SAKATA®

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Play-by-play From the Field

It's a Blitz! Growers are reporting large and heavy fruit, thick walls, good shape and great yield over several harvests...

"Very happy with first harvest yield: about 30 bins vs. 25 from other varieties."
"Good bush with little to no sun scald."
"Good yield potential for second harvest and potentially third."
"Estimate 30 bins first harvest - ~2-3 pods per plant. Expected the same for second picking!"

Blitz is an early-maturing, extra-large blocky green-to-red bell with great yield potential at first harvest. Fruit are high quality with thick walls and a uniformly blocky shape. It is a consistent performer providing size and quality. Blitz has excellent open field performance and is also adapted for production in high tunnel and mid tech protected culture.

HR: TMV: 0, and Xcv: 0-5, 7-9 // IR: TEV

Stats:

Type: Bell	**Fruit Size:** Extra-large
Exterior Color: Green to red	**Plant Habit:** Medium-large
Fruit Shape: Blocky	**Relative Maturity:** Early, Mid-early

Pathology Report: Defend Against Bacterial Spot

Bacterial spot of pepper is a serious disease of pepper throughout the pepper growing regions of the world and particularly in tropical and subtropical areas.

Bacterial spot of tomato and pepper is caused by four bacterial species (*Xanthomonas euvesicatoria*, *X. vesicatoria*, *X. perforans*, and *X. gardneri*). Of the four species, *X. euvesicatoria* appears to be the main causal agent for bacterial spot of pepper. At this time, 10 races of the pathogen have been identified on pepper. Because of the difficulty in differentiating the bacterial species with non-DNA based methods, the seed industry currently recognizes the causal agent by its former scientific name of *Xanthomonas campestris* pv. *vesicatoria* prior to its reclassification.

Management of bacterial spot begins with the production of clean seed and transplants, preventative bactericide spray programs, and resistance. Despite the availability of commercial resistance to bacterial spot for a couple of decades, the threat of bacterial spot in pepper productions in the Southeastern US remains very high. Early resistance in pepper cultivars of the 1990s mainly involved the use of single dominant, hypersensitive reaction (HR) based genes: *Bs1*, *Bs2*, and *Bs3*. These genes were first deployed singularly, but as resistance failed and new races emerged, gene pyramiding of these three HR-based genes became the novel resistance strategy. This form of resistance is best described as "vertical resistance" which is a moniker used to define a gene-for-gene interaction, where a single resistance gene in the plant corresponds to a single avirulence gene in the pathogen. Throughout the past few decades, bacterial mutations involving bacterial avirulence genes resulted in new races. Furthermore, evolutionary pressure from the widespread commercial use of the *Bs1*, *Bs2*, and *Bs3* genes has resulted in the proliferation of pepper race 6. This race cannot be controlled by any of these vertical resistance genes. The sudden loss of resistance is often a concern when vertical resistance genes are deployed.

Leaf pustules illustrating *bs5* resistance

In the 1990's, Drs. Bob Stall and Jeff Jones of the University of Florida devised a different approach which consisted in the introduction into commercially viable germplasm of two recessive genes named *bs5* and *bs6*. Unlike the *Bs1*, *Bs2*, *Bs3* and *Bs4* genes, the resistance conferred by *bs5* and *bs6* is not based upon a HR. Both *bs5* and *bs6* are recessive genes that provide a certain level of resistance when used singly and their use in tandem provides a significantly enhanced and more stable resistance. Unfortunately, this more durable and broader resistance is not commonly used because it's harder to breed into commercial hybrids than the commonly available vertical resistance.

Vertical resistance genes are usually short-lived because of the emergence of resistance-breaking races of the pathogen and that is what happened with the introduction of the Bs1, *Bs2* and *Bs3* genes in pepper commercial fields. The promising introduction of pepper hybrids carrying the *bs5* or *bs6* gene should slow down the emergence of new bacterial spot races and provide a more lasting resistance.

Written by:
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Florida Branch Manager/Plant Pathologist

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Pathology Manager

Meet Jim and Cory

Jim Stewart is Sakata's Area Sales Manager for the Florida region. He spends an extensive amount of time in the trial fields and collaborating with Sakata's pepper breeders. Being from the southeast, he's well-acquainted with the climate, growing conditions and other factors that help us breed the best possible peppers for the East. Jim's knowledge base is a great tool for growers to utilize to get the most out of the Eastern pepper program.

Cory Dombrowski is the Eastern Trials Coordinator for the Sakata Pepper program. His vast knowledge of every type of pepper enables him to better serve the eastern regions, and provide insight on growing peppers all over the country. Cory is dedicated to growing the Sakata pepper program above and beyond its already sterling set of accomplishments, and providing his services as an asset and tool to all Eastern pepper growers.

Jim and Cory Talk Eastern Peppers

Q. *The three new peppers for the East are named Gridiron, Blitz, and Touchdown – What's the significance of these names?*

Jim: Our Eastern peppers have football-themed names that correlate with their respective levels of durability, maturity and yield.

Q. *Can you elaborate on the names? What sets each pepper apart 'on and off of the field?'*

Jim: Of course! Gridiron is like an Astroturf field – it's a deep, dark green color, has high-quality, durable fruit and fast in terms of the being an early-maturing variety.

Blitz's name is self-explanatory; we liken it to a blitzing linebacker – fast, meaning early-maturing.

Touchdown is our mid-maturing variety. It puts points on the scoreboard; the football equivalent of extended harvests, which enable maximum yields.

Q. *Gridiron, Blitz and Touchdown were specifically bred to face the challenges of the East climate. What characteristics allow these peppers to deliver for the grower?*

Jim: These peppers are tough! Their high quality is very beneficial for growers in the East.

Cory: Their high resistance to Xcv: 0-5, 7-9 is an important characteristic. It really sets these peppers apart.

Q. *What results are Eastern growers seeing with the new trio of peppers?*

Cory: Gridiron and Blitz have proven to be very early, with great fruit size and high quality, while also providing high yields.

Jim: Touchdown's overall yields look very promising – it is known for its yield potential over multiple harvests, not just the first pick. Also, because of its plant structure, it could possibly be considered a no stake variety.

Q. *Can you give some specifics regarding which regions our peppers are being grown?*

Jim: Large numbers are being grown in Central and South Florida.

Cory: Thus far, we've seen very positive Fall results, and early Winter results look very promising, as well.

Q. *What upcoming challenges do pepper growers on the East face?*

Cory: Phytophthora pressure is a major concern, along with races 4 and 6 of BLS and Tomato Spotted Wilt Virus.

Jim: Our peppers have high resistance to Xcv: 0-5, 7-9, and we are currently breeding to address new concerns. The growing environment is never stagnant, and we pride ourselves on consistently introducing products that adapt to the grower's needs as they become known.

Q. *What can packers and shippers expect to see from these peppers? What about consumers?*

Jim: Packers and shippers can expect to see high quality and high yield

Cory: Consumers can expect a high quality product, as well. These peppers are bred to hold their quality all the way through the consumer chain!

The Pepper Report with Kevin Ratchford

South Florida is in the thick of the winter harvest season. Spring plantings are going in the ground in central Florida. The National Weather Service had been forecasting a colder than average winter, however temperatures have been unseasonably warm and humid this growing season. Rainfall has been higher than average in many locations as a result of several weak cold fronts that have moved across the state.

Pepper crops have been growing fast with the higher than normal temperatures. Growers are doing the best they can to stay on top of their game and harvesting pepper plantings sooner than they anticipated. We are also seeing some issues with alternatives to Methyl Bromide and differences in plastic mulch permeability. Yields are decent. I've been seeing a lot more jumbo pepper than I can remember in the 25 years I've worked the Florida pepper market. Bacteria Leaf Spot is present but incidence is at low levels for the most part. Commercial plantings of Blitz, Gridiron, and Touchdown are clean.

We gained extra points with fall plantings of Blitz and Gridiron as growers were impressed with earliness, yields and the quality of pack outs. And they had no pass interference with bacterial leaf spot. Harvest of Touchdown will kick off soon. Commercial plantings are looking good.

The season is what it is. We will continue to learn. And, as a pepper team with focus, we will figure out the right plays to make and help our pepper growers score the points they need for a successful season.

-Kevin Ratchford
President of Agri-Logic Consulting

Contact us Anytime!

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After many years of intensive and rigorous development, the Sakata team is proud to introduce three exciting new bell peppers—**Blitz**, **Gridiron** and **Touchdown**—specifically developed and adapted for regions and slots on the East Coast.