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Sixteen sweet corn cultivars including standard and modified supersweets were evaluated at the Pinney-Purdue Ag. Center, Wanatah, IN.

Materials and Methods. The trials were conducted on a Tracy Sandy Loam, fertilized in fall 2002 with 90 lb./A K2O from 0-0-60 and before planting in spring 2003 with 100 lb./A N from urea. The trial was arranged as a randomized complete block design with three replications. Cultivars were assigned to individual plots 1 row (36 in.) wide by 25 ft. long. Seventy seed per plot were seeded May 27, 2003. Force 3G was applied at planting to control corn rootworm larvae. On June 12 seedling vigor was rated and emergence was recorded. Plants were thinned to achieve a population of 35 plants per 25 ft of row (20,328 plants/A). Weeds were controlled with a preplant application of Atrazine and Dual II, followed by a single cultivation and handweeding. Irrigation was applied through overhead sprinklers as needed. To control caterpillars Baythroid 2E was applied on Aug 15. Over 1.3 in. rain in mid-July followed by wind caused some leaning of corn plants. Lodging was rated on July 22. Each plot was harvested when corn reached marketable stage and the number and weight of marketable ears were determined. Three ears from each plot were used to evaluate degree of husk cover, degree of tip fill, overall attractiveness, and average ear diameter and length after husking. On August 15, plants were rated for height, ear height, tillering, and plant vigor. Quantitative data were analyzed using ANOVA followed by mean separation using Fisher's protected least significant difference at $P \leq .05$. The relationships between yield components and average days to harvest were analyzed using regression analysis. For other data means are presented.

Results and Discussion. Emergence ranged from 43% to 90%. Varieties with more than 80% emergence included ACX950, BXX1690, ACX1071, Saturn Bicolor, Obsession, BSS0977 and GSS0966. Varieties with less than 66% emergence inlcude 277A, Zenith and ACX816: these had significantly poorer emergence than those above 80%. The number of marketable ears ranged from 1194 to 1646 per acre, but did not differ significantly among varieties. Varieties in the top 25% for number of ears produced were all bicolors: Mirai301BC, ACX1071, Obsession and Saturn Bicolor. Yield ranged from 91 to 149 cwt./A. Varieties in the top 25% inlcuded bicolors Mirai301BC, ACX1071, Obsession and 276A. The highest-yielding variety, Mirai301BC, produced significantly greater yield than all except two other varieties: ACX1071 and Obsession. The lowest yielding variety, 272A, was not significantly different from four other varieties: bicolors 277A, ACX725 and ACX950, and yellow Zenith. The yellow varieties all produced similar yields. The bicolors ACX816, ACX1071 and Mirai301BC were among the top three for weight per ear and ear length; ACX816 and Mirai301BC were also among the top three for ear diameter. ACX816 was heavier than any other variety and longer than all except ACX1071 and Mirai301BC. The bicolor 277A had the lightest and the shortest ears, but did not differ significantly from 8 other varieties for weight and 5 other varieties for length. Among the yellow varieties, Mirai002 and Saturn were heavier, longer and wider than GSS0966 and Zenith, but statistically significant differences were rare. The number of ears produced, yield, average ear weight and ear length were not correlated with the number of days to maturity, but ear diameter was. Varieties with later maturity tended to have wider ears. The bicolors ACX950 and Saturn Bicolor and the yellows GSS0966 and Zenith produced narrower ears than would be expected based on their maturity dates. The bicolors 276A, ACX816 and Mirai 301BC produced ears wider than would be expected based on their maturity dates. Huskcover ratings ranged from 3.4 to 9.0, tip fill ratings from 5.8 to 9.0, and overall appearance from 3.7 to 8.0. Bicolors with good to excellent husk cover included Obsession, 276A, ACX816, BSS0977, Mirai301BC and Saturn Bicolor. Bicolors with less than 1/2 in. of tight husk beyond the ear tip included ACX1071, 272A, ACX725 and BSS1960. All yellow varieties had good to excellent husk cover; Mirai002, Zenith and Saturn had excellent husk cover. Tip fill was good for most bicolor varieties, and good to excellent for all yellow varieties. Tip fill was fair for bicolors ACX816, ACX1071 and 272A. For bicolors the overall appearance rating was highest for Obsession and 276A, followed by BSS0977. 272A, BSS1690 and ACX725 received the lowest appearance ratings. The yellow varieties all received favorable ratings for overall appearance, but Zenith was not rated as highly as the other three.

The bicolor varieties 277A and ACX725 were rated as having the most lodging, and significantly more lodging than BSS0977, Saturn Bicolor, BSS1690, Mirai301BC, Obsession and 272 A (all bicolor). Among the yellow varieties, Mirai002 showed more lodging than the other three.

The most promising bicolor varieties included Mirai301BC, Obsession, BSS0977 and 276A. Saturn Bicolor also performed well. Among the yellow varieties, Mirai002, Saturn and GSS0966 were the most promising.

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Table 1. Yield, ear size and quality, and plant characteristics of supersweet corn in Northern Indiana, 2003.

Cultivar	Co.*	Color	Days to Harvest	GDD to Harvest***	Yield of Marketable Ears		Average Ear Weight	Ear Length	Ear Diameter	Husk Cover	Tip Fill	Overall	Emer-gence	Lodge	Plant Ht.	Ear Ht.	Tillers	Vigor, 8/15	Vigor, 6/12
			(DAP)**		(doz/A)	(cwt/A)	(lb)	(in)	(in)	(1-9)#	(1-9)#	(1-9)#	(%)	(1-9)#	(1-3)#	(1-6)#	(1-5)#	(1-9)#	(1-9)#
272A	ST	BI	77	1331	1194	91	0.63	7.6	1.74	4.1	6.2	3.7	79	2.3	2.3	2.3	2.0	4.7	7.7
ACX725	AC	BI	80	1395	1355	105	0.64	7.3	1.75	4.2	8.2	4.0	70	4.0	2.2	2.5	1.7	5.0	7.3
BSS1690	SY	BI	80	1395	1355	117	0.72	7.8	1.69	4.8	7.4	3.7	88	1.7	2.8	2.3	1.0	4.7	8.0
277A	ST	BI	82	1454	1420	104	0.61	7.0	1.83	5.4	8.9	5.7	65	4.3	2.5	2.5	1.7	4.3	5.7
ACX1071	AC	BI	82	1454	1565	143	0.76	8.4	1.81	3.4	6.2	4.7	86	3.0	3.0	2.8	2.3	5.3	7.7
Saturn Bicolor	SW	BI	83	1474	1533	118	0.64	7.8	1.72	7.1	8.8	6.7	83	1.7	3.0	3.0	1.3	4.7	5.3
ACX950	AC	BI	84	1497	1339	110	0.69	7.3	1.71	6.4	8.7	6.7	90	3.3	3.0	3.8	1.3	5.3	8.0
Obsession	ST	BI	85	1510	1533	140	0.76	7.8	1.85	8.7	8.4	7.7	82	2.3	3.0	3.3	2.3	5.3	6.7
BSS0977	SY	BI	86	1524	1468	116	0.66	7.9	1.88	7.8	8.1	7.3	81	1.3	3.0	4.0	1.3	5.0	7.3
Mirai 301BC	SG	BI	86	1524	1646	149	0.76	8.1	1.93	7.8	7.7	6.3	77	2.0	3.0	4.0	2.7	5.0	6.7
276A	ST	BI	86	1542	1387	125	0.75	7.9	1.94	8.3	8.3	7.7	71	3.7	2.8	2.7	1.7	4.3	5.0
ACX816	AC	BI	86	1542	1194	121	0.85	8.3	1.93	8.1	5.8	6.0	43	3.3	2.8	2.5	3.3	4.7	2.7
Mirai 002	SG	Y	85	1510	1420	123	0.72	7.4	1.88	9.0	8.2	8.0	73	3.7	3.0	4.0	1.3	5.7	4.3
Saturn	SW	Y	85	1510	1484	122	0.69	7.5	1.86	8.9	8.8	8.0	69	1.7	3.0	3.0	2.3	4.7	3.7
GSS0966	SY	Y	87	1561	1500	123	0.68	7.3	1.75	7.8	9.0	8.0	81	3.0	3.2	4.2	1.3	6.0	6.7
Zenith	RI	Y	87	1561	1355	106	0.66	7.1	1.78	9.0	8.4	7.3	56	3.0	3.0	3.5	2.7	4.7	3.0
Grand mean					1422	120	0.70	7.6	1.81	6.9	8.0	6.3	75	2.8	2.9	3.2	1.9	5.0	6.0
LSD .05†					NS	22	0.08	0.4	0.14	–	–	–	15	1.4	–	–	–	–	–
r^2 for regression vs DAP††					NS	NS	NS	NS	0.31										

*Seed source: ST=Stokes Seeds, AC=Abbott&Cobb, SY=Syngenta/Rogers, SW=Seedway, SG=Siegers Seeds, RI=Rispens Seeds.

**DAP: days after planting.

***GDD: corn growing degree days.

#Husk cover, tip fill, plant vigor: 1 to 9 scale; 2=poor (weak), 5=acceptable, 8=good (vigorous). Height: 1=<5 ft., 2=5-6 ft.; 3=> 6 ft.. Ear Ht. 1 < 12 in. to 6 >36 in.; Tillers: 1=no tillers to 5=many large tillers. Lodging: 1=no lodging; 9-maximum lodging.

†Means differing by more than this amount are significantly different at P≤.05. NS=Cultivar effect not significant.

††r^2 is the proportion of variability explained by harvest date; NS=regression not significant at P≤.05.