

# Agricultural Experiment Station AUBURN UNIVERSITY

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## SWEET CORN VARIETY TRIALS – 1972<sup>1</sup>

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**S**WEET CORN in Alabama is produced on approximately 6,000 acres, most of which is located in three counties: 2,000 acres in Baldwin, 1,200 acres in Escambia, and 1,000 acres in Chilton. The remainder is located in 28 other counties throughout the State<sup>3</sup>. All of the commercial acreage is exclusively for fresh market consumption either locally or shipped.

Sweet corn variety trials were conducted at the Gulf Coast Substation, Fairhope, Alabama (Baldwin County) and the North Alabama Horticulture Substation, Cullman, Alabama (Cullman County). These two areas represent growing conditions that are generally encountered.

### EXPERIMENTAL DESIGN

Twenty-seven varieties and lines were seeded on March 22 at Fairhope and April 18 at Cullman. One additional line was added at Cullman. Two row plots 15 feet long in a randomized block design with 4 replications were used for the study. After thinning, 2 plants per hill remained spaced 9 inches in the drill. Rows were spaced 37 inches at Fairhope and 44 inches at Cullman. Fertilizer applications and insect controls were applied in accordance with recommended practices. Irrigation was applied to supplement rainfall to ensure up to 1 acre inch of water per week. Each variety was harvested once over when market maturity was reached.

<sup>1</sup> Data presented in this publication is in the opinion of the authors a true evaluation of each entry. Variety and company names are used for identification and does not imply endorsement of one over the other.

<sup>2</sup> Research Associate, Department of Horticulture; Superintendent and Assistant Superintendents, Gulf Coast Substation; and Superintendent, North Alabama Horticulture Substation, respectively.

<sup>3</sup> Commercial Sources of Alabama Produce. Published by Fruit and Vegetable Division, Alabama Farm Bureau, Alabama Department of Agriculture and Industries, and Cooperative Extension Service, Auburn University. May 1972.

### RESULTS

**Gulf Coast Substation, Baldwin County.** Marketable yield and other characteristics of each entry are presented in Table 1. Asgrow XP 1281 produced the highest number of marketable ears of the 17 highest entries. Funk's GSCW and Iochief produced a lower yield than the other entries.

Monarch Advance and Goldenrod produced the largest ears by weight and Hybrid Seneca Scout and Iochief the smallest. Goldenrod, Asgrow XP 299, and Northrup King 667 produced the longest ears (shuck removed) and Keystone Evergreen Hybrid, Monarch Advance, and Merit produced ears with the greater diameter. Funk's GSCW, Golden Security, Hybrid Seneca Scout, and Tendersweet were rated excellent for ear filling.

Eye appeal rating was made on the shucked ear; size and diameter of the ear were not factors in this rating. Goldenrod, Golden Security, Hybrid Seneca Chief, Northrup King 435-666, Rogers 64-2160, and Silver Queen were rated highest.

Several entries produced plants with heights in excess of 7 feet, Table 2. Funk's GSCW and Iochief produced the shortest plants. Asgrow XP 358, Keystone Evergreen Hybrid, Rogers 64-2160, and Tendersweet showed the greatest ease in snapping the ear from the plant. Gusto and Asgrow XP 1281 were the most difficult to harvest.

Maturity dates were earlier than normal this year for some entries. Silver Queen normally requires approximately 90 to 92 days growing time. This year it required 83 days.

**North Alabama Horticulture Substation, Cullman County.** Hybrid Seneca Chief and Asgrow XP 299 produced the highest yields while Calumet, Iochief, and Merit produced the lowest yields, Table 3. Yields of Marketable ears were rather variable at this location. Ear weights were in general larger at Cullman than at Fairhope. Monarch Advance and Asgrow

TABLE 1. YIELD AND EAR CHARACTERISTICS OF SWEET CORN VARIETIES, GULF COAST SUBSTATION, FAIRHOPE, ALABAMA, 1972

Variety	Ears per acre <sup>1</sup>		Ear weight		Color	Kernel rows	Ear length	Ear diameter	Ear set height	Ear filling	Tip cover	Eye appeal	Composite
	Doz.	Rating	Lb.	Rating									
Asgrow XP 1281	2,738 a	5.00 <sup>3</sup>	.64	3 <sup>3</sup>	Y <sup>2</sup>	18	7.38	1.88	22.75	4	3.25 <sup>3</sup>	4 <sup>3</sup>	3.85 <sup>3</sup>
Goldenrod	2,543 ab	5.00	.71	5	Y	14-16	8.19	1.81	25.50	4	2.13	5	4.23
Rogers 64-2160	2,515 ab	4.96	.51	0	Y	12	7.31	1.75	18.00	4	1.75	5	3.14
Rogers 70-2428	2,487 ab	4.83	.59	2	Y	16-18	7.56	1.75	22.00	3	2.50	3	3.07
Merit	2,468 ab	4.75	.63	3	Y	18	7.13	1.94	27.25	4	2.50	3	3.45
Hybrid Seneca Chief	2,459 ab	4.70	.50	0	Y	12-14	7.00	1.47	15.25	3	3.75	5	3.29
Northrup King 667	2,459 ab	4.70	.68	4	Y	16-18	7.94	1.81	18.00	3	2.38	3	3.42
Silverliner	2,431 ab	4.58	.57	2	W	12	7.31	1.88	27.25	4	2.00	5	3.52
Asgrow XP 299	2,421 ab	4.53	.57	2	Y	14-16	7.94	1.50	27.50	3	3.50	3	3.21
Keystone Evergreen Hybrid	2,421 ab	4.53	.66	4	W	18	7.06	1.94	28.75	3	4.50	3	3.86
Tendersweet	2,412 abc	4.49	.52	0	Y	12-14	7.31	1.50	23.75	5	4.00	4	3.50
Goldie	2,394 abc	4.40	.53	1	Y	16-18	7.50	1.75	23.50	4	1.38	4	2.96
Calumet	2,393 abc	4.40	.61	3	Y	14	7.50	1.75	25.25	4	1.75	4	3.43
Butter Sweet	2,365 abc	4.27	.55	1	Y	18	7.56	1.88	28.50	3	2.75	4	3.00
Silver Queen	2,365 abc	4.27	.58	2	W	12-14	7.13	1.75	26.25	4	4.75	5	4.00
Golden Queen	2,319 abc	4.06	.55	1	Y	14-16	7.38	1.75	29.25	4	3.50	4	3.31
Sweet Tennessee	2,319 abc	4.06	.63	3	Y	16-18	7.44	1.75	24.00	3	2.00	4	3.21
Northrup King 435-666	2,310 bc	4.02	.54	1	Y	14-16	7.88	1.75	14.25	4	1.75	5	3.15
Hybrid Seneca Scout	2,282 bc	3.88	.49	0	Y	16-18	6.75	1.63	24.75	5	4.00	4	3.38
Gusto	2,263 bc	3.80	.53	1	Y	16	6.68	1.79	19.75	4	2.75	4	3.11
Wintergreen	2,245 bc	3.71	.53	1	Y	14-16	7.25	1.63	18.50	4	3.00	4	3.14
Asgrow XP 358	2,198 bc	3.50	.56	1	Y	14-16	6.88	1.75	24.75	4	4.00	3	3.10
Monarch Advance	2,189 bc	3.46	.74	5	Y	18	7.75	1.94	21.75	3	2.75	3	3.44
Golden Security	2,188 bc	3.45	.64	3	Y	14-16	7.00	1.75	24.00	5	4.75	5	4.24
Hybrid Seneca 110	1,993 c	2.55	.51	0	Y	14-16	7.13	1.50	19.25	3	3.50	3	2.41
Iochief	1,509 d	0	.49	0	Y	16-18	6.50	1.75	18.00	3	3.00	4	2.00
Funk's GSCW	1,444 d	0	.52	0	W	12-14	6.56	1.75	25.00	5	2.37	3	2.07

Soil test P = 70 (medium); K = 90 (medium); Mg (high); pH = 6.9.

<sup>1</sup> Means followed by the same letter do not differ significantly from each other at the 5% level.

<sup>2</sup> Y—yellow, W—white.

<sup>3</sup> Rating Index: 5 = excellent, 4 = good, 3 = fair, 2 = poor, 1 = very poor, and 0 = unacceptable.

<sup>4</sup> The ratings in this column were obtained by assigning values to yield and ear weight and averaging them with ear filling, tip cover, and eye appeal. Rating index is the same as in footnote 3.

TABLE 2. PLANT CHARACTERISTICS OF SWEET CORN VARIETIES, GULF COAST SUBSTATION, FAIRHOPE, ALABAMA, 1972

Variety	Plant height	Ease of snapping	Seedling vigor	Shank length	Growing days
Asgrow XP 1281	86.00	2.00 <sup>1</sup>	3.63 <sup>2</sup>	3.75	79
Goldenrod	95.25	3.00	4.50	2.50	80
Rogers 64-2160	72.25	3.50	4.25	3.50	74
Rogers 70-2428	82.00	2.50	3.38	3.75	77
Merit	90.25	2.75	3.88	3.00	77
Hybrid Seneca Chief	72.25	3.00	4.25	4.25	77
Northrup King 667	81.50	3.00	3.88	3.50	79
Silverliner	87.50	3.25	4.50	4.00	79
Asgrow XP 299	92.00	3.00	4.75	3.25	80
Keystone Evergreen Hybrid	102.50	3.75	3.00	3.00	81
Tendersweet	88.00	3.75	4.25	3.25	77
Goldie	84.00	3.00	4.63	3.25	77
Calumet	94.75	3.00	4.00	3.00	84
Butter Sweet	89.75	3.00	4.50	3.00	79
Silver Queen	89.25	3.25	3.63	3.50	83
Golden Queen	91.75	3.00	4.50	2.75	82
Sweet Tennessee	87.75	2.25	4.25	3.00	79
Northrup King 435-666	76.75	2.50	3.88	2.50	79
Hybrid Seneca Scout	83.00	3.25	4.25	3.50	77
Gusto	81.25	2.00	4.25	2.75	79
Wintergreen	78.50	3.25	4.75	3.00	80
Asgrow XP 358	92.00	3.50	4.63	3.75	79
Monarch Advance	85.00	3.25	4.25	3.25	79
Golden Security	93.75	3.00	4.25	3.50	77
Hybrid Seneca 110	73.75	2.50	4.63	3.50	77
Funk's GSCW	67.00	2.75	2.63	3.50	81
Iochief	64.75	3.00	3.25	3.50	79

Soil test P = 70 (medium); K = 90 (medium); Mg (high); pH = 6.9.

<sup>1</sup> Rating Index: 5 = very easy, 4 = easy, 3 = average difficulty, 2 = difficult, 1 = very difficult.

<sup>2</sup> Rating Index: 5 = excellent, 4 = good, 3 = fair, 2 = poor, and 1 = very poor.

XP 299 produced the largest ear weights and Iochief produced the smallest ears. Goldenrod had the longest ear (shuck removed) and Monarch Advance had the greater ear diameter. Asgrow XP 358 produced the best filled ears and Northrup King 667 produced the poorest filled ears. Most of the entries at Cullman had very good ear filling.

Tip covering was good to very good for all but four varieties. Calumet, Rogers 64-2160, and Silverliner had only a fair to good rating and Goldie had a poor to fair covering. Hybrid Seneca Chief, Iochief, Keystone Evergreen Hybrid, Northrup King 435-666, and Rogers 64-2160 were rated only fair in eye appeal while the other entries were rated good to excellent. Again, ear size and diameter were not factors in this rating.

All entries at Cullman had shorter heights than at Fairhope, Table 4. Goldenrod and Keystone Evergreen Hybrid were the two tallest growing (as at Fairhope) with Funk's GSCW and Hybrid Seneca Chief the shortest. Calumet, Goldenrod, and Hybrid Seneca Chief were the most difficult to harvest while Northrup King 667 was the least difficult to harvest. Asgrow XP 299 and Goldenrod had the smallest number of suckers per plant.

Growing days from planting to market maturity were variable with 83 days required for the slowest maturing varieties and 74 days for the earliest ones.

TABLE 3. YIELD AND EAR CHARACTERISTICS OF SWEET CORN VARIETIES, NORTH ALABAMA HORTICULTURE SUBSTATION, CULLMAN, ALABAMA, 1972

Variety	Ears per acre <sup>1</sup>		Ear weight		Color	Kernel rows	Ear length	Ear diameter	Ear set height	Ear filling	Tip cover	Eye appeal	Composite
	Doz.	Rating	Lb.	Rating									
Hybrid Seneca Chief.....	2,750 a	5.00 <sup>3</sup>	.56	0 <sup>3</sup>	Y <sup>2</sup>	12	7.88	1.50	16.20	3.71 <sup>3</sup>	4.08 <sup>3</sup>	3 <sup>3</sup>	3.16 <sup>4</sup>
Asgrow XP 299.....	2,725 ab	5.00	.80	4	Y	14	8.40	1.65	29.37	4.18	4.78	4	4.39
Rogers 64-2160.....	2,665 abc	5.00	.63	1	Y	12	7.63	1.53	14.95	3.35	3.28	3	3.13
Sweet Tennessee.....	2,648 abc	5.00	.74	3	Y	16	7.93	1.78	26.27	4.43	4.60	4	4.21
Northrup King 667.....	2,631 abc	5.00	.74	3	Y	14-16	8.73	1.60	16.65	3.28	4.13	3	3.68
Goldenrod.....	2,554 abcd	4.81	.74	3	Y	14-16	9.45	1.60	32.15	4.20	4.58	5	4.32
Silverliner.....	2,545 abcd	4.75	.74	3	W	12-14	8.25	1.55	26.77	3.70	3.80	4	3.85
Asgrow 358.....	2,486 abcde	4.39	.67	2	Y	14-16	7.60	1.55	25.87	4.68	4.93	4	4.00
Asgrow XP 1327W.....	2,486 abcde	4.39	.67	2	W	12	8.35	1.76	23.00	4.15	4.20	4	3.75
Wintergreen.....	2,477 abcde	4.34	.68	2	Y	14	7.85	1.58	18.90	4.33	4.10	5	3.95
Keystone Evergreen Hybrid.....	2,452 abcde	4.18	.67	2	W	16-18	8.05	1.75	30.80	3.90	4.00	3	3.42
Rogers 70-2428.....	2,443 abcde	4.13	.61	1	Y	16-18	8.25	1.53	19.48	4.05	4.43	5	3.72
Northrup King 435-666.....	2,364 abcdef	3.65	.73	3	Y	16	8.88	1.53	15.38	3.30	4.05	3	3.40
Golden Security.....	2,315 abcdef	3.35	.72	2	Y	14-16	8.08	1.68	24.28	4.50	4.88	5	3.95
Funk's GSCW.....	2,298 abcdef	3.24	.63	1	W	14	7.50	1.55	18.00	4.38	4.08	4	3.14
Butter Sweet.....	2,289 abcdef	3.19	.62	1	Y	18	7.78	1.65	27.82	3.95	4.38	5	3.50
Golden Queen.....	2,289 abcdef	3.19	.73	3	Y	14	8.00	1.58	32.00	4.35	4.48	5	4.00
Monarch Advance.....	2,247 abcdefg	2.93	.91	5	Y	16	8.90	1.88	23.15	4.13	4.28	4	4.07
Goldie.....	2,213 bcdefg	2.73	.61	1	Y	16	8.08	1.58	18.93	4.13	2.58	4	2.89
Hybrid Seneca 110.....	2,204 bcdefg	2.67	.62	1	Y	14	7.30	1.50	18.48	4.28	4.20	4	3.23
Silver Queen.....	2,187 cdefg	2.57	.75	3	W	12-14	8.03	1.76	26.20	4.43	4.75	4	3.75
Tendersweet.....	2,178 cdefg	2.51	.66	1	Y	14	8.50	1.50	24.73	4.55	4.25	5	3.46
Gusto.....	2,085 defg	1.95	.64	1	Y	16	7.13	1.60	22.22	4.58	4.25	4	3.16
Hybrid Seneca Scout.....	2,067 defg	1.84	.68	2	Y	16	7.30	1.63	23.93	4.63	4.75	5	3.64
Asgrow XP 1281.....	2,050 defg	1.73	.87	5	Y	18	8.65	1.72	22.60	4.23	4.65	4	3.92
Merit.....	1,990 efg	1.37	.73	3	Y	16-18	8.13	1.73	29.90	4.18	4.43	5	3.60
Calumet.....	1,922 fg	0	.56	0	Y	14	8.12	1.35	24.45	4.00	3.78	4	2.36
Iochief.....	1,768 g	0	.59	0	Y	16-18	7.28	1.55	20.00	3.53	4.45	3	2.20

Soil test P = 250 (very high); K = 120 (high); Mg. (high); pH = 6.2.

<sup>1</sup> Means followed by the same letter do not differ significantly from each other at the 5% level.

<sup>2</sup> Y—yellow, W—white.

<sup>3</sup> Rating Index: 5 = excellent, 4 = good, 3 = fair, 2 = poor, 1 = very poor, and 0 = unacceptable.

<sup>4</sup> The ratings in this column were obtained by assigning values to yield and ear weight and averaging them with ear filling, tip cover, and eye appeal. Rating index is the same as in footnote 3.

TABLE 4. PLANT CHARACTERISTICS OF SWEET CORN VARIETIES, NORTH ALABAMA HORTICULTURE SUBSTATION, CULLMAN, ALABAMA, 1972

Variety	Plant height	Ease of snapping	Seedling vigor	Shank length	Suckers per plant	Growing days
	In.	Rating	Rating	In.	No.	No.
Hybrid Seneca Chief.....	67.20	2.75 <sup>1</sup>	3.25 <sup>2</sup>	3.35	.75	79
Asgrow XP 299.....	86.75	3.50	4.63	2.53	.20	81
Rogers 64-2160.....	69.50	3.75	4.50	2.95	.68	74
Sweet Tennessee.....	79.47	3.25	3.13	4.60	.28	81
Northrup King 667.....	71.80	4.00	3.00	2.98	.55	79
Goldenrod.....	89.70	2.75	4.00	3.35	.20	81
Silverliner.....	79.80	3.25	4.75	3.65	.48	81
Asgrow 358.....	80.60	3.00	3.13	3.15	.53	79
Asgrow XP 1327W.....	73.60	3.25	3.50	3.50	.53	83
Wintergreen.....	73.45	3.50	2.75	3.20	.33	79
Keystone Evergreen Hybrid.....	89.62	3.50	3.75	3.40	.88	83
Rogers 70-2428.....	71.20	3.00	3.13	3.55	1.23	74
Northrup King 435-666.....	70.67	3.25	3.38	3.23	.45	76
Golden Security.....	75.22	3.50	1.88	4.18	1.38	83
Funk's GSCW.....	66.55	3.00	3.88	3.03	1.50	83
Butter Sweet.....	79.60	3.00	2.75	3.28	.60	79
Golden Queen.....	84.87	3.50	4.00	3.38	.60	81
Monarch Advance.....	76.35	3.25	2.88	3.15	.63	81
Goldie.....	72.95	3.50	3.50	3.18	.95	74
Hybrid Seneca 110.....	68.65	3.75	4.00	3.85	.50	76
Silver Queen.....	80.90	3.50	3.13	2.93	.78	83
Tendersweet.....	75.90	3.00	3.25	3.83	.40	81
Gusto.....	73.13	3.00	3.75	3.05	.30	76
Hybrid Seneca Scout.....	74.25	3.50	1.25	3.38	1.30	81
Asgrow XP 1281.....	80.60	3.00	3.13	3.15	.53	79
Merit.....	78.00	3.75	4.00	3.23	.45	76
Calumet.....	78.40	2.88	3.63	3.35	.58	74
Iochief.....	58.62	3.25	3.50	3.40	.13	74

Soil test P = 250 (very high); K = 120 (high); Mg (high); pH = 6.2.

<sup>1</sup> Rating Index: 5 = very easy, 4 = easy, 3 = average difficulty, 2 = difficult, 1 = very difficult.

<sup>2</sup> Rating Index: 5 = excellent, 4 = good, 3 = fair, 2 = poor, and 1 = very poor.

## SUMMARY

Sweet corn varieties and lines were grown and evaluated for commercial potential at two locations in Alabama during the 1972 growing season. Variety responses are shown in Tables 1 through 4. Varieties Goldenrod, Silver Queen, and Golden Security received the highest composite ratings at Fairhope while Asgrow XP 299, Sweet Tennessee, Goldenrod, Asgrow XP 358, Golden Queen, and Monarch Advance received the highest composite rating at Cullman.

## ACKNOWLEDGMENT

Varieties and lines of sweet corn used in this study were donated by the following companies.

Asgrow Seed Company	Kalamazoo, Michigan
FMC Corporation (Seed Department)	Modesto, California
Louisiana Seed Company	Alexandria, Louisiana
Keystone Seed Company	Hollister, California
Northrup King	Minneapolis, Minnesota
Roberson Seed Farms	Hall, New York
Rogers Brothers	Idaho Falls, Idaho