day harvest window. This slower conversion also improves longevity of storage. The biggest variable with these harvest windows is temperature or heat units. Hotter temperatures in the field and after harvest will result in decreased sugar content and eating quality. Some growers try to mitigate this by harvesting early in the morning to take advantage of cooler air temperatures or by cooling the sweet corn artificially with cold water, ice, or in coolers.

FERTILITY

Proper soil pH (6.0-6.5) and fertility (e.g. nitrogen, phosphorus and potassium) are key to getting your sweet corn off to a good start and growing well through the season. Be sure to test your soil and amend your fields as needed per the recommendations for your area.

Sidedressing with additional nitrogen throughout the season is also recommended. For additional fertilizer recommendations, consult the Midwest Vegetable Production Guide: www.ruppseeds.com/SG31 or your local extension agent.

HERBICIDES

Weed control methods in sweet corn vary by production system and variety. Growers may use a burndown herbicide with a pre-emergence herbicide, or combine pre-emergence herbicides with cultivation. There are also sweet corn varieties that are tolerant to glyphosate and/or glufosinate that allow for over-the-top applications of herbicide. Be sure to confirm the herbicide tolerance traits of your sweet corn before making over-the-top applications and follow the label guidelines when spraying.

For a list of labeled herbicides, consult the Midwest Vegetable Production Guide: www.ruppseeds.com/SG32 or your local extension agent.

PLANTING

Planting timing is key to a successful sweet corn crop. We field a lot of questions on how to get July 4th sweet corn; however, many variables contribute to maturity date such as: soil temperature, moisture, and growing degree days. Read the "Scheduling Your Sweet Corn Plantings" article on page 12 of this guide for detailed information on planting timing to ensure a constant supply of sweet corn.

RISKS OF PLANTING TOO EARLY

Planting early comes with increased risks such as; poor stand because of cold, wet soil, weed problems due to delayed canopy cover, and frost injury. We encourage growers to have a soil thermometer to help determine when to plant. Most corn will not sprout if the soil temperature is below 50 degrees Fahrenheit (F). Even at 55°F, germination is slow. By the time soil has warmed up to 60-65°F, germination is prompt, and the seedling will emerge within 7-10 days.

Air temperature does not affect soil temperature at a 2 inch depth nearly as much as the amount of sunshine. Soil warms up rapidly on a clear day even when the air is cool.

PLANTING DEPTH & SPACING

The general rule of thumb is to plant seeds at a depth that is 2.5 times the thickness of the seed. For example, if you have a kernel of sweet corn that is ½" long (from tip to top), it should be planted at 1¼" deep. When planting in 30" rows, a 7-8" in-row spacing (roughly the width of your boot plus 2") will give you a seeding rate of roughly 25,000 seeds/acre. Always check planting depth and seed spacing once you are in the field. Any time your planter drops two seeds too close together, you will have two weeds instead of two productive plants. Also, err on the side of caution and plant slower and allow your planter to singulate the seeds. Typically, we recommend a planting speed of 2.0-3.5 mph.

FIELD CONDITIONS

Planting delays can be problematic for sweet corn growers. Wet conditions can increase the potential for soil compaction and soil smearing around the seed furrow that ultimately restricts root growth and reduces yield. Once sidewall compaction has occurred, it cannot be alleviated and will be magnified when the soil dries.

There are several methods for determining if the soil is too wet to plant. Paul Jasa of the University of Nebraska recommends the following methods to assess planting conditions:

- Collect a handful of soil from your desired planting depth and squeeze the soil in your fist. If moisture and soil cling to your palm, the soil is too wet.
- Take a similar soil sample and form it into a ball and drop it to the ground from about waist-high. If the ball remains mostly intact or breaks into only a few pieces, the soil is too wet.

You can also evaluate how your equipment is operating in the field. If soil is accumulating on the closing wheels, the soil is too wet to plant. You should inspect the seed furrow periodically for signs of soil smearing and sidewall compaction.

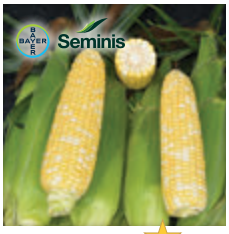
STORAGE

For maximum quality, sweet corn should be cooled to 32-34°F within an hour after harvest. High humidity (95%-98%) helps reduce moisture loss and kernel denting. Under optimal harvest and post-harvest conditions, the maximum shelf-life of sweet corn is only about 5 to 7 days. As sweet corn remains at above optimal temperatures for longer periods of time, the marketable shelf-life will decrease.

The most common cooling method used is hydrocooling where sweet corn is either showered with or immersed in cold water after harvest. Icing is another common method of cooling corn. Sweet corn containers can be filled with crushed ice. As the ice melts, cooling decreases so additional ice may be needed. The amount of ice required for initial cooling is roughly 20-30% of the weight of the sweet corn being cooled.

To maintain quality, sweet corn should be stored immediately after post-harvest cooling and for the shortest time possible.

BI-COLOR GROWER PREFERRED ALL-STARS



ANTHEM XR II

Genetic Type: **SH2**

Maturity: **74 days**

Ear Size l x d: **8x1.8"**

Kernel Rows: **14-18**

Rust: **R**

Stewart's:

NLB:

Use: **FM, S**

Eating Quality: ****

Enjoy all the benefits of Anthem XR and Anthem II, combined in one hybrid. Brings the best of both worlds - the rust protection offered by Anthem XR and Anthem II's Roundup and BT Performance Series traits.

SV9010SA

Genetic Type: **SH2**

Maturity: **81 days**

Ear Size l x d: **8x1.9"**

Kernel Rows: **18-20**

Rust: **R**

Stewart's: **M**

NLB: **M**

Use: **FM, S**

Eating Quality: ***

The Performance Series version of EX08767143. It has the same characteristics with the addition of Roundup herbicide resistance and protection against European corn borer, earworm and fall armyworm. Good variety for machine harvest.

SV9014SB

Genetic Type: **Synergistic**

Maturity: **78 days**

Ear Size l x d: **7.8x1.9"**

Kernel Rows: **18-20**

Rust: **R**

Stewart's: **M**

NLB: **M**

Use: **FM**

Eating Quality: ****

Maintains the same great taste and eating quality of other high-quality synergistic varieties.

XANADU

Genetic Type: **SH2**

Maturity: **74-75 days**

Ear Height: **25"**

Ear Size l x d: **8x1.75"**

Kernel Rows: **16-18**

Rust:

Stewart's:

NLB: **R**

Use: **FM, HG**

Eating Quality: *****

Xanadu, being part of the Nirvana series, incorporates a stronger plant, higher ear placement, and improved disease resistance while maintaining exceptional eating quality and consumer appeal.

ANTHEM XR

Genetic Type: **SH2**

Maturity: **73 days**

Ear Height: **24"**

Ear Size l x d: **8x1.8"**

Kernel Rows: **16-20**

Rust: **R**

Stewart's: **M**

NLB: **M**

Use: **FM, S**

Eating Quality: ****

One of our top performing varieties for its cold soil vigor, agronomics, and eating quality. With its strong rust resistance and moderate resistance against NLB, Anthem XR performs well in the early season and also late into the season.

ENCHANTED

Genetic Type: **SH2**

Maturity: **79 days**

Ear Height: **28"**

Ear Size l x d: **8x2"**

Kernel Rows: **18-20**

Rust: **M**

Stewart's: **M**

NLB: **M**

Use: **FM, S**

Eating Quality: ****

Strong vigor in the late season and performs well in adverse conditions, especially in drought. Nice tall plant with high ear placement and good eating quality. Good variety for late season.

KICKOFF XR

Genetic Type: **SH2**

Maturity: **69 days**

Ear Height: **28"**

Ear Size l x d: **8.25x1.98"**

Kernel Rows: **16-18**

Rust: **M**

Stewart's:

NLB:

Use: **FM, S**

Eating Quality: ****

Currently one of the earliest maturing higher eating quality Sh2s on the market. Excellent cold soil vigor with excellent agronomics to grow through the cold spring, producing a nice husk package, high yields, ear size, and great eating quality for that first early market.

NIRVANA

Genetic Type: **SH2**

Maturity: **75 days**

Ear Height: **24"**

Ear Size l x d: **8x1.8"**

Kernel Rows: **16**

Rust: **M**

Stewart's:

NLB: **R**

Use: **FM, HG**

Eating Quality: *****

Nirvana is one that has raised the bar for tender, high eating quality sweet corn for many of our customers. Good vigor with consistent plant type and quality.

XTRA TENDER 274A

Genetic Type: **SH2**

Maturity: **74 days**

Ear Height: **23"**

Ear Size l x d: **8x2"**

Kernel Rows: **18-20**

Rust: **S**

Stewart's: **M**

NLB: **S**

Use: **FM, HG**

Eating Quality: ****

Xtra Tender 274A has proven to be the best cold soil tolerant variety in the Sh2 category. With excellent eating quality and flavor, it does well in roadside and local markets.

ALLURE

Genetic Type: **Synergistic**

Maturity: **75 days**

Ear Height: **25"**

Ear Size l x d: **8x1.8"**

Kernel Rows: **16**

Rust: **R**

Stewart's: **R**

NLB: **R**

Use: **FM, HG**

Eating Quality: ****

Allure produces a very refined ear with strong tip fill, good husk cover, and great flag leaves. Perfect for those growers whose consumers demand quality.

CAPPUCCINO

Genetic Type: **Synergistic**

Maturity: **73 days**

Ear Height: **17"**

Ear Size l x d: **7.5-8x1.9"**

Kernel Rows: **16**

Rust: **M**

Stewart's: **M**

NLB: **M**

Use: **FM, HG**

Eating Quality: ***

Cappuccino was made to perform in all timeslots, making it a perfect choice for when you are in need of a rain gap corn. It has very good cold soil emergence and vigor.

MONTAUK

Genetic Type: **Synergistic**

Maturity: **79 days**

Ear Height: **18"**

Ear Size l x d: **8x1.8"**

Kernel Rows: **16-20**

Rust: **S**

Stewart's: **M**

NLB: **M**

Use: **FM**

Eating Quality: ****

A proven variety with high yields and excellent flavor. It is a farmer's market favorite for yield and customer satisfaction.

YELLOW ALL-STARS

PROVIDENCE ★

Genetic Type: **Synergistic**

Maturity: **82 days**

Ear Height: **18"**

Ear Size l x d: **8.5x1.9"**

Kernel Rows: **16-18**

Rust: **R**

Stewart's: **S**

NLB: **S**

Use: **FM**

Eating Quality: ****

Our #1 selling bicolor synergistic. It is the roadside grower's choice for consistent sweetness and overall quality.

HONEY SELECT ★

Genetic Type: **Synergistic**

Maturity: **79 days**

Ear Height: **18"**

Ear Size l x d: **8.5x2"**

Kernel Rows: **18-20**

Rust:

Stewart's:

NLB:

Use: **FM, HG**

Eating Quality: ***

One of the highest eating quality yellow varieties on the market today. Easy to grow, good vigor, and high sugars.

TAKEOFF MXR ★

Genetic Type: **SH2**

Maturity: **69 days**

Ear Height: **28"**

Ear Size l x d: **7.5-8.5"**

Kernel Rows: **16-18**

Rust:

Stewart's:

NLB: **MS**

Use: **FM, S**

Eating Quality: ****

Incredible eating quality with excellent husk package. Impressive ear shape and size for its early maturity. Strong seedling vigor. Yellow version of Kickoff XR.

EATING QUALITY RATING

Rupp 5-Star rating system is used to help growers differentiate sweet corn varieties within each genetic class for eating quality based on sweetness, tenderness, and corn flavor. These ratings are an average of our sampling scores that are compiled from multiple locations across various growing regions.

KEY

DISEASE CODES

NLB - Northern Leaf Blight

DISEASE RATINGS

R - Resistant
M - Moderately Resistant
MS - Moderately Susceptible
S - Susceptible

USE RECOMMENDATIONS

FM - Fresh Market
HG - Home Garden
P - Processing
S - Shipping

THE RUPP ADVANTAGE

In addition to the Grower Preferred All-Star varieties featured here, we have over 100 other sweet corn varieties available.

ruppseeds.com/SG51

We would be glad to discuss a complete program for your sweet corn needs that's focused on your market.

Rupp

WHITE ALL-STARS

MILKY WAY ★

Genetic Type: **Synergistic**

Maturity: **82 days**

Ear Size l x d: **8.25 x1.8"**

Kernel Rows: **16**

Rust: **M**

Stewart's:

NLB:

Use: **FM, HG**

Eating Quality: ***

An improved version of WH 0809 with Attribute Plus traits. This variety has glufosinate herbicide tolerance as well as increased protection against European corn borer, corn earworm, armyworm, and Western bean cutworm.

7401 IMP ★

Genetic Type: **SH2**

Maturity: **75 days**

Ear Height: **28"**

Ear Size l x d: **8x1.8"**

Kernel Rows: **16-18**

Rust: **M**

Stewart's: **R**

NLB: **M**

Use: **FM, HG**

Eating Quality: ****

7401 IMP has been a trifecta hit with our growers. With its very tender kernels, high eating quality, strong and healthy plant type, excellent husk package, and cover, this variety has had both roadside growers and shippers coming back for more.

EDEN RMN ★

Genetic Type: **SH2**

Maturity: **74 days**

Ear Height: **26"**

Ear Size l x d: **8x1.75-2"**

Kernel Rows: **16-18**

Rust: **R**

Stewart's:

NLB: **R**

Use: **FM, HG**

Eating Quality: *****

Eden RMN retains the incredible taste of Eden with some key improvements: a stronger disease package, slightly higher ear height, and a taller plant. Eden was known for generating strong customer loyalty and Eden RMN adds a new level of dependability for growers.

GLACIAL ★

Genetic Type: **SH2**

Maturity: **76 days**

Ear Height: **26"**

Ear Size l x d: **8x1.9"**

Kernel Rows: **16-18**

Rust:

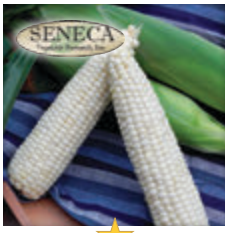
Stewart's:

NLB:

Use: **FM, P**

Eating Quality: ****

Glacial has taken the white sweet corn market by storm with its very high eating quality, tenderness, and ear size. Strong plant type grows well through adverse conditions producing a consistent plant and ear.



ILLUSION ★

Genetic Type: **Synergistic**

Maturity: **72 days**

Ear Height: **28"**

Ear Size l x d: **7.5x1.8"**

Kernel Rows: **14-16**

Rust: **M**

Stewart's: **M**

NLB: **S**

Use: **FM, HG**

Eating Quality: ***

An early season white variety to compare with Whiteout. It has great flavor and eating quality and does well on roadside markets.

MIRAGE ★

Genetic Type: **Synergistic**

Maturity: **78 days**

Ear Height: **18"**

Ear Size l x d: **8x1.8"**

Kernel Rows: **16-18**

Rust: **M**

Stewart's: **M**

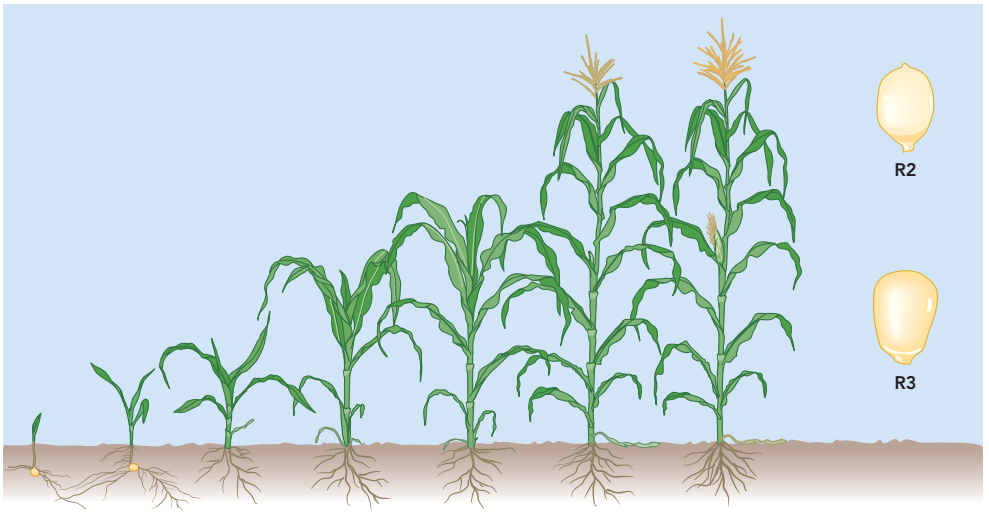
NLB: **M**

Use: **FM**

Eating Quality: ****

The white version of Essence, which makes this one of our highest eating quality white synergistic sweet corns. Tall, strong, and healthy plant type with good flavor and holdability in the field. Excellent, dark green husk and good husk cover.

SWEET CORN GROWTH STAGES



Growth Stages Chart © University of Illinois

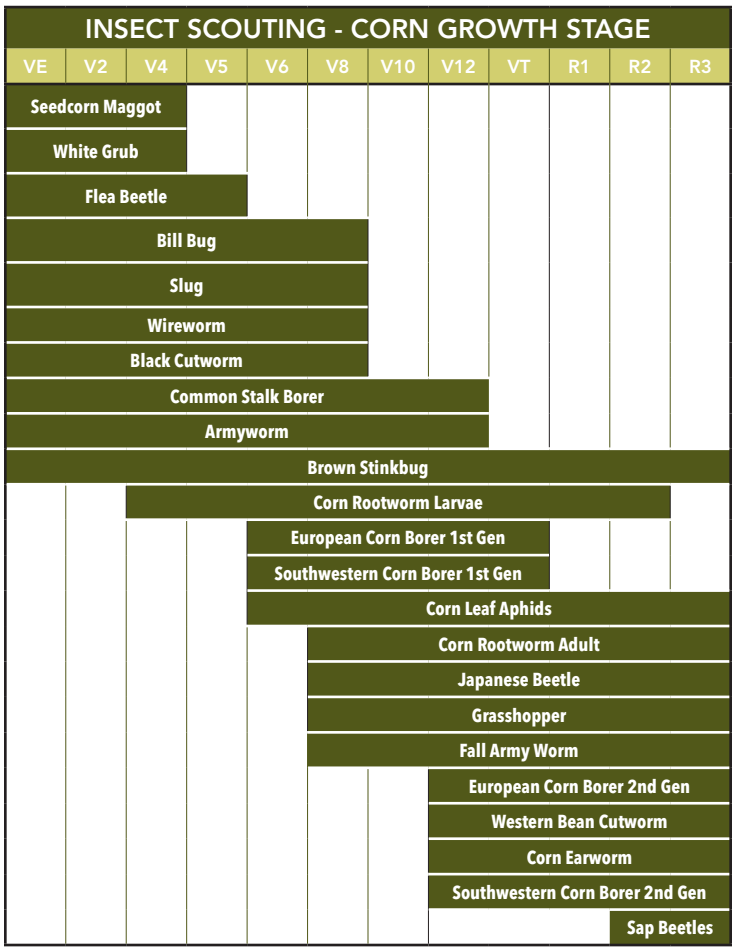
VE	**Emergence**	Corn emergence occurs when the coleoptiles reach and break through the soil surface. If cool or dry conditions exist, emergence may be delayed by several weeks. At the VE stage, growth is also taking place below the soil surface as the nodal root system begins to grow.
V1	**First Leaf**	The V1 stage occurs when the first leaf has fully emerged and the leaf collar is visible. The first leaf to emerge will have a rounded tip and later emerging leaves will have a more pointed tip.
V2	**Second Leaf**	The V2 stage is reached when two leaves are fully emerged with collars visible.
V3-V4	**3rd-4th Leaf**	At the V3 stage, the plant relies more heavily on the nodal root system as the roots increase in size and begin to form root hairs. Growth of the seminal root system has stopped. This is when it is important to start to side dress with nitrogen.
V5-V6	**5th-6th Leaf**	During these stages, the upper most ear and tassel is initiated, and kernel row numbers are being determined.
V7-V9	**7th-9th Leaf**	A period of rapid growth begins during these stages. If the corn plant is stressed, lower leaves may die.
V10	**10th Leaf**	At V10, 10 leaves have formed, the corn stalk elongates, and the tassel rapidly grows.
V12-V15	**12th-15th Leaf**	At V12, kernel row determination is almost complete. As the plant nears pollination, soil moisture and nutrient availability become increasingly critical for yield determination.
VT	**Tasseling**	Tassel stage begins when the last branch of the tassel is visible, but silks have not yet emerged. Tassels normally appear earlier than silks. When sweet corn tassels, it has reached about half of its final height.
R1	**Silking**	Silking begins when the silk is visible outside of the husk. Pollen falls onto the silks to potentially fertilize the ovules. Each ovule can produce an individual kernel. Moisture stress at this time can cause the dry-down of silks and/or pollen grains, which could reduce seed set. Typically, sweet corn is ready for harvest 20 days after pollen shed.
R2	**Blister**	During the blister stage, the kernel is white and shaped like a blister. During the kernel filling stages, the plant now provides nutrients for reproductive growth rather than vegetative growth. While the number of kernels has already been determined in earlier stages, the size of the kernels is being determined.
R3	**Milk**	During the milk stage, the kernel starts to turn color with a white milky inner liquid. Sweet corn will be ready to harvest at this stage. Feel the tip end of the ear to feel if it is blunt. Check daily and harvest at the desired texture. Sh2s are designed to convert sugars to starch slower and it may take Sh2s a few extra days to develop an intense sugar flavor. The kernels will appear plump and/or have a defined color contrast (bicolor).

Planting our cold soil trial. Three days after planting we had 3" of snow which gave the varieties a true test!

Our short row sweet corn trials with commercial varieties and breeder experimentals. Our staff collects data points and tastes each variety.

SWEET CORN INSECT PESTS

INSECT SCOUTING - CORN GROWTH STAGE



INSECT RESISTANCE // HERBICIDE TOLERANCE

	Bayer Seminis Performance Series™	Syngenta Attribute® I	Syngenta Attribute® Plus	Syngenta Attribute® II
Key Sweet Corn Pest				
European Corn Borer	E	E	E	E
Corn Earworm	VG*	F-G*	E*	E*
Fall Armyworm	E	G	E	E
Black Cutworm			VG	VG
Additional Above-Ground Pests				
Southwestern Corn Borer	x		x	x
Sugarcane Corn Borer	x		x	x
Common Stalk Corn Borer	x		x	x
Southern Cornstalk Corn Borer	x		x	x
Beet Armyworm			x	x
Dingy Cutworm			x	x
Western Bean Cutworm			x	x
Additional Below-Ground Pests				
Western Corn Rootworm	x			
Northern Corn Rootworm	x			
Mexican Rootworm	x			
Protein	Cry1A.105, Cry2Ab Cry3Bb1	Cry1Ab	Vip3A, Cry1Ab	Vip3A, Cry1Ab
Herbicide Tolerance	Glyphosate	Glufosinate	Glufosinate	Glyphosate Glufosinate

* Depending on earworm population (flight counts), additional scouting and spraying may be needed.

Key: E= excellent, VG= very good, F-G= fair to good, G= good

Seed Corn Maggot

Growth Stage: VE-V4

Damage: Seed corn maggots burrow into the kernel and attach to the germ of the seed. Kernels that have been infested either do not emerge or leave a weak seedling that may die.

Scouting Notes: Any conditions that delay germination may increase damage. Scout field by digging in areas where plants have failed to emerge. Check ungerminated seed for injury and presence of maggots.

Control: No rescue treatments are available. Effective seed treatments and soil insecticides are available. Avoid planting during cool, wet periods, or within three weeks of incorporating cover crops or weeds.

Additional Resources: *www.ruppseeds.com/SG71*

Corn Flea Beetle

Growth Stage: VE-V5

Damage: Corn flea beetles feed on corn leaves by stripping away the top layer of plant tissue. This feeding leaves gray to brown lines or "tracks" etched on the leaf surface. Heavily infested plants may appear gray as their leaves shrivel and die. The most serious problem caused by the corn flea beetle is transmission of the bacterium *Erwinia stewartia*, the pathogen that causes Stewart's wilt. This disease can severely reduce yields, especially in sweet corn.

Scouting Notes: Normally, once a corn plant reaches the V5 growth stage, it is no longer susceptible to significant corn flea beetle damage.

Additional Resources: *www.ruppseeds.com/SG72*

Insect photos courtesy of: John Obermeyer, Purdue Extension Entomology

SWEET CORN INSECT PESTS

Slug

Growth Stage: VE-V5

Damage: Slugs usually feed on the lower part of plants, eating partially or completely through the leaf. Severe feeding can result in split or tattered leaves that resemble damage by hailstorms. The damage slugs cause is similar in appearance to that caused by some insects (eg. corn flea beetle), but the presence of silver-colored slime trails indicates the presence of slugs. Normally, damage is severe only on VE-V4 stage corn. Stand losses due to slug feeding often occur when fields are too wet during planting causing seed slots to remain open during early plant growth. In this situation, slugs are able to feed day or night on the seedlings, often destroying the growth point.

Scouting Notes: If damage is suspected or seen, check 20 plants in each of 5 areas of the field. Record the number of plants showing leaf damage and calculate a rough estimate of the percentage of defoliation. Typically, night is the easiest time to see slugs on plants or on the soil surface. Treatment may be necessary if defoliation is more than 40% on slow-growing plants, or if more than 3% of the plants are killed.

Control: Reduce crop residue in fields with a history of slugs with tillage to discourage their buildup. There are no effective control methods for slug control. Insecticides do not normally control slugs since the slime they produce protects against many toxicants. Pelleted chemical baits are available for slug control. However, they are expensive and difficult to dispense evenly [i.e., 5-8 pieces per square foot (0.09 square meter)] over the field.

Additional Resources: *www.ruppseeds.com/SG81*

Wireworm

Growth Stage: VE-V8

Damage: Wireworm larvae may feed on the germ of corn kernels or completely hollow out the seeds, leaving only the seed coat. This damage results in gaps in the rows. Damage commonly occurs when corn is planted early and the weather turns cold, slowing seed germination.

Scouting Notes: Corn fields likely to be attacked by wireworms are those in which sod or small grains were grown during the previous year.

Control: Several insecticides are labeled for wireworm control and can be applied as pre-plant or at planting time. Control may be highly variable. If population density is low, seed treatments may be effective. No insecticides are available as rescue treatments. If a field is replanted due to wireworms and the wireworms are still present and actively feeding, a soil insecticide and/or a seed treatment can be used.

Additional Resources: *www.ruppseeds.com/SG82*

Black Cutworm

Growth Stage: VE-V8

Damage: Black cutworm moths have a wide host range, and infestations of larvae usually appear first in weedy areas of fields. Newly hatched larvae feed on leaves, creating small irregular holes. Larger larvae may notch the stems of seedlings immediately below the soil surface, which can cause plants to wilt and die. They may completely cut through stalks, which can result in severe stand reductions.

Scouting Notes: Walk through fields shortly after plant emergence, checking plants for signs of black cutworm feeding (leaf damage, wilted plants, or cut stalks). At the same time, look for indications of other early season pests such as: wireworms, white grubs, corn flea beetle, etc. Continue to watch for cutworm damage during May and early June (in the Midwest).

Control: Early land preparation and good weed control will help to reduce cutworm problems because infestations usually develop on early season weed growth.

Additional Resources: *www.ruppseeds.com/SG83*

Armyworm

Growth Stage: VE-V12 (May-June)

Damage: Armyworm feeding gives corn a ragged appearance, with defoliation occurring from the leaf edge toward the midrib. Damage may be so extensive that most of the plant, except leaf midribs and the stalk, is consumed. Such a highly damaged plant may recover if the growth point has not been destroyed.

Scouting Notes: When scouting early in the season, be especially watchful for signs of armyworm feeding damage where corn was no-tilled into a grass covercrop or in areas of corn fields that border small grains or grassy areas.

Control: Elimination of grass before planting will lower the chance of an armyworm outbreak. This reduces moth egg laying activity and larval migration into fields. Watch for armyworms migrating out of maturing small grains into corn. Planting into standing grass cover crops and then applying burn-down herbicides may increase the chance of armyworm attack.

Additional Resources: *www.ruppseeds.com/SG84*

INSECT SCOUTING RESOURCES

www.ruppseeds.com/SG85
Learn more about current corn insect pressure.

www.ruppseeds.com/SG86
Pest Watch is a great resource to track insect movements nationwide. They also have a complete library of fact sheets about all of the different pests found in vegetable production.

SWEET CORN INSECT PESTS

Corn Rootworm Larva

Growth Stage: V4-R2

Damage: Newly hatched larvae feed primarily on root hairs and outer root tissue. As larvae grow and their food requirements increase, they burrow into the roots to feed. Larval damage is usually most severe after the secondary root system is well established and brace roots are developing. By reducing water and nutrient uptake of plants, larval root pruning places severe physiological stress on corn. Yield reductions may result, especially in corn also suffering from moisture, compaction, or soil fertility stress. Roots damaged by rootworms may be weakened to the extent that the plants lodge or grow in a curved "sled-runner" or "gooseneck" shape. These lodged and misshapen plants often pollinate poorly and are difficult to harvest, contributing to yield losses. Also, rootworm damage sites are often pathways for infection by pathogens.

Scouting Notes: Using a spade or shovel, cut a 7 inch cube of soil around the base of each plant, making certain that the blade of the tool enters the ground vertically to avoid cutting roots. Lift the plant and soil out of the ground and place them on a small piece of dark canvas or plastic. Slowly break the soil away from the roots and carefully examine the soil and roots for larvae. The dark background will make it easier to find any of the small white rootworms. The soil and root sample can also be washed in a pail of water to extract the rootworms. The rootworms will float to the top and can be counted. The addition of salt to the water will float the worms to the top more easily.

Control: Crop rotation has been a major management strategy for corn rootworm. As a general rule, rootworms cannot successfully complete their larval development on crops other than corn. Thus, if rootworm eggs are laid in a corn field one season and soybeans are grown in the field the next season, the young larvae find themselves without a suitable host plant and soon starve to death.

Additional Resources: *www.ruppseeds.com/SG91*

Corn Leaf Aphid

Growth Stage: V6-R3

Damage: Heavily infested corn leaves may wilt, curl, and show yellow patches of discoloration. Winged or non-winged blue green aphid colonies on tassels produce honeydew that can disrupt pollination. Also, excessive aphid feeding within the whorl prior to tassel emergence appears to be directly related to incomplete kernel development and/or barren ears.

Scouting Notes: Aphids cause the greatest damage while feeding within the whorl, where their presence is not usually apparent. If samples are not taken until the aphids are visible on the exposed surface of plants (usually after tassels have emerged), the greatest damage will already have occurred. Initiate sampling for corn leaf aphids approximately 3 weeks prior to tasseling. Winged adults migrate from the South and are common pests during July and August (in the Midwest). Corn leaf aphid feeding can delay corn development under drought stress. The presence of aphid colonies on husk leaves is undesirable in some markets.

Control: Natural predator activity and fungal disease often control infestations.

Additional Resources: *www.ruppseeds.com/SG93*

www.ruppseeds.com/SG94

NY Sweet Corn Trap Network Report. This site contains information on best management practices for sweet corn growers. They also have several fact sheets on individual pests as well as videos on how to set up and maintain your own trap and monitoring system.

European Corn Borer

Growth Stage: V6-VT

Damage: A key sweet corn pest throughout the Midwest. Two or three generations develop each year, depending on latitude and temperature. Small larvae feed by removing the upper epidermis of the leaf (called windowpane feeding).

Scouting Notes: First generation borers are usually present during June in the whorl of corn plants. As the larvae feed and grow, some may be found tunneled into the midrib of leaves. As the borers feed on the leaves, they typically produce a characteristic random or "shot hole" damage pattern. Second generation: Because second generation borers are difficult to detect, concentrate sampling efforts on adult moths in fields that are late planted and/or actively pollinating during the period of peak egg laying. Check with your local extension personnel as to when it is necessary to start sampling. Windshield "splatter" of corn borer moths while driving roads after dusk will indicate the flight, mating, and egg laying of corn borer moths in an area. Typically this generation arrives during weather events that originate in the Gulf Coast and travel northward.

Control: Adequate control can be achieved by applying insecticides at five- to seven-day intervals from row tassel until seven to 10 days before harvest. Continue to spray on a five- to seven-day schedule if traps continue to catch moths. If corn earworm control is also necessary, a shorter spray interval is recommended.

Additional Resources: *www.ruppseeds.com/SG93*

Southern Corn Rootworm Adults

Growth Stage: V8-R3

Damage: High southern corn rootworm adult (also known as spotted cucumber beetle) populations may interfere with corn plant pollination by severely clipping silks during pollen shed. This can result in poorly filled ears.

Scouting Notes: Surveys for rootworm beetles should begin shortly before corn silking commences. Several factors must be considered when scouting. Rootworm beetles are extremely active and can be readily observed feeding, mating, and flying about an infested field. However, such activity varies considerably with the time of day, and such behavior patterns can greatly influence field counts. Beetles are most active in the morning and late afternoon, limiting their activity during the normally higher temperatures of mid-day. Thus, to get the best indication of true population levels, sample in the morning or late afternoon.

Control: Crop rotation has been a major management strategy for corn rootworm. As a general rule, rootworms cannot successfully complete their larval development on crops other than corn. Thus, if rootworm eggs are laid in a corn field one season and soybeans are planted in the field the next season, the young larvae find themselves without a suitable host plant and soon starve to death. Apply a foliar insecticide as silks emerge to protect pollination.

Additional Resources: *www.ruppseeds.com/SG92*

SWEET CORN INSECTS

Fall Armyworm

Growth Stage: V8-R3

Damage: Foliage feeding is often concentrated in the whorl and infested plants appear ragged, with abundant frass evident on the leaves. Larvae also enter ears, often leaving entrance and exit holes in the husks.

Scouting Notes: Fall armyworm does not overwinter in the Midwest but migrates from the South each season and may begin feeding on corn by late June or early July. The "face" of the mature larva is dark brown on the outer sides and light brown in the center, and usually marked with an upside-down white "Y" between the dark and light brown areas.

Control: No definitive thresholds have been established for fall armyworm control decisions. In addition to foliar insecticides, Bt sweet corn hybrids decrease, but do not eliminate, fall armyworm infestations.

Additional Resources: *www.ruppseeds.com/SG101*

Western Bean Cutworm

Growth Stage: V12-R3

Damage: Western Bean Cutworm will feed on mature ears, usually the tip but sometimes the sides. Entry holes are not always visible, so scouting for larvae must include removing husk. Several larvae may be found on a single ear, because these caterpillars are not cannibalistic.

Scouting Notes: In the Midwest, moth flight begins in late June, so pheromone traps should be in place by mid-June and should be checked weekly. Moths are 0.75 inch long with a 1.5 inch wingspan. Forewings are brown with a whitish stripe that runs across the leading edge. There is a white spot just below this stripe and about halfway across each wing. Further out on the wing is a white, crescent-shaped mark. Three distinct stripes right behind the head of medium to large larvae distinguish this pest from other cutworms and caterpillars. Once moths are being captured, begin scouting plants for egg masses on leaves, focusing on fields at the beginning of pollen shed. Examine pre-tassel corn focusing on the upper three leaves. Tillers and lower leaves may also be sites for egg deposition by the moth as well and should also be examined. Egg masses will be nearly white when first deposited. As larvae develop inside the egg, the color will turn to cream then dark purple just before the eggs hatch.

Control: Control should begin if more than one egg mass per 100 plants is found. Insecticide application should be timed so that 90-95% of tassels have emerged. If tassels have already emerged and egg hatch is underway, applications should occur when 70-90% of eggs have hatched. Larvae must encounter insecticide or residue before entering the ear. Once they enter the ear, insecticide applications are not as likely to contact larvae, making control difficult. Adequate control can be achieved by applying insecticides at five-to seven day intervals from tassel until seven to 10 days before harvest. Insecticides for European Corn Borer and Corn Earworm will control Western Bean Cutworm as well. The Attribute® Plus and Attribute® II hybrids provide to Western Bean Cutworm control.

Additional Resources: *www.ruppseeds.com/SG102*

Corn Earworm

Growth Stage: V12-R3

Damage: When on silks, hatching larvae feed on the silk and burrow directly down into the ear. They feed on the corn kernels at the tip of the ear, rendering the product unmarketable unless it is possible to cull and cut off the tips of the ear.

Scouting Notes: A key sweet corn pest in the Midwest, where it overwinters only in the very southern portions of Ohio, Indiana, Illinois, Missouri and Kansas. It migrates from the southern United States into the Midwest and Canada as the season progresses, often arriving in northern regions in August or September but sometimes as early as June of July. For corn earworms, treatment is justified if fresh green silks are present and moths are being caught in pheromone traps. In general, as moth counts increase, decrease the interval between sprays. If fewer than five moths are being caught per night, a five-day spray interval should be adequate. As moth catches approach 50 to 100 per night, a two- to three-day spray interval would be more appropriate. Determining the optimal spray interval depends on many factors, including how much damage you can tolerate, the crop's value, and the cost and effectiveness of the insecticide. Stop treating for corn earworms when 90 percent of the silks are brown. Mature larvae become very aggressive, killing and cannibalizing other larvae. Consequently, often only one mature larva is found in each ear of corn.

Control: When moth counts and temperatures are low, spray intervals may be as long as four to five days. When moth counts and temperatures are high, spray intervals should be reduced to two to three days. Bt sweet corn hybrids reduce, but do not eliminate, corn earworm infestation.

Additional Resources: *www.ruppseeds.com/SG103*

Sap Beetles

Growth Stage: R2-R3

Damage: Sap beetles are typically secondary pests of corn but can act as primary pests if populations are high. Adults emerge in June and July (in the Midwest). Newly emerged adults are attracted to damaged ears. Larvae also contaminate ears, usually at the tip.

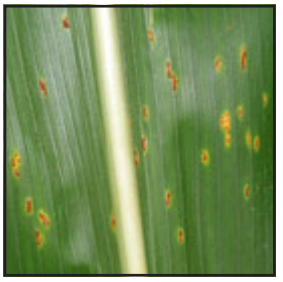
Scouting Notes: All sap beetles have "knobbed" antennae. The adult dusky sap beetle is about 1/8th inch long with short wing covers and a uniform dull black color. Larvae are white with brown heads and two short brown appendages at the tips of their abdomens. Pupae are white, turning cream-colored and later tan before adult emergence.

Control: Treatments for other corn ear pests (caterpillars and beetles) may also control sap beetles. If those treatments do not work, spray every four to five days during silking if more than 10 percent of the ears are infested with sap beetle adults or larvae. If no other corn ear pests are present, then two sprays four days apart starting when 75 percent of the field has fresh silks can be effective. Current Bt hybrids do not control sap beetles.

Additional Resources: *www.ruppseeds.com/SG104*

FOLIAR DISEASES

Common Rust



Description: Small reddish brown, oblong pustules are scattered over the leaf surface. Rust often occurs in bands across leaves because plants are infected where moisture accumulates in leaf whorls.

Scouting Notes: Rust can occur in early June if growing conditions are cool and wet. Juvenile leaves are most susceptible. Rust continues to spread throughout the season during periods of cool weather with light rain or heavy dew.

Control: Select resistant hybrids. If rust develops on early plantings, consider fungicide applications for later plantings of susceptible hybrids.

Gray Leaf Spot

Description: Fungal lesions have straight, parallel sides and resemble elongated rectangles on leaf surfaces. Lesions may be tan to gray with no borders.

Scouting Notes: Symptoms first appear two to four weeks after infection. Heavy dew, fog, or light rain favor the disease. Drying periods between these wet periods also are important to promote the spread of disease. Generally, lesions first appear near tasseling, and disease increases until maturity.

Control: Select resistant hybrids, till crop residues, use crop rotation, and apply fungicides to susceptible hybrids.

Northern Corn Leaf Blight

Description: Fungal lesions are large, cigar-shaped, and brown to tan. During periods of high humidity, lesions may have grayish-green centers because dark spores form on dead tissue.

Scouting Notes: Wet, humid weather favors disease development. Symptoms may occur before silking, but are more prevalent during later developmental stages.

Control: Select resistant hybrids, use crop rotation, and till residues. If lesions are found on lower leaves during wet weather, fungicides may be used to control the spread of the disease.

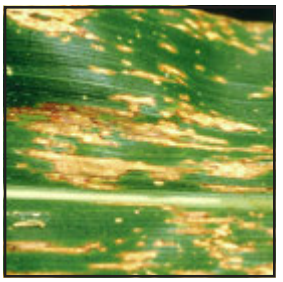
Seedling Blights

Description: Young seedlings that wilt and die during and after emergence are the first signs of blight. A soft watery rot of the roots, mesocotyl, and crown are typical symptoms. Seeds with white or pinkish mold indicate seed rot. Seedling blight is caused by a variety of pathogens.

Scouting Notes: Blights occur when seedlings are under stress or subjected to conditions that limit rapid growth. Wet, cool conditions favor some blights. Hot, dry conditions favor others.

Control: Use fungicide-treated seed, improve drainage, and plant into well-prepared seedbeds.

Southern Corn Leaf Blight



Description: Fungal lesions are small, tan, and have a shape that is oval or with parallel sides. On some hybrids, yellow halos may surround lesions. Lesion borders may be reddish brown on Se hybrids but not on Sh2 hybrids.

Scouting Notes: Warm, wet, humid weather favors disease development, especially periods of heavy dew and fog. Symptoms may occur as early as silking, but are more prevalent during later growth stages.

Control: Select resistant hybrids, use crop rotation, and till residue.

Smut

Description: Initially, a gall appears as a compact mass of white, fungal hyphae that gradually becomes transformed into a mass of dark spores enveloped by a whitish-colored covering. Smut spores may be blown long distances by the wind.

Scouting Notes: Hot dry weather is favorable for the growth of the fungus and the dissemination of wind-blown spores. Spores require free moisture collected in the silk, leaf blades, and other parts of the corn for germination and growth. Infection by the smut fungus results in galls, which can form on any part of the plant above the soil. Most commonly, galls occur on stems near nodes. Large galls may appear on stalks at the nodes, on ears, and rarely on tassels. Leaf infections may result in small inconspicuous galls. Sometimes, galls form on brace roots above the ground.

Control: There are no chemical controls available. Cultural practices, such as destruction of crop debris, and crop rotation are of limited value. Physical damage to corn plants should be minimized as this might promote infection.

Stewart's Bacterial Wilt

Description: Lesions are long, chlorotic, water-soaked, have wavy margins, and become necrotic with age. On susceptible hybrids, some lesions may extend the entire length of the leaf. Small, thin feeding scars are evidence of flea beetle injury. Systemic infection during the seedling wilt phase can cause considerable yield loss. Sweet corn is less damaged by the leaf blight phase.

Scouting Notes: Overwintered adult corn flea beetles carry the bacterium and transmit it, while feeding on leaves, soon after seedlings emerge in spring. A second generation of beetles feeds on plants in mid-late June. Beetles feed throughout the summer and continue to spread the disease.

Control: Select resistant or moderately resistant hybrids. Use a seed treatment insecticide on susceptible hybrids.

FUNGICIDES

For a list of labeled fungicides, consult the Midwest Vegetable Production Guide: www.ruppseeds.com/SG111 or your local extension agent.

CORN DISEASE SCOUTING

Stage I VE to V7	Stage II V7 to VT	Stage III VT to R3
Seedling Blights		
Anthracnose Leaf Blight, Bacterial Wilt and Bacterial Leaf Blight (Stewart's Wilt, Stewart's Disease), Goss's Wilt, Physoderma Brown Spot, Common Smut, High Plains Virus		
	Northern Leaf Blight, Southern Leaf Blight, Common Rust, Southern Rust, Crazy Top, Sorghum Downy Mildew, Anthracnose Top Dieback & Stalk Rot, Bacterial Stalk Rot, Pythium Stalk Rot, Maize Chlorotic Dwarf Virus, Maize Dwarf Mosaic Virus, Corn Lethal Necrosis	
		All Ear & Kernel Rots
		Gray Leaf Spot, Head Smut, Charcoal Rot, Diplodia Stalk Rot, Fusarium Stalk Rot, Gibberella Stalk Rot, Red Root Rot

SCHEDULING YOUR SWEET CORN PLANTINGS

The timing of your plantings is critical to ensure a constant supply of sweet corn for your customers. If you plant too close together, all of your corn will mature at the same time. If you plant too far apart, you will have a few days without any corn. To add to the challenge, corn is heat sensitive. Sweet corn simply does not grow below 50 degrees Fahrenheit. Relative maturity will provide an approximation of how many days to harvest. However, calculating Growing Degree Days or Growing Degree Units (GDD, or GDU's.) will provide a more precise estimate.
You can calculate GDD as follows: record the high and low air temperature each day using a min/max thermometer. Add these together and divide by two, so you know the average temperature each day. From that, subtract the 50 degree base temperature below which the crop doesn't grow. What remains are the GDD for that day. Total up all the daily GDD after planting and you will know how many GDD have accumulated.

The formula for calculating GDD per day looks like this:

GDD = (daily high temperature + daily low temperature) ÷ 2; - 50.

Start with harvest GDD. To use GDD to schedule your planting, you need a rough idea of when you'll be harvesting. The days to maturity of your varieties will give you a good idea of that. Then, you need to know the average GDD accumulation that will take place during harvest. You can use weather records from your area in order to be more accurate in estimating the GDD during harvest.

An example: Say you plant a block of a single sweet corn variety one Monday afternoon in early May. On Tuesday the high was 65 and the low was 45, so GDD=5. On Wednesday the high was 60 and low 40, GDD=0. On Thursday, the high was 66 and the low was 42, GDD=4. Total GDD so far is GDD=9. Let's assume the weather stays like this, so after a week you have accumulated 20 GDD since planting. Is it time to plant a second block?

No, and here's why. Come harvest time in late July there will be about 20 GDD accumulating each day (with high temperatures around 80 degrees, lows around 60). So if you plant now, that second block will mature within one day of the first block, even though they were planted one week apart. You need to wait until about 80 GDD accumulate in order to have that second block ready to harvest 4 days after the first one is. If the cool spring weather keeps up, that could require waiting several weeks between plantings.

Nice idea, but... This probably isn't the first time you've heard about using GDD, yet for some reason you're not using it. And you're not alone. Seems like a lot of growers, especially on diversified farms where sweet corn is just one of many crops, are just too busy to keep up with daily temperature readings and such. So here's an easier way to schedule your sweet corn plantings.

Let your sweet corn do the work. Since corn plants develop in proportion to the number of accumulated GDD, you can simply keep an eye on their stage of growth to estimate degree days and decide if it's time for your next planting. To do that, you need to know quite accurately what a corn plant looks like when a certain number of growing degree days has passed. Then, depending on how many varieties you sow with each planting, and the spread between the earliest and the latest among them, you can get a pretty good idea what stage of corn plant growth is a sign that it's time to make a new planting.

SIMPLE CASES.

Let's assume that you're sowing one variety per block, and you want 4 to 5 days of harvest in August before the next block is ready. You plant, then keep a close eye on the corn until it reaches the pre-spike stage. Note that this seedling has not yet emerged from the soil, but is just below ground. At this stage of growth about ~80 GDD have accumulated. It is time to plant your next block.

Pre-Spike Stage

Perhaps you sow two varieties per block, and they're separated by 2 or 3 'days to harvest' according to their descriptions. To maintain a continuous supply of corn in August, you'll need to plant another block when about half the corn plants in the block are in the 'V stage'. At this stage, the second leaf is emerging but still rolled up, indicating that about 120 GDD have accumulated.

V Stage

Let's say you sow three varieties, and there's a 7-day harvest period among them. An example would be using Mystique (75 days), Precious Gem (78 days) and Delectable (82 days) sown together in repeated plantings. To secure a continuous supply of corn in August, you'll need to sow another block when the average corn plant has its third leaf emerged, starting to flatten out, but still rolled at the end, indicating that ~160 GDD have accumulated.

3rd Leaf Emerged

If you had 4 varieties with 9 'days to harvest' separating the earliest from the latest, to get a consistent supply of corn in August you'd plant a new block when about half of the plants in the block have their fourth leaf just emerged, but still standing straight up, indicating that ~200 GDD have accumulated.

4th Leaf Emerged

The photos of plants as GDD indicators are only guidelines that you can use to get started with this method on your own farm. Depending on your location, and your combinations of varieties, you'll have to adjust the stage of growth that you use as your critical GDD indicator for when to plant sequential blocks. But the point is: if you learn to 'read' them, your sweet corn plants can tell you when to schedule your plantings.

Go slow, go fast, go slower. Remember that early plantings in May, when the weather is cool, may seem way too far apart. Plantings in June when the weather gets hot will seem awfully close together. Your latest plantings, meaning late June in most of New England, can be spaced further apart in time because they will have a longer harvest period when degree days during harvest are accumulating more slowly in September.

Scan the QR code or visit this link for the full article:
www.ruppseeds.com/SG121

BY: VERN GRUBINGER - UNIVERSITY OF VERMONT EXTENSION
FROM HANK BISSELL'S ON-FARM RESEARCH AT LEWIS CREEK FARM: STARKSBORO, VERMONT