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# **Sugar-enhanced and Synergistic Sweet Corn Evaluations in Central Kentucky**

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## **Introduction**

Locally produced sweet corn is a high-demand item at Kentucky retail markets. This trial was designed to evaluate some of the newest sugar-enhanced and synergistic sweet corn varieties.

## **Materials and Methods**

Twenty-two sugar-enhanced and synergistic sweet corn varieties were planted by hand on May 22. Plots consisted of a 20-foot long row of each cultivar that were replicated four times. Rows were spaced 33 inches apart and roughly 200 seeds were hand-planted in each 20-foot row to assure a good stand. Seedlings were thinned to a distance of nine inches apart.

Prior to planting, 100 lb of actual N as ammonium nitrate and 18 lb of K<sub>2</sub>O as 0-0-60 per acre were applied to the soil and tilled in. Plants were side-dressed with 50 lb of actual N per acre as calcium nitrate on July 1.

Weeds were hand-cultivated 10 days after planting, followed by application of Dual II Magnum herbicide on July 1. Brigade and Coragen were used for insect control. A low, three-wire electric fence was set up around the plot at the beginning of harvest to keep out raccoons and coyotes.

## **Results and Discussion**

This growing season was very rainy. Variety evaluation results can be found in Tables 1 through 3. Yields for most of the varieties were not significantly different from each other. Essence, Profit, and Ka-Ching, were judged to be the best bicolor varieties in the trial. Profit, a 70-day maturity variety was the best early-maturing variety in the trial and ears were very easily removed from the plant. All other varieties in this study that matured from 62 to 69 days from planting had very poor husk coverage.

Mattapoisett, Silver King, Mirage, and Whiteout were the best white varieties. All of these had good yields, husk coverage, tip fill, and excellent eating quality. In fact, eating quality of just about all of the varieties evaluated was excellent.

Aspire, the only yellow variety in the trial, had excellent husk coverage, very good tip fill, and was exceptionally sweet.

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**Table 1.** Plant characteristics and yields of sweet corn varieties, Lexington, Kentucky, 2015.

Variety	Type <sup>1</sup>	Seed Source <sup>2</sup>	Kernel Color <sup>3</sup>	Days to Maturity <sup>4</sup>	Yield (dozen ears per acre) <sup>5</sup>	SSe Seedling Vigor <sup>6</sup> (1-5)	Height to First Harvested Ear (in.)	Ease of Ear Harvest <sup>7</sup> (1-5)
Allure	se	SW	bc	75	2,130 a	4.5	18	4.1
Essence	syn	RU	bc	78	2,110 a	3	22	3.3
Mattapoissett	se	SW	w	80	2,080 a	3.9	22	3.1
Silver King	se	HR	w	82	2,030 a	3.5	23	2.8
Mirage	syn	HR	w	78	1,950 ab	2.9	23	3.5
WH 0809	tsw	SY	w	80	1,950 ab	3.6	25	3.6
Cameo	syn	RU	bc	84	1,900 abc	3.1	24	3.6
Profit	syn	SW	bc	70	1,900 abc	5	11	4.3
Ka-Ching	syn	SI	bc	73-77	1,900 abc	4.3	13	3.9
Primus	tsw	SY	bc	81	1,880 abc	2.8	17	3
Whiteout	se	SW	w	73	1,880 abc	3	23	3.8
Alto	se	SI	bc	62-72	1,820 abc	5	12	3.8
Aspire	tsw	SY	y	80	1,800 abc	3.5	22	3.1
Cuppa Joe	se	RU	bc	73	1,750 abcd	3.5	19	3.9
Revelation	syn	HR	bc	66	1,730 abcd	4	11	3.8
Brocade	se	HR	bc	82	1,630 abcde	4.1	21	3.9
Luscious	se+	JS	bc	75	1,500 bcdef	1.4	16	4
BC 0822	tsw	SY	bc	77	1,450 bcdef	3.5	19	3.3
Trinity	se	SI	bc	66-72	1,400 cdef	3.4	8	3.6
Sweetness	se	SW	bc	68	1,290 def	4.4	9	3.8
Pay Dirt	syn	SI	bc	62-72	1,200 ef	2.5	9	3.8
Sugar Pearl	se+	JS	w	73	1,120 f	2	16	3.8

<sup>1</sup>Corn type: se = sugar-enhanced, se+ = sugar-enhanced-plus, syn = synergistic, tsw = Triplesweet<sup>®</sup>.

<sup>2</sup>See appendix for seed company addresses.

<sup>3</sup>Kernel color: y = yellow; w = white; bc= bicolor.

<sup>4</sup>Days to harvest from seed catalogues.

<sup>5</sup>Numbers followed by the same letter are not significantly different (Duncan Multiple Range Test LSD P≤0.05).

<sup>6</sup>Seedling vigor: 1 = poor growth, 5 = excellent growth.

<sup>7</sup>Harvest ease: 1 = difficult to pull ear from stalk; 5 = easy to pull off.

**Table 2.** Ear characteristics of sweet corn varieties, Lexington, Kentucky, 2015.

<b>Cultivar</b>	<b>Husk Coverage<sup>1</sup> (1-10)</b>	<b>Ear Length (in)</b>	<b>Tip Fill<sup>2</sup> (1-10)</b>	<b>Row Straightness<sup>3</sup></b>
Allure	4.8	8.4	8	3.5
Essence	10	7.5	9.3	5
Mattapoissett	9.5	8	9	4
Silver King	9	7.6	8.8	6
Mirage	10	7.9	10	4.8
WH 0809	9.8	7.9	6	7
Cameo	8.5	8.1	4	5.3
Profit	8.5	7.4	9.5	7.5
Ka-Ching	8.8	8.4	9	7
Primus	10	7.7	6.5	6
Whiteout	7.5	7.5	8.3	7.5
Alto	5.5	7.3	9.8	6.3
Aspire	9.8	8.1	7.3	6.8
Cuppa Joe	3.5	8.2	7.8	6.8
Revelation	5.5	7.3	9.5	5.8
Brocade	9	7.6	5.8	5.8
Luscious	7.8	7.2	5.3	6.3
BC 0822	7.8	7.4	0	6
Trinity	7	7.3	7.5	6.8
Sweetness	1.3	7.2	7.3	5
Pay Dirt	6.8	7.1	6.5	5.3
Sugar Pearl	9	6.7	8	5.8

<sup>1</sup>Husk coverage: 1 = corn ear protrudes from all husks, 10 = husks completely cover all ten ears.

<sup>2</sup>Tip fill: 1 = kernels not filled out on ear tips, 10 = all ears filled to the tip with plump kernels.

<sup>3</sup>Row straightness down length of ears: 1 = poor, 5 = very straight.

**Table 3.** Ear quality characteristics of sweet corn, Lexington, Kentucky, 2015.

<b>Cultivar</b>	<b>Pericarp Tenderness<sup>1</sup> (1-4)</b>	<b>Kernel Tenderness<sup>2</sup> (1-4)</b>	<b>Sweetness<sup>3</sup> (1-4)</b>	<b>Comments</b>
Allure	3.1	3	3.5	Husk not as attractive; some with bacterial rot
Essence	3.6	3.5	3.6	Short flags, attractive husk
Mattapoissett	3.1	3.3	3.8	Attractive husk; long flags
Silver King	2.9	2.9	3.1	Long flags; attractive husk and ear; husk snaps off ear easily
Mirage	3.1	3.3	3.5	Attractive husk and ear; shucks easily
WH 0809	3.5	3.5	3.7	Some dark specks on husks; short flags; attractive husk and ear; snaps off husk easily
Cameo	3	3.3	3.5	Short flags; deep kernels
Profit	3.1	2.8	3.6	Attractive husk and ear
Ka Ching	3.5	3.5	3.6	Large ears, long flags; some with bacterial rot
Primus	3.1	3.3	3.8	Short flags
Whiteout	3.4	3.3	3.4	Husk snaps off ear easily; some with bacterial rots; variable length flags
Alto	3	2.9	3.5	Variable ear length; hard to shuck; medium to long flags
Aspire	3.3	2.9	3.8	Pale, attractive husk; snaps off ear easily; some with spots on husks
Cuppa Joe	3.4	3.3	3.5	Short flags; husk not attractive
Revelation	3.3	3.1	3.4	Fairly attractive, some with bacterial rot
Brocade	2.3	3.1	3.3	Medium to long flags; attractive husk
Luscious	2.8	2.6	3.4	Deep kernels; medium to long flags
BC 0822	3.4	3.4	3.6	Attractive husk; short flags
Trinity	3.4	3	2.9	Considerable raccoon feeding; attractive ear; glossy kernels
Sweetness	4	3.4	2.9	Very tender; easy to shuck
Pay Dirt	2.8	2.9	3.4	Several with bacterial rot
Sugar Pearl	2.6	3.4	3.6	Medium to short flags; short ear

<sup>1</sup>Pericarp Tenderness: 1= tough; 4 = tender. Taste evaluations were performed on one ear from each replication that was microwaved on high for 2 minutes prior to tasting.

<sup>2</sup>Kernel tenderness: 1 = crisp; 4 = creamy and tender.

<sup>3</sup>Sweetness: 1 = starchy; 4 = very sweet.