

# Evaluation of Sweet Corn Varieties at Two Grower Locations in Ohio

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Sweet Corn is Ohio's number one fresh market vegetable with between 15,000 to 17,000 acres planted depending on the year. In the US, Ohio ranks 6<sup>th</sup> in fresh market sweet corn production. Sweet corn is produced throughout OH, in the southeast along the Ohio River, in many counties around Cincinnati, and also throughout central and northern OH.

## Objectives

To identify sweet corn cultivars with good emergence, high marketable yield and excellent quality under OH growing conditions.

## Methods

At Canal Winchester, ten SE varieties were planted on April 20<sup>th</sup>, 29<sup>th</sup> and May 22, 2006. Eleven SE varieties were planted on May 4<sup>th</sup> in New Albany. Eight SH2 varieties were planted in Canal Winchester on May 22, 2006 and eleven SH2 varieties were planted on May 25<sup>th</sup> in New Albany. Plots consisted of either: 4, 6 or 8 row blocks, 30 in apart and approximately 500 or 1000 ft long depending on location. In row spacing averaged 9 inches in Canal Winchester and 11 inches in New Albany. The middle two rows (total 20 linear feet) at three random locations in the block were used for yield data. Data collected included early plant vigor, plant and ear characteristics, and marketable yield. Sweetness was determined by a purely subjective evaluation of raw eating quality. Each variety was also evaluated for percent germination at ten different temperatures on the thermo-gradient table (Data not shown). Complete thermo gradient results, saturated salt accelerated ageing, (SSAA) seed tests, and pictures are available at the VegNet website: <http://vegnet.osu.edu>

## Results

As in 2005, warm April weather allowed for early planting and good germination but was followed by a prolonged period of very cool, wet weather. This is reflected in that the days to maturity for the se varieties ranged anywhere from 6 to 19 days later than the 'Predicted Maturity' for a particular variety. In the bicolor se's, Luscious, Precious Gem and Trinity had the best early plant vigor 2-4 weeks after emergence. Whiteout, Denali, Augusta and Sugar Queen had good early plant vigor for the white se varieties.

In the bicolors, Brocade, Luscious and Accord had the best yield in Canal Winchester. Native Gem and Trinity had high yields in New Albany. For the highest yielding varieties, Trinity and Brocade had the best flavor. Revelation and Reflection had good flavor but lower yields. Luscious had significant tip fill problems at one location. Revelation and Precious Gem also had tip fill problems at one location with less than 0.5 inches of the ear tip unfilled. Revelation had a significant amount of Stewart's bacterial wilt which led to a 20% reduction in plant stand. Untreated sample seed was mixed with Gaucho treated seed for this planting. Revelation is a good tasting early variety but the Stewart's susceptibility removes it from our recommended list.

For the white se's, the best yielding varieties were Augusta, Sugar Queen and at one location Chantilly. All white se's tested were rated as having good flavor at both locations except for Whiteout and Sugar Pearl which got a lower medium to good rating at one of the two locations. Chantilly also had a significant amount of Stewart's Bacterial Wilt at both locations reducing plant stand by about 20-25% after stand counts were made on 6/22/06.

In the SH2 varieties, days to maturity more closely matched predicted maturity and a heat wave near harvest time pushed maturity of several varieties together and slightly ahead of predicted maturity.

Overall, yields were very good and the highest yielding bicolor sh2's were: Optimum, Holiday (both augmented SH2's), Mirai 334 BC, Mirai 301 BC, Xtra Tender 282, and Mirai 308 BC. At one location Cavalry (HMX 2374) had the highest yield producing over 2000 dozen ears per acre. However, this variety was extremely tough with very poor flavor. Mirai 334 BC, at the Canal Winchester (CW) location had a tip fill problem with 0.5 to 1 inch of the ear left unfilled. Most of this planting was unmarketable. At New Albany, Mirai 334 BC had good tip fill. The problem at CW is puzzling since there was no stress and all plantings received timely irrigation unless the overhead irrigation affected pollination.

Flavor was rated as very good for most of the sh2 varieties and there was an occasional good or good to very good rating for 3 varieties. One variety that was outstanding in flavor, texture and quality was Optimum. Quality and performance were equal for both locations.

Visit the VegNet website: <http://vegnet.osu.edu> for pictures of these varieties.

Yield, ear size and quality, and plant characteristics of SE and SH2 sweet corn in Canal Winchester, Ohio, 2006

ID #	Cultivar	Co. <sup>1</sup>	Color	Predicted Maturity	Days to Maturity <sup>2</sup>	Percent Plant Stand	Early Plant Vigor <sup>3</sup> 6/22/05	Yield of Marketable Ears (doz/A)	Crates/A	Ear Length (in)	Ear Diameter (in)	Tip Cover <sup>4</sup> (1-5) <sup>4</sup>	Tip Fill <sup>5</sup> (1-5) <sup>5</sup>	Husk Tightness <sup>6</sup> (1-5) <sup>5</sup>	Shank Length (in)	Flag leaves <sup>7</sup>	Ht. From Ground to Lowest Ear (in)	Harvest Ease <sup>8</sup>	Eating Quality Raw <sup>9</sup>
<b>SE'S</b>																			
2	Revelation	HM	Bi	68	81	86	7.1	871	174.0	7	1.8	3.6	4.3	2.0	2	M	18.5	E	G+
3	Reflection HMX 4380	HM	Bi	72	81	100	7.8	1185	237.0	7.2	1.8	4.1	5.0	3.0	2.5	M	23	M	G+
5	Luscious	MM	Bi	75	89	100	9.0	1791	358	7.5	2.0	3.1	2.7	2.0	3	M	29	E-M	M-G
6	Accord	MM	Bi	78	85	100	7.5	1306	261	7.5	1.8	3.9	5.0	2.0	3.5	M	29	E-M	M-G
7	Precious Gem	MM	Bi	80	85	100	8	1839	368	8.2	1.9	3.8	4.3	1.8	3.5	S	32	E-M	M-G
10	Chantilly	MM	W	71	89	90	7.0	1306	261	6.8	1.7	4	5.0	2.2	2.8	M	28	M	G
11	Sugar Pearl	MM	W	72-74	89	No Data	No Data	1258	252	7.7	1.9	3	5.0	1.4	3.6	S	32	M	M-G
12	Whiteout	MM	W	73	89	90	8.9	1161	232	7.2	1.7	4	4.8	2.0	5	M-L	33	M-H	G
13	Augusta	MM	W	79	72	94	7.0	1525	305	8.2	1.9	4	5.0	2.0	5.1	L	27	E-M	G
14	Denali	MM	W	80	72	94	8.5	1452	290	7.8	1.7	3.9	5.0	2.6	5.1	L	28	M	G
15	Sugar Queen	MM	W	82	74	100	8.5	1573	315	7.7	1.8	3.3	5.0	2.4	4.6	M	30	E	G
SE variety #'s 2, 3, 5, planted 4/20/06; #'s 6, 7, 10, 11, 12 planted 4/29/06; #'s 13, 14, & 15 planted 5/22/06.																			
LSD 0.05						-		319	64	0.3	0.07	0.5	0.5	0.2		2			
<b>SH2'S</b>																			
18	Mirai 308 BC	Cen	Bi	71	71	100	6.8	1403	281	8.1	1.9	3.5	4.5	2.0	6	L	31	E	G
19	Mirai 334 BC	Cen	Bi	73	71	100	8.8	1766	353	8.2	1.9	4	2.9	2.2	3	L	29	E	VG
20	Mirai 301 BC	Cen	Bi	76	71	100	8.8	1742	348	8.1	1.8	4	4.0	2.0	4	M	30	E	VG
21	Mirai 350 BC	Cen	Bi	78	72	90	7.5	1742	348	8.2	1.7	3.5	5.0	2.5	3	L	28.5	E	VG
22	Optimum	CR	Bi	78	72	90	8	1791	358	7.6	1.8	4	5.0	2.4	3.5	M	24	E	VG
23	Surpass	CR	Bi	78	74	68	6.2	1331	266	7.8	1.7	4	5.0	2.1	3.5	L	25.5	E	VG
24	Cavalary HMX 2374	HM	Bi	82	74	100	8.5	2057	411	7.4	1.6	3.5	4.8	2.7	3.5	S-M	35	E	No Good
25	Holiday	CR	Bi	84	77	83	7.0	1669	334	8.1	1.8	3.9	5.0	2.6	5.8	M-L	31	E	VG
SH2 Varieties 18 to 25 planted 5/22/06.																			
LSD 0.05								226	45	0.2	0.05	0.4	0.3	0.2	0.4				

1. Seed Source: AC=Abbott & Cobb, C=Centest, CR=Crookham, SI=Siegers, ST=Stokes.

2. DAP: days after planting.

3. Early Plant Vigor, 2-4 weeks after emergence: P=poor, M=medium, G=good, VG=very good plant vigor.

4. Tip Cover: 1=exposed; 2=<.75 in covered; 3=0.75-1.25 in; 4=1.25 - 2 in covered; 5=2+ in. covered.

5. Tip Fill: 1= 2" or + unfilled; 2= >1in unfilled; 3= 0.5 to 1 in unfilled; 4= <0.5 in unfilled to tip; 5=filled to tip.

6. Husk Tightness: 1=loose; 2=firm; 3=tight. 7. Flag Leaves: S=<4"; M=4-8"; L=8-12"; >12". 8. Harvest Ease: E=easy, M=medium, H=hard. VH=very hard

9. Eating Quality: P = poor; M = medium; G = good; VG = very good; E = excellent. STP = slightly tough pericarp; TP = tough pericarp. \* = overmature

Yield, ear size and quality, and plant characteristics of SE and SH2 sweet corn in New Albany, Ohio, 2006

ID #	Cultivar	Co. <sup>1</sup>	Color	Predicted Maturity	Days to Maturity <sup>2</sup>	Percent Plant Stand	Early Plant Vigor <sup>3</sup> 6/22/06	Yield of Marketable Ears (doz/A)	Crates/A	Ear Length (in)	Ear Diameter (in)	Tip Cover <sup>4</sup> (1-5) <sup>4</sup>	Tip Fill <sup>5</sup> (1-5) <sup>5</sup>	Husk Tightness <sup>6</sup> (1-5) <sup>5</sup>	Shank Length (in)	Flag leaves <sup>7</sup> (in)	Ht. From Ground to Lowest Ear (in)	Harvest Ease <sup>8</sup>	Eating Quality Raw <sup>9</sup>
<b>SE'S</b>																			
1	Native Gem	MM	Bi	66	81	95	7.8	1379	198	6.7	1.7	3.6	5.0	2.1	2.5	S	16	E	M-G
4	Trinity	MM	Bi	67-70	81	81	8.0	1185	237	7.3	1.7	4	5.0	2.6	4	M	17	E	G
5	Luscious	MM	Bi	75	85	95	8.1	922	198	7.7	1.9	4.2	5.0	2.0	3.5	M	28	E	G
6	Accord	MM	Bi	78	85	91	8.0	992	198	7.7	1.8	3.8	5.0	2.4	5	M	30	E	G
7	Precious Gem	MM	Bi	80	89	57	8.0	702	140	7.9	1.7	3.3	4.0	1.8	3	M	30	M	G
8	Brocade	MM	Bi	81	89	86	8.0	1258	252	7.9	1.8	3.6	4.0	1.7	3.6	M	28	M-H	G
10	Chantilly	MM	W	71	81	67	7.5	968	194	5.6	1.7	4	5.0	2.0	3	M	22	E	G
12	Whiteout	MM	W	73	81	95	7.8	823	165	7.4	1.7	4.2	5.0	2.5	10	L	31	E	M-G
13	Augusta	MM	W	79	89	95	7.8	1379	276	8	1.7	4	5.0	2.0	4	L	24	M-H	G
14	Denali	MM	W	80	89	76	7.8	823	165	7.6	1.8	4	5.0	2.0	4	M	23	E-M	G
15	Sugar Queen	MM	W	82	95	100	7.5	871	174	7.7	1.8	4.5	5.0	2.1	6	M-L	29	E	G
LSD 0.05						-	-	241.5	48.3	1.1	0.11	0.5	0.4	0.3	0.6				
<b>SH2'S</b>																			
18	Mirai 308 BC	Cen	Bi	71	74	81	8.5	1282	256	8	1.8	3.5	5.0	2.0	6	L	29	E-M	G-VG
19	Mirai 334 BC	Cen	Bi	73	74	100	8	1331	266	8.1	1.9	4.1	4.9	2.0	3.5	M-L	27-29	E	VG
20	Mirai 301 BC	Cen	Bi	76	74	100	8.5	1137	227	7.8	1.8	4.9	5.0	2.0	3.5	M	29	M-H	VG
21	Mirai 350 BC	Cen	Bi	78	76	57	7.3	1162	232	7.5	1.8	4.1	5.0	2.2	3.5	M	26-28	E-M	VG
22	Optimum	CR	Bi	78	76	67	8	1137	227	7.4	1.8	4	4.8	2.0	4	M	20-24	E	VG
23	Surpass	CR	Bi	78	76	71	7.0	726	145	7.1	1.6	4.4	4.8	2.0	5.3	M-L	18	M-H	VG
25	Holiday	CR	Bi	84	78	71	7.8	1379	275	7.7	1.9	4.4	5.0	2.3	5.6	M	32	M-H	VG
282	XT 282		Bi	82	78	86	8.5	1355	271	7.3	2.0	4.4	5.0	2.4	5.5	S-M	29-30	E	VG
26	Obsession		Bi	79	78	71	8.7	1234	247	7.6	1.9	4.1	5.0	2.1	5.6	M	30-32	M	G-VG
277	XT 277		Bi	77	76	No Data	No Data	1258	251	6.9	1.8	3	5	2.1	4	M	25-26	M-H	VG
27	Devotion		W	82	84	No Data	No Data	1234	247	7.3	1.9	4.1	4.8	2.0	5	M	35	E	G-VG
LSD 0.05						-	-	360	72	0.29	0.05				2.1				

1. Seed Source: AC=Abbott & Cobb, C=Centest, CR=Crookham, SI=Siegers, ST=Stokes.

2. DAP: days after planting. Se'splanted on 5/04/06; Sh2's planted on 05/25/06.

3. Early Plant Vigor, 2-4 weeks after emergence: P=poor, M=medium, G=good, VG=very good plant vigor.

4. Tip Cover: 1=exposed; 2=<.75 in covered; 3=0.75-1.25 in; 4=1.25 - 2 in covered; 5=2+ in. covered.

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