



**UNIVERSITY OF
DELAWARE**

PROCESSING

**SWEET
CORN**

VARIETY

TRIAL

RESULTS

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2011 University of Delaware Processing Sweet Corn Variety Trials

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Introduction

The UD Extension Vegetable Program conducted three processing sweet corn trials in 2011 as a follow-up to trials conducted in 2010. The purpose of these trials was to evaluate new sugary, sugary enhanced and supersweet yellow processing sweet corn varieties for yield and quality characteristics under Delaware growing conditions. Similar trials were conducted in Delaware in 1999, 2000, 2002, 2006 and 2010. Reports from past trials are archived at <http://ag.udel.edu/extension/vegprogram/trialresults.htm>.

Two supersweet trials and one sugary/sugary enhanced trial were planted in 2011. 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 su/se Trial	Early sh₂ Trial	Mid sh₂ Trial
Planting Date	April 15	April 12	May 10
Planting Procedure	Hand planted with jab-planters	Planted with Monosem	Hand planted with jab-planters
Spacing	9" in-row 30" between-row		
# Varieties	7	18	18
Location	Sandtown, DE 39°01'39.73" N 75°45'03.35" W	UD Carvel REC Georgetown, DE	Bethlehem, MD 38°46'26.39" N 75°54'41.28" W
Plot Design	4 replications 3-row plots plots 50 ft long		
Irrigation	Overhead irrigation (center pivot or linear system)		
Weed Control	Pre-emergence herbicides used on all plots. Weed control was excellent in all plots except the Early sh ₂ Trial, which had moderate weed pressure.		
Insecticide	All plots received multiple sprays to control corn earworm and European corn borer. Incidence was very low in all plots.		
Harvest Began	July 7	July 8	July 20
Harvest Ended	July 14	July 22	July 29

Varieties Entered in the 2011 Processing Sweet Corn Variety Trials

Variety	Genotype	Company
GH 4927	sugary	Check (Syngenta)
GH 0991	sugary	Check (Syngenta)
GH 9597	sugary	Check (Syngenta)
SUY6RH1264	sugary	Seminis
Champ	sugary enhanced	Check (Seminis)
SUY6RH1176	sugary	Seminis
SEY6RH1263	sugary	Seminis
Overland	supersweet	Check (Syngenta)
Protégé	supersweet	Check (Syngenta)
GSS 2259P	supersweet	Syngenta
GSS 1453	supersweet	Syngenta
007R	supersweet	Abbott & Cobb
ACX 8901 MRY	supersweet	Abbott & Cobb
ACX SS7403Y	supersweet	Abbott & Cobb
7300R	supersweet	Abbott & Cobb
ACX 7242RY	supersweet	Abbott & Cobb
8311RY	supersweet	Abbott & Cobb
HMX 9394	supersweet	Harris Moran
HMX 9388	supersweet	Harris Moran
Rana	supersweet	Crookham
Samurai	supersweet	Crookham
Juggernaut	supersweet	Crookham
Fortitude	supersweet	Crookham
Marvel Edge	supersweet	Crookham
9-363	supersweet	Crookham

Data Collection Procedures

For the two early-planted trials, stand counts were done early in the season. All plants in each row were counted. This data was collected on May 4 (19 DAP) for the Early su/se Trial and on April 28 (16 DAP) for the Early sh₂ Trial.

For all three trials, a thirty-foot section of the center row of the plot was flagged and designated for harvest when the plants were about three feet tall. The plants in this section were counted and are reported as final stands.

A few days before harvest, the height of the plant and the height of the first ear was measured and recorded for eight plants from each replication.

In advance of harvest, five-ear samples were taken from the plot border rows and tested for percent moisture as described below. The target range for harvest for the sugary and sugary enhanced varieties was 69-72% moisture. The target range for the superweet varieties was 72-75% moisture.

Ears were hand harvested from the thirty-foot harvest section. Ears were counted and weighed in-husk and husked. Ten representative ears from the plot were weighed and then the corn was cut from this sample using a commercial cutter. The procedure for determining percent moisture

was as follows. A ~200 g sample of cut corn was blended to slurry with a conventional kitchen blender. A ~20gram sample of the corn slurry was weighed into an aluminum baking cup. The sample was then placed in a 140/150°F drying oven for 12-24 hours. Dried samples were weighed again and percent moisture was calculated.

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

Early Sugary and Sugary Enhanced Trial

The early trial of the sugary and sugary enhanced varieties was planted into Galestown loamy sand, 2 to 5 percent slope on April 15. Emergence in the plot was excellent for most varieties. However, GH 4927 and GH 9597 had significantly lower stands 19 days after planting (82% and 79% respectively) than the other five varieties in the trial, which had stands of 88% or more (Table 1). Stands in the harvest section followed a similar pattern, but differences were not significant. This trial was well watered and minimally stressed.

The earliest varieties in this trial were Champ, GH 4927, SUY6RH1264, and SEY6RH1263 (Table 2). GH 9597 was the latest variety in the trial at 90 days to harvest.

There were significant differences in yield for this trial, both in terms of the weight of the unhusked ears and in terms of the weight of the cut corn. SEY6RH1263 (also one of the earliest varieties) and GH0991 were the highest yielding varieties in the trial. GH0991 was the highest yielding variety in the 2010 Early Sugary Trial.

SEY6RH1263, GH 4927 and GH 0991 produced the heaviest ears (Table 4). GH9597 and SEY6RH1263 attained the greatest kernel depth and SEY6RH1263 had significantly higher percent recovery than all of the other varieties (Table 3).

Early Supersweet Trial

The early trial of supersweet varieties was planted into Pepperbox loamy sand, 0 to 2 percent slopes on April 12. There were significant differences between the varieties in stand at 16 days after planting and in stand at harvest (Table 6). It is notable that ACX SS7403Y achieved excellent stands, even at this early planting date, and several other varieties produced very good stands as well: 007R, Rana, Marvel Edge, ACX 8901 MRY, 7300R, ACX 7242RY, HMX 9388, and Juggernaut. GSS 2259P had significantly lower stands than all of the other varieties, which may have been a seed quality issue, as this variety had only 67% germination in subsequent testing conducted at the Delaware Department of Agriculture's seed testing laboratory. This trial received adequate irrigation and was not stressed, although there was a moderate amount of weed pressure in the plot.

The earliest varieties in the trial were ACX 8901 MRY, 8311RY and HMX 9388 (Table 8). The latest varieties were Overland, Protégé and GSS 2259P.

There were significant differences in yield between the varieties in this trial (Table 10). Overland had a significantly higher yield than all of the other varieties in the trial, both in terms

of unhusked ears, and in terms of cut corn. The next highest yielding varieties were GSS 1453, GSS 2259P, Protégé, and ACX 7242RY. GSS 2259P produced the third highest yields in the trial, despite having a harvest section stand of 66%. The highest yielding of the early varieties was 8311RY.

Late Supersweet Trial

The late trial of supersweet varieties was planted into Ingleside loamy sand, 2 to 5 percent slopes on May 10. Stands for most varieties in the trial were good, however GSS 1453, HMX 9394, Juggernaut and 007R had less than 75% emergence and GSS 2259P had only 55% emergence. This trial was subjected to extremely high temperatures, and did not receive adequate irrigation.

As with the Early Supersweet Trial, ACX 8901 MRY, 8311RY and HMX 9388 were the first varieties to mature (Table 9). The latest varieties were Overland and GSS 2259P.

There were no significant differences in yield between the varieties in this trial, probably due to the drought and heat stress this trial experienced. The highest yielding variety in the trial was Overland.

Conclusions

SEY6RH1263 and GH 0991 were the highest yielding sugary varieties. GH 0991 was also trialed in 2010 and in the 2010 Early Sugary Trial, had a significantly higher yield than all of the other varieties. SEY6RH1263 was trialed for the first time this year, and may be a useful variety for this region, as it is several days earlier than GH 0991.

The standard variety Overland was the highest yielding variety in both supersweet trials this year and also performed well in the 2010 trials. ACX 7242RY, and GSS 2259P also yielded well in both the 2010 and 2011 trials. In both years' trials ACX 7242RY was 4 to 5 days earlier than Overland. GSS 1453 performed well in both of the 2011 supersweet trials and was one or two days earlier than Overland.

Of the earliest maturing supersweet varieties, HMX 9388 was in both the 2010 and 2011 trials. It yielded well in some of the trials but poorly in others. 8311RY was the highest yielding of the extremely early varieties in both of the 2011 trials.

2011 University of Delaware Processing Sweet Corn Trials
Results for Sugary and Sugary Enhanced Varieties
Trial planted April 12

**Table 1. 2011 Processing Sweet Corn Early-Season Sugary and Sugary Enhanced Trial:
 Early and Final Stands**

Variety	% Stand 19 DAP	% Stand in Harvest Section at Harvest
SUY6RH1176	92.5 a	90.6 a
SEY6RH1263	92.5 a	91.3 a
GH 0991	91.3 a	89.4 a
Champ	89.3 a	90.0 a
SUY6RH1264	87.9 a	78.8 a
GH 4927	82.2 b	78.1 a
GH 9597	79.0 b	79.4 a
<i>p-value</i>	<0.0001	0.2165
LSD	4.6446	NA

Table 2. 2011 Processing Sweet Corn Early-Season Sugary and Sugary Enhanced Trial: Moisture Samples Up to and Including Harvest*

		30-Jun	1-Jul	2-Jul	3-Jul	4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul
Variety	DTH	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Champ	83	78.45						57.26	61.08							
GH 4927	83							64.88	62.80							
SUY6RH1264	83	81.99						68.67	66.23							
SEY6RH1263	83	80.88						66.34	67.65							
SUY6RH1176	84								68.77	71.47						
GH 0991	87								72.55	74.57			69.65			
GH 9597	90								77.92	79.33			75.33			70.69

* Numbers in bold are final harvest averages of four replications; other numbers based on a sample of five ears from a single rep.

Table 3. 2011 Processing Sweet Corn Early-Season Sugary and Sugary Enhanced Trial: Yield and Harvest Data

Variety	Days to Harvest	Weight Unhusked Ears (tons/A)	Weight Husked Ears (tons/A)	Weight Cut Corn (lbs/A)	Percent Recovery	Percent Moisture	# Ears per Acre	# Ears per Plant
SEY6RH1263	83	7.54 a	5.98 a	6085 a	40.7 a	67.65 bc*	20328 a	0.967 a
GH 0991	87	7.61 a	5.83 a	5214 ab	34.2 b	69.65 ab	20764 a	1.001 a
Champ	83	7.08 ab	5.21 ab	4542 bc	32.3 bc	61.08 d*	18876 a	0.903 abc
GH 9597	90	6.67 abc	5.23 a	3809 cd	28.5 cd	70.69 a	18731 a	1.021 a
SUY6RH1176	84	7.33 a	5.04 abc	3770 cd	25.6 d	71.47 a	19747 a	0.939 ab
GH 4927	83	5.58 bc	4.09 bc	3499 d	31.2 bc	62.80 d*	14665 b	0.812 bc
SUY6RH1264	83	5.42 c	3.97 c	3481 d	32.0 bc	66.23 c*	14375 b	0.789 c
<i>p-value</i>		0.0258	0.0084	0.0002	<0.0001	<0.0001	0.0001	0.0114
LSD		1.5084	1.1255	1018.3	3.8814	2.2397	3081.3	0.1355

*Moisture tested with CEM Smart System microwave moisture analyzer, all others tested by oven method.

Table 4. 2011 Processing Sweet Corn Early-Season Sugary and Sugary Enhanced Trial: Ear Characteristics

Variety	Ear Weight (g)	Ear Length (cm)	Ear Diameter (cm)	Kernel Depth (cm)	Mean Number of Rows	Median Number of Rows
SEY6RH1263	283 a	20.1 a	5.0 a	1.06 ab	18.1 a	18
GH 4927	268 ab	19.8 ab	4.5 d	1.04 b	16.6 bc	16
GH 0991	264 ab	19.0 cd	4.9 ab	1.03 b	18.2 a	18
Champ	259 bc	18.5 d	4.9 ab	1.01 b	16.1 c	16
GH 9597	252 bc	19.8 ab	4.8 bc	1.10 a	17.5 ab	18
SUY6RH1264	249 bc	19.4 bc	4.7 c	1.01 b	17.3 ab	17
SUY6RH1176	235 c	20.1 a	4.4 e	0.91 c	18.1 a	18
<i>p-value</i>	0.014	<0.0001	<0.0001	<0.0001	<0.0001	
LSD	23.552	0.6484	0.1499	0.0575	0.9233	

Table 5. 2011 Processing Sweet Corn Early-Season Sugary and Sugary Enhanced Trial: Plant Characteristics

Variety	Plant Height (cm)	Height of 1 st Ear (cm)
SUY6RH1176	257 a	85 a
GH 0991	228 b	84 a
GH 9597	200 c	71 b
SUY6RH1264	177 d	55 c
GH 4927	173 d	55 c
SEY6RH1263	164 e	57 c
Champ	163 e	43 d
<i>p-value</i>	<0.0001	<0.0001
LSD	7.6	5.5

2011 University of Delaware Processing Sweet Corn Trials
Results for Supersweet Varieties
Trials planted April 12, 2011 and May 10, 2011

Table 6. 2011 Processing Sweet Corn Early-Season Supersweet Trial: Early and Final Stands

Variety	% Stand 16 DAP	% Stand in Harvest Section at Harvest
ACX SS7403Y	98 a	100 a
007R	92 b	91 abcd
Rana	92 b	91 abcd
Marvel Edge	91 bc	100 a
ACX 8901 MRY	90 bc	94 abcd
7300R	90 bc	94 abcd
ACX 7242RY	90 bcd	99 ab
HMX 9388	88 bcde	86 cd
Juggernaut	88 bcde	97 abc
8311RY	87 cdef	96 abcd
Protégé	86 defg	91 abcd
Samurai	85 efg	99 ab
9-363	85 efg	85 d
Overland	84 efg	85 d
Fortitude	84 efg	86 cd
HMX 9394	83 fg	96 abcd
GSS 1453	82 g	88 bcd
GSS 2259P	52 h	66 e
<i>p-value</i>	<0.0001	<0.0001
LSD	3.109	11.8

Table 7. 2011 Processing Sweet Corn Mid-Season Supersweet Trial: Final Stands

Variety	% Stand in Harvest Section at Harvest
Marvel Edge	90 a
Rana	88 ab
ACX SS7403Y	86 abc
ACX 7242RY	86 abc
HMX 9388	86 abc
Overland	85 abc
Protégé	84 abc
9-363	83 abcd
Samurai	82 abcd
Fortitude	81 abcd
8311RY	80 bcde
ACX 8901 MRY	77 cdef
7300R	77 cdef
GSS 1453	73 def
HMX 9394	71 efg
Juggernaut	70 fg
007R	63 gh
GSS 2259P	55 h
<i>p-value</i>	<0.0001
LSD	9.9

Table 8. 2011 Processing Sweet Corn Early-Season Supersweet Trial: Percent Moisture Up To and Including Harvest*

		7-Jul	8-Jul	9-Jul	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul
Variety	DTH	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101
ACX8901MRY	87	66.89	73.89														
8311RY	87	74.69	75.56														
HMX 9388	87	73.90	77.45														
ACX SS7403Y	90	72.50	77.40			73.42											
7300R	90	75.49	77.33			73.53											
Rana	90	75.84	77.41			74.64											
Marvel Edge	90	77.12	78.34			75.93											
007R	93	72.46	78.34			75.34		76.07	73.00								
ACX 7242RY	94	79.28	79.36			77.04		76.41		74.82							
Samurai	94					78.56		76.84		75.67							
Juggernaut	94		81.36			76.86		75.74		75.84							
HMX 9394	94	78.65	80.79			77.36		77.59		76.81							
Fortitude	97	72.31						72.58	74.52	75.48			73.28				
9-363	97					77.74		77.20		76.87			75.43				
GSS 1453	97					78.42		77.52		77.28			75.66				
Overland	99					79.03		77.00		76.78			76.92		76.42		
Protégé	100	75.25	79.34			78.91		78.82		81.99			79.66			80.00	
GSS 2259P	101					85.96			79.23	79.44			79.96			77.41	77.05

* Numbers in bold are final harvest averages of four replications; other numbers based on a sample of five ears from a single rep.

Table 9. 2011 Processing Sweet Corn Mid-Season Supersweet Trial: Percent Moisture Up To and Including Harvest*

		19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul
Variety	DTH	70	71	72	73	74	75	76	77	78	79	80
8311RY	71	74.41	72.42									
ACX 8901 MRY	71	74.79	72.79									
7300R	71	73.65	73.81									
ACX SS7403Y	76	74.82		73.62				71.67				
Marvel Edge	76	75.72		74.19				72.66				
Rana	76	75.09		74.38				73.31				
HMX 9388	76	76.59		74.36				73.95				
ACX 7242RY	76	76.23		75.76				74.28				
007R	77	76.38		75.09				73.74	73.29			
Juggernaut	77	78.52		75.59				73.65	74.34			
HMX 9394	77	79.01		76.69				74.70	75.03			
Samurai	77			77.25				75.09	75.32			
Protégé	77	76.92						76.20	76.86			
Fortitude	79							73.60			72.65	
9-363	79							75.45			75.27	
GSS 1453	79							75.52			75.73	
Overland	80	81.20						75.71				75.06
GSS 2259P	80							77.50				76.92

* Numbers in bold are final harvest averages of four replications; other numbers based on a sample of five ears from a single rep.

Table 10. 2011 Processing Sweet Corn Early-Season Supersweet Trial: Yield and Harvest Data

Variety	Days to Harvest	Weight Unhusked Ears (tons/A)	Weight Husked Ears (tons/A)	Weight Cut Corn (lbs/A)	Percent Recovery	Percent Moisture	# Ears per Acre	# Ears per Plant
Overland	99	14.03 a	7.13 a	7825 a	28.1 g	76.42 cd	18876 abc	0.954 a
GSS 1453	97	7.79 bcd	6.34 ab	6113 b	39.3 ab	75.66 de	18876 abc	0.923 a
GSS 2259P	101	7.20 bcde	5.77 bcd	6086 b	42.3 a	77.05 bc	16117 cd	1.060 a
Protégé	100	6.77 cdef	5.38 bcde	5445 bc	40.0 ab	80.80 a	19312 abc	0.906 a
ACX 7242RY	94	7.80 bcd	5.62 bcd	5208 bcd	33.2 cdef	74.82 fg	20619 ab	0.902 a
007R	93	6.43 def	5.09 cde	4763 cde	37.2 bc	73.00 j	16988 bcd	0.806 a
Juggernaut	94	8.18 bc	6.05 abc	4730 cdef	28.8 fg	75.84 de	22361 a	0.994 a
ACX SS7403Y	90	8.49 b	5.82 bcd	4667 cdefg	27.6 g	73.42 ij	22506 a	0.969 a
9-363	97	6.70 cdef	5.02 cde	4648 cdefg	34.8 cd	75.43 efg	17424 bc	0.894 a
HMX 9394	94	7.72 bcd	5.84 bcd	4476 cdefg	29.2 fg	76.81 bc	20328 ab	0.913 a
8311RY	87	6.53 def	4.65 de	4390 cdefg	33.7 cde	75.56 ef	18731 abc	0.845 a
Marvel Edge	90	6.88 bcde	5.24 bcde	4174 defg	30.2 efg	75.93 de	19022 abc	0.805 a
Rana	90	6.90 bcde	5.32 bcde	4080 defg	29.5 efg	74.64 gh	19312 abc	0.910 a
Fortitude	97	5.16 f	4.15 e	3858 efg	36.4 bc	73.28 ij	13359 d	0.675 a
7300R	90	6.24 def	4.70 de	3838 efg	30.9 defg	73.53 ij	19021 abc	0.874 a
Samurai	94	6.43 def	4.90 cde	3611 fgh	27.9 g	75.67 de	18585 abc	0.805 a
ACX 8901 MR Y	87	6.02 ef	4.31 e	3562 gh	29.8 efg	73.89 hi	19893 abc	0.925 a
HMX 9388	87	6.36 def	4.27 e	2578 h	20.1 h	77.45 b	17860 bc	0.920 a
<i>p-value</i>		<i><0.0001</i>	<i>0.0007</i>	<i><0.0001</i>	<i><0.0001</i>	<i><0.0001</i>	<i>0.0117</i>	<i>0.1554</i>
LSD		1.6185	1.2394	1133.3	4.4164	0.8163	3987.4	NA

Table 11. 2011 Processing Sweet Corn Mid-Season Supersweet Trial: Yield and Harvest Data

Variety	Days to Harvest	Weight Unhusked Ears (tons/A)	Weight Husked Ears (tons/A)	Weight Cut Corn (lbs/A)	Percent Recovery	Percent Moisture	# Ears per Acre	# Ears per Plant
Overland	80	6.70 a	5.44 a	5540 a	41.4 ab	75.06 bc	17134 a	0.868 a
HMX 9388	76	6.51 a	5.25 a	5351 a	40.3 ab	73.95 de	18005 a	0.909 a
GSS 1453	79	5.89 a	4.88 a	5160 a	43.3 a	75.73 b	15246 a	0.890 a
HMX 9394	77	6.49 a	5.10 a	4622 a	34.8 cde	75.03 bc	16698 a	1.002 a
9-363	79	5.76 a	5.93 a	4497 a	37.0 bcd	75.27 b	15391 a	0.802 a
Fortitude	79	5.41 a	4.15 a	4461 a	41.0 ab	72.65 fg	15391 a	0.838 a
Samurai	77	6.41 a	5.04 a	4453 a	34.4 cde	75.32 b	16698 a	0.885 a
Protégé	77	6.25 a	4.95 a	4380 a	34.9 cde	76.86 a	17279 a	0.888 a
ACX 7242RY	76	5.81 a	4.53 a	4367 a	36.6 bcd	74.28 cd	17134 a	0.848 a
8311RY	71	6.39 a	4.62 a	4286 a	33.5 cde	72.42 gh	18731 a	1.008 a
Marvel Edge	76	5.30 a	4.57 a	4151 a	38.7 abc	72.66 fg	16553 a	0.793 a
GSS 2259P	80	5.73 a	4.46 a	4058 a	35.0 cde	76.92 a	13359 a	1.034 a
Rana	76	6.01 a	4.50 a	4035 a	32.6 de	73.31 ef	17134 a	0.840 a
Juggernaut	77	5.99 a	4.43 a	3993 a	32.4 de	74.34 cd	13794 a	0.852 a
ACX SS7403Y	76	5.33 a	4.24 a	3951 a	34.6 cde	71.67 h	16843 a	0.834 a
007R	77	5.30 a	3.99 a	3865 a	37.5 bcd	73.29 ef	12778 a	0.879 a
ACX 8901 MR Y	71	5.14 a	3.81 a	3499 a	30.6 e	72.79 fg	15972 a	0.905 a
7300R	71	5.49 a	4.08 a	3436 a	29.7 e	73.81 de	18295 a	1.028 a
<i>p-value</i>		<i>0.5019</i>	<i>0.2113</i>	<i>0.1668</i>	<i><0.0001</i>	<i><0.0001</i>	<i>0.2856</i>	<i>0.3700</i>
LSD		NA	NA	NA	5.2835	0.8181	NA	NA

Table 12. 2011 Processing Sweet Corn Early-Season Supersweet Trial: Ear Characteristics

Variety	Ear Weight (g)	Ear Length (cm)	Ear Diameter (cm)	Kernel Depth (cm)	Mean # of Rows	Median # of Rows
Overland	354 a	22.5 a	5.3 a	1.29 b	19.3 a	20
GSS 2259P	338 a	21.8 b	5.2 ab	1.36 b	18.2 bc	18
GSS 1453	310 b	21.4 bc	5.1 b	1.27 b	18.6 ab	20
007R	291 bc	20.6 de	4.8 c	1.07 b	16.4 ef	16
9-363	278 cd	21.1 cd	4.8 c	1.21 b	17.9 bc	18
Protégé	272 cd	18.5 k	4.8 c	1.14 b	16.4 ef	16
Fortitude	265 cde	20.9 cd	5.0 b	1.87 a	17.9 bc	18
HMX 9394	261 def	20.5 def	4.8 c	1.17 b	17.3 cde	16
ACX 7242RY	259 def	19.9 fgh	4.7 c	1.13 b	18.5 ab	18
Marvel Edge	257 defg	20.6 def	4.7 cd	1.08 b	15.3 g	16
Rana	255 defg	19.2 ij	4.7 cd	1.07 b	15.3 g	16
Juggernaut	253 defg	21.5 bc	4.8 c	1.19 b	16.8 def	16
Samurai	251 defg	19.9 gh	4.5 e	1.07 b	16.6 def	16
8311RY	242 efgh	20.1 efgh	4.8 c	1.01 b	17.5 cd	18
7300R	234 fgh	18.8 jk	4.5 de	1.07 b	16.4 ef	16
ACX SS7403Y	231 gh	19.5 hi	4.8 c	1.05 b	16.6 def	16
HMX 9388	218 h	20.1 efg	4.3 e	1.01 b	16.4 ef	16
ACX 8901 MRY	217 h	20.0 efgh	4.4 e	0.99 b	16.1 fg	16
<i>p-value</i>	<0.0001	<0.0001	<0.0001	0.0070	<0.0001	
LSD	27.285	0.6357	0.1920	0.3896	0.9225	

Table 13. 2011 Processing Sweet Corn Mid-Season Supersweet Trial: Ear Characteristics

Variety	Ear Weight (g)	Ear Length (cm)	Ear Diameter (cm)	Kernel Depth (cm)	Mean # of Rows	Median # of Rows
GSS 1453	312 a	32.6 a	5.0 ab	1.13 bcd	17.9 a	18
Juggernaut	291 ab	20.7 a	4.7 cd	1.12 bcde	16.0 fgh	16
007R	284 bc	20.8 a	4.8 bc	1.15 bcd	16.3 efgh	16
HMX 9394	277 bcd	20.5 a	4.7 cd	1.13 bcd	16.4 defg	16
9-363	275 bcde	21.2 a	4.7 cd	1.09 cde	16.7 cdef	16
Samurai	275 bcde	20.0 a	4.7 cd	1.10 bcde	15.8 ghi	16
HMX 9388	271 bcde	20.1 a	4.8 c	1.24 a	16.1 efgh	16
Protégé	262 cdef	19.2 a	4.7 cd	1.14 bcd	16.1 efgh	16
Fortitude	255 defg	19.4 a	5.0 a	1.11 bcde	17.2 abcd	18
Marvel Edge	250 efg	19.6 a	4.7 cd	1.12 bcde	14.1 k	14
GSS 2259P	243 fgh	21.7 a	5.1 a	1.16 bc	17.3 abc	18
8311RY	237 fgh	19.6 a	4.7 cd	1.05 e	16.9 bcde	16
ACX 7242RY	234 ghi	20.1 a	4.8 cd	1.16 bc	17.6 ab	18
Rana	231 ghi	18.5 a	4.8 cd	1.16 bc	14.5 jk	14
ACX 8901 MRY	230 ghi	19.0 a	4.6 d	1.08 de	15.5 hi	16
Overland	229 ghi	19.4 a	5.0 ab	1.17 ab	17.6 ab	18
ACX SS7403Y	219 hi	23.8 a	4.7 cd	1.14 bcd	15.7 ghi	16
7300R	210 i	18.7 a	4.4 e	1.13 bcd	15.1 ij	16
<i>p-value</i>	<0.0001	0.1327	<0.0001	0.0027	<0.0001	
LSD	26.067	NA	0.1625	0.0766	0.8687	

Table 14. 2011 Processing Sweet Corn Early-Season Supersweet Trial: Plant Characteristics

Variety	Plant Height (cm)	Height of 1 st Ear (cm)
GSS 2259P	234 a	102 a
ACX 7242RY	213 b	77 b
9-363	211 b	77 b
Samurai	211 b	75 b
HMX 9388	203 c	73 b
GSS 1453	202 c	92 a
Marvel Edge	197 cd	64 bcde
007R	196 d	66 bcd
Overland	194 de	71 b
HMX 9394	194 def	68 bc
ACX SS7403Y	190 dfg	53 de
7300R	188 fgh	55 cde
8311RY	187 gh	57 cde
ACX 8901 MRY	184 h	52 de
Juggernaut	183 h	64 bcde
Fortitude	183 h	57 cde
Rana	183 h	55 cde
Protégé	174 i	52 e
GSS 2259P	234 a	102 a
<i>p-value</i>	<0.0001	<0.0001
LSD	5.5	13.7

Table 15. 2011 Processing Sweet Corn Mid-Season Supersweet Trial: Plant Characteristics

Variety	Plant Height (cm)	Height of 1 st Ear (cm)
GSS 2259P	239 a	101 a
Marvel Edge	224 b	79 cd
8311RY	223 b	70 fg
Samurai	222 b	84 b
HMX 9388	215 c	80 bc
007R	214 cd	72 efg
ACX 7242RY	212 cd	72 ef
ACX SS7403Y	209 cde	62 hi
Overland	208 de	75 cde
HMX 9394	205 ef	75 def
GSS 1453	204 ef	73 def
9-363	204 ef	78 cd
Protégé	201 fg	66 gh
ACX 8901 MRY	199 fgh	56 j
7300R	199 fgh	62 hi
Juggernaut	198 gh	70 fg
Rana	196 gh	61 hi
Fortitude	195 h	59 ij
<i>p-value</i>	<0.0001	<0.0001
LSD	6.1	5.6

Appendix A: Weather Conditions During the Early-Season Supersweet Trial

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)
12-Apr	0	72.8	48.8	0.16	60.9	56.6
13-Apr	1	61.3	48.1	0	59.1	55.3
14-Apr	2	67.7	46.5	0	63.2	54.4
15-Apr	3	58.8	40.5	0	61.1	54.2
16-Apr	4	64.3	46.4	1.11	58.1	54.3
17-Apr	5	62.7	50.2	0.01	60.8	55.3
18-Apr	6	73.8	47.2	0	60.9	54.4
19-Apr	7	71.6	51.3	0	61.9	56.3
20-Apr	8	83.6	51.2	0	65.5	58.2
21-Apr	9	69.3	42.6	0	63.7	58.5
22-Apr	10	49.5	42.3	0.09	58.5	54.5
23-Apr	11	73.8	44.0	0.07	61.1	53.9
24-Apr	12	83.6	62.5	0	68.5	59.6
25-Apr	13	83.6	60.4	0	70.7	62.7
26-Apr	14	82.3	66.6	0	69.8	65.1
27-Apr	15	81.6	65.9	0	69.9	65.9
28-Apr	16	81.1	63.1	0.46	70.2	67.0
29-Apr	17	69.7	50.0	0	68.9	63.4
30-Apr	18	61.9	46.7	0	65.6	60.3
1-May	19	64.9	41.6	0.13	62.8	58.0
2-May	20	76.9	51.6	0	67.0	59.4
3-May	21	81.7	59.5	0	69.3	62.1
4-May	22	68.3	47.5	0.75	66.3	59.8
5-May	23	65.2	44.4	0	63.2	57.1
6-May	24	69.5	44.9	0	64.4	56.3
7-May	25	71.0	50.3	0	66.9	58.4
8-May	26	71.7	44.9	0	67.7	58.7
9-May	27	71.7	44.3	0	67.4	58.7
10-May	28	73.3	45.9	0	68.1	58.7
11-May	29	67.4	44.6	0	69.1	59.1
12-May	30	74.0	44.3	0	70.4	59.3
13-May	31	69.8	48.7	0	68.7	61.7
14-May	32	64.5	54.5	0.33	65.2	62.4
15-May	33	78.6	62.9	0.08	70.9	64.0
16-May	34	77.5	61.1	0.19	72.6	65.6
17-May	35	72.5	60.5	0.07	70.1	66.1
18-May	36	71.3	57.4	0.11	69.5	65.6
19-May	37	74.8	55.8	0.27	70.7	64.2
20-May	38	70.4	54.6	0	69.7	64.4
21-May	39	78.1	55.6	0	74.9	64.4

Date	Days After Planting	Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
22-May	40	72.9	57.2	0	75.2	66.1
23-May	41	82.7	62.6	0	74.6	67.4
24-May	42	87.4	70.4	0	77.4	69.8
25-May	43	83.8	66.9	0	79.4	71.2
26-May	44	90.4	65.3	0	78.7	71.1
27-May	45	85.3	69.2	0	78.9	71.8
28-May	46	84.2	63.9	0.05	76.8	71.1
29-May	47	85.9	66.5	0	79.4	70.8
30-May	48	93.8	69.0	0	82.8	72.7
31-May	49	91.0	68.5	0	84.4	74.0
1-Jun	50	91.0	69.1	0	85.5	74.8
2-Jun	51	85.5	60.8	0	84.6	73.7
3-Jun	52	77.9	53.3	0	82.8	69.6
4-Jun	53	80.7	49.2	0.08	82.0	67.8
5-Jun	54	76.5	61.6	0.02	78.0	71.6
6-Jun	55	82.0	58.1	0	82.4	68.6
7-Jun	56	85.8	61.1	0	84.6	70.3
8-Jun	57	94.5	67.5	0	87.6	73.3
9-Jun	58	97.3	71.8	0	90.0	76.2
10-Jun	59	91.0	70.0	0.62	88.9	77.5
11-Jun	60	87.8	68.9	0.15	87.7	76.5
12-Jun	61	86.4	67.3	0.03	88.3	76.5
13-Jun	62	77.9	59.8	0	84.8	74.9
14-Jun	63	74.2	54.4	0	79.0	70.8
15-Jun	64	81.0	55.8	0	85.0	69.6
16-Jun	65	81.9	56.3	0.01	82.8	71.1
17-Jun	66	83.6	64.8	0.21	84.5	73.1
18-Jun	67	87.7	62.9	0	87.0	72.8
19-Jun	68	81.8	66.3	0	82.2	76.7
20-Jun	69	76.2	60.8	0.49	80.3	72.1
21-Jun	70	82.9	59.1	0	82.4	70.6
22-Jun	71	89.2	67.1	0.24	86.0	73.2
23-Jun	72	83.7	72.4	0	83.2	76.6
24-Jun	73	87.0	70.2	0	86.9	75.4
25-Jun	74	84.2	67.1	0	87.8	76.6
26-Jun	75	82.3	64.1	0	86.7	76.2
27-Jun	76	84.3	67.5	0	86.8	77.3
28-Jun	77	89.7	66.6	0	88.4	77.3
29-Jun	78	86.4	70.9	0	90.1	78.9
30-Jun	79	82.7	63.6	0	89.4	76.9
1-Jul	80	86.4	58.4	0	89.4	75.5
2-Jul	81	88.9	58.4	0	89.5	75.3
3-Jul	82	88.8	70.1	0.01	88.3	78.4
4-Jul	83	90.1	70.5	0	89.2	79.0
5-Jul	84	89.9	70.9	0.02	90.9	80.0
6-Jul	85	86.4	66.8	0	86.7	79.1

Date	Days After Planting	Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
7-Jul	86	92.7	69.0	0	91.6	77.1
8-Jul	87	87.8	70.2	1.25	89.3	79.2
9-Jul	88	87.2	69.9	0.02	87.9	78.3
10-Jul	89	90.2	63.7	0	88.0	77.3
11-Jul	90	89.8	67.0	0	88.2	77.6
12-Jul	91	90.5	74.5	0	90.0	80.2
13-Jul	92	90.0	70.4	0.06	88.3	80.6
14-Jul	93	80.0	61.8	0	87.2	76.5
15-Jul	94	82.1	56.5	0	86.4	74.9
16-Jul	95	83.4	56.3	0	85.7	74.1
17-Jul	96	87.1	64.4	0	88.7	75.6
18-Jul	97	88.7	66.7	0	90.6	77.7
19-Jul	98	93.0	72.8	0.17	90.7	80.2
20-Jul	99	89.2	69.8	0	91.5	78.6
21-Jul	100	94.6	72.1	0	93.6	80.8
22-Jul	101	101.2	78.2	0	95.6	83.3

Appendix B: Weather Conditions During the Early-Season Sugary and Sugary Enhanced Trial

Weather Data from DEOS Weather Station (<http://www.deos.udel.edu/index.html>)
at Sandtown, DE (1.3 miles from the trial location)

Date	Days After Planting	Max Temp (°F)	Min Temp (°F)	Rainfall (inches)
15-Apr	0	57.4	43.4	0
16-Apr	1	63.6	46.9	0.74
17-Apr	2	62.8	49.9	0.01
18-Apr	3	72.7	48.7	0
19-Apr	4	69.3	53.0	0
20-Apr	5	84.0	50.4	0
21-Apr	6	71.0	43.0	0
22-Apr	7	49.1	42.6	0.08
23-Apr	8	70.9	44.2	0.07
24-Apr	9	83.5	62.6	0.03
25-Apr	10	84.0	61.1	0.17
26-Apr	11	82.1	65.8	0
27-Apr	12	81.4	67.7	0
28-Apr	13	78.4	61.0	0.11
29-Apr	14	68.5	47.7	0
30-Apr	15	63.8	46.0	0
1-May	16	63.2	41.9	0.02
2-May	17	74.2	53.2	0
3-May	18	80.8	61.6	0
4-May	19	70.3	46.7	0.35
5-May	20	66.4	43.8	0
6-May	21	69.8	41.9	0
7-May	22	71.8	45.5	0
8-May	23	72.9	43.6	0
9-May	24	71.7	46.4	0
10-May	25	74.4	45.0	0
11-May	26	70.7	44.4	0
12-May	27	74.2	45.4	0
13-May	28	70.9	52.8	0
14-May	29	64.5	56.9	0.18
15-May	30	64.9	61.8	0
16-May	31	77.2	62.2	0
17-May	32	70.9	61.9	0
18-May	33	71.6	60.2	0.03
19-May	34	72.7	55.0	0.12
20-May	35	70.3	54.3	0.06
21-May	36	78.9	53.2	0
22-May	37	69.7	57.4	0
23-May	38	81.4	62.5	0
24-May	39	84.9	70.2	0

Date	Days After Planting	Max Temp (°F)	Min Temp (°F)	Rainfall (inches)
25-May	40	84.3	66.6	0
26-May	41	89.5	66.9	0
27-May	42	85.7	69.3	0
28-May	43	84.3	63.7	0
29-May	44	85.3	67.0	0
30-May	45	94.1	69.5	0
31-May	46	94.7	69.7	0
1-Jun	47	92.8	70.5	0
2-Jun	48	86.1	59.2	0
3-Jun	49	78.3	48.2	0
4-Jun	50	81.2	47.1	0
5-Jun	51	76.4	62.1	0.12
6-Jun	52	82.3	57.2	0
7-Jun	53	86.8	61.8	0
8-Jun	54	94.6	68.6	0
9-Jun	55	97.5	72.8	0
10-Jun	56	89.7	69.0	0.23
11-Jun	57	86.7	67.8	0.39
12-Jun	58	86.3	65.0	0.48
13-Jun	59	76.0	57.5	0
14-Jun	60	73.6	55.7	0
15-Jun	61	82.0	54.4	0
16-Jun	62	80.4	57.6	0.05
17-Jun	63	82.7	66.9	0
18-Jun	64	85.7	65.4	0.01
19-Jun	65	81.7	69.3	0
20-Jun	66	74.4	60.6	0.04
21-Jun	67	83.6	60.0	0
22-Jun	68	88.4	65.8	0.47
23-Jun	69	85.2	73.4	0
24-Jun	70	86.4	67.9	0
25-Jun	71	83.0	62.9	0
26-Jun	72	81.9	60.0	0
27-Jun	73	81.4	68.1	0
28-Jun	74	88.9	66.3	0.01
29-Jun	75	85.8	65.5	0
30-Jun	76	82.9	58.3	0
1-Jul	77	85.3	57.6	0
2-Jul	78	90.4	57.5	0
3-Jul	79	87.7	69.6	0.24
4-Jul	80	88.2	70.1	0
5-Jul	81	87.9	71.1	0
6-Jul	82	84.0	68.9	0
7-Jul	83	92.7	75.0	0
8-Jul	84	87.3	71.9	0.41
9-Jul	85	N/A	N/A	N/A
10-Jul	86	N/A	N/A	N/A

Date	Days After Planting	Max Temp (°F)	Min Temp (°F)	Rainfall (inches)
11-Jul	87	89.1	78.1	0
12-Jul	88	91.0	73.4	0
13-Jul	89	90.4	70.1	0.04
14-Jul	90	82.6	58.3	0

Appendix C: Weather Conditions During the Mid-Season Supersweet Trial

Weather Data from DEOS Weather Station (<http://www.deos.udel.edu/index.html>)
at Seaford, DE (Oak Grove) (14 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)
10-May	0	74.5	49.2	0	71.2	57.4
11-May	1	71.9	46.7	0	73.0	57.9
12-May	2	73.6	47.2	0	73.3	57.8
13-May	3	72.0	52.8	0	70.9	61.1
14-May	4	66.8	56.8	0.01	66.2	62.1
15-May	5	78.3	62.8	0	74.5	63.3
16-May	6	79.4	62.0	0	76.8	64.7
17-May	7	72.6	61.5	0.02	71.5	65.0
18-May	8	72.8	60.5	0	70.9	64.3
19-May	9	75.3	56.4	0	74.1	62.8
20-May	10	71.5	56.4	0	71.4	61.7
21-May	11	78.5	56.8	0	76.8	62.4
22-May	12	76.0	59.2	0	76.0	64.5
23-May	13	83.0	63.9	0	77.3	66.5
24-May	14	88.6	69.8	0	79.6	69.0
25-May	15	87.0	68.3	0	82.0	69.9
26-May	16	90.1	67.1	0	81.0	70.3
27-May	17	85.1	70.8	0	81.6	70.8
28-May	18	84.8	64.8	0	81.3	69.9
29-May	19	83.9	67.1	0	81.8	70.7
30-May	20	95.0	70.5	0	83.6	72.0
31-May	21	95.3	70.7	0	84.5	72.6
1-Jun	22	92.0	70.6	0	85.1	73.4
2-Jun	23	84.3	60.5	0	80.9	71.8
3-Jun	24	76.9	53.1	0	79.0	66.5
4-Jun	25	78.7	52.1	0	78.6	64.7
5-Jun	26	77.2	61.8	0.08	77.9	69.7
6-Jun	27	83.2	58.7	0.02	79.6	66.6
7-Jun	28	85.7	63.0	0	81.6	67.8
8-Jun	29	92.2	68.3	0	84.6	70.2
9-Jun	30	96.3	71.8	0	87.1	73.4
10-Jun	31	90.8	68.9	0.12	86.0	74.5
11-Jun	32	87.9	69.4	0.08	85.0	74.3
12-Jun	33	87.7	68.4	0.02	86.3	74.4
13-Jun	34	77.3	59.8	0	82.0	72.7
14-Jun	35	75.6	55.4	0	77.7	68.1
15-Jun	36	80.1	56.1	0	81.0	67.6
16-Jun	37	81.2	55.8	0	77.9	68.1
17-Jun	38	83.5	65.1	0	82.1	69.2
18-Jun	39	87.0	63.9	0	84.8	70.8

Date	Days After Planting	Max Temp (°F)	Min Temp (°F)	Rainfall (inches)	Max Soil Temp (°F)	Min Soil Temp (°F)
19-Jun	40	81.1	67.0	0	79.8	74.8
20-Jun	41	76.1	61.4	0	77.9	70.8
21-Jun	42	81.4	59.8	0	81.0	70.3
22-Jun	43	88.6	67.1	0	85.2	72.2
23-Jun	44	84.6	72.8	0	83.3	75.8
24-Jun	45	87.6	70.3	0	85.5	74.4
25-Jun	46	83.4	66.6	0.03	85.5	74.9
26-Jun	47	81.4	62.9	0	83.5	73.8
27-Jun	48	84.6	68.6	0	84.4	75.4
28-Jun	49	90.4	67.6	0.01	84.5	75.6
29-Jun	50	84.2	68.1	0.1	86.6	76.5
30-Jun	51	81.6	61.7	0	85.4	73.3
1-Jul	52	85.7	58.5	0	84.5	72.2
2-Jul	53	89.2	58.3	0	84.7	71.8
3-Jul	54	87.7	70.6	0.04	85.0	75.8
4-Jul	55	89.3	70.2	0	86.0	75.6
5-Jul	56	89.5	71.9	0.01	87.5	77.1
6-Jul	57	87.1	69.0	0	83.2	76.3
7-Jul	58	91.4	69.5	0	87.7	75.5
8-Jul	59	87.4	71.5	0.78	85.7	76.9
9-Jul	60	87.9	69.6	0.02	87.5	76.6
10-Jul	61	91.1	64.8	0	88.9	74.8
11-Jul	62	88.8	67.3	0	87.1	76.0
12-Jul	63	89.9	73.2	0	88.1	78.6
13-Jul	64	89.9	70.2	0.09	87.8	77.6
14-Jul	65	82.0	61.5	0.01	85.5	73.8
15-Jul	66	81.9	57.4	0	83.4	71.6
16-Jul	67	84.3	57.1	0	84.1	70.6
17-Jul	68	87.1	64.2	0	84.1	73.0
18-Jul	69	89.6	65.6	0	87.2	73.8
19-Jul	70	92.1	73.4	0	87.7	76.9
20-Jul	71	92.7	69.5	0	89.7	76.5
21-Jul	72	94.8	72.5	0	90.8	77.9
22-Jul	73	99.8	77.7	0	94.1	79.7
23-Jul	74	100.8	80.4	0	95.1	82.2
24-Jul	75	95.3	76.3	0.07	93.5	81.8
25-Jul	76	87.4	72.1	0.55	90.1	79.7
26-Jul	77	90.9	71.0	0	92.3	78.7
27-Jul	78	86.9	69.0	0	90.5	78.3
28-Jul	79	90.2	64.3	0	88.4	76.5
29-Jul	80	96.6	76.2	0	91.3	80.3