

se and sh₂ Sweet Corn Germplasm Evaluation Results 2001

Information on the Effects of
Genotype and Growing Location on
se- and sh₂-type Sweet Corn
Crop Yield and Ear and Kernel Traits in Ohio in 2001

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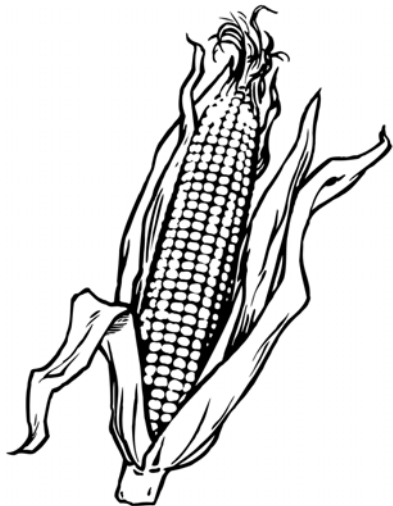
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The Grower's Section

What Did We Do?

We evaluated thirty-two varieties of bicolor se and sh₂ sweet corn grown at OARDC Research Branches in Celeryville (Huron County, muck soil), Fremont (Sandusky County, loam soil), and Wooster (Wayne County, silt loam soil). All locations were planted within three days of each other (May 9 and 11, 2001) and replicated field plots were used (this was not an un-replicated strip trial). Plots, plants, ears, and kernels were examined regularly throughout the season and post-harvest evaluations of quality were completed in the lab.

Why Did We Study only Bicolor Genotypes?

Ohio farmers grow many types and colors of sweet corn. Yellow, white, and bicolor and se-, sh₂-, and other endosperm types are grown in Ohio. Resources available to complete this project allow us to compare varieties which differ in endosperm type **or** kernel color but not both traits. At this time, we believe evaluating a single color of se- and sh₂- type varieties is most important to the industry. In 1999 and 2000, we evaluated many varieties of yellow se- and sh₂-type varieties. Results from these evaluations were summarized in reports similar to this one and in numerous Extension programs. Please contact Matt Kleinhenz for copies of this or past reports.

Why Did We Do this Project?

Stand establishment (germination, emergence), and crop vigor, pest, disease, and stress resistance/tolerance, yield, and quality – these and other variety traits influence a grower's return from sweet corn production. To be successful, Ohio sweet corn growers must have available varieties adapted to the state's varied production conditions and markets. Because sweet corn varieties often differ in traits which affect grower return, scientifically measuring and documenting the performance of varieties under varied local conditions is important. Equipped with reliable information from unbiased testing programs, growers can be confident that the varieties they choose will meet their needs. This project was undertaken to assist Ohio sweet corn growers in identifying varieties with desirable traits.

What did We Find?

1. Emergence. Stand establishment was adequate for most varieties at most locations. Important exceptions to this trend occurred in the se group at Celeryville and sh₂ group at Wooster. On average, BC 0801 VP Attribute and Temptation had the highest values among se varieties and Candy Corner the highest value among sh₂ varieties. Average percent emergence differed widely among varieties within the se- and sh₂ groups. But, on average, percent emergence was similar (about 90%) in the se and sh₂ groups. See Table 3.

2. Marketable Yield. Marketable yield was recorded as the number of marketable ears per plot and it was calculated as the percent by weight of all ears from the plot. Among all locations and genotypes, average marketable yield on a weight basis ranged from 54%-95% in the se group (avg. = 83%) and from 49%-97% in the sh₂ group (avg. = 80%). Disease,

insect damage and stress effects on quality criteria (e.g., tip fill, pollination) were the primary reasons for low marketable yield of some varieties. On average, Bojangles, Bon Appetit, Sweet Rhythm, and Seneca Spring produced the greatest number of marketable ears (17 per 20 plants) among se varieties while BSS 1690 and PS 9364169 produced the greatest number of marketable ears (18 per 20 plants) among sh₂ varieties. On average, the se and sh₂ groups had similar yield values -- approximately 15 ears from every 20 plants and 82% marketable by weight. See Tables 5, 6 and 7.

3. Overall Field Performance. Percent emergence and marketable yield can be measured objectively and are important in sweet corn variety selection. Based on these factors, the following varieties were the highest ranked at the locations shown and overall:

se group	Celeryville	Fremont	Wooster	Overall
top ranked varieties based on emergence and yield	Bon Appetit Temptation PS 6803 Seneca Spring	BC 4806	Sweet Rhythm	Bon Appetit (1) Luscious (1) Seneca Spring (2) Sweet Rhythm (3)
sh₂ group				
top ranked varieties based on emergence and yield	BSS 1690	PS 9364169	PS 9364169	PS 9364169 (1) Candy Corner (2) BSS 1690 (3)

Percent emergence and marketable yield were used to develop the ratings above (see Table 13). Obviously, sweet corn varieties should be chosen based on a number of criteria. In addition to percent emergence and marketable yield, varieties should be chosen based on endosperm type, maturity, crop appearance (e.g., ear size and quality, including tip fill and cover), disease resistance, eating quality, and other factors. Numerical rankings based on a greater number of factors will be attempted in future evaluations.

4. Estimates of Kernel Sweetness. Brix readings are a common measure of the concentration of soluble solids, primarily the sugar sucrose, in a sample. Sucrose and other sugars contribute to the sweetness of sweet corn which can be estimated with brix measurements. But, the total eating quality of sweet corn is based on a unique combination of flavor (sweetness), texture and aroma. Brix readings were taken on kernels from each plot within one hour and after 96 hours storage under refrigerated conditions. Averaged across all sites, at-harvest brix values ranged from 16.5% to 20.9% in the se group and from 13.5% to 16.7% in the sh₂ group. Averaged across all sites, brix values taken after storage ranged from 15.8% to 19.8% in the se group and from 13.0% to 15.9% in the sh₂ group. The decline in average brix values with time across all sites varied by genotype but averaged 0.9% and 0.8% in the se and sh₂ groups, respectively. In the se group, Ambrosia had the highest

average brix value at harvest and BC 4315 had the highest average brix value after storage. In the sh₂ group, GSS 277A had the highest average brix value at harvest and HMX 8344 BS had the highest average brix value after storage. See Tables 14 and 15.

For more information on this bulletin or to receive digital images of representative ears of each entry and copies of this or similar publications, please contact:

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Project Details

This study resulted from the cooperation of private breeders, the Ohio Agricultural Research and Development Center, OSU Extension, the Dept. of Horticulture and Crop Science, and Ohio sweet corn and vegetable industries. Results from this study may be used by growers and others to select varieties adapted to Ohio growing conditions. Breeders may look to the data to estimate the narrow or broad adaptation of individual varieties or draw other inferences.

Materials and Methods

See Table 1 for a list of the varieties and experimental lines included in this study.

Plot Establishment. A total of thirty-two se- and sh₂-type sweet corn varieties or experimental lines were planted at three locations in northern Ohio in 2001. Plots (four 25-ft rows on 30-in centers) were seeded with a modified John Deere planter at the Vegetable Crops Research Branch in Fremont (Sandusky County, loam soil) and Muck Crops Research Branch in Celeryville (Huron County, organic/"muck" soil) on May 9 and at the OARDC in Wooster (Wayne County, silt loam soil) on May 11. Approximately 2.4 seed were delivered per foot in each row. Ends of plots were separated by two feet at planting. Endosperm type (se, sh₂) experiments were separated by a minimum of 250 ft at each location. Plots were arranged in a randomized complete block design with four replication within each endosperm type study.

Plots were shortened by hand after seedling establishment to 20 ft. Plots were also thinned by hand to contain 1.15 ± 0.17 plants/foot of row at the same time.

Plot Maintenance. With one exception, standard soil, nutrient, and pest management practices were employed at all sites. Excessive rainfall and sub-optimal temperatures predominated for one month after planting (Figure 1) and slowed stand establishment at all locations. Conditions also made weed control a challenge, especially in the sh₂ study in Wooster. Stinger herbicide, unlabeled for sweet corn, was applied post-emergence at a rate of 8oz/A to the sh₂ study in Wooster, inhibiting plant growth (Table 12). Below average rainfall and above average temperatures predominated for the final two months of the season (Figure 2). Plots in Wooster were irrigated before and during anthesis on July 17 and 18 and August 8 and 9. Plots in Fremont were irrigated on June 29 and July 13. Approximately 1 inch of water was applied in each irrigation. Plots in Celeryville were not irrigated.

Measurement of Plant and Ear Traits. Plant and crop development were assessed regularly beginning at emergence. Readiness for harvest was assessed by counting days from 50% anthesis (target = 18 for se-type varieties and 20 for sh₂-type varieties) and visual examination of ears in each plot. Midpoint anthesis dates were calculated using the Myers Method. Immediately before harvest, height to the top of the tassel and collar of the primary ear were measured on three plants in the center two rows per plot. All ears were then

removed by hand from the ten center plants in the middle two rows of each plot (20 plants total per plot). The following data were collected for each plot at harvest: total weight of all ears from twenty plants, total number and weight of marketable ears. The following data were collected on five individual marketable ears per plot: ear length, ear diameter, number of rows of kernels, and shank length. Ears were considered non-marketable if they were extremely small, not filled to the tip, or displayed evidence of incomplete pollination, disease, or insect damage.

Eating Quality. Brix readings are a common measure of the concentration of soluble solids, primarily the sugar sucrose, in a sample. Sucrose and other sugars contribute to the sweetness of sweet corn which can be estimated with brix measurements. But, the total eating quality of sweet corn is based on a unique combination of flavor (sweetness), texture and aroma. Estimates of kernel sweetness were made on four mature marketable ears collected at harvest from each plot (16 ears/entry/site). Within one hour after harvest, a 2-inch cross section from the middle of two ears per plot was frozen in liquid nitrogen, placed in sealed plastic containers and stored at -20C. The two remaining ears per plot were placed in refrigerated storage for 96 hours before similar cross-sections were removed, frozen in liquid nitrogen, and stored. Later in the lab, brix readings were taken on sap expressed from thawed but cool kernels from the four ears per plot using a Leica tabletop refractometer.

Statistical Analyses. Data from se and sh₂ experiments were analyzed separately using Statistical Analysis System (SAS; Cary, NC). Analysis of variance was completed on main effects and interactions -- effects were considered significant if p # 0.05. Means were separated using Fisher's Protected LSD (site and time of sampling effects) and Duncan's Multiple Range (variety effect) tests (α= 0.05).

Results

Site and Variety Effects. The site by variety (SxV) interaction was significant for nearly all traits analyzed (Table 2). Significant SxV interactions indicate that individual varieties tended to perform differently at the three locations. Therefore, additional analyses were undertaken to determine site-within-variety and variety-within-site effects.

Stand Establishment and Maturity. On average, percent emergence was highest for both endosperm types at Fremont (Table 3). Overall, percent emergence was similar in the se and sh₂ experiments (about 91%). Among all locations and genotypes, percent emergence ranged from 36% to 100% in the se group and from 64% to 100% in the sh₂ group. Harvest readiness was reached in 78-94 days in the se group and 84-96 days in the sh₂ group (Table 4). Days to harvest tended to be less in Celeryville and Fremont than Wooster for both endosperm types (Table 4).

Marketable Yield. Percent marketable yield by weight in the se group averaged 84% in Celeryville, 79% in Fremont and 85% in Wooster (Table 5) while average yield values in the sh₂ group equaled 80% in Celeryville, 90% in Fremont and 71% in Wooster (Table 5). On

average, the number of marketable ears taken from 20 plants per plot was slightly greater in Celeryville and Wooster than Fremont for the se group but much greater in Fremont than Celeryville or Wooster in the sh₂ group (Table 8). Above-optimal temperatures and below-optimal moisture availability, especially at sensitive stages in crop development, may have reduced marketable yield. Stress effects were evident in some genotypes as stunted plants and small, incompletely-pollinated ears.

Ear Traits. Among all locations and genotypes, ear diameter was similar (about 4.3cm) between both endosperm types (Table 9) although average number of rows of kernels was lower in the se group than sh₂ group. Average total ear length, including the shank, was approximately 28 cm in the se group and 29 cm in the sh₂ group (Table 10). Total ear length at all locations ranged from 26.1 cm to 31.6 cm and 24.7 cm to 32.7 cm in the se and sh₂ group, respectively. Ratings of tip fill and cover are summarized in Table 11. Tip cover was adequate in most genotypes although a number were rated as having poor tip cover at some locations. The same was true of tip fill.

Plant Traits. Average plant height for individual genotypes varied significantly among locations for both endosperm types (Table 12). Average plant heights were greatest at Celeryville and lowest in Wooster. Disease incidence was low at all locations, with smut being the most common disease (Tables 6 and 7).

Overall Field Performance. The rank of each entry for percent emergence and marketable yield was identified for each location from data in Tables 3, 5, and 8. For example, in Table 3, BC 0801 VP Attribute, BC 4315, Luscious, Temptation, and PS 7404 had the highest percent emergence (at least 100%) among bicolor se entries at Celeryville and were given a rank of “1.” Bojangles had the lowest percent emergence among bicolor se entries at Celeryville and was given a rank of “11.” Ties are permitted in the rankings. Genotype rankings for each location and overall are shown in Table 13. A lower value suggests favorable emergence and yield at a particular location. The ranks of each entry at each location were then added to identify the genotype’s ranking within the overall experiment.

Assuming no ties, the lowest possible sum rank for an individual genotype at a particular location is three (three traits x rank of 1 for each trait) while the highest possible score is forty-eight (three traits x rank of 16 for each trait). In 2001, sum ranks of individual se genotypes for all three traits ranged from 6-28 (Celeryville), 6-24 (Fremont), and 3-29 (Wooster). In 2001, sum ranks of individual sh₂ genotypes for all three traits ranged from 4-32 (Celeryville), 5-24 (Fremont), and 5-33 (Wooster).

Estimates of Kernel Sweetness. Brix readings were taken on kernels from each plot within one hour and after 96 hours storage under refrigerated conditions. Averaged across all sites, at-harvest brix values ranged from 16.5% to 20.9% in the se group (Table 14) and from 13.5% to 16.7% in the sh₂ group (Table 15). Averaged across all sites, brix values taken after storage ranged from 15.8% to 19.8% in the se group (Table 14) and from 13.0% to 15.9% in the sh₂ group (Table 15). The decline in average brix values with time across all sites varied

by genotype but averaged 0.9% and 0.8% in the se and sh₂ groups, respectively. In the se group, Ambrosia had the highest average brix value at harvest and BC 4315 had the highest average brix value after storage (Table 14). In the sh₂ group, GSS 277A had the highest average brix value at harvest and HMX 8344 BS had the highest average brix value after storage (Table 15).

Figure 1

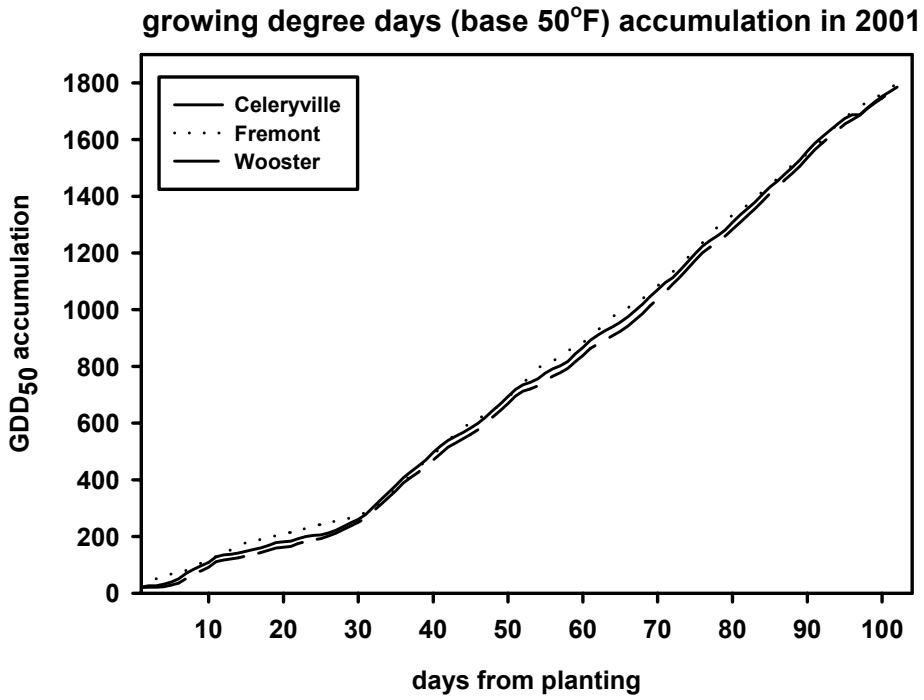
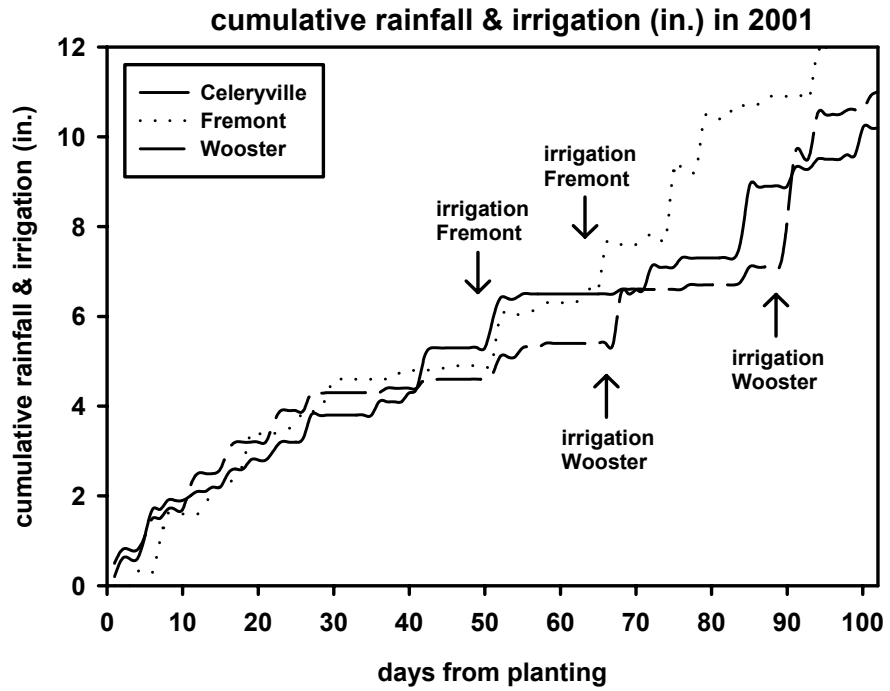


Figure 2

average midpoint anthesis for se (top) and sh-2 (bottom) genotypes and cumulative rainfall and irrigation

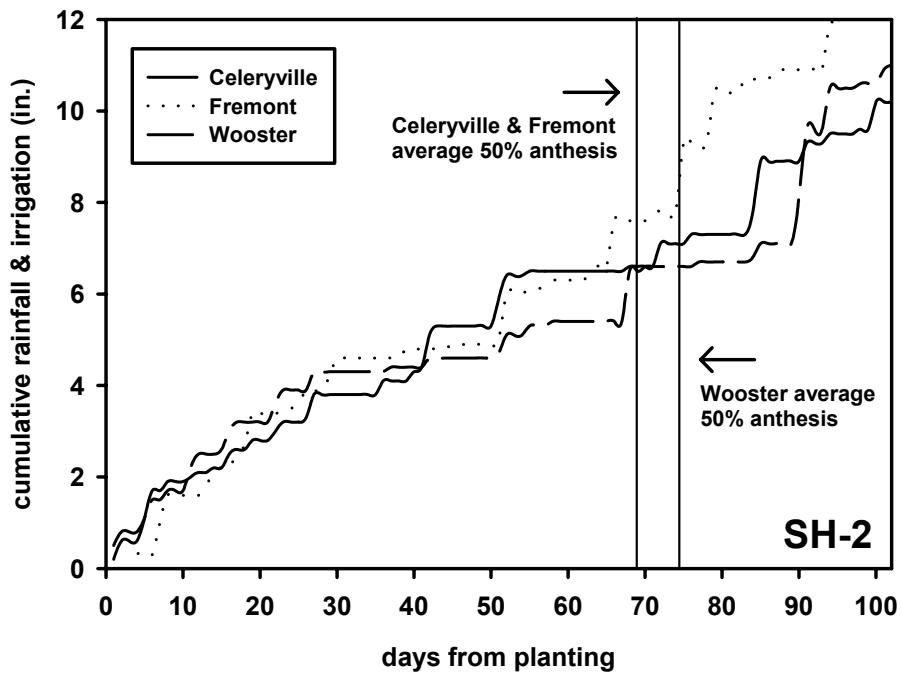
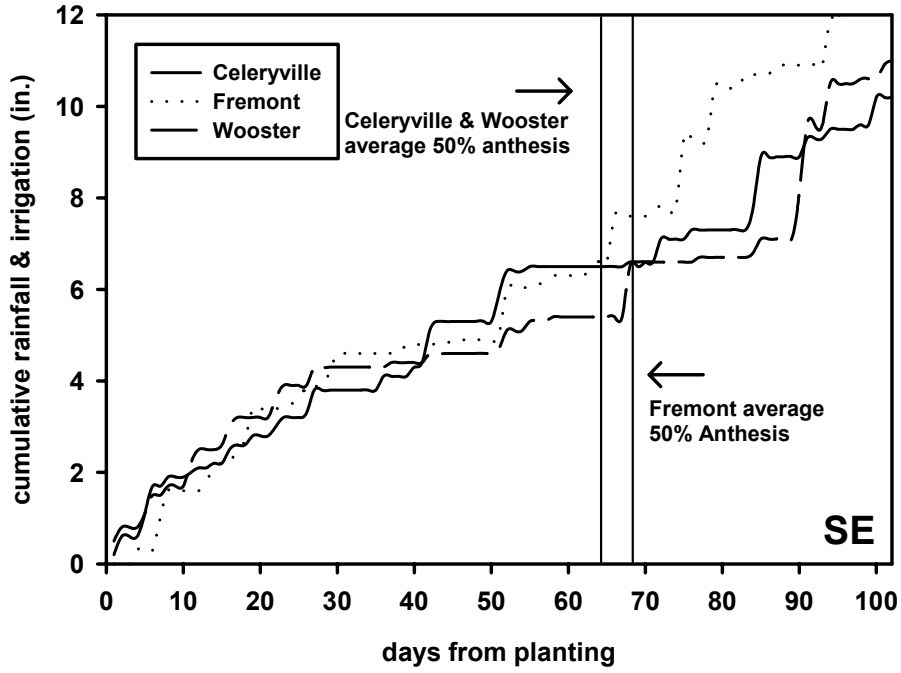


Table 1. List of se- and sh₂-type sweet corn entries tested at three locations in Ohio in 2001.

<u>Type</u>	<u>Entry #</u>	<u>Name</u>	<u>Kernel Color</u>	<u>Company</u>
se	1	Ambrosia	bicolor	Crookham Company
	2	BC 0801 VP Attribute	bicolor	Syngenta Seeds, Inc.
	3	BC 4315	bicolor	Syngenta Seeds, Inc.
	4	BC 4806	bicolor	Syngenta Seeds, Inc.
	5	Bojangles	bicolor	Crookham Company
	6	Bon Appetit	bicolor	Mesa Maize, Inc.
	7	Ecstase II	bicolor	Seedway
	8	Luscious	bicolor	Stokes Seeds, Inc
	9	Mystique	bicolor	Crookham Company
	10	Summer Flavor # 79 BC	bicolor	Abbott & Cobb, Inc.
	11	Sweet Rhythm	bicolor	Harris Moran Seed Co.
	12	Precious Gem	bicolor	Siegers Seed Company
	13	Temptation	bicolor	Rispens
	14	PS 6803	bicolor	Seminis
	15	PS 7404	bicolor	Seminis
	16	Seneca Spring	bicolor	Seminis
<hr/>				
sh₂	1	ACX 946	bicolor	Abbott & Cobb, Inc.
	2	ACX 951	bicolor	Abbott & Cobb, Inc.
	3	BSS 0977 VP Attribute	bicolor	Syngenta Seeds, Inc.
	4	BSS 1690	bicolor	Syngenta Seeds, Inc.
	5	BSS 6284	bicolor	Syngenta Seeds, Inc.
	6	GS275A	bicolor	Stokes Seeds, Inc
	7	GS277A	bicolor	Stokes Seeds, Inc
	8	GS282A	bicolor	Stokes Seeds, Inc
	9	Summer Sweet # 8102R	bicolor	Abbott & Cobb, Inc.
	10	Tango	bicolor	Crookham Company
	11	Candy Corner	bicolor	Harris Moran Seed Co.
	12	HMX 8343 BS	bicolor	Harris Moran Seed Co.
	13	HMX 8344 BS	bicolor	Harris Moran Seed Co.
	14	PS 8201	bicolor	Seminis
	15	PS 9364169	bicolor	Seminis
	16	Hollywood	bicolor	Seminis

Table 2. Analysis of variances results for experiments studying the impact of planting site, variety and time of sampling on sweet corn ear traits, yield, and kernel brix values in Ohio in 2001.

Experiment	Source	df	-----Length (cm)-----			Height to Ear (cm)	Ear Diameter (cm)	No. Rows (kernels)	--Marketable Yield--		Kernel Brix (%)
			Ear	Shank	Total Ear				No. ears/ 20 plants	Percent by weight	
----- Pr > F -----											
sh ₁ Experiment											
	Site (S)	2	< 0.0001	0.0349	< 0.0001	< 0.0001	0.5258	< 0.0001	0.0046	0.0021	< 0.0001
	Variety (V)	15	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0200	0.0057	< 0.0001
	Time (T)	1	NA ¹	NA	NA	NA	NA	NA	NA	NA	< 0.0001
	S x V	30	< 0.0001	< 0.0001	0.0018	< 0.0001	< 0.0001	0.8011	0.0002	< 0.0001	< 0.0001
	V x T	15	NA	NA	NA	NA	NA	NA	NA	NA	0.9155
sh ₂ Experiment											
	Site (S)	2	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001
	Variety (V)	15	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	Time (T)	1	NA ¹	NA	NA	NA	NA	NA	NA	NA	< 0.0001
	S x V	30	< 0.0001	0.0005	< 0.0001	< 0.0001	< 0.0001	0.0067	< 0.0001	< 0.0001	0.0002
	V x T	15	NA	NA	NA	NA	NA	NA	NA	NA	0.4994

¹ = Not Applicable. For brix, comparison of readings taken at and 96 hr after harvest. See Materials and Methods.

Table 3. Percent emergence of se- and sh₂- type sweet corn entries planted at three sites in Ohio in 2001.

<u>se Entry</u>	<u>Celeryville</u>	<u>Fremont</u>	<u>Wooster</u>	<u>Entry Average</u>	<u>Row LSD_(0.05)</u>	
1	Ambrosia	61	93	90	81.3	9.7
2	BC 0801 VP Attribute	101	102	112	104.8	4.0
3	BC 4315	100	98	97	98.3	11.5
4	BC 4806	73	97	97	89.0	9.8
5	Bojangles	36	94	88	72.7	14.8
6	Bon Appetit	96	95	93	94.7	7.4
7	Ecstase II	92	94	93	93.0	10.3
8	Luscious	100	98	93	97.0	5.5
9	Mystique	47	80	76	67.7	8.7
10	Summer Flavor # 79 BC	88	94	69	83.7	7.3
11	Sweet Rhythm	91	97	101	96.3	11.4
12	Precious Gem	90	88	83	87.0	10.8
13	Temptation	101	99	110	103.3	13.8
14	PS 6803	92	95	95	94.0	8.0
15	PS 7404	101	100	96	99.0	5.3
16	Seneca Spring	91	95	92	92.7	12.1
	site	83.4	94.5	92.6	se overall	90.2
	Column DMRT_(0.05)	9.6	7.6	13.6		

<u>sh₂ Entry</u>	<u>Celeryville</u>	<u>Fremont</u>	<u>Wooster</u>	<u>Entry Average</u>	<u>Row LSD_(0.05)</u>	
1	ACX 946	89	84	80	84.3	12.8
2	ACX 951	92	99	85	92.0	7.3
3	BSS 0977 VP Attribute	91	94	82	89.0	11.0
4	BSS 1690	99	94	94	95.7	15.8
5	BSS 6284	100	96	91	95.7	11.7
6	GS275A	97	98	93	96.0	6.3
7	GS277A	86	88	74	82.7	11.6
8	GS282A	75	80	64	73.0	11.6
9	Summer Sweet # 8102R	96	95	93	94.7	15.0
10	Tango	82	93	70	81.7	10.0
11	Candy Corner	102	99	99	99.9	7.1
12	HMX 8343 BS	91	101	106	99.3	6.3
13	HMX 8344 BS	97	96	100	97.7	6.3
14	PS 8201	97	101	95	97.7	10.1
15	PS 9364169	98	100	95	97.7	4.7
16	Hollywood	93	94	85	90.7	16.4
	site	92.4	94.1	87.6	sh₂ overall	91.4
	Column DMRT_(0.05)	10.6	11.6	12.7		

Table 4. Number of days from planting to midpoint anthesis and harvest of se- and sh type sweet corn entries planted at three sites in Ohio in 2001.

<u>se Entry</u>	<u>Celeryville</u>		<u>Fremont</u>		<u>Wooster</u>		<u>Entry Avg.</u>		
	<u>anthesis</u>	<u>harvest</u>	<u>anthesis</u>	<u>harvest</u>	<u>anthesis</u>	<u>harvest</u>	<u>anthesis</u>	<u>harvest</u>	
1	Ambrosia	66	89	70	89	70	89	68.4	89.0
2	BC 0801 VP Attribute	65	89	72	92	71	94	69.2	91.7
3	BC 4315	68	84	70	89	68	89	68.4	87.3
4	BC 4806	69	92	73	92	73	94	71.8	92.7
5	Bojangles	67	86	68	85	65	84	66.6	85.0
6	Bon Appetit	66	82	67	82	65	80	65.8	81.3
7	Ecstase II	67	78	61	78	60	80	62.5	78.7
8	Luscious	69	82	69	82	68	84	68.6	82.7
9	Mystique	65	86	69	85	68	89	67.4	86.7
10	Summer Flavor # 79 BC	66	86	70	85	71	89	68.8	86.7
11	Sweet Rhythm	68	82	67	82	64	84	66.0	82.7
12	Precious Gem	68	89	73	89	74	90	71.3	89.3
13	Temptation	70	82	67	82	63	80	66.6	81.3
14	PS 6803	65	84	72	89	70	90	68.8	87.7
15	PS 7404	68	84	71	89	73	90	70.6	87.7
16	Seneca Spring	68	78	63	78	61	80	63.8	78.7
	site average	67.0	84.6	68.7	85.5	67.6	86.6	67.8	85.6
								----- se overall -----	

<u>sh₂ Entry</u>	<u>Celeryville</u>		<u>Fremont</u>		<u>Wooster</u>		<u>Entry Avg.</u>		
	<u>anthesis</u>	<u>harvest</u>	<u>anthesis</u>	<u>harvest</u>	<u>anthesis</u>	<u>harvest</u>	<u>anthesis</u>	<u>harvest</u>	
1	ACX 946	70	89	71	89	75	96	71.9	91.3
2	ACX 951	72	92	73	92	78	94	74.4	92.7
3	BSS 0977 VP Attribute	70	89	73	92	77	96	73.4	92.3
4	BSS 1690	66	84	66	86	72	89	68.1	86.3
5	BSS 6284	63	84	63	86	68	84	64.4	84.7
6	GS275A	69	84	70	86	70	89	69.6	86.3
7	GS277A	69	89	70	86	72	89	70.1	88.0
8	GS282A	72	89	72	89	76	96	73.3	91.3
9	Summer Sweet # 8102R	69	84	71	86	73	89	70.7	86.3
10	Tango	70	84	69	86	72	89	70.3	86.3
11	Candy Corner	66	86	68	86	71	89	67.9	87.0
12	HMX 8343 BS	74	89	72	89	75	94	73.6	90.7
13	HMX 8344 BS	71	92	73	92	76	94	73.3	92.7
14	PS 8201	72	92	73	92	75	96	73.3	93.3
15	PS 9364169	71	89	71	89	73	94	71.5	90.7
16	Hollywood	72	89	72	89	80	96	74.4	91.3
	site average	69.7	87.8	70.2	88.4	73.9	92.1	71.3	89.5
								----- sh₂ overall -----	

Note: Midpoint anthesis indicates when 50% of the plants reached anthesis.

Table 5. Percent marketable ears by weight of se- and sh₂- type sweet corn entries planted at three sites in Ohio in 2001.

<u>se Entry</u>		<u>Celeryville</u>	<u>Fremont</u>	<u>Wooster</u>	<u>Entry Average</u>	<u>Row LSD_(0.10)</u>
1	Ambrosia	69	87	85	80.3	12.3
2	BC 0801 VP Attribute	78	81	84	80.9	24.6
3	BC 4315	89	84	83	85.4	12.5
4	BC 4806	69	91	84	81.3	15.6
5	Bojangles	86	84	93	87.6	11.6
6	Bon Appetit	93	82	90	88.5	12.0
7	Ecstase II	90	68	79	79.1	16.5
8	Luscious	91	80	92	87.9	10.9
9	Mystique	54	86	86	75.3	24.0
10	Summer Flavor # 79 BC	85	87	78	83.5	12.9
11	Sweet Rhythm	93	66	95	84.7	12.2
12	Precious Gem	71	74	85	76.7	14.6
13	Temptation	92	76	82	83.6	15.3
14	PS 6803	93	54	83	76.5	20.8
15	PS 7404	88	82	75	81.3	18.3
16	Seneca Spring	94	85	87	88.4	11.0
					se overall	
site		83.5	79.0	85.1	82.6	
Column DMRT_(0.10)		17.4	16.4	17.5		

<u>sh₂ Entry</u>		<u>Celeryville</u>	<u>Fremont</u>	<u>Wooster</u>	<u>Entry Average</u>	<u>Row LSD_(0.10)</u>
1	ACX 946	87	90	66	80.9	28.0
2	ACX 951	66	93	51	70.0	25.0
3	BSS 0977 VP Attribute	91	97	86	91.6	8.1
4	BSS 1690	96	91	88	91.8	10.1
5	BSS 6284	82	81	83	81.7	12.7
6	GS275A	84	88	80	84.1	13.4
7	GS277A	49	92	87	75.8	14.8
8	GS282A	83	81	85	83.2	12.8
9	Summer Sweet # 8102R	85	85	54	74.7	35.1
10	Tango	79	86	74	79.7	20.2
11	Candy Corner	88	93	82	87.5	9.4
12	HMX 8343 BS	83	81	65	76.3	22.5
13	HMX 8344 BS	77	96	43	72.3	19.8
14	PS 8201	75	89	78	80.8	3.0
15	PS 9364169	91	95	94	93.2	9.9
16	Hollywood	70	93	23	62.0	12.9
					sh₂ overall	
site		80.4	89.5	71.1	80.3	
Column DMRT_(0.10)		16.6	13.0	27.5		

Note: percent marketable ears by weight = (marketable ear weight/total ear weight)*100

Table 6. Percent marketable ears by weight of se- type sweet corn entries planted at three sites in Ohio in 2001.

<u>se Entry</u>	<u>Cel</u>	<u>reason non-marketable</u>	<u>Fre</u>	<u>reason non-marketable</u>	<u>Woo</u>	<u>reason non-marketable</u>	
1	Ambrosia	69	poor fill, cover, insect damage	87	poor fill	85	very small ears
2	BC 0801 VP Attribute	78	insect damage	81	poor tip fill	84	incomplete pollination
3	BC 4315	89	poor pollination	84	smut, poor tip fill	83	poor tip fill
4	BC 4806	69	small ears, insect damage	91		84	incomplete pollination
5	Bojangles	86		84	small ears, poor tip fill	93	
6	Bon Appetit	93		82		90	
7	Ecstase II	90	smut	68	smut, small ears	79	variable tip cover
8	Luscious	91	pollination problems	80	variable tip cover	92	
9	Mystique	54	insect damage	86	poor tip cover	86	very small ears
10	Summer Flavor # 79 BC	85	cover variable, insect damage	87	poor tip fill	78	insect damage
11	Sweet Rhythm	93		66	double ears, variable cover	95	double ears
12	Precious Gem	71	insect damage, poor fill	74	poor maturity, small ears	85	incomplete pollination
13	Temptation	92		76	smut	82	small ears
14	PS 6803	93	insect feeding	54	insect, poor tip cover	83	small ears, poor maturity
15	PS 7404	88	insect feeding	82	insect damage, poor cover, fill	75	poor fill, poor maturity
16	Seneca Spring	94		85	small ears, poor tip fill	87	variable tip fill
	site	83.5		79.0		85.1	
	Column DMRT_(0.05)	17.4		16.4		17.5	

Note: percent marketable ears by weight = (marketable ear weight/total ear weight)*100

Table 7. Percent marketable ears by weight of sh₂- type sweet corn entries planted at three sites in Ohio in 2001.

<u>sh₂ Entry</u>	<u>Cel</u>	<u>reason non-marketable</u>	<u>Fre</u>	<u>reason non-marketable</u>	<u>Woo</u>	<u>reason non-marketable</u>
1 ACX 946	87	small ears	90		66	split maturity
2 ACX 951	66	small ears, insect damage	93	incomplete pollination	51	split maturity, small ears
3 BSS 0977 VP Attribute	91		97		86	split maturity, aphids
4 BSS 1690	96		91	smut	88	small ears
5 BSS 6284	82	split maturity	81	double ears	83	poor tip fill
6 GS275A	84		88	nice line, some smut	80	small ears
7 GS277A	49	insect feeding on tips	92	small ears, split maturity	87	insect damage
8 GS282A	83	irregular size ears	81	smut	85	aphids, split maturity
9 Summer Sweet # 8102R	85		85	smut, small ears	54	poor tip fill and pollination
10 Tango	79	split maturity	86	smut, small ears	74	split maturity, small ears
11 Candy Corner	88		93	some small ears	82	small ears
12 HMX 8343 BS	83	smut	81	split maturity	65	small ears, poor maturity
13 HMX 8344 BS	77	insect damage	96		43	poor tip fill and pollination
14 PS 8201	75	split maturity, small ears	89		78	split maturity
15 PS 9364169	91		95		94	
16 Hollywood	70	small ears, poor tip fill	93		23	small plants, did not mature
	site	80.4	89.5		71.1	
	Column DMRT_(0.05)	16.6	13.0		27.5	

Note: percent marketable ears by weight = (marketable ear weight/total ear weight)*100

Table 8. Number of marketable ears per 20 plants of se- and sh₂- type sweet corn entries planted at three sites in Ohio in 2001.

<u>se Entry</u>		<u>Celeryville</u>	<u>Fremont</u>	<u>Wooster</u>	<u>Entry Average</u>	<u>Row LSD_(0.05)</u>
1	Ambrosia	13	16	16	14.8	3.6
2	BC 0801 VP Attribute	16	15	16	15.5	6.2
3	BC 4315	17	16	16	16.2	3.3
4	BC 4806	13	17	15	15.1	4.2
5	Bojangles	17	16	19	16.9	3.0
6	Bon Appetit	18	15	17	16.6	3.2
7	Ecstase II	19	14	14	15.4	3.6
8	Luscious	18	14	18	16.4	3.1
9	Mystique	12	15	16	14.2	5.9
10	Summer Flavor # 79 BC	17	16	14	15.5	3.0
11	Sweet Rhythm	18	14	19	16.9	3.5
12	Precious Gem	13	13	15	13.6	4.1
13	Temptation	18	15	15	15.8	4.1
14	PS 6803	19	10	14	14.3	5.3
15	PS 7404	17	15	12	14.8	4.2
16	Seneca Spring	19	16	16	16.7	3.0
site		16.3	14.8	15.6	se overall 15.5	
Column DMRT_(0.10)		4.2	4.0	4.9		

<u>sh₂ Entry</u>		<u>Celeryville</u>	<u>Fremont</u>	<u>Wooster</u>	<u>Entry Average</u>	<u>Row LSD_(0.05)</u>
1	ACX 946	16	18	10	14.3	7.2
2	ACX 951	10	18	7	11.6	5.1
3	BSS 0977 VP Attribute	17	19	14	16.7	2.7
4	BSS 1690	19	19	16	17.8	3.0
5	BSS 6284	15	18	16	16.1	3.2
6	GS275A	16	17	14	15.6	3.4
7	GS277A	10	18	17	14.5	2.2
8	GS282A	15	18	15	15.9	3.1
9	Summer Sweet # 8102R	16	17	9	13.9	7.0
10	Tango	15	16	12	14.1	4.9
11	Candy Corner	17	19	15	16.8	3.6
12	HMX 8343 BS	15	15	10	13.1	5.4
13	HMX 8344 BS	14	19	7	13.5	3.8
14	PS 8201	12	17	13	14.2	3.0
15	PS 9364169	17	19	17	17.6	3.4
16	Hollywood	13	19	3	11.6	2.8
site		14.7	17.7	12.1	sh₂ overall 14.8	
Column DMRT_(0.05)		4.3	3.5	5.7		

Table 9. Ear diameter (cm) and number of rows of kernels per ear of se- and sh type sweet corn entries planted at three sites in Ohio in 2001.

se Entry	Celeryville		Fremont		Wooster		Entry	Row	Entry	Row	
	diam.	# rows	diam.	# rows	diam.	# rows	Avg. diam.	LSD _(0.05) diam.	Avg. # rows	LSD _(0.05) # rows	
1	Ambrosia	4.3	15	4.4	14	4.3	16	4.4	0.3	14.9	2.0
2	BC 0801 VP Attribute	4.3	15	4.2	14	4.3	15	4.3	0.3	14.8	1.4
3	BC 4315	4.0	16	4.1	15	4.3	16	4.1	0.2	15.6	1.4
4	BC 4806	4.1	15	4.1	15	4.4	15	4.2	0.2	15.2	1.3
5	Bojangles	4.1	14	4.2	14	4.0	14	4.1	0.2	13.8	1.2
6	Bon Appetit	4.7	14	4.5	14	4.1	15	4.4	0.4	14.4	1.5
7	Ecstase II	3.8	12	3.9	13	4.1	13	3.9	0.2	12.4	0.7
8	Luscious	4.8	17	4.4	16	4.4	17	4.5	0.3	16.9	0.9
9	Mystique	4.2	16	4.3	15	4.4	16	4.3	0.2	15.4	1.2
10	Summer Flavor # 79 BC	4.1	16	4.4	15	4.4	17	4.3	0.2	15.9	2.4
11	Sweet Rhythm	4.3	14	4.1	14	4.2	15	4.2	0.3	14.2	1.2
12	Precious Gem	4.4	15	4.2	16	4.1	16	4.2	0.3	15.6	1.6
13	Temptation	4.2	15	4.3	15	4.0	15	4.1	0.3	15.1	1.2
14	PS 6803	4.1	17	4.5	17	4.7	18	4.5	0.3	17.4	1.5
15	PS 7404	4.1	17	4.5	17	4.3	17	4.3	0.1	16.6	1.1
16	Seneca Spring	4.0	13	3.9	13	4.2	13	4.0	0.2	13.1	1.1
								se overall		se overall	
	site	4.2	15.1	4.2	14.7	4.3	15.4	4.2		15.1	
	Column DMRT _(0.05)	0.3	1.3	0.3	1.8	0.3	1.4				

sh ₂ Entry	Celeryville		Fremont		Wooster		Entry	Row	Entry	Row	
	diam.	# rows	diam.	# rows	diam.	# rows	Avg. diam.	LSD _(0.05) diam.	Avg. # rows	LSD _(0.05) # rows	
1	ACX 946	4.5	17	4.1	15	4.1	16	4.2	0.5	16.0	1.3
2	ACX 951	4.2	16	4.3	15	4.2	15	4.2	0.2	15.2	2.1
3	BSS 0977 VP Attribute	4.1	17	4.0	14	4.1	16	4.1	0.2	15.5	0.9
4	BSS 1690	4.5	14	4.4	15	4.2	14	4.3	0.2	14.4	1.2
5	BSS 6284	4.5	16	4.6	14	4.2	15	4.4	0.2	14.7	2.2
6	GS275A	4.5	19	4.3	18	4.4	19	4.4	0.2	18.5	1.4
7	GS277A	4.7	17	4.2	16	4.5	18	4.5	0.3	17.2	1.8
8	GS282A	4.2	19	4.3	18	4.3	18	4.3	0.3	18.0	1.1
9	Summer Sweet # 8102R	4.4	18	4.3	16	4.3	17	4.3	0.3	16.9	1.3
10	Tango	4.4	17	4.1	16	4.5	18	4.3	0.3	16.8	2.0
11	Candy Corner	4.4	14	4.2	14	4.2	15	4.3	0.2	14.4	1.0
12	HMX 8343 BS	4.2	15	4.2	14	4.2	15	4.2	0.3	14.8	1.0
13	HMX 8344 BS	4.9	16	4.5	16	4.3	16	4.6	0.3	16.0	1.4
14	PS 8201	4.3	17	4.2	15	4.1	16	4.2	0.2	15.7	1.6
15	PS 9364169	4.1	17	4.2	17	4.4	17	4.3	0.2	16.8	1.8
16	Hollywood	4.3	17	4.5	17	3.3	16	4.0	0.3	16.5	1.4
								sh₂ overall		sh₂ overall	
	site	4.4	16.5	4.3	15.5	4.2	16.3	4.3		16.1	
	Column DMRT _(0.05)	0.3	1.8	0.3	1.5	0.3	1.6				

Table 10. Ear length (cm) and total ear and shank length (cm) of se- and sh type sweet corn entries planted at three sites in Ohio in 2001.

se Entry	Celeryville		Fremont		Wooster		Entry	Row	Entry	Row	
	ear	+ shank	ear	+ shank	ear	+ shank	Avg.	LSD _(0.05)	Avg.	LSD _(0.05)	
1	Ambrosia	20	27	20	27	18	25	19.4	1.3	26.1	3.1
2	BC 0801 VP Attribute	21	30	21	31	20	28	20.6	1.0	29.6	2.3
3	BC 4315	21	29	21	29	20	28	20.8	0.7	28.7	2.4
4	BC 4806	20	32	21	33	19	31	20.2	1.3	31.6	3.2
5	Bojangles	20	30	21	28	20	28	20.4	0.4	28.6	1.9
6	Bon Appetit	19	26	19	27	19	25	18.6	0.8	26.1	1.7
7	Ecstase II	18	27	18	27	19	25	18.3	0.8	26.6	1.7
8	Luscious	19	28	19	27	19	26	19.0	1.3	27.3	2.4
9	Mystique	22	31	22	31	20	28	21.1	1.1	30.0	2.2
10	Summer Flavor # 79 BC	20	27	20	29	19	28	19.5	1.0	27.9	4.6
11	Sweet Rhythm	18	27	18	26	18	27	18.1	1.9	26.6	3.6
12	Precious Gem	20	27	20	29	19	28	19.8	0.8	28.1	1.4
13	Temptation	19	27	19	28	17	24	18.3	1.1	26.1	2.9
14	PS 6803	21	35	20	29	19	30	20.4	1.2	31.1	4.2
15	PS 7404	20	27	22	28	19	27	20.5	0.9	27.2	2.1
16	Seneca Spring	19	26	19	29	20	28	19.3	1.0	27.6	3.0
							se overall		se overall		
site		19.8	28.6	20.0	28.5	19.1	27.2	19.6	28.1		
Column DMRT_(0.05)		1.2	2.8	1.0	2.9	1.3	3.3				

sh ₂ Entry	Celeryville		Fremont		Wooster		Entry	Row	Entry	Row	
	ear	+ shank	ear	+ shank	ear	+ shank	Avg.	LSD _(0.05)	Avg.	LSD _(0.05)	
1	ACX 946	19	31	20	34	18	26	19.2	1.5	30.2	4.4
2	ACX 951	21	31	21	30	20	32	20.7	0.9	31.0	1.7
3	BSS 0977 VP Attribute	19	31	18	29	18	26	18.3	0.7	28.3	2.6
4	BSS 1690	21	30	21	35	18	28	20.0	1.1	30.8	3.9
5	BSS 6284	20	29	21	34	19	28	20.0	0.6	30.5	1.7
6	GS275A	18	26	20	30	18	27	18.9	0.8	27.5	2.0
7	GS277A	18	28	19	29	18	27	18.3	0.7	28.2	2.7
8	GS282A	19	30	19	33	19	30	18.8	0.7	30.9	5.9
9	Summer Sweet # 8102R	17	25	18	27	17	24	17.3	0.9	25.2	3.6
10	Tango	20	28	20	31	19	28	19.4	0.8	29.0	2.4
11	Candy Corner	19	28	19	29	18	27	18.6	0.9	28.0	2.3
12	HMX 8343 BS	20	30	21	32	19	27	19.8	1.4	29.8	3.3
13	HMX 8344 BS	20	30	20	30	19	29	19.7	0.7	29.7	2.1
14	PS 8201	20	33	20	33	19	32	19.7	0.6	32.7	3.7
15	PS 9364169	20	29	20	31	19	27	19.6	0.8	28.7	2.3
16	Hollywood	19	28	19	29	14	17	17.0	1.0	24.7	3.4
							sh₂ overall		sh₂ overall		
site		19.3	29.1	19.8	31.1	18.2	27.1	19.1	29.1		
Column DMRT_(0.05)		0.6	2.1	0.9	4.5	1.3	3.4				

Note: 2.54 cm = 1 inch

Table 11. Ear leaf cover and complete kernel fill to tip on a scale of 1 = good to 3 = poor of se- and sh₂type sweet corn entries planted at three sites in Ohio in 2001.

se Entry	Celeryville		Fremont		Wooster		Entry	Row	Entry	Row	
	tip cover	tip fill	tip cover	tip fill	tip cover	tip fill	Avg.	LSD _(0.10)	Avg.	LSD _(0.10)	
	tip cover	tip fill	tip cover	tip fill	tip cover	tip fill	tip cover	tip cover	tip fill	tip fill	
1	Ambrosia	2.3	2.3	2.0	2.5	1.0	2.8	1.8	1.0	2.5	0.5
2	BC 0801 VP Attribute	2.0	2.0	1.0	2.5	1.8	2.8	1.6	0.7	2.4	0.5
3	BC 4315	1.3	2.3	2.0	2.5	1.0	2.5	1.4	0.7	2.4	0.5
4	BC 4806	2.0	2.3	1.3	1.5	2.0	2.5	1.8	1.0	2.1	0.5
5	Bojangles	1.5	1.8	1.0	1.3	2.0	2.0	1.5	1.0	1.7	0.5
6	Bon Appetit	1.0	1.3	1.0	1.3	1.0	1.3	1.0	0.5	1.3	0.0
7	Ecstase II	1.3	1.5	1.8	1.8	2.0	1.5	1.7	0.9	1.6	0.7
8	Luscious	1.0	2.0	1.8	1.3	2.0	2.5	1.6	0.5	1.9	0.5
9	Mystique	2.5	2.5	2.5	2.0	1.3	2.5	2.1	1.0	2.3	0.9
10	Summer Flavor # 79 BC	2.0	2.0	1.3	2.3	1.0	2.0	1.4	0.8	2.1	0.5
11	Sweet Rhythm	1.3	2.0	1.3	2.0	2.0	2.3	1.5	0.8	2.1	0.7
12	Precious Gem	2.0	2.8	1.8	2.0	1.8	2.0	1.8	0.7	2.3	0.7
13	Temptation	1.3	2.0	1.0	1.0	1.0	1.3	1.1	0.7	1.4	0.5
14	PS 6803	3.0	2.0	2.5	2.8	1.8	2.0	2.4	0.7	2.3	0.7
15	PS 7404	2.8	2.0	2.0	2.5	2.0	2.3	2.3	0.8	2.3	0.5
16	Seneca Spring	2.0	1.5	2.0	2.5	1.5	1.5	1.8	0.8	1.8	1.2
								se overall		se overall	
	site	1.8	2.0	1.6	2.0	1.6	2.1	1.7		2.0	
	Column DMRT _(0.05)	0.8	0.6	0.8	0.8	1.0	0.5				

sh ₂ Entry	Celeryville		Fremont		Wooster		Entry	Row	Entry	Row	
	tip cover	tip fill	tip cover	tip fill	tip cover	tip fill	Avg.	LSD _(0.10)	Avg.	LSD _(0.10)	
	tip cover	tip fill	tip cover	tip fill	tip cover	tip fill	tip cover	tip cover	tip fill	tip fill	
1	ACX 946	1.3	1.5	2.0	2.0	2.0	1.8	1.8	0.7	1.8	0.5
2	ACX 951	2.3	2.3	1.5	1.0	2.3	2.5	2.0	0.8	1.9	1.1
3	BSS 0977 VP Attribute	1.3	1.5	1.0	1.0	2.0	2.0	1.4	0.8	1.5	0.5
4	BSS 1690	1.0	1.0	2.0	1.0	2.3	2.0	1.8	0.8	1.3	0.9
5	BSS 6284	2.0	2.5	2.0	1.8	1.0	1.8	1.7	0.7	2.0	0.0
6	GS275A	1.3	2.0	1.3	2.0	2.0	2.3	1.5	1.1	2.1	0.7
7	GS277A	2.8	1.3	1.8	1.5	2.3	2.0	2.3	1.3	1.6	0.8
8	GS282A	1.3	1.5	2.0	2.0	1.8	2.0	1.7	0.8	1.8	0.7
9	Summer Sweet # 8102R	1.5	1.5	1.8	1.3	2.5	2.3	1.9	0.8	1.7	0.9
10	Tango	1.5	2.5	1.8	2.0	2.0	2.0	1.8	0.7	2.2	1.0
11	Candy Corner	1.0	1.3	1.5	1.5	2.0	2.5	1.5	0.8	1.8	0.5
12	HMX 8343 BS	1.8	1.5	2.0	2.3	2.0	2.3	1.9	0.5	2.0	0.5
13	HMX 8344 BS	2.0	2.0	1.0	1.0	2.0	3.0	1.7	1.0	2.0	0.0
14	PS 8201	2.0	2.0	1.3	1.5	2.0	2.0	1.8	0.8	1.8	0.5
15	PS 9364169	1.3	1.5	2.0	2.0	2.3	2.0	1.8	4.7	1.8	0.7
16	Hollywood	1.8	1.8	2.0	2.0	1.7	1.7	1.8	0.6	1.8	0.7
								sh₂ overall		sh₂ overall	
	site	1.6	1.7	1.7	1.6	2.0	2.1	1.8		1.8	
	Column DMRT _(0.10)	0.8	0.7	0.9	0.8	2.5	0.7				

Table 12. Height (cm) to primary ear collar and top of plant tassel of se- and sh type sweet corn entries planted at three sites in Ohio in 2001.

se Entry	Celeryville		Fremont		Wooster		Entry	Row	Entry	Row	
	ear	tassel	ear	tassel	ear	tassel	Avg.	LSD _(0.05)	Avg.	LSD _(0.05)	
	ear	tassel	ear	tassel	ear	tassel	ear	ear	tassel	tassel	
1	Ambrosia	62	205	45	158	40	160	49.0	7.6	174.2	18.7
2	BC 0801 VP Attribute	73	200	56	165	60	158	63.2	8.5	174.1	18.9
3	BC 4315	60	183	41	147	53	149	51.3	9.4	159.5	15.3
4	BC 4806	53	208	54	169	54	166	53.8	8.0	181.1	18.2
5	Bojangles	53	175	41	154	47	168	46.9	8.5	165.9	12.3
6	Bon Appetit	69	198	45	172	56	151	56.5	7.4	173.8	12.3
7	Ecstase II	47	167	34	138	42	133	40.8	3.8	145.9	10.7
8	Luscious	77	197	52	169	58	157	62.2	6.3	174.3	12.1
9	Mystique	63	197	44	166	41	152	49.8	10.0	171.6	9.1
10	Summer Flavor # 79 BC	67	190	42	160	41	153	50.0	5.7	167.9	13.4
11	Sweet Rhythm	60	207	43	166	54	138	52.5	11.8	170.1	14.3
12	Precious Gem	72	220	62	192	53	179	62.2	4.2	197.2	14.4
13	Temptation	67	191	48	168	53	147	55.8	4.7	168.6	14.8
14	PS 6803	83	210	56	161	55	175	64.5	8.4	182.1	16.7
15	PS 7404	69	201	55	184	54	170	59.1	9.6	185.0	14.1
16	Seneca Spring	44	170	34	148	46	151	41.2	8.3	156.3	8.7
							se overall		se overall		
site		63.8	195.1	46.9	163.5	50.4	156.7	53.7	171.8		
Column DMRT_(0.05)		8.1	11.9	9.6	16.1	7.6	17.6				

sh ₂ Entry	Celeryville		Fremont		Wooster		Entry	Row	Entry	Row	
	ear	tassel	ear	tassel	ear	tassel	Avg.	LSD _(0.05)	Avg.	LSD _(0.05)	
	ear	tassel	ear	tassel	ear	tassel	ear	ear	tassel	tassel	
1	ACX 946	62	186	53	179	39	138	51.3	11.0	167.8	26.1
2	ACX 951	80	210	85	204	46	145	70.3	10.9	186.4	17.6
3	BSS 0977 VP Attribute	74	220	82	214	48	163	67.9	8.3	198.9	15.5
4	BSS 1690	67	210	49	179	45	148	53.3	7.5	178.9	12.6
5	BSS 6284	64	198	51	191	47	157	54.0	12.5	181.9	13.6
6	GS275A	75	205	58	194	51	167	61.2	9.6	188.7	14.7
7	GS277A	66	178	49	164	43	153	52.4	8.5	164.8	14.0
8	GS282A	81	197	69	181	48	150	65.7	8.3	175.8	14.8
9	Summer Sweet # 8102R	76	197	54	192	40	154	56.6	9.0	180.7	18.3
10	Tango	66	177	50	165	52	154	56.0	8.9	165.7	11.2
11	Candy Corner	64	193	60	192	55	165	59.7	7.8	183.3	12.2
12	HMX 8343 BS	69	209	73	206	50	158	64.1	8.0	190.8	15.3
13	HMX 8344 BS	76	212	79	210	53	164	69.3	12.2	195.0	27.8
14	PS 8201	86	202	88	195	64	166	79.2	8.3	187.6	13.0
15	PS 9364169	71	202	65	192	52	158	62.5	7.5	183.6	10.4
16	Hollywood	82	196	68	190	39	119	62.9	10.5	168.5	21.6
							sh₂ overall		sh₂ overall		
site		72.4	199.5	64.4	190.4	48.2	153.6	61.7	181.2		
Column DMRT_(0.05)		9.4	13.2	9.6	15.6	11.4	23.8				

Note: 2.54 cm = 1 inch

Table 13. Estimate of overall performance of bicolor se- and sh₂-type sweet corn entries planted at three sites in Ohio in 2001 based on percent emergence and marketable yield. The lower the value, the better the rank.

<u>se Entry</u>	----- Rank by Site -----			Sum of Preceding Columns	Overall Rank in Study	
	<u>Celeryville</u>	<u>Fremont</u>	<u>Wooster</u>			
1	Ambrosia	12	3	8	23	11
2	BC 0801 VP Attribute	7	3	5	15	6
3	BC 4315	5	2	6	13	5
4	BC 4806	11	1	6	18	8
5	Bojangles	10	4	3	17	7
6	Bon Appetit	1	4	4	9	1
7	Ecstase II	4	8	12	24	12
8	Luscious	2	5	2	9	1
9	Mystique	13	6	10	29	13
10	Summer Flavor # 79 BC	8	2	14	24	12
11	Sweet Rhythm	3	7	1	11	3
12	Precious Gem	9	9	11	29	13
13	Temptation	1	4	7	12	4
14	PS 6803	1	10	9	20	9
15	PS 7404	6	2	13	21	10
16	Seneca Spring	1	3	6	10	2

<u>sh₂ Entry</u>	----- Rank by Site -----			Sum of Preceding Columns	Overall Rank in Study	
	<u>Celeryville</u>	<u>Fremont</u>	<u>Wooster</u>			
1	ACX 946	6	8	11	25	11
2	ACX 951	11	3	12	26	12
3	BSS 0977 VP Attribute	4	3	5	12	4
4	BSS 1690	1	6	2	9	3
5	BSS 6284	5	8	4	17	5
6	GS275A	5	7	6	18	6
7	GS277A	12	7	4	23	9
8	GS282A	9	11	8	28	14
9	Summer Sweet # 8102R	5	9	10	24	10
10	Tango	10	10	11	31	15
11	Candy Corner	2	2	3	7	2
12	HMX 8343 BS	7	8	7	22	8
13	HMX 8344 BS	7	2	9	18	6
14	PS 8201	8	5	6	19	7
15	PS 9364169	3	1	1	5	1
16	Hollywood	10	4	13	27	13

Table 14. Influence of se-type genotype and time of sampling on sweet corn kernel sap sucrose level (Brix, %) in crops planted at Celeryville, Fremont and Wooster, Ohio on May 9 and 11, 2001. Brix readings were taken using a Leica tabletop refractometer on sap expressed from eight ears per site immersed in liquid nitrogen within one hour of harvest and on sap expressed from eight ears held under refrigeration for ninety-six hours after harvest.

<u>se Entry</u>	Celeryville			Fremont			Wooster			Entry Avg.		
	<u>harvest</u>	<u>96 hr</u>	<u>site-time</u> LSD _(0.05)	<u>harvest</u>	<u>96 hr</u>	<u>site-time</u> LSD _(0.05)	<u>harvest</u>	<u>96 hr</u>	<u>site-time</u> LSD _(0.05)	<u>harvest</u>	<u>96 hr</u>	
1	Ambrosia	19.7	18.6	3.04	21.7	20.0	2.65	21.2	20.1	1.74	20.9	19.6
2	BC 0801 VP Attribute	18.6	17.9	1.89	22.0	19.9	1.21	18.9	19.5	4.69	19.8	19.1
3	BC 4315	15.9	18.0	5.97	23.2	22.4	1.54	22.9	19.7	1.94	20.7	19.8
4	BC 4806	19.6	18.7	0.88	19.1	18.7	2.16	19.2	18.6	1.99	19.3	18.7
5	Bojangles	18.6	16.5	4.15	19.3	15.7	1.69	16.7	16.3	2.76	18.1	16.2
6	Bon Appetit	17.3	16.8	2.28	16.8	17.3	1.70	16.0	15.2	1.93	16.7	16.4
7	Ecstase II	18.3	16.9	1.30	17.7	18.7	1.77	20.2	18.7	4.41	18.8	18.0
8	Luscious	18.1	17.0	1.98	17.3	16.3	1.86	19.1	18.3	2.49	18.1	17.2
9	Mystique	19.2	17.5	2.00	18.2	16.6	3.24	19.6	20.9	2.15	19.0	18.4
10	Summer Flavor # 79 BC	17.8	18.1	3.33	17.2	16.8	1.42	19.4	19.4	4.27	18.0	18.0
11	Sweet Rhythm	17.0	16.5	2.30	16.5	13.8	2.10	18.1	18.3	3.03	17.2	16.2
12	Precious Gem	18.3	17.1	2.04	17.6	16.7	4.63	17.5	16.8	3.12	17.8	16.8
13	Temptation	17.4	17.2	1.42	16.7	16.8	3.45	15.3	12.8	5.36	16.5	15.8
14	PS 6803	13.3	13.7	3.68	20.8	18.6	2.35	21.1	20.3	1.49	18.2	17.1
15	PS 7404	16.5	16.8	4.02	19.9	19.4	3.32	19.9	20.6	2.44	18.8	18.9
16	Seneca Spring	18.2	17.0	2.80	18.2	16.8	5.00	21.0	19.4	1.64	19.1	17.8
	column C.V.	10.40	9.20		8.60	8.10		10.20	8.20		12.30	10.99
	column DMRT_(0.05)	3.15	2.73		2.80	2.51		3.39	2.72		2.25	1.95
										---- se overall ----		
	site average	17.7	17.1		18.9	17.7		19.1	18.5		18.6	17.8

Table 15. Influence of sh₂-type genotype and time of sampling on sweet corn kernel sap sucrose level (Brix, %) in crops planted at Celeryville, Fremont and Wooster, Ohio on May 9 and 11, 2001. Brix readings were taken using a Leica tabletop refractometer on sap expressed from eight ears per site immersed in liquid nitrogen within one hour of harvest and on sap expressed from eight ears held under refrigeration for ninety-six hours after harvest.

<u>sh₂ Entry</u>	<u>Celeryville</u>			<u>Fremont</u>			<u>Wooster</u>			<u>Entry Avg.</u>		
	<u>harvest</u>	<u>96 hr</u>	<u>site-time</u> <u>LSD_(0.05)</u>	<u>harvest</u>	<u>96 hr</u>	<u>site-time</u> <u>LSD_(0.05)</u>	<u>harvest</u>	<u>96 hr</u>	<u>site-time</u> <u>LSD_(0.05)</u>	<u>harvest</u>	<u>96 hr</u>	
1 ACX 946	14.8	13.6	1.63	14.0	13.6	2.33	14.6	14.9	2.55	14.5	14.0	
2 ACX 951	15.4	14.4	1.28	15.3	15.5	1.74	14.1	13.1	2.74	14.9	14.3	
3 BSS 0977 VP Attribute	15.7	14.5	1.46	14.8	15.3	2.94	15.0	15.0	2.45	15.2	14.9	
4 BSS 1690	15.7	14.6	0.71	14.5	13.3	2.75	15.4	16.2	1.08	15.2	14.8	
5 BSS 6284	15.9	13.0	2.07	14.2	11.3	1.57	13.6	14.7	3.13	14.6	13.0	
6 GS275A	15.3	14.0	2.33	15.6	13.4	2.66	17.1	16.1	1.27	16.0	14.5	
7 GS277A	18.5	15.6	2.47	15.5	12.6	2.61	16.3	16.4	2.40	16.7	14.7	
8 GS282A	14.9	13.0	3.31	14.8	14.8	3.05	14.7	15.1	2.62	14.8	14.3	
9 Summer Sweet # 8102R	13.2	14.1	1.79	14.3	12.3	1.56	16.1	15.2	2.57	14.4	14.0	
10 Tango	15.1	14.6	1.79	15.5	13.4	4.84	16.1	16.4	1.01	15.5	14.8	
11 Candy Corner	16.4	14.5	2.03	15.2	13.9	1.29	15.6	15.6	2.70	15.7	14.6	
12 HMX 8343 BS	13.8	12.3	1.49	13.8	13.6	1.56	15.2	13.6	3.38	14.3	13.1	
13 HMX 8344 BS	16.6	16.3	0.83	16.1	15.9	1.80	16.1	15.5	3.40	16.2	15.9	
14 PS 8201	14.0	13.7	2.13	13.0	13.8	3.85	13.2	13.1	1.66	13.5	13.5	
15 PS 9364169	15.7	14.3	1.62	15.8	14.3	1.66	15.1	14.6	3.29	15.5	14.4	
16 Hollywood	16.1	13.3	2.45	15.2	14.9	2.04	15.3	14.1	2.62	15.5	14.1	
	column C.V.	8.60	6.50		9.80	11.10		12.30	6.10		10.31	10.12
	column DMRT_(0.05)	2.27	1.58		2.50	2.61		3.32	1.56		1.55	1.42
										---- sh₂ overall ----		
	site average	15.4	14.1		14.8	13.8		15.2	15.0		15.2	14.3