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Supersweet Corn Evaluations in Central Kentucky

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

Materials and Methods

Twenty-two supersweet corn varieties were planted by hand on 25 May in a Maury silt loam soil. Plots consisted of 20 ft long rows of each cultivar and were replicated four times in a randomized block design. Rows were spaced 33 inches apart. Roughly 200 seeds were hand-planted in each 20 ft row to assure a good stand. Seedlings were thinned to a nine-inch spacing.

Prior to planting, 80 lb of actual N, P and K per acre as 19-19-19 were applied to the soil and tilled in. Plants were fertigated with 36 lb of actual N per acre as calcium nitrate on 11 July.

Weeds were cultivated after planting, followed by application of Dual II Magnum herbicide on 14 June. Mustang Max and Baythroid were used for insect control. A low, three wire electric fence was set up around the plot at the beginning of harvest to exclude raccoons and coyotes.

Results and Discussion

Variety evaluation data can be found in Tables 1 through 3. The growing season was very rainy. There were 22 days having at least a tenth of an inch of rain from the planting date until first harvest. Browning/rotting on ear shanks showed up to a varying degree in most cultivars in the trial. This was diagnosed as a rot phase of Stewart's Wilt, a bacterial disease promoted by prolonged, wet conditions. Most of this was easily removed by taking off a little of the outer shuck covering. Yields for 18 of the 22 varieties were not significantly different from each other.

Munition was the best white variety and yielded significantly more ears than any other variety, Table 1. It also had good seedling vigor, tended to have some of the shorter ears, and had the highest height to the first harvestable ear. It was one of the standards for comparison in the trial.

Cabo, Battalion, AP 426, Anthem XR, and Obsession were the best bicolor varieties. AP 426 was notable in that it has a short 58-day maturity period, had one of the highest husk coverage ratings in the trial and produced an eight-inch-long ear. Husk coverage is important to reduce worm, sap beetle, and bird damage. Husk coverage was particularly poor this season in comparison to previous seasons. Tip fill was particularly good for all but two varieties. Battalion was one of the few with little to no shank decay. Obsession was a recommended variety used as a standard in the trial.

GSS 1170 was the highest yielding yellow variety, and also one with little to no shank decay, but also had the shortest ears. Eating quality for all of the varieties evaluated was excellent (Table 3). Battalion, GSS 1170, AP 426, Anthem XR, and the standard Obsession all had high sweetness ratings.

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Table 1. Plant characteristics and yields of sweet corn varieties, Lexington, KY, 2016.

Cultivar[1]	**Seed source**[2]	**Kernel Color**[3]	**Days to maturity**[4]	**Yield** ***dozen ears per acre***[5]	**Seedling vigor**[5] *1-5*	**Ease of ear harvest**[7] *1-5*	**Height to first harvested ear** ***in***
Munition (standard)	SY	w	78	3220 a	4.5	3	31.5
Cabo	SY	bc	78	2110 b	3.3	3.4	26.1
Battalion	SY	bc	77	2010 bc	3	3	24.3
GSS 1170	SY	y	78	2010 bc	3.6	3	26.5
AP 426	RU	bc	58	1980 bc	3.4	3.3	22.8
Cumberland	ST	bc	77	1900 bcd	4.3	3.1	20
Anthem XR	SW	bc	72	1850 bcde	4.9	3.5	21
Obsession (standard)	RU	bc	79	1830 bcde	3.9	3.5	23
Enchanted	RU	bc	78	1820 bcde	3.5	3.1	24
Super Surprise	RU	bc	74	1820 bcde	4.6	2.3	18.8
Prestige XR	SW	bc	77	1780 bcde	4.5	3.5	20
XtraTender 2171	JS	bc	71	1770 bcde	3.8	3.5	21.3
Nirvana	SW	bc	75	1700 bcde	3.4	4.4	18
Superb MXR	ST	bc	74	1680 bcde	5	3	18.3
Vision MXR	JS	y	75	1630 bcde	4.1	3.4	17.3
SS 3778	JS	y	76	1630 bcde	2.9	3.5	22.3
Honor XR	ST	bc	79	1620 bcde	4.3	3.4	24.8
SS 2742	JS	bc	75	1600 bcde	3.3	3.3	20.8
Eden	ST	w	76	1600 bcde	3.4	3.5	19
XTH 11274	ST	y	72	1490 cde	4.1	3.7	19.8
XtraTender 20173	JS	bc	73	1450 de	2.9	3.1	24.3
Gourmet Sweet 2171	ST	bc	72	1370 e	3.9	3.9	22.3

[1]All but Battalion, Obsession, Prestige, SS 3778 and Honor XR are augmented supersweet varieties.
[2]See appendix for seed company addresses.
[3]Kernel color: y = yellow; w = white; bc = bicolor.
[4]Days to maturity noted in seed catalogues.
[5]Numbers followed by the same letter are not significantly different (Duncan Multiple Range Test $P \leq 0.05$).
[6]Seedling vigor: 1 = poor growth, 5 = excellent growth.
[7]Harvest ease: 1 = difficult to remove ear from stalk; 5 = easy to remove.

Table 2. Ear characteristics of sweet corn varieties, Lexington, KY, 2016.

Cultivar	Husk coverage[1] *1-10*	Ear length *in*	Ear width *in*	Tip fill[2] *1-10*	Row straightness[3] *1-10*
Munition	6.5	7.5	1.8	9.8	5.3
Cabo	6.5	8.1	1.9	9.8	6.5
Battalion	5	7.7	1.9	10	4.8
GSS 1170	6	7.5	1.8	9.5	4.5
AP 426	8.3	8	1.9	9.5	5.3
Cumberland	1.3	8.5	1.9	10	5
Anthem XR	7.3	7.9	2	9.8	4.8
Obsession	7	8	2	9.8	5.8
Enchanted	5.8	8.2	1.9	10	4.8
Super Surprise	4	8.2	2	9.8	5
Prestige XR	5.5	8.1	1.8	10	4.8
XtraTender 2171	4.3	7.8	1.9	10	5.8
Nirvana	1.8	8.2	1.9	9.8	5
Superb MXR	7.5	7.7	2	9.5	4.3
Vision MXR	1.5	7.6	1.9	4.3	4
SS 3778	5.3	8.3	1.8	10	6.8
Honor XR	4.5	8	1.8	10	5.3
SS 2742	5.5	8.2	1.7	9.3	8
Eden	4.5	8.2	2	9.8	3.8
XTH 11274	3.5	8.2	1.9	6.8	3.8
XtraTender 20173	3.5	7.7	1.9	9.3	4.5
Gourmet Sweet 2171	2.3	7.9	1.9	10	6.5

[1]Husk coverage: 1 = corn ear protrudes from all husks, 10 = husks completely covered all ten ears.
[2]Tip fill: 1 = kernels not filling out ear tips, 10 = all ears filled to the tip with plump kernels.
[3]Row straightness along length of ears: 1 = poor, 10 = very straight.

Table 3. Eating quality characteristics of sweet corn, Lexington, KY, 2016.

Cultivar	Pericarp tenderness[1] *1-4*	Kernel tenderness[2] *1-4*	Sweetness[3] *1-4*	Comments
Munition	3.4	2.7	3.2	Attractive husk/ear; a few tassels on ears
Cabo	3.5	2.5	3.2	Attractive husk/ear; short flags; little stalk rot
Battalion	3.5	3	3.8	Attractive husk/ear; no stalk rot; short ears
GSS 1170	2.9	2.7	3.5	Husk not attractive; short ears; some tassels on ears; short flags
AP 426	3.4	2.9	3.6	Glossy ear; a few with butt-end blanking on ear; good corn taste
Cumberland	3.5	2.5	3.2	
Anthem XR	3.5	3.1	3.7	Attractive husk; some ears with split kernels and tassels
Obsession	3.5	3	3.8	Attractive husk/ear; short flags
Enchanted	3.5	2.5	3.2	Glossy ears; some with butt-end blanking and tassels
Super Surprise	3.3	2.9	3.6	Attractive husk/ear; long flags
Prestige XR	3.5	3	3.8	Attractive ear and dark green husk; several ears with tassels; little stalk rot
XtraTender 2171	3.5	2.5	3.2	Some ears with tassels
Nirvana	3.5	3	3.8	Some with split kernels; tender kernels
Superb MXR	3.5	3	3.8	Attractive ear, some ears with tassels; long flags
Vision MXR	3.6	3.2	3.7	Some kernel splitting; sap beetle damage; some ears with tassels; raccoon damage
SS 3778	3	3.1	3.5	Attractive husk/ear; long flags; a few slightly orange kernels; some tassels; good corn flavor
Honor XR	3.5	3	3.8	Attractive husk/ear; short-med. flags; pale husk not attractive; some ear tassels
SS 2742	3.5	2.5	3.2	Attractive ear; some ears with tassels; raccoon damage
Eden	3.5	2.5	3.2	Very tender kernels; raccoon damage
XTH 11274	3.4	3.2	3.6	Attractive ear; a few with butt-end blanking; raccoon damage
XtraTender 20173	3.5	2.5	3.2	Stalk rot problems
Gourmet Sweet 2171	3.5	2.5	3.2	Some ears with tassels and butt- end blanking

[1]Pericarp Tenderness: 1= tough; 4 = tender. Taste evaluations were performed by two evaluators on one ear from each replication; ear was microwaved on high setting for 2 minutes.
[2]Kernel tenderness: 1 = crisp; 4 = creamy and tender.
[3]Sweetness: 1 = starchy; 4 = very sweet.