

Synergistic Sweet Corn Evaluations in Eastern Kentucky

Terry Jones and Amanda Ferguson Sears
Department of Horticulture

Introduction

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

Methods

Sixteen synergistic sweet corn cultivars were planted by hand on May 17th 2005. 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. One day after planting 1.7 pts. of Dual Magnum II was applied pre emergence to control weeds.

Soil test results showed that additional phosphorus and potassium were needed. Therefore 50 lb N, 50 lb P₂O₅ and 50 lb K₂O (all rates per acre) were applied prior to planting. The plots were side dressed (50 lb N) when plants were approximately 14 inches tall, and again when plants were 30 inches tall. Supplemental overhead irrigation was needed. Warrior T was applied every 5 days during silking to reduce worm problems.

In evaluating and ranking cultivars, points were awarded based on plant stand, husk coverage, tip fill, commercial acceptability, yield and disease tolerance. Disease tolerance was not used in the equation in 2005 because there was so little disease present at the time of harvest.

Results

This was a good year to evaluate sweet corn cultivars for pollination and ear fill under extremely warm and dry weather. We experienced hot dry weather during most of the 2005 growing season. Quicksand received 10.8 inches of rain between May 1st and August 31st. Despite hot dry conditions the 2005 sweet corn crop did very well. Harvest for these cultivars occurred between July 26th and Aug. 5th. Unlike 2004, Northern Corn Leaf Blight, Southern Corn Leaf Blight, Yellow Leaf Spot and Gray Leaf Spot were not very severe during the summer of 2005, so we were not able to determine which cultivars had good disease tolerance and thus were better suited for late season production in disease prone areas. Polka showed the highest level of leaf disease (slight-moderate) in 2005.

Sugar Ace and Honey Treat were rated as the two top yielding, best quality, yellow sweet corn cultivars (Table 1). Sugar Ace was a high yielding, disease resistant cultivar in the 2004 corn trials. 2004 was one of the coolest, wettest years on record, whereas 2005 was a very warm dry year.

Nantasket and Providence were the best bi-color sweet corns and were the two top rated cultivars overall (Table 1). BC 0805 was also a very nice bicolor and did well in 2004 trials.

Avalon, Misquamicut and Argent were the three best white cultivars, giving commercially acceptable yields of attractive, high quality ears (Table 1). Avalon and Argent were also outstanding in 2004.

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

Table 1. 2005 Synergistic sweet corn plant characteristics and yield components, Robinson Station, Quicksand, KY.

Cultivar Name (color)¹	Seed source	Plant stand²	Husk coverage³	Tip fill^{4,7}	Disease rating⁵	Commercial acceptability^{6,7}	Dozen ears/acre	Cultivar Points⁸	Rank based on points
Nantasket (BC)	HM	73	10	9.6	1	5	1936	3386	1
Providence (BC)	HM, SW	73	9.9	9.6	1	5	1815	3359	2
Sugar Ace (Y)	HM	83	10	9.5	1	4	1769	3354	3
Honey Treat (Y)	SY	80	10	8.5	1	5	1981	3351	4
Avalon (W)	SW	84	10	9.5	1	4	1618	3349	5
Misquamicut (W)	HM, SW	79	9.6	9.4	1	5	1467	3339	6
BC 0805 (BC)	SW	69	10	9.6	1	4	1603	3213	7
Argent (W)	HM, SW	80	10	8.5	1	3.5	1891	3194	8
BC1136 (BC)	SY	75	9.6	8.6	1	3.5	1860	3109	9
Sweet Satin (W)	HM	79	10	7.8	1	3.5	1936	3106	10
Sweet Ice (W)	HM	80	10	7.4	1	3	2027	3040	11
Cinderella (BC)	SW	70	9.6	8.8	1	4	1059	3048	12
Honey Select	SW	69	10	7.5	1	4	1860	3028	13
Polka (BC)	HM, SW	62	10	9.5	2	2.5	1316	2949	14
Cameo (BC)	HM, SW	71	8.6	7.5	1	3	1997	2813	15
Frisky (BC)	SW	73	8.4	6.8	1	2	1089	2554	16

¹BC=bicolor, W=White, Y=Yellow.

²Plant stand is percent emergence of 100 seeds.

³Husk Coverage: 1=poor, 10=excellent

⁴Number of ears out of 10 that had good tip fill.

⁵Disease rating (made 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.

⁸Points 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 2005 point ranking.