



# Sweet Corn Variety Evaluation Report

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*Spring 2020*



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# Summary

The **Southeast Sweet Corn Research and Extension Group** (SSCREG) is proud to offer you the first edition of the Sweet Corn Variety Evaluation Report for the Southeastern U.S. The report represents a joint effort among Extension specialists and researchers of the University of Georgia and the University of Florida who work directly with sweet corn production.

The steady increase of input costs for crop production (i.e., fungicides, herbicides, insecticides, fertilizer, irrigation, etc.) with consistent revenues requires growers to be innovative. Selecting cultivars adapted to particular growing conditions is an important practice to help growers increase productivity. The goal of this report is to provide growers, crop advisers, county educators, extension agents, and specialists with a broad evaluation of different commercial sweet corn hybrids and their performance in different locations of the Southeastern U.S.

This report includes information from extension and research variety trials conducted during the spring of 2020 in the Southeastern U.S. Table 1 contains the cultivars evaluated as well as locations where variety trials were conducted. The following pages present crop management practices, weather conditions, and yield results for each location. Finally, an overview of the ears of all cultivars is presented at the end of the report.

**Table 1. List of sweet corn cultivars evaluated per location during spring 2020.**

Company	Variety	Type	Mid-south GA	Southwest GA	Southeast GA	Northeast FL
Seminis	Passion	Yellow	X*	X	X	
Seminis	SC1336,	Yellow	X	X	X	
Seminis	Obsession	Bicolor	X	X	X	X
Seminis	Affection	Bicolor	X	X	X	X
Seminis	EX08767143	Bicolor	X	X	X	
Syngenta	BSS1075	Bicolor	X	X	X	X
Syngenta	BSS8021	Bicolor	X	X	X	X
Syngenta	GSS1170	Yellow	X	X	X	
HM Clause	Coastal	Bicolor	X	X	X	
HM Clause	Flagler	Bicolor	X	X	X	
IFSI	Superb MXR	Bicolor				X
IFSI	Seminole Sweet XR	Bicolor				X
Crookham	Everglades	Bicolor				X
Crookham	CSABF13-698	Bicolor				X

\*Indicates the cultivar was evaluated in the location.



# Sites, crop management, and results

Location: Southwest Georgia – Decatur County, Brinson – GA



*Figure 1. Sweet corn field of the collaborator grower in southwest Georgia.*

**Planting date:** April 15, 2020

**Row spacing:** 36 inches

**In-row plant spacing:** 6 inches

**Plant population:** 29,040 plants/acre

**Experimental design:** randomized complete block with 4 replications

**Plot size:** 20 plants per plot

**Harvest date:** June 23, 2020

**Crop management:** practices associated with soil preparation, irrigation and management of pest, weeds and diseases followed collaborating grower's standard practices.

**Weather conditions:** maximum and minimum daily air temperature and rainfall were monitored using the Donalsonville Weather Station from the Georgia Automated Weather Network.

**Results:** In southwest Georgia, sweet corn was harvested 70 days after planting. Daily air temperature averaged 74 °F while rainfall events accumulated 12.4 in. Despite a rainfall event at 8 days after planting resulting in 4.3 in of accumulation, weather conditions were optimum for crop development in this location, and daily air temperatures were within the optimum range for growth (60 to 80 °F).

Sweet corn yield and ear quality for each cultivar evaluated in the southwest Georgia location are shown in Figure 1 and Table 2. Overall, sweet corn yield was the highest for the cultivar Passion (685 crates/acre); however, there was no significant difference among Passion and BSS8021 (588 crates/acre), Obsession (582 crates/acre), and EX08767143 (583 crates/acre).

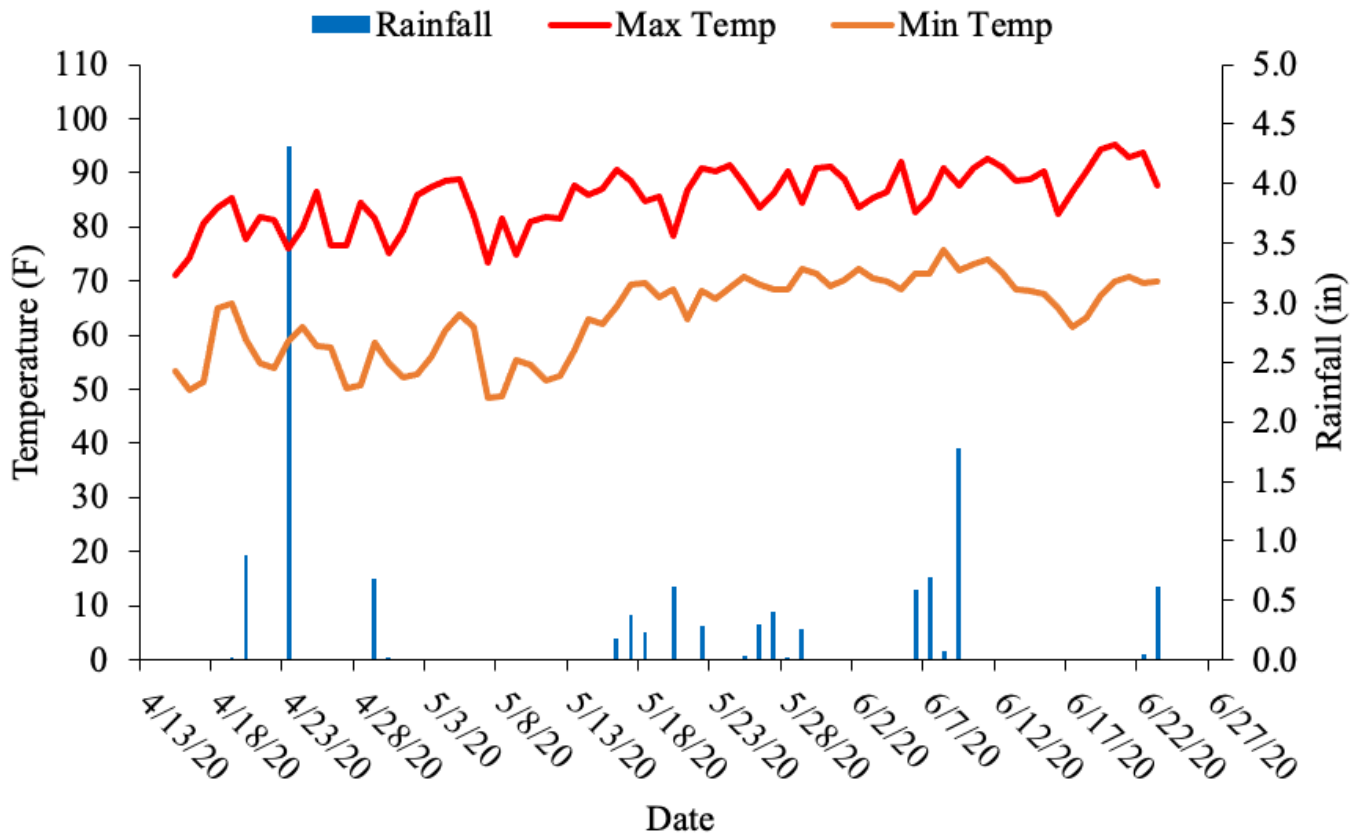


Figure 2. Maximum and minimum daily air temperature and rainfall during sweet corn development in the southwest Georgia location during spring 2020.

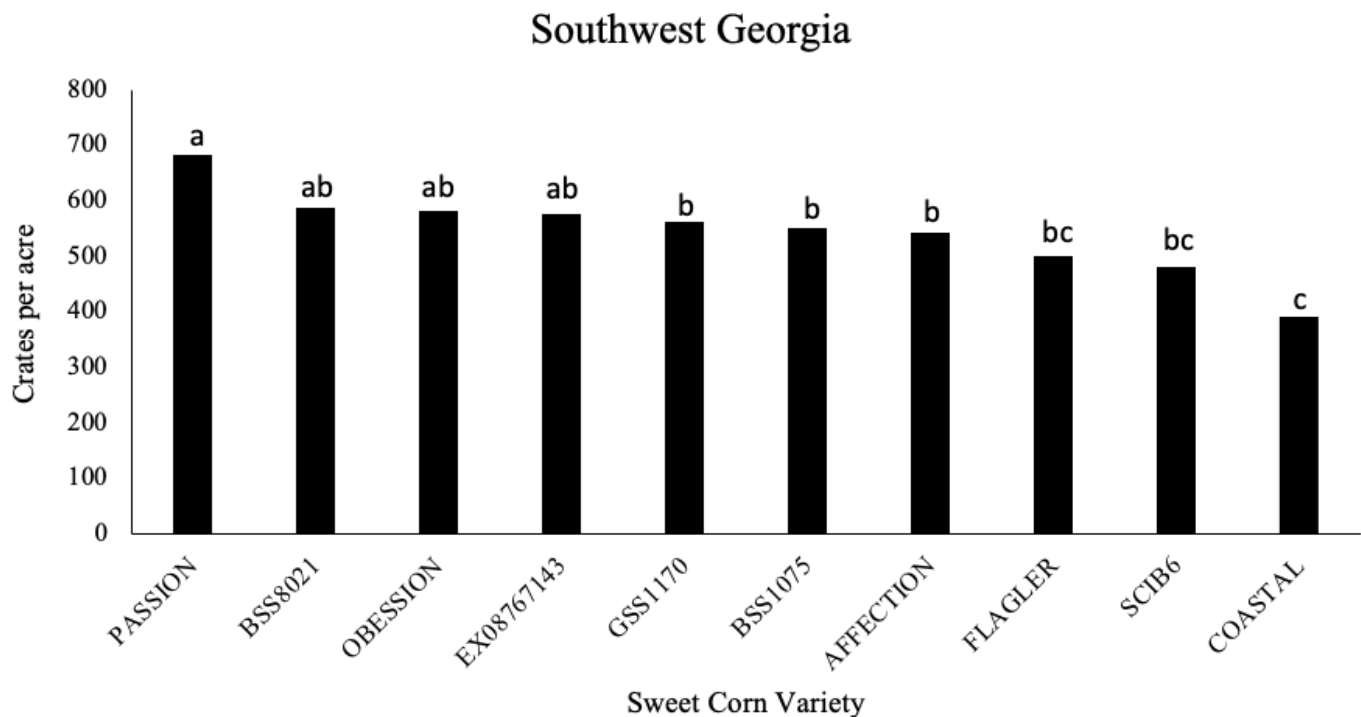


Figure 3. Sweet corn yields according to cultivar in the southwest Georgia location.

**Table 2. Ear quality according to cultivar in the southwest Georgia location.**

Cultivar	Ear/Plant**		Germination	Ear weight		Ear width		Ear length		Kernel rows		Kernel grains		Ear grains	
	#			%	lb	a	in	a	in	a	e	#	a	#	a
Affection	1.1	a*	80	0.6	a	1.6	a	6.5	e	17	a	34	bcd	603	bcd
BSS1075	1.0	a	85	0.6	a	1.7	a	6.9	cd	19	a	36	ab	707	ab
BSS8021	1.1	a	88	0.6	a	1.6	a	6.9	cd	15	a	37	ab	571	d
Coastal	1.0	a	64	0.6	a	1.7	a	7.3	ab	17	a	33	cd	569	d
EX08767143	1.2	a	81	0.6	a	1.6	a	7.5	a	18	a	38	a	683	abc
Flagler	1.0	a	76	0.5	a	1.6	a	7.1	bc	17	a	33	d	578	cd
GSS1170	1.1	a	83	0.6	a	1.7	a	6.8	d	15	a	37	ab	583	cd
Obsession	1.2	a	80	0.5	a	1.6	a	7.3	ab	18	a	37	ab	662	abcd
Passion	1.2	a	90	0.5	a	1.7	a	7.3	ab	18	a	36	ab	648	abcd
SC1336	1.1	a	67	0.6	a	1.7	a	7.1	bc	20	a	35	abc	723	a

\* Values followed by similar letters within a column indicate no significant difference among cultivars according to Tukey-Kramer mean test.

\*\* The second ears of plants were harvested when considered marketable.



## Location: Mid-south Georgia – Worth County, Poulan, Georgia



*Figure 4. Sweet corn field of the collaborator grower in mid-south Georgia.*

**Planting date:** April 2, 2020

**Row spacing:** 36 inches

**In-row plant spacing:** 6 inches

**Plant population:** 29,040 plants/acre

**Experimental design:** randomized complete block with 4 replications

**Plot size:** 30 plants per plot

**Harvest date:** June 5, 2020

**Crop management:** practices associated with soil preparation, irrigation and management of pest, weeds and diseases followed the collaborating grower's standard practices.

**Weather conditions:** maximum and minimum daily air temperature and rainfall was monitored using the Ty Ty Weather Station from the Georgia Automated Weather Network.

**Results:** In mid-south Georgia, sweet corn was harvested 75 days after planting. Daily air temperature averaged 71 °F while rainfall events resulted in 12.6 in of accumulation. Weather conditions were optimum for crop development in this location, and daily air temperatures were within the optimum range for growth (60 to 80 °F).

Sweet corn yield and ear quality for each cultivar evaluated in the southwest Georgia location are shown in Figure 6 and Table 3. Overall, sweet corn yield was the highest for Passion (631 crates/acre); however, there were no significant differences among Passion and BSS2075 (609 crates/acre), Obsession (601 crates/acre), EX08767143 (590 crates/acre), SC1336 (569 crates/acre), and GSS1170 (555 crates/acre).

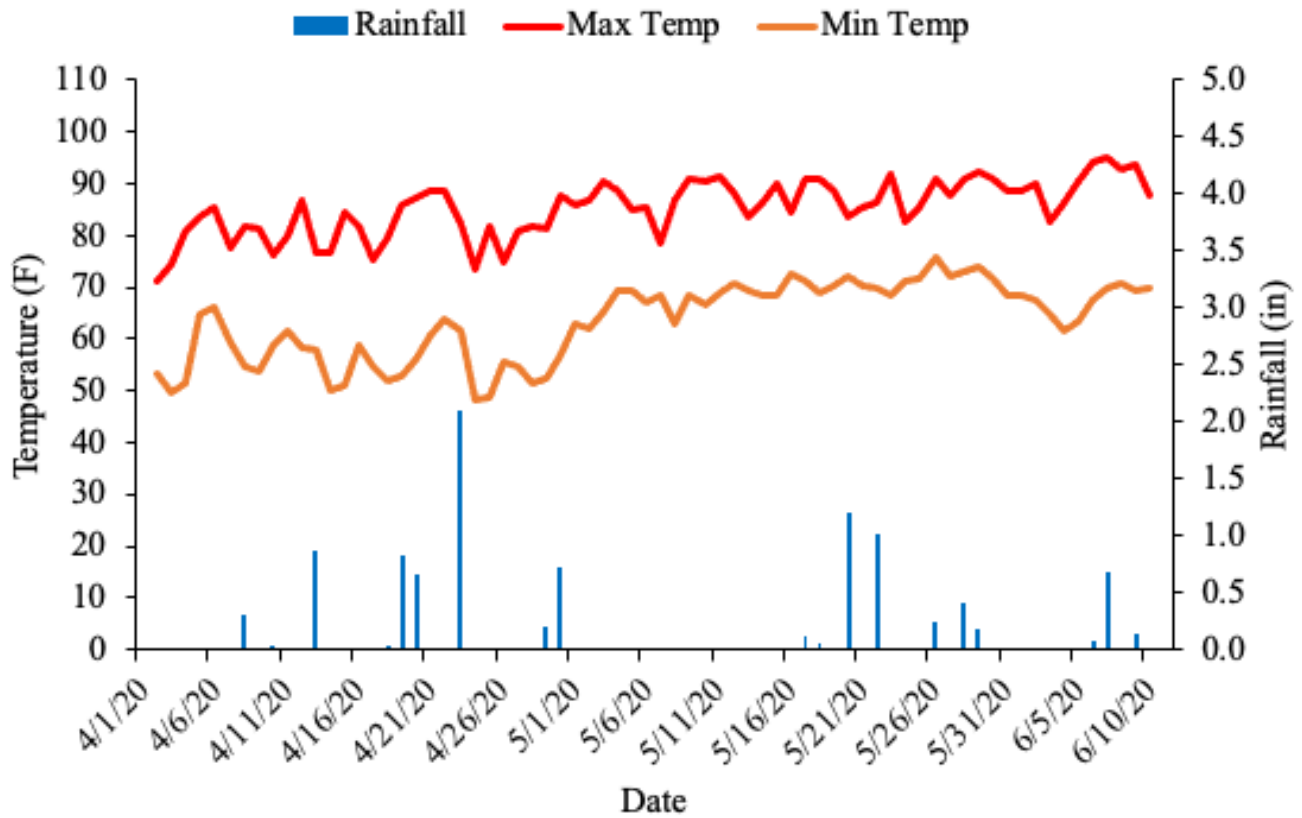


Figure 5. Maximum and minimum daily air temperature and rainfall during sweet corn development in the mid-south Georgia location during spring 2020.

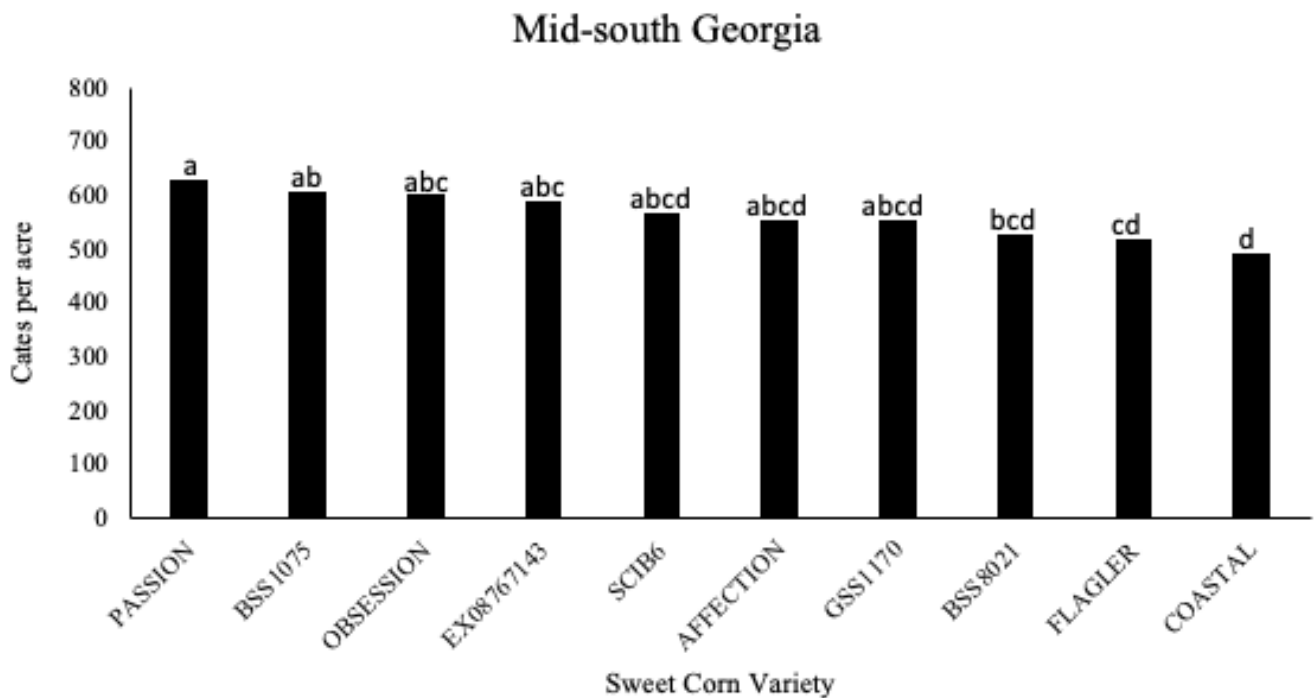


Figure 6. Sweet corn yields by cultivar in the mid-south Georgia location.



**Table 3. Ear quality by cultivar in the mid-south Georgia location.**

Cultivar	Ear/Plant**		Germination	Ear weight		Ear width		Ear length		Kernel rows		Kernel grains		Ear grains	
	#	a*		%	lb	bc	in	a	in	abc	#	bcd	#	cde	#
Affection	0.9	a*	94	0.5	bc	1.6	a	6.6	abc	15	bcd	35	cde	550	bcd
BSS1075	1.0	a	99	0.4	c	1.7	a	6.8	abc	15	bcd	39	ab	614	abc
BSS8021	0.9	a	92	0.4	c	1.5	a	6.7	abc	13	e	40	a	524	cd
Coastal	0.9	a	84	0.6	a	1.7	a	7.1	a	17	ab	36	abcd	646	a
EX08767143	1.0	a	97	0.5	bc	1.6	a	7.0	ab	14	cde	39	ab	585	abc
Flagler	0.9	a	91	0.5	ab	1.6	a	7.2	a	16	bcd	36	abcd	594	abc
GSS1170	0.9	a	94	0.5	ab	1.6	a	6.8	abc	14	de	38	abc	551	bcd
Obsession	0.9	a	100	0.5	bc	1.6	a	6.9	abc	17	abc	37	abcd	631	ab
Passion	1.0	a	100	0.3	d	1.5	a	6.3	c	14	cde	32	e	485	d
SC1336	0.9	a	99	0.4	c	1.6	a	6.5	bc	19	a	33	de	658	a

\* Values followed by similar letters within a column indicate no significant difference among cultivars according to Tukey-Kramer mean test.

\*\* The second ears of plants were harvested when considered marketable.

## Location: Southeast Georgia – Toombs County, Lyons, Georgia



*Figure 7. Sweet corn field of the collaborator grower in southeast Georgia.*

**Planting date:** June 3, 2020

**Row spacing:** 36 inches

**In-row plant spacing:** 6 inches

**Plant population:** 29,040 plants/acre

**Experimental design:** randomized complete blocks with 4 replications

**Plot size:** 30 plants per plot

**Harvest date:** July 31, 2020

**Crop management:** practices associated with soil preparation, irrigation and management of pest, weeds and diseases followed University of Georgia recommendations.

**Weather conditions:** maximum and minimum daily air temperature and rainfall was monitored using the Vidalia Weather Station from the Georgia Automated Weather Network.

**Results:** In southeast Georgia, sweet corn was harvested 60 days after planting. Daily air temperature averaged 82 °F while rainfall events accumulated 7.8 in. Maximum daily air temperature was constantly above the optimum range for sweet corn development (80 °F) in this location, which increased the growth rate and reduced the time to harvest. Although it seems a benefit, a fast growth rate does not reflect high yields. Contrarily, it reduces the vegetative stage, which consequently reduce crop development and the ability of plants to uptake nutrient.

Sweet corn yield and ear quality for each cultivar evaluated in the southwest Georgia location are shown in Figure 9 and Table 4. Overall, sweet corn yield was the highest for EX08767143 (725 crates/acre). Yield of EX08767143, however, was not significantly different compared to Affection (620 crates/acre), BSS1075 (620 crates/acre), Costal (618 crates/acre), GSS1170 (614 crates/acre), and Passion (611 crates/acre).

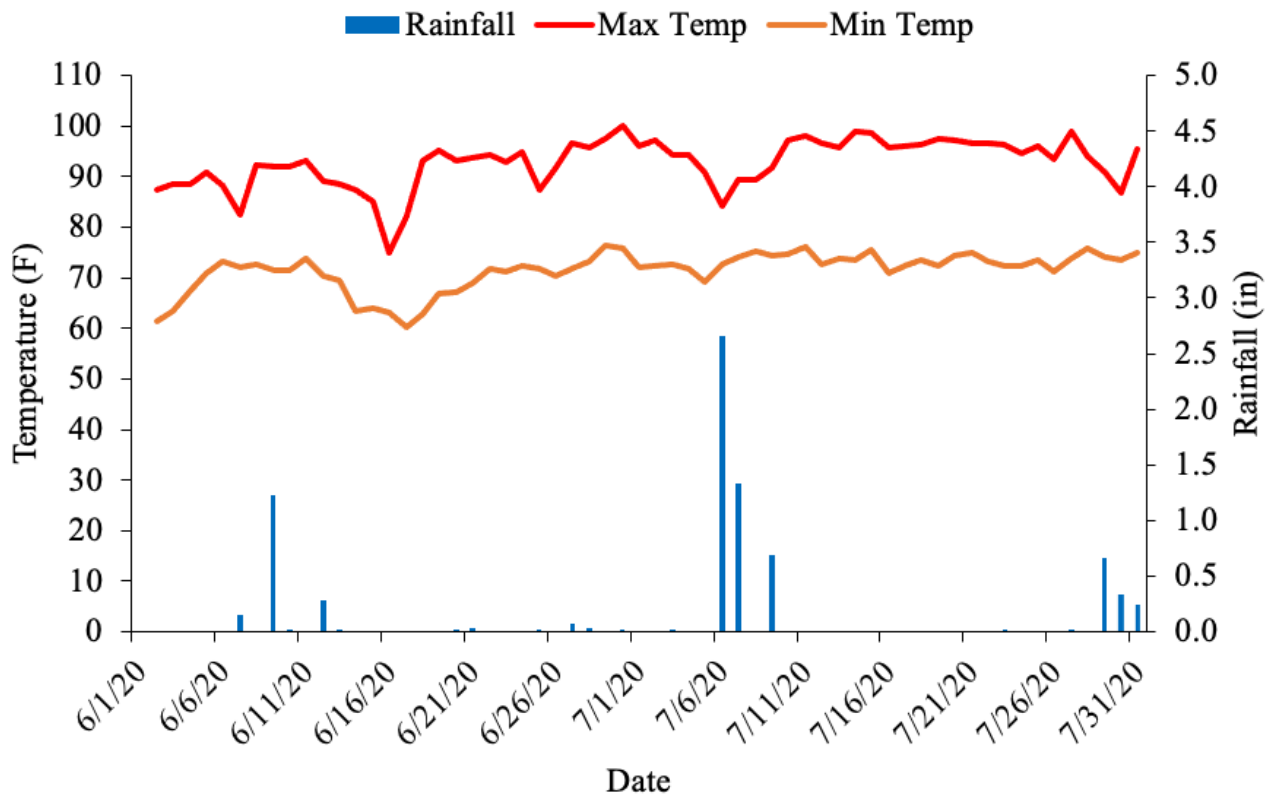


Figure 8. Maximum and minimum daily air temperature and rainfall during sweet corn development in the southeast Georgia location during spring 2020.

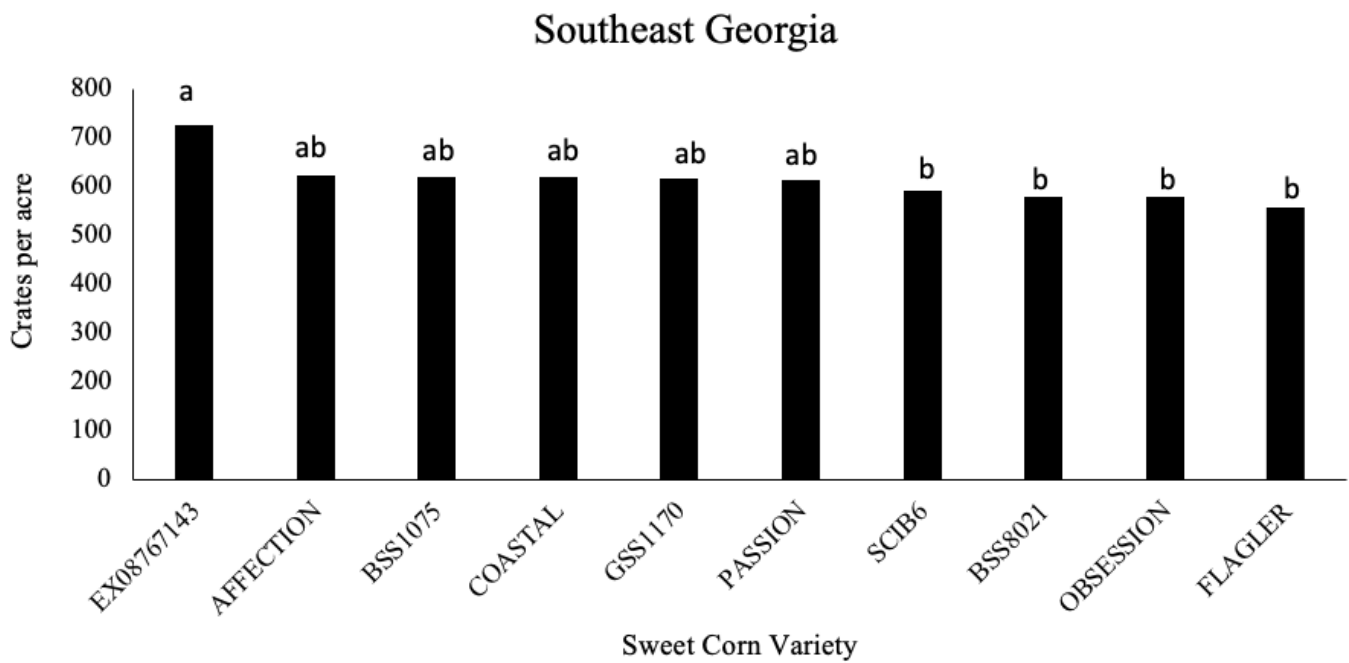


Figure 9. Sweet corn yields by cultivar in the southeast Georgia location.



**Table 4. Ear quality according to cultivar in the southeast Georgia location.**

Cultivar	Ear/Plant**		Germination	Ear weight		Ear width		Ear length		Kernel rows		Kernel grains		Ear grains	
	#	c		%	lb	a	in	a	in	c	#	cd	#	de	#
Affection	1.0	c	94	0.5	a	1.7	a	6.9	c	16	cd	32	de	540	c
BSS1075	1.0	c	96	0.5	a	1.7	a	7.2	bc	18	ab	33	cd	610	ab
BSS8021	1.0	c	96	0.5	a	1.6	a	6.9	c	14	d	33	cd	479	de
Coastal	1.3	a	78	0.5	a	1.7	a	7.4	ab	14	d	31	de	449	e
EX08767143	1.2	ab	99	0.5	a	1.7	a	7.7	a	14	d	35	abc	522	cd
Flagler	1.0	c	86	0.6	a	1.7	a	7.4	ab	16	cd	29	e	474	de
GSS1170	1.1	bc	92	0.5	a	1.7	a	7.1	bc	16	cd	34	bcd	552	bc
Obsession	1.0	c	93	0.5	a	1.7	a	7.4	ab	17	bc	38	a	648	a
Passion	1.0	c	96	0.5	a	1.7	a	7.6	a	17	bc	36	ab	620	a
SC1336	1.2	ab	79	0.5	a	1.7	a	7.2	bc	19	a	32	de	628	a

\* Values followed by similar letters within a column indicate no significant difference among cultivars according to Tukey-Kramer mean test.

\*\* The second ears of plants were harvested when considered marketable.

## Location: Northeast Florida – Hastings, Florida



*Figure 10. Sweet corn field at the Hastings Agricultural and Extension Center, Florida.*

**Planting date:** March 2, 2020

**Row spacing:** 40 inches

**In-row plant spacing:** 6.125 inches

**Plant population:** 25,602 plants/acre

**Experimental design:** randomized complete blocks with 4 replications

**Plot size:** 4-row plots. At harvest, all ears in the central 30 feet of the middle two rows in each plot were picked and weighed.

**Harvest date:** The earliest variety, ‘Superb MXR’, was harvested 72 days after planting (DAP) and remaining varieties were harvested 77 DAP.

**Crop management:** The nutrient scheme consisted of preplant and three side dressings totaling 200-50-200 (N-P-K). Practices associated with soil preparation, irrigation and management of pest, weeds and diseases followed the grower standard practices.

**Weather conditions:** maximum and minimum daily air temperature and rainfall were monitored using the Hastings Weather Station from the Florida Automated Weather Network.

**Results:** In northeast Florida, the daily air temperature averaged 70 °F while rainfall events resulted in 2.4 in of accumulation. Weather conditions were optimum for crop development in this location, and daily air temperatures were within the optimum range for growth (60 to 80 °F).

Sweet corn yield for each cultivar evaluated at the northeast Florida location are shown in Figure 12. Overall, sweet corn yield was the highest for ‘Affection’ (437 crates/acre); however, there was no significant difference among Affection and ‘BSS-1075’ (409 crates/acre), ‘Seminole Sweet XR’ (398 crates/acre), Superb MXR (383 crates/acre), Everglades (370 crates/acre), CSABF13-698 (357 crates/acre), and Obsession (356 crates/acre).

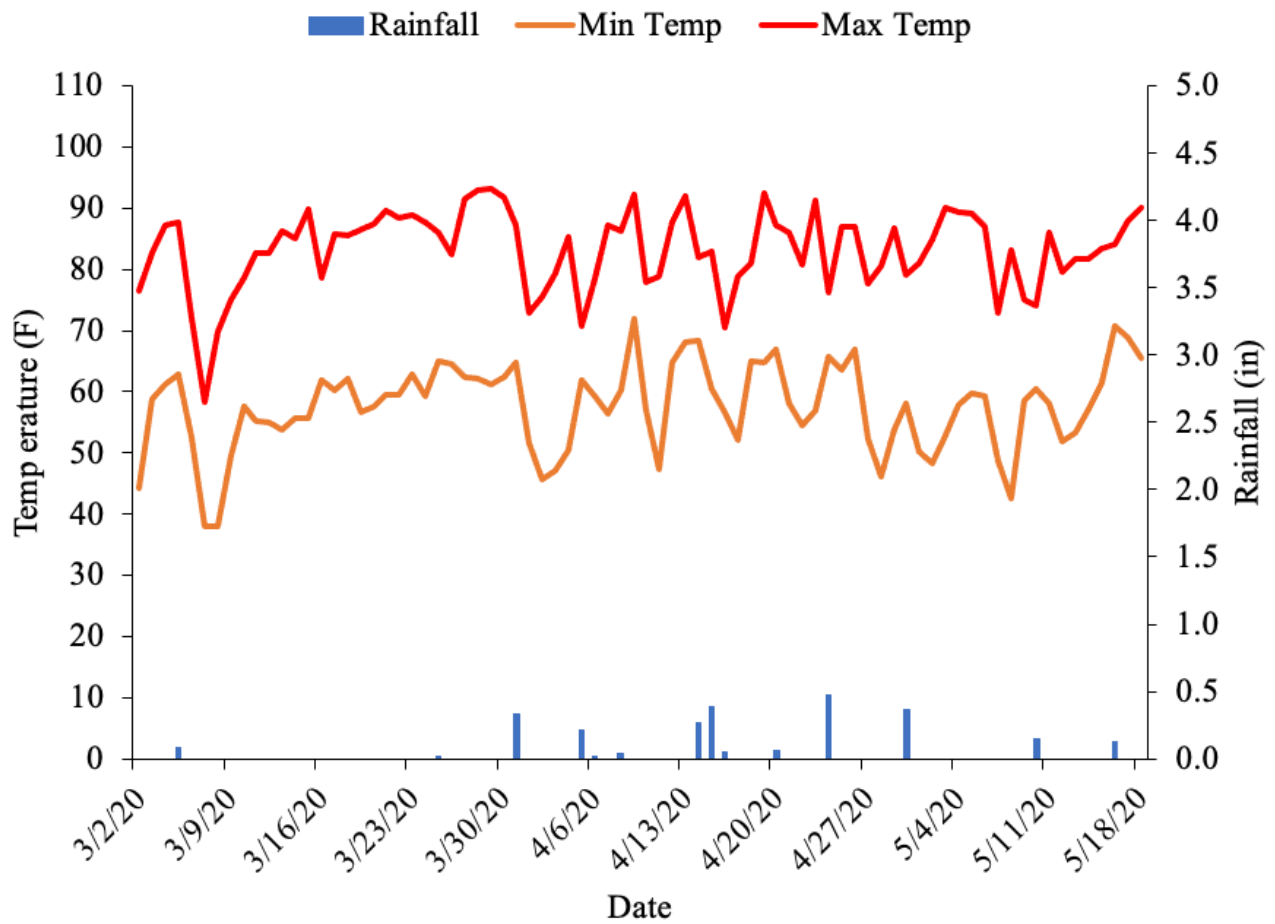


Figure 11. Maximum and minimum daily air temperature and rainfall during the sweet corn development in northeast Florida.

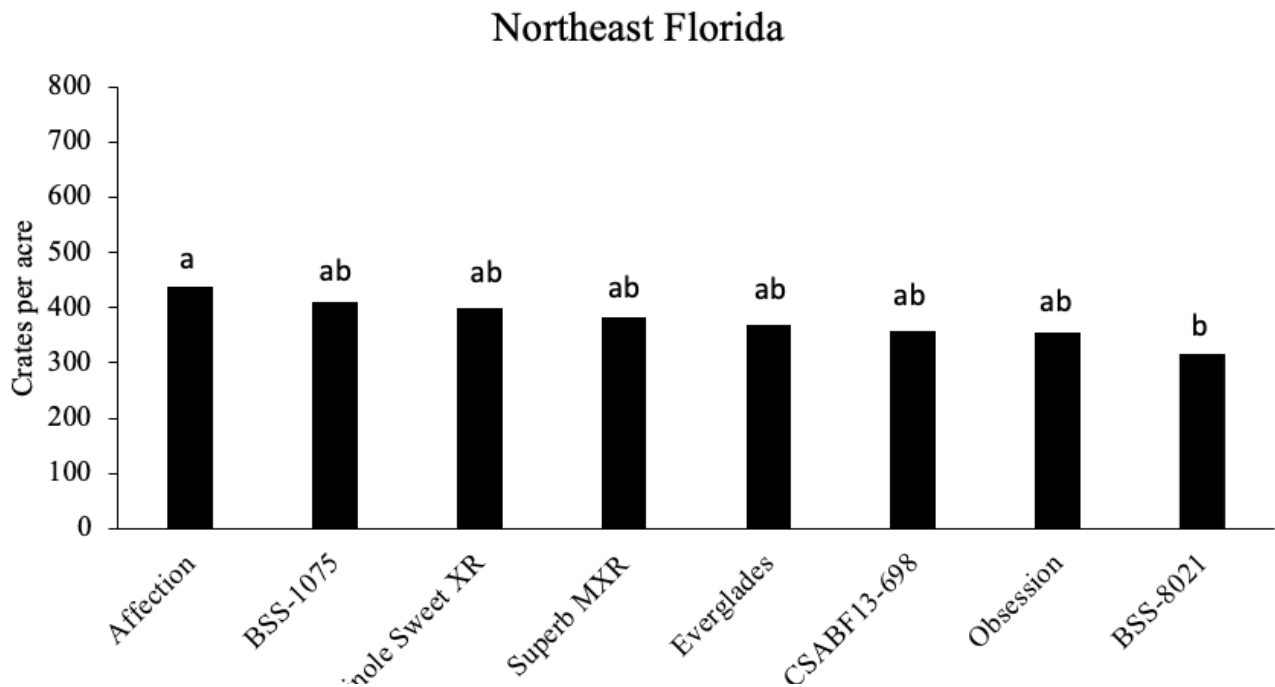


Figure 12. Sweet corn yields according to cultivar at the northeast Florida location.



## Overview of sweet corn ears in Georgia

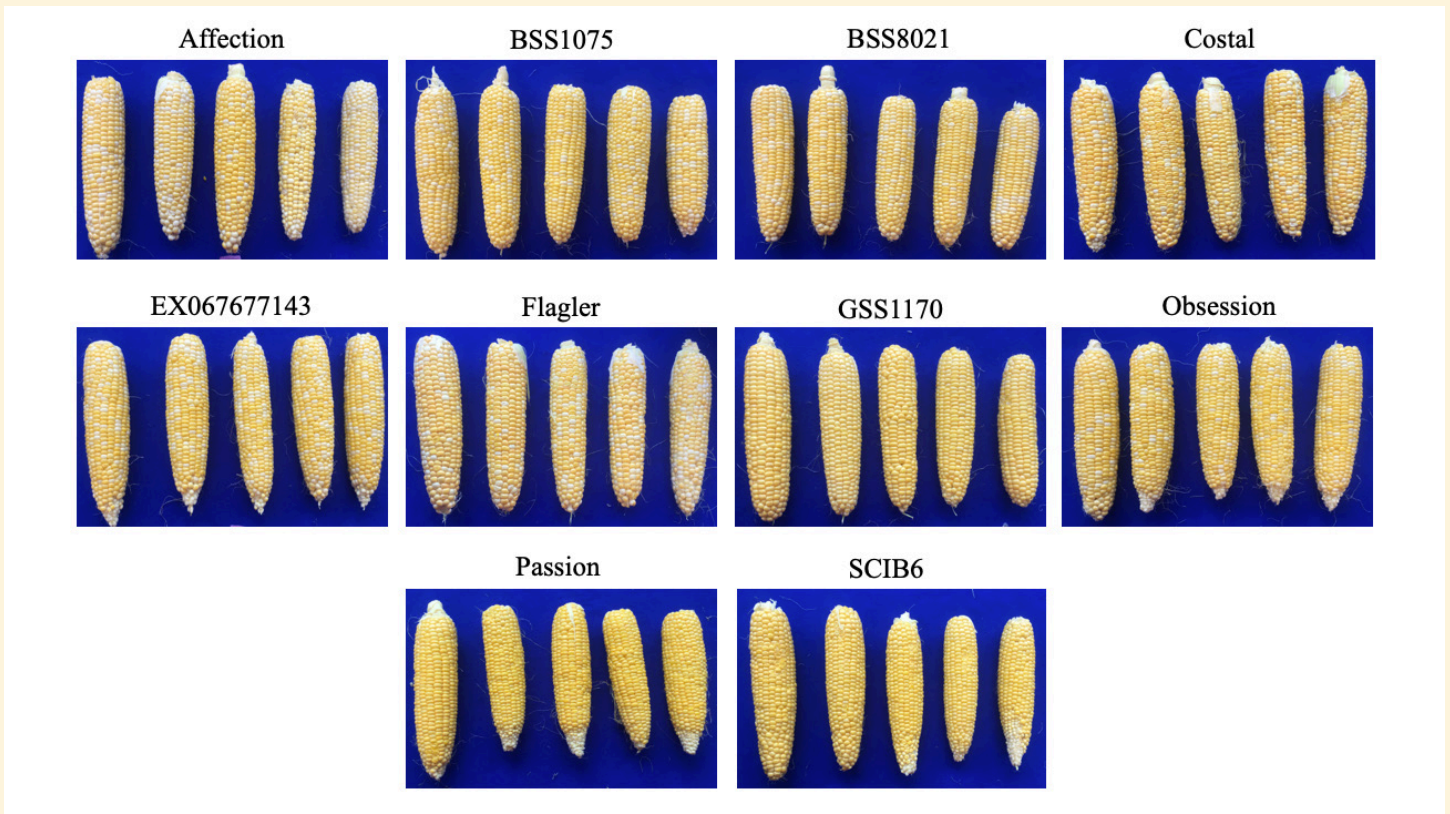


Figure 13. Sweet corn ears for each cultivar evaluated in Georgia during spring 2020.

## Overview of sweet corn ears in Florida



Figure 14. Sweet corn ears for each cultivar evaluated in Florida during spring 2020.

## ***Acknowledgments:***

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