UNIVERSITY OF DELAWARE

WHITE FRESH MARKET SWEET CORN

VARIETY TRIAL RESULTS

2010

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Acknowledgements

The authors express their thanks to:

Delaware Department of Agriculture for financial support of these trials through the Specialty Crops Block Grant program.

Participating Seed Companies: Crites Seed, Inc., Crookham Company, Harris Moran Seed Company, Mesa Maize and Syngenta Seeds, Inc.,

Seedway, LLC 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 at the research farm.

Mark and Tony at Freeman Brothers Farm for hosting the supersweet trial.

Seasonal vegetable program workers Jean Thomas, Chelsea Aydelotte, Brooke Drury and Heather Baker for their hard work planting, collecting data and harvesting the trials.

2010 University of Delaware White Fresh Market Sweet Corn Variety Trials

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Introduction

The UD Extension Vegetable Program conducted three white fresh market sweet corn trials in 2010. The purpose of these trials was to evaluate new white fresh market sweet corn varieties for yield and quality characteristics under Delaware growing conditions. A similar trial was conducted in Delaware in 2005. The report from the previous trial is archived at http://ag.udel.edu/extension/vegprogram/trialresults.htm.

One supersweet isolation group trial and two sugary enhanced isolation group trials were planted in summer 2010. 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

Trial	Early Sugary Enhanced Isolation Group Trial	Late Sugary Enhanced Isolation Group Trial	Supersweet Isolation Group Trial
Planting Date	May 7	July 1	May 11
Planting Procedure	Hand planted with jab-planters	Planted with Monosem	Hand planted with jab-planters
Spacing	9” in-row 30” between-row	9” in-row 30” between-row	9” in-row 21”/51” between-row
# Varieties	10	11	9
Location	UD Carvel REC Georgetown, DE	UD Carvel REC Georgetown, DE	Lewes, DE 38°43’56.99” N 75°10’36.73” W
Plot Design	4 replications 3-row plots plots 50 ft long	4 replications 3-row plots plots 50 ft long	4 replications 4-row plots plots 38 ft long
Irrigation	Traveling linear irrigation system		Traveling gun
Weed Control	Pre-emergence herbicides used on all plots. Weed control was excellent in all plots.		
Insecticide	All plots received multiple sprays to control corn earworm and European corn borer. Incidence was very low in all plots.		
Harvest Began	July 15 (69 DAP)	August 30 (60 DAP)	July 19 (69 DAP)
Harvest Ended	July 21 (75 DAP)	September 7 (68 DAP)	July 26 (76 DAP)

Varieties Entered in the 2010 White Fresh Market Sweet Corn Variety Trials

Variety	Isolation Group	Early Trial	Late Trial	Company
Kokopelli	se	X	X	Mesa Maize
Edelweiss	se	X	X	Mesa Maize
Whiteout	se	X	X	Mesa Maize
Sugar Pearl	se	X	X	Mesa Maize
Mattapoisett	se	X	X	Mesa Maize
Silver King	se	X	X	check
Argent	se	X	X	check
Celestial	se	X	X	check
Silver Duchess (CSYWF 7-260)	se	X	X	Crookham
Frosty	se	X	X	Crookham
Sweet Ice	se		X	check
Munition	sh_2	X		Syngenta
Iceberg	sh_2	X		Harris Moran
Bandero	sh_2	X		Harris Moran
ZHW 1622	sh_2	X		Crites Seed, Inc.
MIRAI 421-W	sh_2	X		check
Devotion	sh_2	X		check
White Saturn	sh_2	X		check
Xtra Tender 372A	sh_2	X		check
CAAWF 9-381	sh_2	X		Crookham

Data Collection Procedures

Before harvest a thirty-foot section of the center row of the plot was flagged and designated for harvest. For the supersweet trial 15 feet from each of the two center rows were flagged. The plants in the flagged section were counted and are reported as final stands.

At the time of harvest, the height of the plant and the height of the first ear was measured and recorded for eight plants from each replication, with the exception of the Late Sugary Enhanced Trial, where this data was not taken.

Ears were hand harvested from the thirty-foot harvest section. Ears were counted and weighed in-husk and husked. The ear length, ear diameter, row number and kernel depth was determined for a sample of five ears from each plot on the day of harvest.

Discussion of Trial Results

Sugary Enhanced Trials

The varieties in the sugary enhanced isolation group were planted on May 7 and July 1 into adjacent plots in Field 25 at the Carvel Research and Education Center. The soil at the site is Hammonton loamy sand, 0 to 2 percent slopes. Stands were commercially acceptable in both trials. However, in the early trial there were significant stand count differences among varieties suggesting differences in seed vigor.

The early trial experienced some drought and heat stress. The late trial did not experience excessive heat during critical periods (pollination) and received adequate irrigation.

There were significant differences in yield for both trials. The highest yielding varieties in the early trial were Edelweiss, Kokopelli, Mattapoisett, Silver Duchess and Celestial. All five of these varieties produced significantly higher yields (in terms of ears/acre) than the standard varieties Silver King and Argent. In the early trial Silver King and Argent seemed to be more acutely affected by the drought and heat stress than the newer varieties.

In the late trial Edelweiss, Celestial and Silver King were the highest yielding varieties in terms of ears/acre. Edelweiss and Celestial produced significantly higher yields (in terms of ears/acre) than the standard varieties Argent and Sweet Ice.

As is typical, the shortest season varieties (i.e. Frosty, Sugar Pearl) did not produce as high a yield as the best longer season varieties. Short season varieties, like Frosty and Sugar Pearl, which produce attractive ears are desirable for first plantings to obtain the earliest possible harvests.

While taste was not evaluated scientifically, the top pick for flavor by those sampling was Whiteout.

Supersweet Trial

The trial of varieties in the supersweet isolation group was planted into Greenwich loam, 0 to 2 percent slopes on May 11, 2010. Emergence was good for most varieties. The exceptions were White Saturn, which had less than 75% emergence and ZHW 1622, which had less than 50% emergence.

This trial was not drought stressed and benefited from ample irrigation and heavier soil. There were very few significant differences in yield in terms of ears per acre. ZHW 1622 yielded significantly less than the other varieties in the trial (probably explained by this variety's less than 50% stand) and Iceberg yielded significantly less than the top four varieties, Bandero, MIRAI 421-W, Munition and Xtra Tender 372A. In terms of weight of the husked ears, MIRAI 421-W, Xtra Tender 372A, Bandero and Devotion were the highest yielding varieties in the trial.

While taste was not evaluated scientifically, the top picks for flavor by those sampling were MIRAI 421-W and Devotion.

2010 University of Delaware White Fresh Market Sweet Corn Trials
Results for Sugary Enhanced Varieties
Trials planted May 7, 2010 and July 1, 2010

Table 1. 2010 White Fresh Market Sweet Corn Early Sugary Enhanced Trial: Final Stand Counts

Variety	**Plants/30 ft. of Row**	
Celestial	37	a
Silver Duchess	36	ab
Mattapoisett	34	abc
Frosty	34	abc
Edelweiss	33	bcd
Sugar Pearl	33	bcd
Kokopelli	33	cd
Argent	33	cd
Silver King	33	cd
Whiteout	30	d
p-value	***0.0138***	
LSD	**3.0**	

Table 2. 2010 White Fresh Market Sweet Corn Late Sugary Enhanced Trial: Final Stand Counts

Variety	**Plants/30 ft. of Row**	
Silver Duchess	41	a
Edelweiss	40	a
Mattapoisett	38	a
Argent	38	a
Celestial	38	a
Sugar Pearl	38	a
Frosty	37	a
Whiteout	36	a
Kokopelli	35	a
Sweet Ice	35	a
Silver King	33	a
p-value	***0.077***	
LSD	**NA**	

Table 3. 2010 White Fresh Market Sweet Corn Early Sugary Enhanced Trial: Plant Characteristics

Variety	Plant Height (cm)	Height of 1st Ear (cm)
Kokopelli	201 a	64 a
Silver Duchess	194 b	46 f
Celestial	192 bc	50 e
Edelweiss	192 bc	62 ab
Silver King	188 bcd	55 cd
Whiteout	188 bcd	61 ab
Mattapoisett	187 cd	56 c
Sugar Pearl	184 de	60 b
Argent	179 e	52 de
Frosty	160 f	45 f
p-value	***<0.0001***	***<0.0001***
LSD	**6.1**	**3.5**

Table 4. 2010 White Fresh Market Sweet Corn Early Sugary Enhanced Trial: Yield and Harvest Data

Variety	Days to Harvest	# Ears per Acre	Dozen Ears per Acre	Weight Unhusked Ears (lbs/A)	Weight Husked Ears (lbs/A)	# Ears per Plant
Kokopelli	75	17134 a	1428 a	11398 b	7797 a	0.90 a
Edelweiss	69	16553 a	1379 a	11003 bc	7510 abc	0.86 ab
Mattapoisett	75	16117 ab	1344 ab	13838 a	7740 a	0.82 abc
Silver Duchess	75	15972 ab	1331 ab	10353 bcd	7609 ab	0.77 abcd
Celestial	75	14230 abc	1186 abc	9583 cde	6011 cd	0.67 cdef
Sugar Pearl	69	13213 bcd	1101 bcd	8971 de	6142 bcd	0.69 bcde
Whiteout	69	12342 cde	1029 cde	8187 ef	5454 de	0.71 bcde
Frosty	71	12342 cde	1028 cde	7161 f	4810 de	0.63 def
Silver King	75	10745 de	896 de	8858 de	5039 de	0.58 ef
Argent	75	9584 e	799 e	6824 f	4400 e	0.50 f
p-value		***0.0003***	***0.0003***	***<0.0001***	***<0.0001***	***0.0015***
LSD		**3242.7**	**270.1**	**1676.8**	**1538.1**	**0.176**

Table 5. 2010 White Fresh Market Sweet Corn Late Sugary Enhanced Trial: Yield and Harvest Data

Variety	Days to Harvest	# Ears per Acre	Dozen Ears per Acre	Weight Unhusked Ears (lbs/A)	Weight Husked Ears (lbs/A)	# Ears per Plant
Edelweiss	64	22361 a	1864 a	16326 a	11000 a	0.96 abc
Celestial	68	22071 a	1839 a	13321 bc	9389 ab	1.00 ab
Silver King	64	20038 ab	1670 ab	13841 b	8985 bcd	1.04 a
Kokopelli	64	18295 bc	1525 bc	10493 de	7353 de	0.90 abcd
Mattapoisett	68	18150 bc	1513 bc	13771 b	9153 bc	0.82 cde
Sweet Ice	64	17134 bcd	1428 bcd	11233 cd	7565 cde	0.85 bcd
Whiteout	64	16843 bcd	1404 bcd	11053 cd	7867 bcde	0.82 cde
Argent	68	16553 bcd	1379 bcd	11648 bcd	8416 bcde	0.75 def
Silver Duchess	64	15972 cd	1331 cd	11072 cd	6981 ef	0.68 ef
Frosty	60	14230 d	1186 d	7547 f	4150 g	0.66 ef
Sugar Pearl	60	13794 d	1150 d	8320 ef	5454 fg	0.63 f
p-value		***0.0002***	***0.0002***	***<0.0001***	***<0.0001***	***<0.0001***
LSD		**3517.6**	**293.2**	**2305.1**	**1684.1**	**0.167**

Table 6. 2010 White Fresh Market Sweet Corn Early Sugary Enhanced Trial: Ear Characteristics

Variety	Unhusked Ear Weight (g)	Husked Ear Weight (g)	Ear Length (cm)	Ear Diameter (cm)	Kernel Depth (cm)	Mean Number of Rows	Median Number of Rows
Mattapoisett	404 a	217 a	21.7 a	4.4 ab	0.9 c	15.6 abc	16
Silver Duchess	294 b	216 ab	20.9 b	4.3 abc	0.9 bc	14.6 cde	14
Silver King	397 a	212 ab	21.6 ab	4.4 ab	0.9 c	16.3 a	16
Sugar Pearl	308 b	211 ab	17.8 de	4.4 a	1.0 ab	14.6 cde	14
Argent	323 b	207 ab	21.3 ab	4.4 ab	0.9 bc	14.9 cd	16
Kokopelli	302 b	206 abc	19.4 c	4.4 ab	1.0 a	15.2 bcd	16
Edelweiss	301 b	206 abc	18.1 d	4.4 ab	0.9 bc	16.0 ab	16
Whiteout	300 b	200 bc	19.1 c	4.2 cd	0.7 d	16.5 a	16
Celestial	310 b	191 cd	21.2 ab	4.2 d	0.9 c	13.9 e	14
Frosty	263 b	177 d	17.2 e	4.3 bcd	1.0 ab	14.5 de	14
p-value	***0.001***	***0.0005***	***<0.0001***	***0.0016***	***<0.0001***	***<0.0001***	
LSD	**60.9**	**16.0**	**0.75**	**0.13**	**0.07**	**1.00**	

Table 7. 2010 White Fresh Market Sweet Corn Late Sugary Enhanced Trial: Ear Characteristics

Variety	Unhusked Ear Weight (g)	Husked Ear Weight (g)	Ear Length (cm)	Ear Diameter (cm)	Kernel Depth (cm)	Mean Number of Rows	Median Number of Rows
Argent	319 ab	230 a	20.0 bc	4.4 bc	0.9 cde	14.1 bc	14
Mattapoisett	344 a	228 ab	20.7 a	4.4 bc	0.9 e	14.8 ab	15
Edelweiss	331 ab	223 abc	18.0 ef	4.7 a	1.0 b	14.5 abc	14
Whiteout	297 bc	212 abcd	19.8 c	4.5 b	1.0 bc	15.3 a	16
Silver King	315 ab	203 bcde	19.7 c	4.4 bc	0.9 e	14.4 abc	14
Sweet Ice	302 bc	202 bcde	18.7 d	4.5 b	1.0 bcd	13.7 cd	14
Silver Duchess	317 ab	200 cde	20.4 ab	4.2 cd	0.9 de	13.0 de	12
Celestial	274 cd	193 de	20.6 ab	4.2 d	0.9 de	12.6 e	12
Kokopelli	260 d	182 e	18.0 e	4.4 bcd	1.0 bcd	14.4 abc	14
Sugar Pearl	274 cd	179 e	17.5 ef	4.4 bc	1.1 a	13.9 bcd	14
Frosty	241 d	135 f	17.4 f	3.9 e	1.0 bcd	14.0 bc	14
p-value	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	
LSD	**37.3**	**26.9**	**0.56**	**0.17**	**0.07**	**0.93**	

2010 University of Delaware White Fresh Market Sweet Corn Trials
Results for Supersweet Varieties
Trial planted May 11, 2010

Table 8. 2010 White Fresh Market Sweet Corn Supersweet Trial: Final Stand Counts

Variety	Plants/30 ft. of Row
CAAWF 9-381	34 a
Munition	33 a
MIRAI 421-W	33 a
Bandero	33 a
Xtra Tender 372A	32 a
Iceberg	31 ab
Devotion	30 ab
White Saturn	27 b
ZHW 1622	17 c
p-value	***<0.0001***
LSD	**4.74**

Table 9. 2010 White Fresh Market Sweet Corn Supersweet Trial: Plant Characteristics

Variety	Plant Height (cm)	Height of 1st Ear (cm)
Devotion	213 ab	84 a
MIRAI 421-W	196 b	75 b
Munition	261 a	73 b
White Saturn	182 b	68 c
Iceberg	201 b	66 cd
Bandero	185 b	65 d
Xtra Tender 372A	168 b	56 e
ZHW 1622	164 b	50 f
CAAWF 9-381	162 b	43 g
p-value	***0.0081***	***<0.0001***
LSD	**52.9**	**3.4**

Table 10. 2010 White Fresh Market Sweet Corn Supersweet Trial: Yield and Harvest Data

Variety	Days to Harvest	# Ears per Acre	Dozen Ears per Acre	Weight Unhusked Ears (lbs/A)	Weight Husked Ears (lbs/A)	# Ears per Plant
Bandero	72	19747 a	1646 a	14773 a	9081 ab	1.05 b
MIRAI 421-W	72	19312 a	1610 a	14343 a	10356 a	1.01 b
Munition	76	19312 a	1609 a	11718 bc	8814 bc	1.01 b
Xtra Tender 372A	69	19021 a	1585 a	13318 ab	9551 ab	1.02 b
CAAWF 9-381	72	18295 ab	1525 ab	13118 ab	8503 bcd	0.93 b
Devotion	72	18150 ab	1513 ab	14691 a	9066 ab	1.08 b
White Saturn	69	17715 ab	1477 ab	10736 c	7524 cde	1.13 a
Iceberg	69	16117 b	1343 b	10884 c	7388 de	0.92 b
ZHW 1622	76	13068 c	1089 c	10469 c	7002 e	1.33 a
p-value		***0.0014***	***0.0002***	***0.0002***	***0.0004***	***0.0489***
LSD		**2819.5**	**2019.2**	**2019.2**	**1336.7**	**0.238**

Table 11. 2010 White Fresh Market Sweet Corn Supersweet Trial: Ear Characteristics

Variety	Unhusked Ear Weight (g)	Husked Ear Weight (g)	Ear Length (cm)	Ear Diameter (cm)	Kernel Depth (cm)	Mean Number of Rows	Median Number of Rows
ZHW 1622	364 a	245 a	20.2 b	4.6 bcd	1.0 a	16.4 b	16
MIRAI 421-W	337 b	243 a	21.1 a	4.9 a	0.9 bcd	15.8 bc	16
Xtra Tender 372A	319 cd	227 b	20.1 bc	4.7 bc	0.9 e	16.2 b	16
Devotion	366 a	226 b	21.5 a	4.7 b	0.9 de	18.1 a	18
CAAWF 9-381	325 bc	212 c	18.5 e	4.5 d	0.9 bcd	16.4 b	16
Bandero	339 b	210 c	19.8 bc	4.5 cd	1.0 ab	16.2 b	16
Iceberg	307 d	209 c	20.3 b	4.3 e	0.9 cde	14.7 d	15
Munition	276 e	208 c	19.5 cd	4.2 e	1.0 abc	15.5 bcd	16
White Saturn	274 e	192 d	19.2 d	4.5 d	0.9 e	15.2 cd	16
p-value	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	***<0.0001***	
LSD	**17.6**	**11.9**	**0.56**	**0.14**	**0.07**	**0.95**	

Appendix A: Photographs of the Sugary Enhanced Varieties in Order of Maturity

Sugar Pearl
Mesa Maize

Frosty
Crookham

Edelweiss
Mesa Maize

Whiteout
Mesa Maize

Sweet Ice
Standard Variety

Kokopelli
Mesa Maize

Silver King
Standard Variety

Silver Duchess
Crookham

Mattapoisett
Mesa Maize

Argent
Standard Variety

Celestial
Standard Variety

Appendix B: Photographs of the Supersweet Varieties in Order of Maturity

Xtra Tender 372A
Standard Variety

White Saturn
Standard Variety

Iceberg
Harris Moran

Bandero
Harris Moran

MIRAI 421-W
Standard Variety

CAAWF 9-381
Crookham

Devotion
Standard Variety

Munition
Syngenta

ZHW 1622
Crites Seed

Appendix C: Weather Conditions During the Early and Late Sugary Enhanced Trials

Weather Data from DEOS Weather Station (http://www.deos.udel.edu/index.html) 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 Sugary Enhanced Trial	Late Sugary Enhanced Trial					
7-May	0		77	49.7	0	79.2	60.2
8-May	1		83.5	58	0	78.2	65
9-May	2		60.9	43.9	0	71.9	59.5
10-May	3		61.8	37.3	0	73.3	53.5
11-May	4		58.8	35	0.12	63.6	52.5
12-May	5		79	50	0.06	75.9	55.1
13-May	6		64.9	48.7	0	74.6	57.2
14-May	7		85.6	53.1	0.37	80.2	59.9
15-May	8		75.1	56.1	0	77.8	65.1
16-May	9		71.3	54.3	0	77.5	61.8
17-May	10		63.7	49.5	0.03	66.8	59.8
18-May	11		58.3	51.2	1.12	62.3	57.3
19-May	12		65.9	51.7	0	70.9	57.1
20-May	13		77.6	51.1	0	74.8	57.7
21-May	14		86.2	54.2	0	82.1	60.3
22-May	15		76.4	58.5	0	77.9	64.7
23-May	16		72.9	60.6	0	78	67.2
24-May	17		70.6	60	0	75.9	67.1
25-May	18		75.6	58.9	0	82.4	67.2
26-May	19		87.4	54.1	0	85.7	64.8
27-May	20		80.9	59.2	0	86	70.6
28-May	21		74.3	58.9	0	80.8	68.4
29-May	22		82.1	59.5	0	79.6	67.6
30-May	23		87.3	66.3	0	87.3	69.3
31-May	24		91.3	63.2	0	88.3	70
1-Jun	25		85.5	69.8	0	86	74.2
2-Jun	26		89.3	68.2	0	91.7	71.8
3-Jun	27		88.4	69.3	0	93.4	74.5
4-Jun	28		89.8	68.1	0	95	74
5-Jun	29		90.5	75.3	0	95.3	78.2
6-Jun	30		90.3	67	0	94.6	78.2
7-Jun	31		76.1	58.9	0	93.7	70.4
8-Jun	32		76.5	55.7	0	93.6	68.4
9-Jun	33		72.3	57.3	0	76.1	71.3
10-Jun	34		87.2	68.8	0	93.4	70.6
11-Jun	35		80.3	60.2	0	97.8	71
12-Jun	36		86.6	61.9	0	97.3	73.1

Date	Days After Planting		Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
	Early Sugary Enhanced Trial	Late Sugary Enhanced Trial					
13-Jun	37		92.4	73.8	0	100.1	78
14-Jun	38		87.3	68	0	95.2	76.1
15-Jun	39		78.6	67.7	0	92.4	74.9
16-Jun	40		83.3	66.7	0	90.5	73.6
17-Jun	41		85.5	66.5	0	98.3	75.6
18-Jun	42		82.9	57.9	0	95.1	71
19-Jun	43		88.1	61.2	0	98.3	71.7
20-Jun	44		93.7	72	0	102.1	77.7
21-Jun	45		90.5	66.6	0	99.4	76.9
22-Jun	46		92.8	66.3	0	102.3	76.6
23-Jun	47		91.9	68.5	0	96.9	74.9
24-Jun	48		94.7	74.1	0	98.3	78.5
25-Jun	49		87.3	71	0	96.9	76.2
26-Jun	50		89.1	67.4	0	96.1	74.8
27-Jun	51		94.3	73	0	101.2	77.4
28-Jun	52		94.9	76.8	0.23	101.8	81.7
29-Jun	53		88.6	76.3	0.05	91.1	79.7
1-Jul	54		77.4	57.3	0	94.4	70.5
2-Jul	55	0	78.8	53.7	0	93.2	70.2
3-Jul	56	1	85.1	55.4	0	97.8	70.1
4-Jul	57	2	90.7	63	0	99.6	72.4
5-Jul	58	3	96	68	0	101	75.4
6-Jul	59	4	100.5	68.9	0	103.7	77.8
7-Jul	60	5	95.5	72.8	0	103.9	80.3
8-Jul	61	6	84.3	73.4	0	92.9	82.5
9-Jul	62	7	87.4	71.8	0.02	97.4	79.1
10-Jul	63	8	76.9	70.3	1.15	83.5	75.8
11-Jul	64	9	86.9	68.5	0.01	91.5	72.5
12-Jul	65	10	88.1	67.5	0	91.2	72.6
13-Jul	66	11	86.8	73.5	0.31	90.9	77.5
14-Jul	67	12	81.3	72.5	0.03	86	77.1
15-Jul	68	13	88.1	71.3	0	94.9	74.5
16-Jul	69	14	93.4	73.2	0	97	77.7
17-Jul	70	15	91.1	75.1	0	98.3	80.4
18-Jul	71	16	92.3	72.8	0	99.9	79.3
19-Jul	72	17	88.6	74.9	0	94.2	81.3
20-Jul	73	18	92.2	73.4	0	101.2	79.6
21-Jul	74	19	90.7	73.6	0	101.2	81.7
22-Jul	75	20	91.2	72.1	0	103.8	80.2
23-Jul		21	94.8	72.1	0	105.9	81.3
24-Jul		22	97.9	79.7	0	108.9	85
25-Jul		23	97.9	72.2	0.09	109.1	83.7
26-Jul		24	84.7	66.9	0	101.7	77.4
27-Jul		25	88.3	61.5	0	101.2	74.5

Date	Days After Planting		Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
	Early Sugary Enhanced Trial	Late Sugary Enhanced Trial					
28-Jul		27	89.8	72.9	0	101.5	80.7
29-Jul		28	90.8	74.4	0.78	99.3	81.1
30-Jul		29	81.9	65.1	0	93.1	72.2
31-Jul		30	85.7	60.4	0	98.3	70.4
1-Aug		31	80.9	66.3	0.08	91	74.7
2-Aug		32	81.8	68.5	0	89	75.7
3-Aug		33	87.5	65.3	0	98.4	74.8
4-Aug		34	88.8	73.8	0	97.8	79.5
5-Aug		35	94.4	73.8	0.36	103.1	80.3
6-Aug		36	88.5	69.2	0	93.4	76.2
7-Aug		37	87.2	64	0	98.4	72.2
8-Aug		38	89.2	65.6	0	100.3	74.4
9-Aug		39	92.2	71.1	0.01	103.5	79.6
10-Aug		40	96.1	73.1	0	105.5	80.2
11-Aug		41	93.7	74.4	0	103.1	81.8
12-Aug		42	85	73.1	0.54	92.7	78.2
13-Aug		43	79.8	70.1	0	86.6	75.1
14-Aug		44	80.4	62.9	0	95.7	70.7
15-Aug		45	81.4	67	0	86.6	75.4
16-Aug		46	90.7	73	0	99.4	77.6
17-Aug		47	83.2	75.5	0	84.6	80.2
18-Aug		48	76.6	68.3	0.69	83.6	77.5
19-Aug		49	86.1	69.7	0	87	76
20-Aug		50	89.9	68.4	0	90.4	76.5
21-Aug		51	88.7	65.1	0	88.9	77
22-Aug		52	85.5	72.5	0.34	85.4	79.6
23-Aug		53	82.3	67.8	0	84	76.2
24-Aug		54	71.2	65.2	0.01	78.9	74.3
25-Aug		55	76.6	62.8	0	78.7	71.9
26-Aug		56	84.1	62.7	0	84	71.8
27-Aug		57	80.9	56.9	0	85.1	71.4
28-Aug		58	83	56.3	0	85.9	71.8
29-Aug		59	91.1	56.7	0	87.5	72.5
30-Aug		60	92.8	63.8	0	88.7	75.1
31-Aug		61	94.4	62.2	0	88.5	75.4
1-Sep		62	92.9	64.2	0	89.7	76.7
2-Sep		63	90.3	69.3	0	88.4	78.1
3-Sep		64	82.1	72.5	0.01	82.5	78.3
4-Sep		65	81.6	57.7	0	84.9	75.1
5-Sep		66	78.5	50.9	0	83.9	71.8
6-Sep		67	83.3	50.4	0	84.1	71
7-Sep		68	86.4	61	0	84.5	73.2

Appendix D: Weather Conditions During the Supersweet Trial

Weather Data from DEOS Weather Station (http://www.deos.udel.edu/index.html) at Warrington Farm, Harbeson, DE (approximately 5 miles from the trial location)

Date	Days After Planting	Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
11-May	0	57.2	35.8	0.1	59.4	55.5
12-May	1	77.3	49.6	0.04	62.8	56.4
13-May	2	60.7	48.2	0	63.1	58
14-May	3	87.2	53.5	0.19	66.1	59.3
15-May	4	76.2	54.7	0	67.5	63.5
16-May	5	68.8	53.3	0	66.4	61.4
17-May	6	63.3	49	0.04	63.8	60.6
18-May	7	58.4	51.8	1.47	61.5	58.7
19-May	8	64.8	51.7	0	62	58.5
20-May	9	76.9	50.6	0	66.6	59.1
21-May	10	84.5	54.2	0	68.4	61.4
22-May	11	74.3	57.4	0	67.9	63.4
23-May	12	69.8	59.8	0.01	67.6	64.9
24-May	13	66.9	59.4	0	67.2	64.8
25-May	14	73.2	57	0	70	64.8
26-May	15	86.8	52.5	0	71.2	63.9
27-May	16	76.6	59.6	0	72.3	67.2
28-May	17	71	59.3	0.01	69.8	66.7
29-May	18	81	58.3	0	69.1	65.6
30-May	19	87.2	64.1	0	72.7	66.4
31-May	20	91.5	62.4	0	73.3	67.4
1-Jun	21	85.3	69.5	0.02	73.3	70.1
2-Jun	22	86.4	67.1	0	74.2	69.3
3-Jun	23	89.3	68.2	0.07	75.6	70.6
4-Jun	24	90.4	67.4	0	76.2	71.1
5-Jun	25	90.7	74.3	0	77.2	72.9
6-Jun	26	90.9	68.4	0.02	77.3	73.6
7-Jun	27	74.4	57.9	0	75.2	70.8
8-Jun	28	75.8	54.2	0	74.9	68.8
9-Jun	29	71.6	54.9	0.04	72.2	69.3
10-Jun	30	86.5	68.3	0	75	69.1
11-Jun	31	74.9	59.8	0	76.1	69.7
12-Jun	32	87.4	61.8	0	77	70.7
13-Jun	33	91.6	70.5	0.23	79.3	73.3
14-Jun	34	84.1	66.9	0	78.8	74.3
15-Jun	35	76	67.5	0	76.5	74
16-Jun	36	82.2	67.2	0.06	77.1	72.7
17-Jun	37	85.5	68.9	0	79.2	74
18-Jun	38	80.1	58.6	0	79.4	72.3
19-Jun	39	89	59.4	0	79.2	72.4

Date	Days After Planting	Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
20-Jun	40	92.8	73	0	81	75.3
21-Jun	41	87	66.2	0	82.1	75.2
22-Jun	42	92.3	65.7	0.39	81.7	75.7
23-Jun	43	91.7	67.9	0.65	82.7	76
24-Jun	44	93.8	72.9	0.82	83.6	78.1
25-Jun	45	83.9	69.5	0	82.8	77.8
26-Jun	46	89.1	67.5	0	81.8	77
27-Jun	47	93.7	71.4	0	83.4	77.7
28-Jun	48	94.9	76.1	0.28	84.1	79.4
29-Jun	49	88.2	73.8	0.04	82.7	79.8
30-Jun	50	78.2	57.8	0.02	80.8	77
1-Jul	51	77.4	55.3	0	78.8	73.5
2-Jul	52	76.9	55.2	0	78.2	72.5
3-Jul	53	86.2	54.2	0	78.3	71.9
4-Jul	54	93.4	59.4	0	79.4	72.6
5-Jul	55	94.9	64.9	0	80.6	74.3
6-Jul	56	99.8	67.2	0	82.7	75.7
7-Jul	57	90.8	72.7	0	83.2	77.7
8-Jul	58	82	73.3	0	81.2	78.8
9-Jul	59	85	69.7	0	82.2	77.2
10-Jul	60	78.5	68.9	0.69	80.4	77.5
11-Jul	61	87.6	68.6	0.04	81.2	75.8
12-Jul	62	88.8	65.3	0	79.8	75.3
13-Jul	63	85.4	75.8	0.34	80.5	77.2
14-Jul	64	83	72.7	0.1	79.7	77.8
15-Jul	65	86	71.1	0	82	76.6
16-Jul	66	95.2	73.4	0	82.7	77.6
17-Jul	67	92.8	74.7	0	83.1	78.9
18-Jul	68	94.2	70.9	0	83.6	78.4
19-Jul	69	90.2	74.5	0	82.3	79.3
20-Jul	70	93.5	74.3	0	83.7	78.9
21-Jul	71	92.7	72.1	0	83.4	79.6
22-Jul	72	93.2	71	0	84.5	79.1
23-Jul	73	98.4	71.5	0	85.8	79.6
24-Jul	74	100.2	79.8	0	87.6	81.8
25-Jul	75	99.4	71.2	0.29	87.5	82.3
26-Jul	76	85.4	65.7	0	84.1	79.6