UNIVERSITY OF DELAWARE

WHITE FRESH MARKET

VARIETY TRIAL RESULTS

Emmalea Ernest and Gordon Johnson

University of Delaware
Carvel Research and Education Center
16483 County Seat Highway
Georgetown, DE 19947

2016

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Acknowledgements

The authors express their thanks to:

Participating Seed Companies: Abbott & Cobb, Crookham Company, Harris Moran/ H.M. Clause, Inc., and Seminis Seeds.

Siegers Seed Company for donating the seed of standard varieties.

Brian Hearn and the staff at the University of Delaware Research & Education Center, Georgetown, for their assistance in planting, spraying, and irrigating the trials.

Seasonal vegetable program workers Brianna Bryfogle, Kenna Hunt, Brandon Hunt, Bert Weber and Danielle Vanderhei for their hard work planting, collecting data and harvesting the trials.

2016 University of Delaware White Fresh Market Sweet Corn Variety Trials

Emmalea Ernest and Gordon Johnson
University of Delaware
Elbert N. and Ann V. Carvel Research & Education Center
16483 County Seat Highway
Georgetown, DE 19947
302-856-7303
emmalea@ude.edu, gcjohn@udel.edu

Introduction

The UD Extension Vegetable Program conducted two white fresh market sweet corn trials in 2016. The purpose of these trials was to evaluate new white fresh market sweet corn varieties for yield and quality characteristics under Delaware growing conditions.
Similar trials have been conducted in past years and are archived at:
http://extension.udel.edu/ag/vegetable-fruit-resources/vegetable-small-fruits-program/.

Only supersweet isolation group varieties were trialed. Details for trial planting, management and harvest procedures are in the Materials and Methods section. Each trial is analyzed as a separate experiment and results are reported as such.

Materials and Methods

Both trials were located at the University of Delaware Research Farm in Georgetown, Delaware. The Early Trial was planted on April 21 in field 6B and the Mid-Season Trial was planted on May 19 next to the first planting in the same field. Plots consisted of three rows, 50 ft in length; the center row was designated for harvest. Plots were arranged in a randomized complete block design with four replications. Trials were planted with a Monosem vacuum planter with 30 inch between row spacing and 9 inch in row spacing (23,231 plants per acre). Starter fertilizer (20-10-0-1(S)) at a rate of 11 gallons per acre, was applied at planting. The trials were irrigated with a traveling linear irrigation system.

Post planting pesticide and fertilizer applications for the Early Season Trial were as follows:

- preemergence herbicide application of Lexar (*s*-metoachlor, atrazine, mesotrione) 3 qt/A on April 22;
- Cultivated and sidedressed with 30% UAN at 60 lbs/A of N on June 7
- insecticide application of Warrior II (lambda-cyhalothrin) at 2 fl oz/A on July 7;
- insecticide application of Warrior II (lambda-cyhalothrin) at 2 fl oz/A + Tactic (sticker, surfactant, deposition aid) at 16 oz/A on July 12.

Post planting pesticide and fertilizer applications for the Mid-Season Trial were as follows:

- preemergence herbicide application of Lexar (*s*-metoachlor, atrazine, mesotrione) 3 qt/A on May 19;
- Cultivated and sidedressed with 30% UAN at 60 lbs/A of N on June 14
- insecticide application of Warrior II (lambda-cyhalothrin) at 2 fl oz/A + Tactic (sticker, surfactant, deposition aid) at 16 oz/A on July 12.
- insecticide application of Warrior II (lambda-cyhalothrin) at 2 fl oz/A on July 19;
- insecticide application of Lamcap II (lambda-cyhalothrin) at 2 fl oz/A on July 30;

Varieties Entered in the 2016 White Fresh Market Supersweet Sweet Corn Variety Trials

Variety	Company
Devotion	Seminis
SV1580SC	Seminis
7401 IMP	Abbott & Cobb
GLACIAL	Abbott & Cobb
SNOW PACK	Abbott & Cobb
8909	Abbott & Cobb
CAPWF13-714i (W)	Crookham Company
CSAWP11-456	Crookham Company
Eden (W)	Crookham Company
Piscataway	Harris Moran
XTH 372A	standard c/o Siegers
XTX 378A	standard c/o Siegers
XTH 3174	standard c/o Siegers
Placer	Harris Moran

Data Collection Procedures

Counts of all emerged plants in all rows were made on May 19 (28 DAP) for the Early Trial and on June 14 (26 DAP) for the Mid-Season Trial.

Before harvest a thirty-foot section of the center row of the plot was flagged and designated for harvest. The plants in the flagged section were counted and are reported as final harvest section stands.

On July 14 (84 DAP) the following measurements were taken for eight plants from the harvest section in each replication in the Early Trial: height of the plant and height of the first ear. These measurements were taken for the Mid-Season Trial on August 2 (75 DAP).

Ears were hand harvested from the thirty-foot harvest section. Marketable ears were counted and weighed in-husk. The following measurements were taken for a sample of five ears from each plot: number of flag leaves longer than 5 cm, length of the longest flag leaf, tip cover (distance from top of ear to end of husk when half husked or length of ear protruding from husk reported as a negative number), ear length, ear diameter, tip fill (distance from end of ear to first well filled kernels), and number of rows.

Discussion of Trial Results

Early Season Trial Yield

The early season trial of fourteen white supersweet fresh market sweet corn varieties was planted into Rosedale loamy sand, 0 to 2 percent slopes on April 21, 2016. Soil temperature during the first 14 days after planting averaged 61°F at a two inch depth under sod, with daily maximum temperatures averaging 64°F and daily minimum temperatures averaging 58°F. Emergence at 28 days after planting ranged from 94% to 71% and there were statistically significant differences in emergence between the varieties (Table 1). The varieties with the highest percent emergence were XTH 372A, Piscataway, Devotion and XTX 378A. XTH 3174 had significantly lower percent emergence than all of the other varieties.

Some varieties had a high incidence of double planting, presumably due to small or inconsistent seed size: Devotion, Glacial, SV1580SC and 7401 IMP. These varieties had higher than optimal plant densities (see Table 1, Harvest Section Final Stand) and some (Glacial, Devotion and 7401 IMP) produced lower yields, possibly as a result of the inconsistent spacing resulting in unmarketable ears.

This trial was well irrigated and not drought stressed, but cooler than normal late April and early May conditions delayed maturity.

The earliest maturing varieties were Piscataway, Eden and XTX 378A which were harvested 89 DAP after the accumulation of 1565 heat units (base 50, max 86). The latest maturing varieties were 7401 IMP and CSAWP11-456, which were harvested 98 DAP after the accumulation of 1825 heat units. The varieties 8909, Piscataway, XTX 378A, SV1580SC, Eden, and Placer had significantly higher yield than CSAWP11-456, Glacial, Devotion and 7401 IMP (Table 4) in terms of the number of marketable ears produced and in terms of the weight of marketable ears produced.

Mid-Season Trial Yield

The mid-season trial of fourteen white supersweet fresh market sweet corn varieties was planted into Rosedale loamy sand, 0 to 2 percent slopes on May 19, 2016. Soil temperature during the first 14 days after planting averaged 71°F at a two inch depth under sod, with daily maximum temperatures averaging 76°F and daily minimum temperatures averaging 67°F. Emergence at 24 days after planting ranged from 98% to 53% and there were statistically significant differences in emergence between the varieties (Table 1). Emergence for XTH 3174 was poor even under more ideal soil temperature conditions, which suggests a quality problem with that particular seed lot. All of the other varieties had nearly equal or greater percent emergence in the May 19 planting than in the April 21 planting.

Some varieties again had a high incidence of double planting, presumably due to small or inconsistent seed size: Devotion, Glacial, and SV1580SC. These varieties had higher than optimal plant densities (see Table 1, Harvest Section Final Stand) and some (Glacial and Devotion) produced lower yields, possibly as a result of the inconsistent spacing resulting in unmarketable ears.

This trial was well irrigated and experienced good growing conditions.

The earliest maturing varieties were Piscataway, Eden and Placer, which were harvested 70 DAP after the accumulation of 1610 heat units (base 50, max 86). The latest maturing varieties were 7401 IMP and CSAWP11-456, which were harvested 76 DAP after the accumulation of 1785 heat units. The highest yielding varieties in the trial in terms of number of marketable ears were Piscataway, XTX 378A, SV1580SC, Eden, Placer, and CSAWP11-456 (Table 5).

Ear and Plant Characteristics

There were significant differences in plant height and height of the first ear between varieties in the both plantings (Tables 2 and 3). Devotion was the tallest variety in both trials and 8909 was the shortest.

In both trials there were significant differences between the varieties for all of the ear characteristics evaluated (Tables 6 & 7). Tip cover and tip fill are discussed further below.

Overall Variety Assessment

Piscataway was a top yielding variety in both trials. It was also among the earliest varieties to mature. Tip fill was somewhat problematic in the early planting but not the mid-season planting. The ears of Piscataway were smaller than the other varieties in the trial, as is typical for short season varieties

XTX 378A was a top yielding variety in both trials. It was among the earliest varieties to mature in the first planting but not in the second. Tip cover and tip fill were good in the early planting and acceptable in the mid-season planting.

SV1580SC was a top yielding variety in both trials. It had a similar maturity time to Devotion in both plantings, but was higher yielding. Tip fill was good in both trials. Tip cover may be an issue for this variety.

Eden was a top yielding variety in both trials. It was also among the earliest to mature. Tip fill and tip cover were good for both plantings.

Placer was a top yielding variety in both trials. It was also among the earliest to mature. Tip cover was acceptable but tip fill was worse than average for both trials.

8909 was the highest yielding variety in the early trial, but among the lowest yielding in the second planting. Tip cover and tip fill were excellent in both trials.

2016 White Fresh Market Supersweet Sweet Corn Trials: Summary Table of Variety Information

	% Early Emergence	Yield (Ears Per Acre)		Tip Cover (cm)		Tip Fill (cm)		Ear Wt (lbs)	
		Early	Mid	Early	Mid	Early	Mid	Early	Mid
8909	87.7	19,021	17,279	4.3	5.3	0.8	0.0	0.50	0.49
Piscataway	94.2	18,731	23,813	3.8	4.5	2.1	0.2	0.38	0.46
XTX 378A	93.8	18,586	23,523	3.7	2.4	0.4	1.1	0.42	0.53
SV1580SC	87.4	17,569	22,797	1.7	1.0	0.5	0.3	0.48	0.45
Eden (W)	84.1	17,279	22,216	3.4	3.6	0.9	0.7	0.44	0.47
Placer	87.6	17,134	21,635	2.5	2.3	2.3	2.5	0.48	0.53
CAPWF13-714i (W)	81.1	16,117	19,021	1.9	2.6	2.3	1.5	0.47	0.46
XTH 372A	94.3	15,537	20,909	2.6	2.4	1.7	0.4	0.42	0.54
XTH 3174	70.8	15,391	15,682	2.9	3.8	2.6	1.0	0.56	0.55
SNOW PACK	81.9	13,939	16,553	4.5	3.7	0.5	0.1	0.42	0.59
CSAWP11-456	89.2	10,745	21,344	2.2	3.1	3.4	1.8	0.43	0.54
GLACIAL	89.7	10,600	18,440	2.0	2.9	1.0	1.4	0.40	0.53
Devotion	93.8	10,454	19,747	2.3	3.2	1.3	0.6	0.46	0.47
7401 IMP	83.4	10,019	21,054	1.7	2.5	3.7	1.7	0.45	0.57

Cell Highlighting Color Key
Green=highest ranked varieties for a trait.
Yellow=good performance.
Orange=below average performance
Red=poor performance

2016 University of Delaware White Fresh Market Supersweet Sweet Corn Trials

Table 1. 2016 White Fresh Market Supersweet Sweet Corn Trials: Whole Plot Emergence and Final Stand Counts

Variety	Early Trial Emergence 28 DAP	Early Trial Harvest Section Final Stand	Mid-Season Trial Emergence 26 DAP	Mid-Season Trial Harvest Section Final Stand
XTH 372A	94.3 a	98.5 def	94.4 ab	101.5 efg
Piscataway	94.2 a	105.8 cdef	94.3 ab	106.5 cde
Devotion	93.8 ab	130.3 a	95.8 ab	121.3 ab
XTX 378A	93.8 ab	112.3 bcd	97.6 a	109.3 cde
GLACIAL	89.7 bc	118.0 abc	89.5 d	121.0 ab
CSAWP11-456	89.2 c	112.3 bcd	93.8 bc	113.5 bc
8909	87.7 cd	102.3 cdef	89.1 d	97.0 fg
Placer	87.6 cd	94.5 ef	90.3 cd	104.5 cdef
SV1580SC	87.4 cd	129.8 a	90.0 d	127.8 a
Eden (W)	84.1 de	109.8 cde	90.3 cd	109.0 cde
7401 IMP	83.4 de	120.3 ab	90.7 cd	112.0 bcd
SNOW PACK	81.9 e	91.8 f	85.0 e	92.5 g
CAPWF13-714i (W)	81.1 e	118.3 abc	80.5 f	103.5 def
XTH 3174	70.8 f	92.3 f	52.8 g	72.8 h
p-value	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***
$LSD_{0.05}$	**4.3437**	**16.888**	**3.5036**	**9.4778**

Table 2. 2016 White Fresh Market Supersweet Sweet Corn: Early Trial Plant Characteristics

Variety	Plant Height (ft)	Height of 1st Ear (ft)
Devotion	6.9 a	2.2 a
CSAWP11-456	6.7 b	1.6 c
SV1580SC	6.6 b	1.8 b
XTH 3174	6.6 bc	1.4 ef
XTX 378A	6.4 cd	1.6 c
CAPWF13-714i (W)	6.3 d	1.8 b
7401 IMP	6.0 e	1.3 f
GLACIAL	6.0 e	1.6 cd
Placer	6.0 e	1.5 de
Piscataway	5.8 f	1.4 ef
SNOW PACK	5.7 fg	1.4 ef
XTH 372A	5.7 fg	1.3 f
Eden (W)	5.6 g	1.1 g
8909	5.2 h	1.1 g
p-value	***<0.0001***	***<0.0001***
LSD	**0.1678**	**0.1273**

Table 3. 2016 White Fresh Market Supersweet Sweet Corn: Mid-Season Trial Plant Characteristics

Variety	Plant Height (ft)	Height of 1st Ear (ft)
Devotion	7.2 a	2.3 a
SV1580SC	7.1 ab	2.1 b
CSAWP11-456	7.0 b	2.0 b
XTH 3174	6.9 bc	1.2 e
XTX 378A	6.7 cd	1.8 c
Piscataway	6.6 de	1.5 d
GLACIAL	6.6 de	1.5 d
7401 IMP	6.6 ef	1.5 d
CAPWF13-714i (W)	6.4 fg	1.6 d
Placer	6.3 g	1.4 d
Eden (W)	6.0 h	1.1 f
XTH 372A	5.9 h	1.1 f
SNOW PACK	5.9 h	1.5 d
8909	5.8 h	1.2 ef
p-value	***<0.0001***	***<0.0001***
LSD	**0.1885**	**0.1534**

Table 4. 2016 Early White Fresh Market Supersweet Sweet Corn Trial: Yield and Harvest Data

Variety	Days to Harvest	Heat Units to Harvest*	# Ears per Acre	Dozen Ears per Acre	Unhusked Wt (lbs/A)	Ears per Plant
8909	91	1620	19,021 a	1585 a	12,371 a	0.80 a
Piscataway	89	1565	18,731 a	1561 a	10,208 abc	0.76 a
XTX 378A	89	1565	18,586 a	1549 a	10,443 ab	0.72 a
SV1580SC	97	1795	17,569 a	1464 a	10,362 abc	0.60 ab
Eden (W)	89	1565	17,279 a	1440 a	10,399 ab	0.68 a
Placer	91	1620	17,134 a	1428 a	11,250 a	0.77 a
CAPWF13-714i (W)	97	1795	16,117 ab	1343 ab	9,334 abcd	0.59 abc
XTH 372A	91	1620	15,537 ab	1295 ab	8,512 abcd	0.68 a
XTH 3174	91	1620	15,391 ab	1283 ab	10,025 abcd	0.72 a
SNOW PACK	91	1620	13,939 ab	1162 ab	9,319 abcd	0.65 a
CSAWP11-456	98	1825	10,745 b	895 b	6,070 cd	0.42 bcd
GLACIAL	91	1620	10,600 b	883 b	5,770 d	0.40 bcd
Devotion	97	1795	10,454 b	871 b	5,860 d	0.35 d
7401 IMP	98	1825	10,019 b	835 b	6,160 bcd	0.36 cd
p-value			***0.0196***	***0.0196***	***0.0374***	***0.0005***
$LSD_{0.05}$			**6226.2**	**518.87**	**4321.9**	**0.2348**

*****Base 50, max 86 heat units accumulated beginning with the day after planting and continuing through the day before harvest.

Table 5. 2016 Mid-Season White Fresh Market Supersweet Sweet Corn Trial: Yield and Harvest Data

Variety	Days to Harvest	Heat Units to Harvest*	# Ears per Acre	Dozen Ears per Acre	Unhusked Wt (lbs/A)	Ears per Plant
Piscataway	70	1610	23,813 a	1984 a	15,592 abc	0.97 a
XTX 378A	74	1730	23,523 ab	1960 ab	16,227 ab	0.93 a
SV1580SC	74	1730	22,797 ab	1900 ab	13,559 cdefg	0.77 cde
Eden (W)	70	1610	22,216 abc	1852 abc	14,363 abcde	0.88 abc
Placer	70	1610	21,635 abc	1803 abc	16,556 a	0.89 ab
CSAWP11-456	76	1785	21,344 abcd	1779 abcd	14,645 abcd	0.82 bc
7401 IMP	76	1785	21,054 bcde	1755 bcde	14,090 bcdef	0.81 bcd
XTH 372A	71	1640	20,909 bcde	1742 bcde	14,203 bcde	0.89 ab
Devotion	74	1730	19,747 cdef	1646 cdef	11,561 g	0.70 de
CAPWF13-714i (W)	71	1640	19,021 defg	1585 defg	11,514 g	0.80 bcd
GLACIAL	74	1730	18,440 efg	1537 efg	12,673 defg	0.67 e
8909	74	1730	17,279 fgh	1440 fgh	12,296 efg	0.80 bcd
SNOW PACK	74	1730	16,553 gh	1379 gh	13,228 defg	0.77 cde
XTH 3174	71	1640	15,682 h	1307 h	11,776 fg	0.93 a
p-value			***<0.0001***	***<0.0001***	***0.0003***	***<0.0001***
$LSD_{0.05}$			**2717.2**	**226.37**	**2341.8**	**0.1109**

*****Base 50, max 86 heat units accumulated beginning with the day after planting and continuing through the day before harvest.

Table 6. 2016 Early White Fresh Market Supersweet Sweet Corn Trial: Ear Characteristics*

Variety	Per Ear Weight (lbs)	# of Flag Leaves	Length of Longest Flag (cm)	Tip Cover (cm)	Ear Length (cm)	Ear Diameter (cm)	Tip Fill (cm)	# of Rows
8909	0.50 ab	5.6 cd	24.0 a	4.3 a	20.0 ab	4.3 cd	0.8 ef	16.5 ef
Piscataway	0.38 f	5.4 de	14.2 cd	3.8 ab	18.6 f	4.0 h	2.1 cd	14.5 g
XTX 378A	0.42 def	4.6 ef	15.7 c	3.7 ab	19.3 cde	4.2 efg	0.4 f	18.1 ab
SV1580SC	0.48 bc	6.7 ab	19.1 b	1.7 f	20.0 ab	4.4 bc	0.5 f	17.5 bcd
Eden (W)	0.44 bcdef	5.8 bcd	13.5 cd	3.4 bc	18.6 f	4.2 def	0.9 ef	17.1 cdef
Placer	0.48 bcd	6.5 abc	14.0 cd	2.5 def	19.7 abcd	4.4 bc	2.3 cd	17.1 cdef
CAPWF13-714i (W)	0.47 bcd	4.4 fg	15.0 cd	1.9 ef	18.9 ef	4.5 ab	2.3 cd	17.6 bcd
XTH 372A	0.42 cdef	6.0 bcd	16.6 bc	2.6 cde	19.1 def	4.3 de	1.7 cde	16.8 def
XTH 3174	0.56 a	4.6 ef	16.2 bc	2.9 bcd	20.0 abc	4.6 a	2.6 bc	16.4 ef
SNOW PACK	0.42 cdef	7.2 a	16.5 bc	4.5 a	19.9 abc	4.1 fgh	0.5 f	16.2 f
CSAWP11-456	0.43 cdef	3.6 g	12.3 d	2.2 def	19.4 bcde	4.2 def	3.4 ab	17.2 bcde
GLACIAL	0.40 ef	5.9 bcd	22.7 a	2.0 ef	20.3 a	4.1 gh	1.0 ef	18.6 a
Devotion	0.46 bcde	5.7 cd	16.6 bc	2.3 def	19.3 cde	4.4 bc	1.3 def	17.8 abc
7401 IMP	0.45 bcdef	4.6 ef	14.6 cd	1.7 f	20.0 ab	4.3 cde	3.7 a	17.5 bcd
p-value	***0.0003***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***
LSD	**0.064**	**0.9367**	**3.2957**	**0.8485**	**0.6755**	**0.1318**	**1.0488**	**0.9753**

* average weight from 5 ears per plot with husks removed; number of flag leaves longer than 5 cm; tip cover measured as distance from tip of ear to end of husk when half husked or length of ear protruding from husk reported as a negative number; tip fill measured as distance from tip of ear to first well filled kernels (a lower number indicates better tip fill).

Table 7. 2016 Mid-Season White Fresh Market Supersweet Sweet Corn Trial: Ear Characteristics*

Variety	Per Ear Weight (lbs)	# of Flag Leaves	Length of Longest Flag (cm)	Tip Cover (cm)	Ear Length (cm)	Ear Diameter (cm)	Tip Fill (cm)	# of Rows
Piscataway	0.46 e	4.8 ef	13.5 cde	4.5 ab	19.5 efg	4.3 g	0.2 gh	15.6 ef
XTX 378A	0.53 abc	3.5 g	10.2 f	2.4 f	20.0 def	4.6 bcd	1.1 cde	17.1 bc
SV1580SC	0.45 e	6.4 ab	11.7 ef	1.0 g	20.0 de	4.3 efg	0.3 gh	16.8 cd
Eden (W)	0.47 de	5.5 bcde	15.3 bcd	3.6 cd	19.4 g	4.4 efg	0.7 efg	16.0 def
Placer	0.53 bcd	6.7 a	12.1 ef	2.3 f	21.3 a	4.5 cde	2.5 a	17.4 abc
CSAWP11-456	0.54 abc	5.2 cdef	10.3 f	3.1 cdef	21.4 a	4.4 e	1.8 b	16.2 de
7401 IMP	0.57 ab	4.6 ef	16.1 abc	2.5 ef	21.5 a	4.7 ab	1.7 bc	17.4 abc
XTH 372A	0.54 abc	5.5 bcde	15.4 bcd	2.4 f	19.5 fg	4.6 abc	0.4 fgh	16.8 cd
Devotion	0.47 e	5.0 cdef	12.2 ef	3.2 cde	19.6 efg	4.4 ef	0.6 efgh	17.3 abc
CAPWF13-714i (W)	0.46 e	4.9 def	12.6 def	2.6 ef	19.5 efg	4.3 fg	1.5 bcd	17.5 abc
GLACIAL	0.53 bc	4.4 fg	11.6 ef	2.9 def	20.6 bc	4.7 ab	1.4 bcd	18.1 a
8909	0.49 cde	5.0 cdef	18.7 a	5.3 a	20.2 cd	4.4 de	0.0 h	15.3 f
SNOW PACK	0.59 a	6.0 abc	12.8 def	3.7 c	21.0 ab	4.7 a	0.1 gh	17.8 ab
XTH 3174	0.55 ab	5.9 abcd	18.1 ab	3.8 bc	20.7 b	4.5 cde	1.0 def	16.2 de
p-value	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***
LSD	**0.0554**	**1.0342**	**2.9845**	**0.8**	**0.5226**	**0.1424**	**0.6154**	**0.88**

* average weight from 5 ears per plot with husks removed; number of flag leaves longer than 5 cm; tip cover measured as distance from tip of ear to end of husk when half husked or length of ear protruding from husk reported as a negative number; tip fill measured as distance from tip of ear to first well filled kernels (a lower number indicates better tip fill).

Appendix A: Photographs of the Varieties in the 2016 White Supersweet Sweet Corn Trials in Order of Maturity

Early *Mid-Season*

Eden

Crookham

Early *Mid-Season*

Piscataway

Harris Moran

Early *Mid-Season*

Placer

Harris Moran

Early *Mid-Season*

XTH 372A

Standard Variety

Early *Mid-Season*

XTH 3174

Standard Variety

Early *Mid-Season*

XTX 378A

Standard Variety

Early *Mid-Season*

Glacial

Abbott & Cobb

Early *Mid-Season*

Snow Pack

Abbott & Cobb

Early *Mid-Season*

8909

Abbott & Cobb

Early *Mid-Season*

CAPWF13-714i (W)

Crookham

Early *Mid-Season*

Devotion
Seminis

Early *Mid-Season*

SV1580SC
Seminis

Early *Mid-Season*

7401 IMP

Abbott & Cobb

Early *Mid-Season*

CSAWP11-456

Crookham

Appendix B: Weather Conditions During the 2016 Early and Mid Season White Supersweet Sweet Corn Trials

Weather Data from DEOS Weather Station (http://www.deos.udel.edu/) at the Carvel Research and Education Center, Georgetown, DE

Date	Days After Planting		Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
	Early Trial	Mid-Season Trial					
21-Apr	0		72.9	40.0	0	62.8	53.8
22-Apr	1		78.1	62.0	0.03	65.8	59.2
23-Apr	2		65.6	51.5	0.24	63.3	60.0
24-Apr	3		67.2	41.1	0	67.4	54.4
25-Apr	4		74.5	43.8	0	67.0	55.8
26-Apr	5		85.4	61.2	0	70.1	60.7
27-Apr	6		61.2	49.2	0.26	65.7	59.5
28-Apr	7		52.8	46.6	0.48	59.5	56.7
29-Apr	8		52.7	47.9	0.04	58.0	55.6
30-Apr	9		58.8	47.9	0	61.9	55.4
1-May	10		54.3	48.8	0.49	58.5	56.6
2-May	11		77.7	50.9	0.43	67.9	56.7
3-May	12		70.1	50.2	0.3	67.6	63.0
4-May	13		54.2	49.6	1.1	63.8	59.3
5-May	14		52.2	48.4	0	59.3	57.4
6-May	15		54.0	47.4	0.66	59.7	55.9
7-May	16		62.3	48.9	0.01	63.0	56.6
8-May	17		71.7	49.0	0	66.5	57.7
9-May	18		67.2	43.1	0.01	62.7	56.6
10-May	19		64.4	51.8	0	65.2	59.6
11-May	20		70.2	51.4	0.37	64.4	59.8
12-May	21		70.5	56.4	0	67.8	61.2
13-May	22		70.1	55.4	0.15	66.0	62.7
14-May	23		76.6	51.7	0.16	71.5	60.5
15-May	24		60.3	47.2	0	67.5	61.0
16-May	25		63.1	37.4	0	69.4	57.4
17-May	26		63.7	48.7	0.24	63.6	60.5
18-May	27		64.5	51.5	0	68.4	59.2
19-May	28	0	71.9	52.2	0	71.7	60.6
20-May	29	1	75.9	46.2	0	73.8	59.8
21-May	30	2	61.7	53.7	0.92	67.2	62.7
22-May	31	3	58.5	53.5	0.14	63.4	61.1
23-May	32	4	68.4	55.0	0.01	68.8	60.5
24-May	33	5	80.3	56.5	0.01	73.5	62.8
25-May	34	6	85.8	57.4	0	76.6	64.0
26-May	35	7	89.5	58.3	0	79.2	66.2
27-May	36	8	88.4	68.0	0	80.6	69.9
28-May	37	9	88.1	64.6	0	81.8	70.6
29-May	38	10	83.4	56.9	0.01	77.7	69.6
30-May	39	11	75.5	67.1	1.8	74.8	72.3
31-May	40	12	83.6	64.9	0.23	80.3	70.4
1-Jun	41	13	82.7	64.5	0	82.7	71.9

Date	Days After Planting		Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
	Early Trial	Mid-Season Trial					
2-Jun	42	14	71.9	65.5	0	76.7	73.5
3-Jun	43	15	74.7	64.3	0.01	76.2	72.1
4-Jun	44	16	82.2	62.5	0	79.6	70.9
5-Jun	45	17	85.7	66.1	0.04	79.4	73.0
6-Jun	46	18	85.3	70.9	0	83.2	74.2
7-Jun	47	19	88.1	63.9	0.06	84.1	75.2
8-Jun	48	20	74.1	54.3	0	77.8	71.0
9-Jun	49	21	79.1	50.6	0	78.3	67.2
10-Jun	50	22	79.1	55.4	0	79.1	68.4
11-Jun	51	23	89.2	59.2	0	80.9	69.9
12-Jun	52	24	93.3	68.6	0	82.8	74.3
13-Jun	53	25	77.8	60.6	0	82.1	71.3
14-Jun	54	26	79.2	61.9	0	83.9	73.5
15-Jun	55	27	77.8	56.5	0	77.1	71.7
16-Jun	56	28	69.9	64.2	0.54	74.7	72.2
17-Jun	57	29	78.2	62.4	0.25	80.0	70.1
18-Jun	58	30	81.2	56.6	0	82.7	68.5
19-Jun	59	31	87.9	57.2	0	84.1	70.0
20-Jun	60	32	89.1	63.7	0	85.1	73.0
21-Jun	61	33	87.2	67.3	0.87	81.8	74.6
22-Jun	62	34	82.4	65.7	0	78.4	72.5
23-Jun	63	35	80.3	64.4	0.14	78.7	71.9
24-Jun	64	36	82.1	68.1	1.98	80.9	73.9
25-Jun	65	37	79.9	62.6	0	82.4	73.6
26-Jun	66	38	80.9	57.0	0	83.0	71.4
27-Jun	67	39	85.5	60.3	0	84.0	73.4
28-Jun	68	40	78.7	71.4	0.16	79.8	76.2
29-Jun	69	41	85.0	66.1	0	83.4	75.1
30-Jun	70	42	84.6	62.0	0	83.7	73.5
1-Jul	71	43	85.1	68.6	0.09	82.2	76.3
2-Jul	72	44	80.4	65.5	0	82.7	74.9
3-Jul	73	45	70.2	59.5	0.32	78.1	73.3
4-Jul	74	46	74.1	62.4	0.04	75.8	72.1
5-Jul	75	47	89.8	73.3	0	83.5	74.4
6-Jul	76	48	90.3	72.4	0	86.3	77.3
7-Jul	77	49	92.2	74.2	0	87.7	78.9
8-Jul	78	50	92.7	75.2	0	88.5	80.1
9-Jul	79	51	89.3	72.4	0	86.9	80.2
10-Jul	80	52	83.0	69.2	0	84.3	78.9
11-Jul	81	53	85.1	63.6	0	85.7	76.6
12-Jul	82	54	85.3	62.6	0	85.8	76.3
13-Jul	83	55	85.5	69.4	0.56	82.4	78.3
14-Jul	84	56	91.6	75.2	0	88.7	78.0
15-Jul	85	57	91.1	75.0	0	88.7	80.0
16-Jul	86	58	88.6	72.7	0	86.7	80.3
17-Jul	87	59	90.1	70.6	0	88.5	79.5
18-Jul	88	60	92.1	72.2	0.44	88.1	80.4
19-Jul	89	61	87.8	71.9	0	88.0	79.5
20-Jul	90	62	83.8	66.1	0.45	85.6	78.1
21-Jul	91	63	87.3	65.6	0	87.5	77.8

Date	Days After Planting		Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
	Early Trial	Mid-Season Trial					
22-Jul	92	64	90.2	70.4	0	86.3	79.1
23-Jul	93	65	95.0	74.4	0	88.3	80.2
24-Jul	94	66	93.3	74.4	0	88.4	81.5
25-Jul	95	67	95.9	76.3	0.01	89.3	82.4
26-Jul	96	68	92.6	73.0	1.34	88.4	80.9
27-Jul	97	69	93.4	75.9	0.01	89.0	83.0
28-Jul	98	70	90.5	72.9	2.29	86.4	81.5
29-Jul		71	86.1	72.2	0.13	84.3	80.4
30-Jul		72	87.0	70.5	0	84.5	80.0
31-Jul		73	89.7	73.8	0.04	86.6	80.6
1-Aug		74	88.2	72.4	0.26	85.6	81.8
2-Aug		75	83.7	68.9	0	85.4	79.7
3-Aug		76	79.4	65.7	0	83.3	77.9