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Sweet Corn Cultivar Trial

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Abstract

The 2009 sweet corn cultivar trial was conducted to identify cultivars with good ear characteristics for local marketing or shortdistance shipping. This year's trial focused on the bicolor, high-quality shrunken 2 (sh2) types, often referred to as augmented or improved sh2. The best cultivars in this class provide improved flavor and tenderness over conventional sh2 hybrids. They need isolation from other corn genotypes in the field and careful handling at harvest, but reward the grower with the best combination of gourmet eating quality and extended shelf-life that is available.

Keywords

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Introduction

The 2009 sweet corn cultivar trial was conducted to identify cultivars with good ear characteristics for local marketing or short-distance shipping. This year's trial focused on the bicolor, high-quality shrunken 2 (sh2) types, often referred to as augmented or improved sh2. The best cultivars in this class provide improved flavor and tenderness over conventional sh2 hybrids. They need isolation from other corn genotypes in the field and careful handling at harvest, but reward the grower with the best combination of gourmet eating quality and extended shelf-life that is available.

Materials and Methods

Planting and plot design. The trial was planted on April 23, 2009 in a dark sandy-loam soil. Plot arrangement was a randomized complete block design with four replications. A plot consisted of two rows spaced 30 in. apart and 25 ft long. After emergence, plants were thinned to approximately 8 in. apart and a uniform population of 26,000/acre.

Fertility and irrigation. Water was applied as needed by a center pivot irrigation system to supplement rainfall. Fertilizer was applied preplant incorporated at rate of 60 lb nitrogen (N) and 100 lb potassium (K₂O). After crop emergence 45 lb nitrogen (UAN) was sidedressed on May 21 and again on June 9.

Pest control. Weeds were controlled with Dual II Magnum, Atrazine 4L, and Callisto herbicides applied crop preemergence. Ear caterpillars were controlled by spraying Mustang Max or Belt insecticide every three to four days once ear silking started.

Results and Discussion

Cultivars are ranked by relative maturity from early to late in Tables 1 and 2. Several entries had good emergence and seedling vigor even though it was wet and the soil temperature was in the low 50s after planting. The seedling vigor of XTH 2170, XTH 2171, 274A, Sweet Surprise, Awesome, and XTH 2281 stood out and were given excellent ratings in Table 1. XTH 2170 was the first cultivar to be harvested and BSS 0982 and Bueno took almost 10 days longer to reach marketable maturity. Sweet Surprise, Awesome, Obsession, XTH 2281, Bueno, and BSS 0982 produced above average yields (Table 2). Although all cultivars showed some merit, the following should be considered for grower trial: XTH 2170 and 274A for early planting and first harvest; Sweet Surprise and Awesome were midseason cultivars that produced impressive yields of attractive ears; and Bueno, Obsession, and XTH 2281 were full season hybrids with good disease resistance. BSS 0982 should also be considered since it was the only Bt, insect-protected, cultivar in the trial. Its ears were good eating but kernels weren't always as tender as some of the other entries. Harvest photographs were taken of each cultivar and are available for viewing on our Website: <http://mirdf.ag.iastate.edu/>.

Table 1. Sweet corn cultivar seed source, seedling vigor ratings, and trial comments.

Cultivar	Seed source ^a	Seedling vigor ^b	Comments
XTH 2170	RI	E-G	First cultivar to be harvested in trial, nice large ear.
274A	RI	E	Good seedling vigor, strong plant, and large ear for early cv.
Fantastic	ST	G-F	Uneven maturity but mature ears were nice.
XTH 2171	ST	E	Uneven maturity, mediocre yield.
Mirai 301 BC	CE	G	Attractive large ears, pulled a little hard from plant.
Mirai 308 BC	CE	G	Ears pulled hard, short flag leaves, excellent eating qualities.
Optimum	RU	F	Small ears, secondary ears in shank, kernels sweet and tender.
Sweet Surprise	RI	E	Vigorous plants, strong yield, attractive ears, good quality.
Awesome	ST	G-E	Large dark green flag leaves, a few small secondary ears in shank, attractive husked ears had good eating characteristics.
277A	ST	F	Fair husk cover of ear tip, short ears, deep kernels set trial standard for tenderness and flavor, excellent eating quality.
Mirai 350 BC	CE	F	Excellent eating quality, light green husk and short flag leaves.
Obsession	RI	G	Attractive large ears, good to excellent eating qualities.
XTH 2281	ST	E	Strong plant and yield, attractive ears, kernels crunchy sweet.
Bueno	CR	G-F	Last cultivar to be picked, good yield of attractive ears, kernels crunchy sweet with pleasant corn flavor.
BSS 0982	RG	F	Bt hybrid, long flags and shanks, attractive ears, decent eating quality, maybe more kernel toughness than others.

^aSource: CE=Centest Seeds, CR=Crookham Co., RG=Syngenta Seeds Rodgers Brand, RI=Rispens Seeds, RU=Rupp Seeds, and ST=Stokes Seeds.

^bSeedling Vigor: rating based on plant size four weeks after planting: E=excellent, G=good, F=fair, and P=poor.

Table 2. Sweet corn cultivar marketable yield and ear characteristics.

Cultivar	DTH ^a	Ear ht (inch)	Yield dozen ears/A	Yield cwt/A	Husked ear wt (lb)	Ear length (in.)	Ear dia (in.)	Tip fill rating ^b
XTH 2170	74	28	1,365	119.9	0.47	7.8	1.75	G
274A	76	32	1,453	135.9	0.50	7.7	1.79	F-G
Fantastic	76	32	1,392	120.6	0.48	7.4	1.78	G-F
XTH 2171	76	27	1,220	97.2	0.43	7.8	1.72	G-F
Mirai 301 BC	77	40	1,462	130.7	0.54	7.8	1.90	G-F
Mirai 308 BC	77	33	1,336	112.5	0.50	7.7	1.86	F-G
Optimum	77	30	1,230	105.3	0.45	7.1	1.78	G-F
Swt Surprise	78	33	1,704	160.7	0.53	7.5	1.86	G
Awesome	78	36	1,695	157.8	0.51	7.3	1.86	G-F
277A	78	35	1,462	117.4	0.48	7.2	1.80	G
Mirai 350 BC	80	36	1,220	107.9	0.49	7.5	1.81	G-F
Obsession	82	33	1,695	151.1	0.51	8.0	1.83	G-F
XTH 2281	82	39	1,540	139.9	0.49	7.6	1.82	G
Bueno	83	34	1,578	135.2	0.47	7.8	1.76	G
BSS 0982	83	36	1,559	143.4	0.54	8.0	1.87	G-F
Average			1,465	129.4	0.49	7.6	1.81	
LSD 5%			279	3.9	0.04	0.2	0.19	

^aDTH = Days to harvest.

^bTip fill rating: G=good (less than ¼ in. unfilled kernels in tip), F=fair (1/4 to 1 in. of unfilled kernels), P=poor (> 1 in. unfilled kernels).