

Early Sweet Corn Variety Trials

Mark G. Hutton, Vegetable Specialist
Gleason Gray, Extension Educator
Tori Jackson, Lisa Coffin and Christina Howard, Technicians
University of Maine Cooperative Extension
Tel. (207) 581-3188

Introduction

New England farmers have many options when it comes to selecting sweet corn varieties to grow. In addition to color options (yellow, white, bicolor, and now red) and maturity ranges, growers must also choose which sugar type best suits their production style and markets. The standard sugary type corns (abbreviated “su”), have been giving way to sugar-enhanced (“se” and “se+”) and supersweet (“sh²”) types. The supersweet types have very high levels of sweetness and can hold sugar levels for many hours after harvest, in contrast to standard varieties. However, they also tend to have a tougher texture and less “corn” flavor, they must be isolated from other types of corn to prevent cross-pollination, and they germinate poorly under cold soil temperatures. The sugar-enhanced types also hold sugar levels longer after harvest than standard varieties, but not as long as the supersweet types. They do not have the tough texture of the super sweet types, nor do they require isolation, and they tend to have better cold soil germination. For this reason the sugar-enhanced varieties have, in recent years, become the most popular type of sweet corn grown in northern New England. Now there are also choices within the sugar-enhanced varieties. Some varieties are listed as “se” while others are listed as “se+” or “se se”. If the variety came from a cross of a normal (su) parent and a sugar-enhanced (se) parent it is called an se type (technically, it is heterozygous for this trait). If the variety is from a cross of two se parents it is referred to as se+ or se se (i.e. it is homozygous for this trait). The latest wrinkle in the sugar-type puzzle is varieties that have traits from su, se and super sweet types. These are proprietary and go under commercial labels such as “Triple Sweet” and “Sweet Breed”. The idea is to take the best characteristics of each type, and blend them into new varieties. Most of these are new to the market and grower evaluations have just begun.

Over the past few years we have tested numerous varieties of sweet corn at the Maine Agricultural Experiment Station, concentrating on early to midseason bicolor varieties. In 1999 and 2002 we looked at se-types and in 2001 we looked at supersweet types. All of the trials were replicated and randomized for statistical validity. Reports for each of the studies are included below. We would like to thank all of the companies that provided seed for this trial, including Harris, Johnny’s Selected Seeds, Seedway, Stokes, and Twilley.

Early Bicolor Sugar-Enhanced (se) Sweet Corn Trial 1999

Seed germination in all plots was very good. All of the varieties preformed well under the very hot, dry conditions that characterized this growing season. Fleet was the first variety to mature in the trial, and had characteristics similar to its sister variety Quickie, being a short plant with relatively small ears set close the to ground. Ear quality was fair to good. Ecstasy II, Geronimo, July Gem, Seneca Arrowhead, and Trinity were in the second early harvest. Ecstasy often produced two marketable ears per plant. The ears were fair quality, relatively small and had the

poorest tip cover in the trial, meaning that the husks may not adequately protect the ear tips from birds and insects. Geronimo produced relatively large ears, averaging 15 rows of big kernels. They were low to the ground however, and somewhat difficult to pick (the ears did not easily snap off the stalk). July Gem produced a good-sized attractive ear, but it was the most difficult variety to pick, and its maturity was variable. Seneca Arrowhead produced a good quality ear, somewhat short but averaging 16 rows of kernels. Tip cover on this variety was among the poorest in the trial. Trinity produced a small to medium-sized ear that picked easily, although it was low to the ground. Tip fill tended to be poor, reducing ear quality. The third early harvest included Double Gem, Seneca Tomahawk, Sweet Chorus and Sweet Rhythm. Double Gem produced a good-sized ear of high quality that picked easily, although its maturity was variable. It also had the poorest germination rate in the trial, but it was still acceptable. Seneca Tomahawk had good ear length, but averaged only 13 rows of kernels. It was among the poorest for tip cover, but it was very easy to husk. Sweet Chorus had among the largest ears in the trial. It was easy to pick with good tip cover, but had some poor tip fill under the dry growing conditions. Sweet Rhythm was a shorter, fuller ear with good quality, but somewhat less tip cover and similar problems with tip fill. Ear height for this variety was the most variable, which may pose a problem for mechanical harvesting. Mystique and Sweet Symphony were harvested three days following the third harvest group. Mystique was a large plant with the ears placed well off the ground, but it was among the hardest to pick. The ears were good quality and the largest in the trial, but sometimes had poor tip fill. Sweet Symphony was a large, uniform plant with ears well off the ground. The ears were very good quality with excellent tip cover. Wizard was harvested three days after Sweet Symphony and Mystique and had the highest germination rate in the trial. It was also the tallest plant in the trial, and had good picking ease and tip cover, but the maturity was variable. The ears were large and had the highest number of rows of kernels (18) in the trial. Lancelot was the last variety harvested in the trial, maturing four days after Wizard. It was a large, though somewhat variable, plant, which held the ears higher off the ground than any other variety. Picking ease was good, although maturity was somewhat variable, and the large ears had very good quality.

Sweet Corn Bicolor se Variety Trial 1999
 Highmoor Farm, Monmouth, Maine
 University of Maine Cooperative Extension

Variety	Days to Harvest ¹	Harvest Date	Plants/row	Height (in.)	Ear Ht. (in.) ²	Picking Ease ³	Tip Cover ⁴	Ear Length (in.)	Rows of Kernels	Comments
Double Gem✓	75	8/3	44	73.5 ±2.6	17.2 ±1.5	2.8	2.0	7.3 ±0.5	16	Variable maturity
Ecstasy II	68	8/2	48	68.8 ±3.2	14.5 ±1.8	2.4	1.3	7.2 ±0.3	13	Marketable 2 nd ear
Fleet	65	7/29	53	61.0 ±3.2	9.1 ±1.9	2.7	2.0	7.2 ±0.2	13	Tassels on ear tips
Geronimo	69	8/2	52	63.4 ±3.2	12.6 ±1.5	1.8	2.0	7.5 ±0.1	15	Large kernels
July Gem	71	8/2	53	68.7 ±2.6	13.9 ±1.8	1.5	2.3	7.4 ±0.4	15	Variable maturity
Lancelot✓	80	8/13	51	77.5 ±5.6	23.3 ±1.1	2.7	2.2	7.3 ±0.2	17	Variable maturity
Mystique	75	8/6	47	78.1 ±1.6	20.9 ±1.2	1.7	2.0	8.1 ±0.5	15	Poor tip fill
S. Arrowhead✓	62	8/2	55	68.7 ±2.5	13.6 ±0.4	2.0	1.9	7.2 ±0.3	16	Tassels on ear tips
S. Tomahawk	68	8/3	49	73.5 ±3.8	19.1 ±1.8	2.2	1.8	7.4 ±0.1	13	Easy husking
Sweet Chorus✓	67	8/3	54	76.9 ±1.3	15.4 ±1.5	2.7	2.5	7.6 ±0.5	14	Poor tip fill
Sweet Rhythm	74	8/3	56	78.8 ±2.9	22.9 ±3.3	2.3	2.1	7.1 ±0.1	15	Poor tip fill
Sweet Symphony✓	76	8/6	50	77.1 ±.95	21.8 ±0.5	2.4	3.0	7.3 ±0.2	16	Consistent, bright color
Trinity	68	8/2	53	68.9 ±2.5	11.4 ±1.2	2.9	2.1	7.2 ±0.2	14	Poor tip fill
Wizard✓	72	8/9	59	89.2 ±2.9	20.6 ±1.2	2.6	2.5	7.4 ±0.2	18	Variable maturity
LSD 0.05			6.5	3.4	2.5			0.4	0.8	

¹ Maturity date according to seed catalog. Seed planted manually 5/21-5/27

² Ear height measured from base of ear to soil surface

³ Picking ease rated on a scale of 1 to 3 with 1 being difficult to snap and 3 being easy to snap.

⁴ Tip cover rated on a scale of 1 to 3 with 1 indicating an exposed tip and 3 indicating three or more inches of tip cover.

✓Best of show

Early Bicolor Supersweet (sh₂) Sweet Corn Trial 2001 Variety Notes

Everprime: Fair germination, good yield. Tall plant, but ear sits low. Picks well. Poor to fair tip cover. Good ear size and appearance. Good flavor.

Fantasy: Good germination, good yield. Short plant, ears low on the stalk. Picks well. Poor tip cover. Smallest ear in trial with fewer rows, but highest sugar content.

Fortune: Good germination, but lowest yield in trial. Good sized plant with ears well off the ground. Picks very well. Fair tip cover. Medium-sized ear, lower sugar content than others.

Jumpstart: Among the earliest to mature. Good germination, only fair yield. Fair-sized plant, but ears close to the ground. Somewhat tough to pick, but good tip cover. Fewest rows and large kernels. Good sugar content.

Majesty: Among the latest in the trial. Good germination, good yield. Tallest plant and good ear height. Picks well. Only fair tip cover. Large, attractive ear. Good sugar content.

Milk n' Honey II: Among the earliest to mature. Good germination and yield. Shorter plant, picks very well. Fair tip cover. Large ear, but lowest sugars in the trial.

Confection: Fair germination, good yield. Tallest plant in trial, ear fairly high on plant. Picks well, fair tip cover. Medium-sized, attractive ear with good sugar content.

Sweet Heart: Among the earliest to mature. Very good germination and good yield. Medium-sized plant but low ear height. Picks well, fair tip cover. Smaller ear, with only fair sugar content.

SS 6082: Among the earliest to mature. Fair germination, good yield. Short plant ears close to ground. Picks well, good tip cover. Medium sized year, good sugar content.

SS 7422: Very good germination, but only fair yield. Shorter, picks well. Fair tip cover. Large attractive ear, but low sugar content.

270A Extra Tender: Among the earliest to mature. Good germination, fair yield. Shortest plant in trial, ears low to the ground. Somewhat tough to pick, fair tip cover. Large ear, lower sugar content.

275A Extra Tender: Highest germination rate, best yielding in trial. Tall plant with ears set highest of any variety. Picks well with fair to good tip cover. Good sized ear with fair sugar content.

277A Extra Tender: Later maturing. Lower germination rate and yield. Smaller plant. Somewhat tough to pick, fair tip cover. Large attractive ear with high sugar content.

GS 276A: Later maturing. Good germination and yield. Medium-tall plant, picks well. Large, attractive ear with good sugar content.

Bicolor Supersweet (sh₂) Corn Variety Trial 2001
 Highmoor Farm, Monmouth, Maine
 University of Maine Cooperative Extension

Variety	Days to Harvest ¹	Harvest Date	Plants/Row	Height (in.) ¹	Height of Ear ²	Yield/Plot	Picking Ease ³	Tip Cover ⁴	Length of Ear	Rows of Kernels	Sugar (brix)
Everprime	77	8/22	29.25	71.97	16.52	25.50	2.12	1.25	7.54	14.95	14.05
Fantasy	75	8/22	31.50	58.53	13.65	24.75	2.12	1.02	6.81	14.20	16.67
Fortune	75	8/22	32.75	68.55	22.08	17.25	2.75	1.41	7.29	14.66	12.20
Jumpstart	71	8/17	32.00	69.00	15.13	21.50	1.87	2.53	7.29	12.90	14.20
Majesty✓	75	8/27	32.50	73.07	27.35	24.25	2.37	1.37	7.79	16.17	13.75
Milk&Honey II✓	71	8/17	32.25	67.36	17.95	26.00	2.62	1.89	7.89	15.35	11.02
Confection✓	74	8/21	29.25	72.65	24.60	26.25	2.25	1.89	7.41	15.18	14.40
Sweet Heart	70	8/17	34.25	68.65	16.50	24.00	2.25	1.69	6.96	13.88	13.10
SS#6082 BC	73	8/17	30.25	63.45	16.55	24.00	2.75	1.88	7.38	14.55	14.07
SS#7422 BC	74	8/22	33.75	62.65	17.85	20.00	2.25	1.30	8.04	14.75	11.57
270A Xtra Tndr	71	8/17	31.25	58.22	13.93	22.25	1.62	1.42	7.55	15.10	12.80
275A Xtra Tndr✓	75	8/22	34.75	70.80	27.55	31.00	2.12	1.82	6.95	17.95	13.40
277A Xtra Tndr ✓	77	8/24	29.25	60.53	17.92	29.25	1.62	1.47	7.32	17.67	15.88
GS276A✓	76	8/24	32.50	64.90	23.15	30.25	2.37	1.80	7.72	17.25	14.70
LSD 0.05			3.52	7.90	3.77	8.54	0.56	0.40	0.35	0.77	1.38

¹ Maturity date according to seed catalog. Seed planted manually 6/5/01

² Height of ear measured from base of ear to soil surface (in inches).

³ Picking ease rated on a scale of 1 to 3 with 1 being the easy to snap and 3 being difficult to snap.

⁴ Tip cover rated on a scale of 1 to 3 with 1 indicating an exposed tip and 3 indicating three or more inches of tip cover.

✓Best of show

Sweet Corn Bicolor se Variety Trial 2002
 Rogers Farm, Stillwater, Maine
 University of Maine Cooperative Extension

Variety	Days to Harvest ¹	Harvest Date	Plants/ Row	Height (in.) ¹	Height of Ear (in.) ²	Picking Ease ³	Tip Cover ⁴	Length of Ear (in.)	Rows of Kernels	Insects/ Ear	Comments
Absolute✓	78	9/18	23.25	72.40	18.31	1.25	1.74	7.75	16.60	1.83	Easy to husk
Bojangles	78	9/5	21.50	63.53	14.29	1.25	1.55	7.15	13.97	1.77	synergistic
Bon Appetite	71	9/9	21.25	74.15	15.18	1.25	2.33	7.00	15.05	1.80	
Delectable✓	80	9/11	22.50	66.36	18.95	2.25	2.16	7.68	17.42	1.78	Easy to husk
Double Choice	72	9/9	21.00	64.10	13.86	1.25	2.03	7.34	13.38	1.63	
Luscious	75	9/5	21.75	70.43	16.95	1.25	1.60	6.94	16.92	2.05	
Providence✓	80	9/18	22.50	62.78	17.07	2.25	3.05	8.23	15.55	1.23	
SEB 6803	76	9/11	20.25	63.27	18.29	1.50	0.86	7.94	18.08	1.75	
Serendipity✓	80	9/18	20.75	64.22	18.24	1.75	2.66	7.86	14.88	1.38	Not uniform
Sir Prize	72	9/5	23.25	68.80	17.81	1.50	1.89	7.01	17.17	1.15	
Sweet Satin	77	9/18	21.25	69.65	24.17	1.50	1.98	7.62	15.15	2.00	White, synergistic
Sweet Symphony	76	9/9	21.50	62.15	17.95	2.00	2.60	6.35	15.43	1.38	Short ears, synergistic
Terrific	77	9/11	19.25	74.53	17.76	1.75	1.99	7.14	15.27	1.78	
Twilight✓	78	9/11	21.00	62.20	18.00	1.50	2.83	7.18	17.25	1.68	
War Dance	78	9/18	20.75	56.85	14.93	1.75	2.65	7.30	17.70	1.73	

¹ Maturity date according to seed catalog. Seed planted manually 6/21/02

² Height of ear measured from base of ear to soil surface.

³ Picking ease rated on a scale of 1 to 3 with 1 being the easy to snap and 3 being difficult to snap.

⁴ Tip cover rated on a scale of 1 to 3 with 1 indicating an exposed tip and 3 indicating three or more inches of tip cover.

✓ Best of show