

Super Sweet Corn Evaluations in Eastern Kentucky, 2007

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Introduction

Sweet corn remains a very popular item at roadside and farmers' markets and is Kentucky's most commonly planted vegetable crop. This research was undertaken to evaluate supersweet sweet corn varieties that might be suitable for production in eastern Kentucky.

Methods

Soil test results (Table 1) showed that additional potassium (K) was needed. Therefore, 50 lbs./A nitrogen (N), and 100 lbs./A K₂O were applied prior to planting. Sixteen supersweet sweet corn cultivars were planted by hand on 1 June. Plots consisted of a row 20 feet long of each cultivar replicated four times in a randomized block design. Rows were spaced 3 feet apart and 100 seeds were planted for each plot of a cultivar. The plots were sidedressed (50 lbs./A N) when plants were approximately 14 inches tall, and again when plants were 30 inches tall. Supplemental overhead irrigation was needed.

One day after planting, 1.7 pts./A of Dual Magnum II were applied preemergence to control weeds. Capture 2EC was applied every 5 days during silking to reduce worm problems. However, corn earworms showed resistance to pyrethrin insecticides and control was less than expected.

In evaluating and ranking cultivars, points were awarded based on plant stand, husk coverage, tip fill, commercial acceptability, and yield. Disease tolerance was not used in the equation in 2007 because there was so little disease present at harvest.

Results

This was a good year to evaluate sweet corn cultivars for pollination and ear fill under extremely hot, dry weather, which occurred during all of the 2007 growing season. Quicksand received 8.36 inches of rain between 1 June and 31 August. At planting, the soils were extremely dry with a 6.7- inch water deficit since March. The average monthly temperatures for June, July, and August were 5°F, 2°F, and 9°F above normal, respectively. Irrigation was required in order to get seed germination. Harvest for these cultivars occurred between 11 and 15 August. Because of the very dry conditions, northern corn leaf blight, southern corn leaf blight, yellow leaf spot, and gray leaf spot were not severe enough to rate, so we were not able to determine which cultivars had good disease tolerance, and thus better suited for late-season production in disease-prone areas.

Passion and GSS0969 were rated as the two top yielding, best quality, yellow sweet corn cultivars (Table 2). Passion seemed to germinate better under the very dry planting conditions.

Obsession and Calvary were the best bicolor supersweet varieties (Table 2). Triumph was also a very nice bicolor and had attractive ears.

Devotion was the best white cultivar, receiving the second highest rating overall in this trial (Table 2.).

Sweet corn cultivar selection should take into consideration the cultivar's ability to produce over an extended planting season where site location, weather, and changes in disease pressure may drastically change performance.

Table 1. *2007 Sweet corn cultivar trial soil test results.*

pH	Buffer pH	P	K	Ca	Mg	Zn
6.64	7.05	91	233	2757	399	7.0

Table 2. 2007 Supersweet sweet corn plant characteristics and yield components, Robinson Station, Quicksand, KY.

Cultivar Name ¹	Seed Source	Plant Stand ²	Husk Coverage ³	Tip Fill ^{4,7}	Disease Rating ⁵	Commercial Acceptability ^{6,7}	Dozen Ears/Acre	Cultivar Points ⁸	Rank Based on Points
Passion (Y)	RU	66.5	9.3	9.5	-	5	1,921	3,232.1	1
Devotion (W)	SW	72.5	9.5	9.0	-	4	2,148	3,190	2
Obsession (BC)	SW	56.8	10	8.9	-	5	1,830	3,138	3
GSS0969 (Y)	SW	46.3	9.3	9.9	-	5	1,649	3,040	4
Calvary (BC)	SW	47.8	10	9.3	-	4	2,042	3,007	5
Triumph (BC)	Rispen	61.5	9.7	8.7	-	4	1,513	3,000	6
Candy Corner (BC)	HR	32.5	9.0	9.3	-	4	1,311	2,689	7
XTH 1273 (Y)	HR	45.3	9.3	7.9	-	3	1,225	2,588	8
Sweet Shipper (RS) (Y)	Rispen	32.5	8.5	9.8	-	2	1,089	2,467	9
Mirai 301 (BC)	HR	19	9.0	9.7	-	4	848	2,430	10
Vision Xtra Tender (Y)	SW	30.3	8.7	8.8	-	2	983	2,343	11
Fantastic (BC)	SW	16	8.7	8.8	-	3	1,089	2,314	12
Mirai 131 (Y)	RU	31	8.3	8	-	2.5	938	2,279	13
Zenith (Y)	HR	14	9.3	9.1	-	2	827	2,263	14
Sweet Perfection RS (Y)	Rispen	20	8.5	9	-	1	499	2,097	15
Mirai 308 (BC)	SW	10	8	8.5	-	2.5	424	2,045	16

¹BC=bicolor, W=White, Y=Yellow.

²Plant Stand: percent emergence of 100 seeds.

³Husk Coverage: 1=poor, 10=excellent.

⁴Tip Fill: number of ears out of 10 that had good tip fill.

⁵Disease Rating (at time of harvest): 0=no disease, 1=mild, 2=slight-moderate (infected to just below ear level), 3=moderate (infected above ear level), 4 = moderate-severe (infected to flag leaf) 5 = severe (plant dead).

⁶Commercial Acceptability: 1=poor, 5=excellent.

⁷Based on 10 ears of corn.

⁸Cultivar Points obtained (Rank) = (10 x Stand) + (100 x Husk Coverage) + (100 x Tip Fill) + (100 x Commercial Acceptability) + (yield ÷ 10) - (Disease Rating x 100). Disease Rating was not included in 2007 point ranking.