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Sweet Corn

FRESH MARKET CROP GUIDE

®

TripleSweet Plus – setting a higher standard

TripleSweet Plus is the latest advancement in the TripleSweet product line. It features the same exceptional quality and tenderness, but now it's even sweeter tasting thanks to more supersweet kernels on every ear. Combined with an improved shelf life, it is sure to be a hit at roadside stands and in local retail stores.

Primus

- First in a series of new TripleSweet Plus varieties from Syngenta
- Marks the next generation of superior eating-quality corn
- Exceptional flavor and sweetness exceed standard TripleSweet varieties and bring customers back for more
- Tender and extra sweet bi-color kernels, long ears and medium-sized husks preferred for roadside and local markets
- High resistance to southern corn leaf blight and intermediate resistance to Stewart's wilt
- Approximately 81 days to maturity

BC0528

Attribute Trait stacks

This TripleSweet Plus, Primus-type variety produces consistent, long ears and tender juicy kernels of excellent eating quality. With insect resistance through the Attribute trait stacks, BC0528 offers built-in protection against key pests to maximize yield and quality.

- Excellent tip fill and attractive flag leaves
- Built-in protection against key lepidopteran pests
- Tolerance to glufosinate
- Excellent for main season planting
- Strong visual appeal

TripleSweet hybrids boasting superior eating qualities

Quick Trip

Attribute® II Trait stacks

An exciting early-season TripleSweet bi-color variety, Quick Trip boasts the great eating quality that TripleSweet varieties are known for in our portfolio. Our first early-season variety with the Attribute® II sweet corn trait stacks.

- Offers early maturity and great ear size and shape
- Good tip fill and husk cover
- Strong seedling vigor
- Quick-to-market
- Attractive appearance and great eating quality for strong consumer appeal
- Delivers grower simplicity and peace of mind via insect and weed control that comes with the Attribute II trait package

Aspire

Attribute® II Trait stacks

Aspire is the next generation of TripleSweet varieties offering improved insect resistance through the Attribute II trait stacks.

- Medium green color with good husk extension
- Broad-spectrum control of lepidopteran pests, including Western bean cutworm
- Tolerance to glufosinate and glyphosate

Pursuit

Attribute® II Trait stacks

Pursuit is a bi-color, TripleSweet variety with improved insect resistance from the Attribute II trait stacks. Pursuit also offers beneficial herbicide tolerance for flexibility in weed management programs.

- Superior TripleSweet flavor with tender kernels
- Broad-spectrum control of lepidopteran pests, including Western bean cutworm
- Tolerance to glyphosate and glufosinate herbicides approved for application over the top of Attribute II sweet corn

Avalon

- The ultimate white corn–paramount in eating quality–juicy, succulent, sweet
- Delicious sweetness, crunchy texture delivers full bodied flavor
- Ears hold well on plant to extend the harvest over several days

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Serendipity

- TripleSweet variety with great eating quality
- Excellent variety for roadside and local markets and home gardens
- Bi-colored kernels fill to the tip and are well covered by the husk
- Long holding on the stalk for extended harvesting

Providence

- A TripleSweet that delivers consistent, long-lasting sweetness
- Well suited for roadside and local markets as well as home gardens
- Produces long, well-filled tapered ears of bi-colored kernels

Milky Way Attribute® Plus Trait stacks

- Exceptional TripleSweet eating quality
- Broad-spectrum control of lepidopteran pests, including Western bean cutworm
- Tolerance to glufosinate
- High-quality ears
- Approximately 82 days to maturity

Honey Select

- All-America Selections Winner
- Exceptional tenderness, flavor and sweetness
- Produces large, high-quality ears
- Medium-green husks and good flags
- Approximately 79 days to maturity

Alto

- Excellent tip fill and good husk cover
- Excellent stand uniformity in early cold soil
- Desirable flavor and appearance that creates strong consumer appeal
- Earliness to market for increased profit potential
- Only variety of its kind with 72 day maturity

Remedy* Attribute® II Trait stacks

- Long ears with tender, sweet kernels
- Excellent tip fill and good husk cover
- Broad-spectrum control of lepidopteran pests, including Western bean cutworm
- Tolerance to glyphosate and glufosinate herbicides approved for application over the top of Attribute II sweet corn

*Under certain stress conditions, Remedy sweet corn may exhibit tassels and or glumes growing out of the ear. Please contact your Syngenta Sales Representative with any questions.

Supersweet (sh2) hybrids that outperform in the field and the market

GSS1170

- Garrison-type shipper ear with uniform appearance and excellent tip fill
- Attractive ears with ideal size for the shipper market
- High-quality ears
- Approximately 78 days to maturity

Crave

A Glacial bi-color type, Crave sweet corn offers a great husk package, large ear size and excellent eating quality that both growers and consumers will crave.

- Outstanding eating quality
- Vibrant, bi-color kernels
- Great husk length, color and flags
- Medium-tall plants
- Strong consumer appeal
- Well-adapted to many corn growing locations

BSS8021

- Excellent tip fill and good husk cover
- Maintains uniform ear size
- Long flags for high consumer appeal
- Strong rust resistance
- High-quality ears that meet market needs

Protector

Attribute® II Trait stacks

- Strong husk protection, straight rowing and excellent tip fill on uniform ears ideal for shipping
- Broad-spectrum control of lepidopteran pests, including Western bean cutworm
- Tolerance to glufosinate and glyphosate
- Wide area of adaptation and industry-leading disease resistance package

Accentuate

- Good tip fill and straight rows
- Clean plant type resists lodging
- High yield potential and great husk package

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BSS1075

- Maintains uniform ear size during fall and winter seasons
- Strong rust resistance
- High-quality ears that meet market needs
- Strong healthy plant

Cabo

Offering superior eating quality and excellent adaptability, Cabo is a large augmented supersweet variety that combines consistent 8-inch ears with great tip fill.

- Attractive, strong husk cover and excellent kernel color
- Desirable flavor profile with outstanding eating quality and tenderness
- Sturdy plant with strong tip fill
- Widely adapted and performs well in most corn growing regions when managed properly
- Reliable uniformity of ear size and rowing
- High yield potential and performance that growers demand

Patriarch

Attribute® Plus Trait stacks

Patriarch offers superior eating quality with excellent adaptability across many growing regions. Built on a large augmented sh2 chassis and combined with Attribute Plus trait stacks, this variety is a game changer. For less hassle from seed to tassel, Patriarch is your go-to variety.

- Robust ear with excellent tip fill
- Outstanding eating quality with superior tenderness and flavor
- Industry leading broad-spectrum control of lepidopteran pests, including Western bean cutworm
- Allowance of herbicide flexibility with tolerance to glufosinate herbicides through the Attribute Plus trait stacks

BSS0761

Attribute® Plus Trait stacks

BSS0761 is a fresh variety ideal for high-end shipper and local markets looking for high-quality, bi-color ears. This fresh variety pairs exceptional eating quality with improved insect resistance through the Attribute Plus trait stacks.

- Stylish shipper ear
- Exceptional eating quality
- Built-in protection against key lepidopteran pests
- Tolerance to glufosinate herbicides
- Strong performer with high yield potential

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8909MRW

- Exceptional white kernel color
- High yield potential
- Excellent dark, protective husk
- Multiple disease resistance

7401 IMP

- Great vigor and seed quality
- Attractive dark-green husk package and many flags
- Bright white kernel color

Glacial

- Innovative variety for different markets including processing, fresh market and the shipper market
- Large, vibrant white ears with excellent tip fill
- High eating quality with great husk marketability

Sugary/sugary enhanced (su/se)

Silver Queen

- The industry standard white “su” sweet corn
- Superb eating quality
- Attractive package
- Elegant ears with flavorful, tender kernels
- Approximately 88 days to maturity

Silver King

- This white ear has fabulous flavor and tenderness for local market growers and home gardeners
- Tight husk cover helps prevent bird damage
- Optimum ear placement makes for an easy harvest
- Approximately 82 days to maturity

Attribute® II Trait stacks

Attribute® Plus Trait stacks

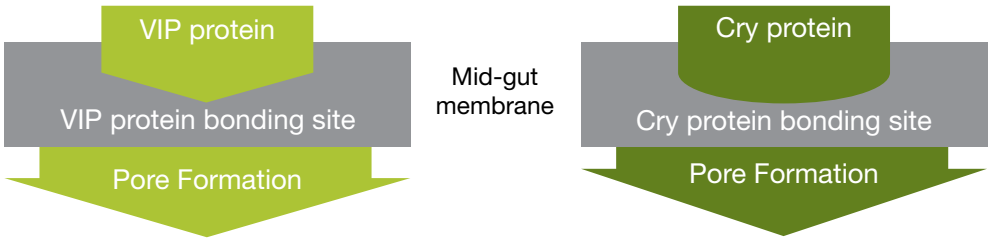
The Attribute II and Attribute Plus trait stacks from Syngenta are the latest breakthrough in above-ground insect protection for sweet corn, delivering unsurpassed control of lepidopteran pests to maximize yield, quality and productivity. In addition to high-level insect protection, Attribute II hybrids produce a protein that increases tolerance to glufosinate and glyphosate herbicides. Attribute Plus hybrids produce a protein that increases tolerance to glufosinate herbicides.

How It Works

The introduction of the Attribute II and Attribute Plus trait stacks continues the Syngenta tradition of providing high-performance traits to sweet corn growers, and now they have the added power of Vip3A – a unique mode of action proprietary to Syngenta. The combination of Vip3A with Cry1Ab, the protein found in Attribute insect-protected sweet corn varieties, offers excellent control of key yield-robbing insects including European corn borer, corn earworm and fall armyworm. Attribute II and Attribute Plus are also highly effective against Western bean cutworm, which has emerged as a serious and growing threat in many production areas.

How VIP Differs from Cry Proteins

Both vegetative insecticidal proteins (VIP) and crystalline proteins (Cry) are derived from *Bacillus Thuringiensis* (Bt). However, VIPs are an entirely new class of proteins that differ from their Cry protein counterparts. Vip3A binds to different receptors than Cry proteins within an insect's mid-gut membrane. Researchers have identified changes in the binding process as a factor in the development of resistant insects. Expressing both VIP and Cry proteins, Attribute II and Attribute Plus insect protection greatly reduces the risk of insect resistance.



Both VIP and Cry-bound proteins cause formation of pore in mid-gut membrane

Pore formation results in insect death

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Broad-Spectrum Control of Key Sweet Corn Pests					
Event	Protein	European Corn Borer	Corn Earworm	Fall Armyworm	Black Cutworm
Attribute II	Vip3A, Cry1Ab	E	E	E	VG
Attribute	Cry1Ab	E	F-G	G	P
Seminis® Performance Series™	Cry1A.105, Cry2Ab	E	VG	E	P
Attribute Plus*	Vip3A, Cry1Ab	Resistant	Resistant	Resistant	Resistant

Control rating: E= excellent, VG= very good, F-G= fair to good, G= good, F=fair, P-F= poor to fair, and P= poor.
Source: K. Flanders, et al. University of Alabama Cooperative Extension System 2010
*Attribute Plus was not evaluated in this trial.

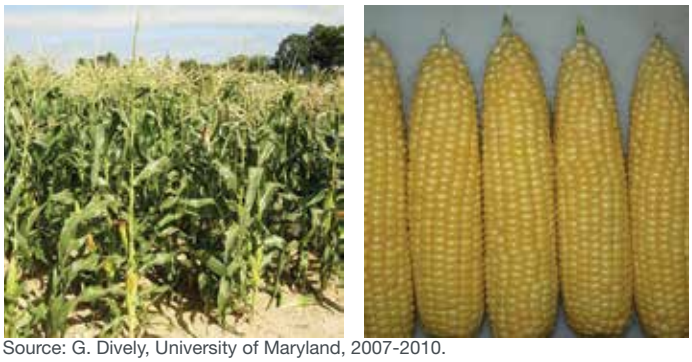
Attribute II and Attribute Plus Spectrum of Control

- Beet Armyworm (*Spodoptera exigua*)
- Black Cutworm (*Agrotis ipsilon*)
- Common Stalk Borer (*Papaipema nebris*)
- Corn Earworm (*Helicoverpa zea*)
- Dingy Cutworm (*Feltia jaculifera*)
- European Corn Borer (*Ostrinia nubilalis*)
- Fall Armyworm (*Spodoptera frugiperda*)
- Southern Cornstalk Borer (*Diatraea crambidoides*)
- Southwestern Corn Borer (*Diatraea grandiosella*)
- Sugarcane Borer (*Diatraea saccharalis*)
- Western Bean Cutworm (*Striacosta albicosta*)

Conventional non-Bt

Source: G. Dively, University of Maryland, 2007-2010.

Attribute II



Source: G. Dively, University of Maryland, 2007-2010.

The Complete Package

Attribute II and Attribute Plus give growers the flexibility to cater their herbicide program to effectively address problem weeds while reaping the benefits of its superior insect control.

Grower guide for Attribute sweet corn

Attribute Trait stacks

Attribute, Attribute II, and Attribute Plus sweet corn varieties from Syngenta are viable crop strategies for sweet corn growers throughout the country. Commercially grown since 1998, Attribute sweet corn seeds provide a high level of above-ground protection against targeted pests throughout the growing season. With Attribute sweet corn, growers have another option for harvesting outstanding yield potential of high-quality sweet corn that meets market needs. If properly managed, Attribute sweet corn can be a valuable addition to your crop management strategy for many years to come.

Attribute trait stacks performance

Since the introduction of the Attribute trait stacks, numerous field trials have been conducted by Syngenta throughout the U.S. Results from these trials indicate that Attribute sweet corn showed significantly less damage from targeted pests, while non-Attribute protected plants suffered extensive damage from European corn borers and corn earworms. As a result, Attribute hybrids are an effective strategy for controlling European corn borer and corn earworm insect populations. Results to date indicate that under most conditions, more than 95 percent of Attribute plants remain virtually free of European corn borer and corn earworm damage throughout the growing season; however, the expected level of protection can vary depending upon environmental factors and seed purity. European corn borers and corn earworms can migrate from non-Bt plant to Bt plants, so some corn borer and earworm larvae may be seen on Attribute sweet corn that borders non-Bt fields. Because European corn borers and corn earworms cannot distinguish between Bt and non-Bt hybrids, egg masses may be found on Attribute plants. But once small larvae begin feeding on them, they quickly ingest the Bt protein and die. To optimize yields and ear quality, scout fields for pest outbreaks, and where necessary, apply chemical insecticides to prevent economic loss. Insect pests which are not controlled by this Bt protein include: corn rootworms, cutworms, common stalk borers, silk fly larvae, sap beetles, aphids and flea beetles. Attribute II and Attribute Plus, which combine Vip3A with the Bt protein found in Attribute, do provide control of several additional pests including black cutworm and Western bean cutworm. However, where possible, consult your area pest management specialists or local extension agents for additional insight on pest outbreaks in your area and suggested control options.

IPM strategies

Attribute sweet corn is an important IPM tool that can reduce the need for chemical pest control. Unlike broad-spectrum insecticides, which can destroy beneficial insect populations, Attribute sweet corn is not harmful to ladybird beetles, lacewings and other beneficial insects. While Attribute sweet corn can be a powerful IPM tool to control European corn borers and corn earworms, it is not an end-all solution for pest control. Years of IPM experience have shown that using multiple-control tactics over time is the best strategy for preserving ecological diversity. Under high corn-earworm pressure found in the southern half of the U.S. and with late-season planting, some pest damage can occur in Attribute sweet corn fields. If the market requires close to zero insect damage, some chemical control methods might be necessary. The number of applications and timing of these applications depend on the corn earworm pressure and environmental conditions. Continue to use conventional insecticides judiciously to control infestations of pests that are not controlled by Attribute sweet corn. A multifaceted approach, including practices like crop rotation and tillage, can go a long way toward controlling pest pressure.

All growers that purchase and plant Attribute sweet corn are required by the EPA to sign a stewardship agreement. Please contact your seed dealer for a copy of the required agreement or visit the Syngenta stewardship website at http://www.syngentastewardship.com under Attribute Stewardship. The Attribute Grower Stewardship Agreement (the “Stewardship Agreement”) was created to ensure you receive the important information you need to manage your crops safely and effectively.

As part of the mandated IPM strategies, growers are also required to destroy all Attribute sweet corn stalks in your fields preferably within 14 days but never later than 30 days after harvest. The allowed crop destruction methods are: rotary mowing, discing, or plow-down. The crop destruction methods are intended to protect against development of insect resistance.

Insect resistance

Every pest management strategy must address the possibility that target insects could develop resistance to the pest control measures. So it is important to understand how resistant insect populations occur.

Genes for resisting virtually anything may exist in nature, due to random genetic variability and the constant shuffling of thousands of genes through mating. Insects do not develop resistance genes through exposure to an insecticide. However, the insecticide does select the resistant insects that exist in the population by eliminating the non-resistant insects.

As the insecticide kills the insects that don’t have resistance genes, the survivors begin to dominate the breeding process. They pass their resistance genes to future generations, and as these populations increase, they eventually become predominant and the insecticide becomes ineffective.

What to do if you observe unexpected damage

If you observe unexpected damage from target pests, call this toll free number and report what you have observed.

1-877-GRO-CORN (1-877-476-2676)
8 a.m. – 5 p.m., Monday through Friday, Mountain Time

A Syngenta representative will investigate the situation. After ruling out other possible causes and testing to verify that the plants carry the proprietary Bt gene, the representative will collect European corn borers or corn earworms for laboratory assay tests. If resistance is suspected, Syngenta will inform customers and extension agents in the affected area, as well as EPA officials. Insect monitoring programs will be increased and alternative control measures will be recommended.

Partners in resistance prevention

Insect resistance is a real possibility and should be taken very seriously. Failure to follow resistance management measures could lead to the development of resistant populations. All levels of the production chain, from the grower to the seed industry, must work together. Each of us has a responsibility to manage this exciting new technology carefully and preserve its long-term value for growers, consumers and the environment.

Technical data: sweet corn

Variety	Endosperm type	Kernel color	Approx. days to maturity	Avg. ear length (in)	Avg. ear diameter (in)	Avg. row count	Husk appearance	Disease resistance
Supersweet								
SS BiColor Early Riser	sh2*	Bi-color	72	7.5	1.5	14-16	Good husk protection and flags	**IR:** Et
7401 IMP	sh2	White	74	8	1.7	16-18	Dark husk, with good protection and many flags	**HR:** MDMV
SS7403RY	sh2*	Yellow	75	8	1.6	16-18	Dark green, good flags, good husk protection	**HR:** Ps (Rp1-g), Ps (Rp1-i) **IR:** Bm
BSS1075	sh2	Bi-color	77	7.25	1.9	18	Medium dark-green color with medium flags	**HR:** Ps: (Rp1-i) **IR:** Et / Bm
Cabo	sh2	Bi-color	78	8	2	16-18	Medium green with average flags	-
GSS1170	sh2	Yellow	78	7.1	1.8	16	Medium dark green, medium long flags leaves, similar protection as Garrison	**HR:** Et / Ps: (Rp1-i)
SS3778R	sh2*	Yellow	78	8.5	1.9	18-20	Good husk and flags, dark husk color	**HR:** Ps (Rp1-g), Ps (Rp1-i)
NEW Patriarch Attribute Plus	sh2	Bi-color	78	8	2	16-18	Dark green	**HR:** Ps (Rp1-g) **IR:** MDMV
Accession	sh2	Yellow	78	8.5-8.75	1.9	16-20	Excellent husk length and flags	-
BSS8021	sh2	Bi-color	80	7.3	1.8	16	Medium green	**HR:** Ps: (Rp1-i) / Et
NEW Crave	sh2	Bi-color	78	8	1.8	16-18	Great husk length, color and flags	-
Aces	sh2	Bi-color	78	8	1.8	18	Dark husk, numerous dark flags, great husk protection	**HR:** Ps (Rp1-i), Ps (Rp1-g)
Desert Snow	sh2	White	78	8.5-9	1.8	16-20	Excellent husk length, dark green flags and husk color	**HR:** Pst
Glacial	sh2	White	79	8	1.8	16-18	Dark husk, good husk protection	-
2182MR	sh2	Bi-color	79	8-9	1.8	18	Dark husk, excellent flags and husk protection	**HR:** Ps **IR:** Et / Bm
Protector Attribute II	sh2	Yellow	79	8	1.8	18	Medium-dark green with medium-long flags	**HR:** Et / Ps: (Rp1-d), Ps (Rp1-i) / MDMV
BSS0761 Attribute Plus	sh2	Bi-color	80	7.7	2	16-18	Dark green, long and shiny flags	-
8909MRW	sh2	White	80	8-8.5	1.7	18	Dark husk, excellent flags and husk protection	**HR:** Ps **IR:** Et / Bm
Accentuate	sh2	Yellow	80	8	2	14-16	Long, tight, husk protection	**HR:** Ps / Et / Bm / Pst
8102R Plus	sh2	Bi-color	80	7.75-8	1.7	16-18	Good flags and husk protection	**HR:** Ps **IR:** Et / Bm / Pst
1760MR	sh2	White	80	7.5-8	1.7	16-18	Very dark husk, numerous flags, great husk protection	**HR:** Ps **IR:** Et / Bm / Pst
3590MR	sh2	Yellow	82	8.5	1.8	18-20	Dark husk and good husk protection	**HR:** Ps / Et / MDMV / Pst
SS Jubilee	sh2	Yellow	83	8.5	1.9	16-20	Medium green	**IR:** Bm
Sugary/Sugary enhanced								
Silver King	se	White	82	8	1.9	16-18	Medium green with good cover	**IR:** Bm / Et / Pst / Ps
Peaches & Cream Mid EH	se	Bi-color	83	8.6	1.9	18-20	Long flags with good cover	**IR:** Pst
Sweet G 90	su	Bi-color	85	9	1.9	16	Medium green	-
Silver Queen	su	White	88	8	1.8	14-16	Dark green	**HR:** Pst **IR:** Et / Bm
Golden Queen	su	Yellow	88	8.5	1.8	12-16	Medium green	**HR:** Pst **IR:** Et

*SuperSeedWare® (SSW®) is a proprietary genotype protected by US Patents #8,796,504 and #8,822,756. For more information please contact your sales representative.

Technical data: sweet corn

Variety	Endosperm type	Kernel color	Approx. days to maturity	Avg. ear length (in)	Avg. ear diameter (in)	Avg. row count	Husk appearance	Disease resistance
TripleSweet Plus								
BC0528 Attribute	TripleSweet Plus	Bi-color	81	8.4	1.8	16-18	Medium green	-
Primus	TripleSweet Plus	Bi-color	81	8	1.8	14-16	Medium green	**HR:** Bm **IR:** Pst
TripleSweet								
NEW Quick Trip Attribute II	TripleSweet	Bi-color	71	7.5	1.8	14-16	Attractive, dark green	-
Alto	TripleSweet	Bi-color	72	7.5	1.8	14-16	Medium green	-
Honey Select	TripleSweet	Yellow	79	8.5	1.9	18-20	Medium green	**IR:** Pst
Aspire Attribute II	TripleSweet	Yellow	80	8.5	1.8	14-16	Medium green with good husk extension	**HR:** Ps (Rp1-d)
Pursuit Attribute II	TripleSweet	Bi-color	80	7	2	16-18	Medium green	**HR:** Ps (Rp1-g)
Avalon	TripleSweet	White	82	8	1.7	16	Medium green	**IR:** Bm /Pst
Milky Way Attribute Plus	TripleSweet	White	82	8.4	1.8	14-16	Medium green with excellent tip cover	**HR:** Ps (Rp1-g)
Providence	TripleSweet	Bi-color	82	8	1.7	14-18	Medium green	**HR:** Ps (Rp1-d)
Serendipity	TripleSweet	Bi-color	82	8	1.8	16-18	Medium green	-
Remedy* Attribute II	TripleSweet	Bi-color	82	8.5	1.7	14-16	Medium green	-

Disease abbreviation key

Bm	Southern corn leaf blight *(Bipolaris maydis)*	**Ps**	Common rust caused by *Puccinia sorghi* (Rp1-d, e, g, i) controlled by the Rp1-d, e, g, and i genes (see **footnote below)	**sh2**	Supersweet
Et	Northern leaf blight *(Exserohilum turcicum)*			**su**	Sugary
MDMV	Maize dwarf mosaic (*Maize dwarf mosaic virus*)	**Pst**	Stewart's wilt (*Pantoea stewartii*)	**HR**	High resistance
		se	Sugary enhanced	**IR**	Intermediate resistance

*Under certain stress conditions, Remedy sweet corn may exhibit tassels and or glumes growing out of the ear. Please contact your Syngenta Sales Representative with any questions.
**Footnote to sweet corn: the effectiveness of rust resistance genes in sweet corn will be determined by the variation of common rust races in each growing environment. Rust races are continually evolving, so that rust resistance genes that were effective in the past may suddenly and unexpectedly lose their effectiveness. It is necessary to scout for rust disease development, so that alternative disease control strategies can be deployed in the event that major gene resistance proves ineffective. Syngenta Seeds is an associate member of the International Seed Federation and supports the initiative to use consistent terminology to describe plant diseases and resistance. For further information, see http://www.worldseed.org/isf/diseases_resistance.html.

In cases where specific races or strains are not noted, the variety is resistant to some, but not necessarily all known races or strains of the pathogen. For complete disease resistance information, please visit **www.SyngentaUS.com/vegetables.**

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For more information on Syngenta vegetable offerings,
visit www.SyngentaUS.com/vegetables
or contact your local Syngenta reseller or representative.

Product performance assumes disease presence.

*For complete disease resistance information, please visit www.SyngentaUS.com/vegetables.

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