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Saginaw Valley Research and Extension Center 2014 sh2 Sweet Corn Variety Trial

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A sweet corn variety trial was planted at the Saginaw Valley Research and Extension Center (3775 S. Reese Road, Frankenmuth, MI 48734). Seminis, Syngenta, Crookham, and Illinois Foundation Seed Inc. generously donated publicly available sh2 sweet corn seeds.

The 24 randomized plots consisted of three replications of eight sh2 varieties (Table 1). Dual Magnum (1pt/a) and urea (to supply 120 lb/a N) were applied to the field approximately two weeks before planting. The soil type was a Tappan-Londo loam with a poor-moderate drainage classification, typical of Michigan's Saginaw Valley.

On June 27, 2014, sweet corn was machine-planted at a rate of one seed per 10 inches. Each plot had four rows that were 27 feet long and 30 inches apart, with a 5-foot break (east-west) between varieties. On July 16, 2014, the plots were thinned. Plots were hoed on July 16, and August 4. No further pesticide plot treatments were applied.

Sweet corn was harvested on September 22 (day 87), and measurements were taken on the same day as harvest. One entire inner row of each plot was tallied for harvestable ears, and five ears were randomly chosen to measure their length and diameter, tip fill (number of ears with a full tip), and pest damage (number of ears containing insects). Plots were also assessed for plant height (3 levels: short, medium, tall), wind lodging (yes or no), and disease presence (1-3 severity ranking). A couple from a locally respected sweet corn farm were tasked with tasting and rating all eight varieties for flavor.

Results

Overall, EX08767143 and SC1336 had the best disease resistance, tallest height, and were the highest yielding sweet corn in bushels/A and ears/plant (Figure 1 and Table 1). However, despite reaching their predicted maturity date, neither was uniformly mature and both lacked sweetness according to our tasters. The other tall variety, AP426, also lacked sweetness, and contained the highest proportion of earworms. The two shortest varieties, XTH2475 and AP358, had two of the highest sweetness ratings. Michigan had a milder than average summer this year, and so flavor development may have been more a function of weather than genetics. For most varieties, one plot in three received wind damage and lodged. However, SC1336 did not lodge in any plots, and XTH2475 showed lodging in all plots. Rust and northern corn leaf blight were found in all plots to some level. Varieties EX08767143 and SC1336 consistently had the lowest level of disease pressure, while BSS30761 and XTH20173 had the highest level. Given more time for kernels to develop, the two Seminis varieties, EX08767143 and SC1336, show a lot of potential.

Acknowledgements

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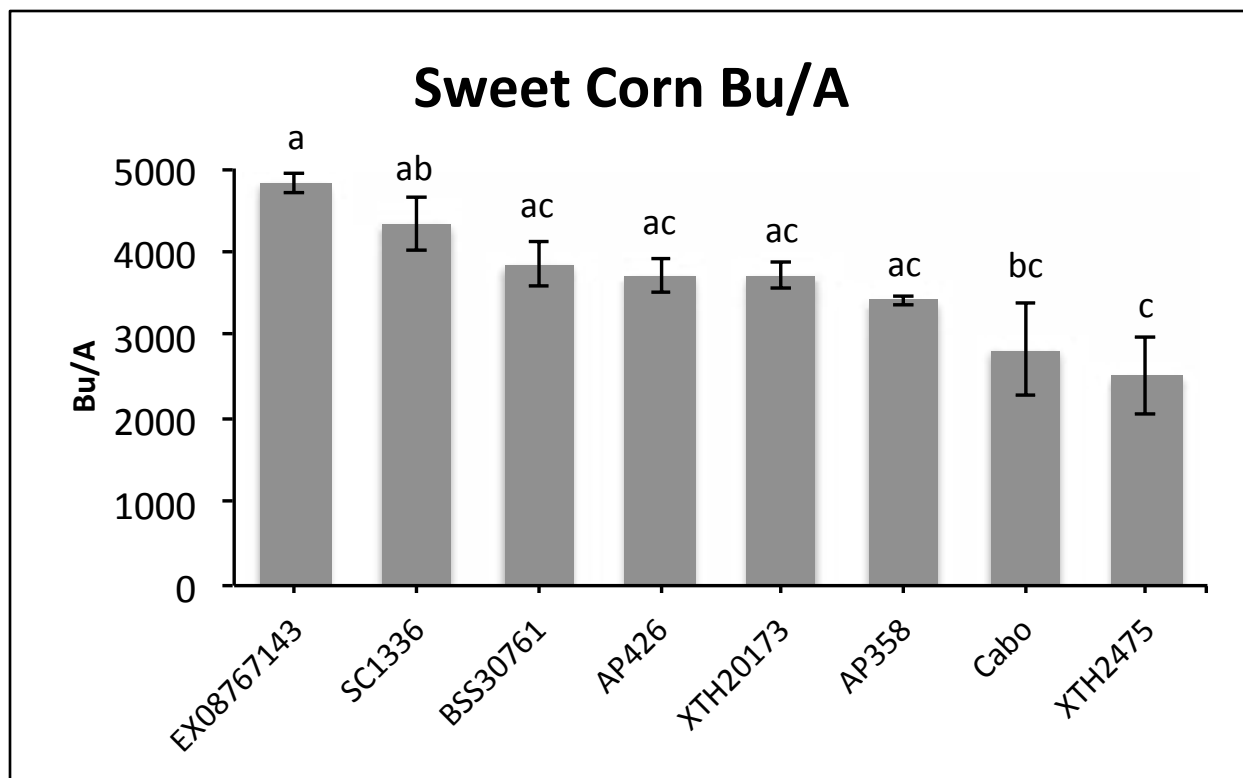


Figure 1. Performance in bushels/a (Bu/A) of eight sh2 sweet corn cultivars at the Saginaw Valley Research and Extension Center, Frankenmuth, Michigan. The trial was planted at 30-inches between rows and 10-inches in the row (21,000 plants/acre). All cultivars were harvested at 87 days after planting.

Table 1. Measured characteristics of eight sh2 sweet corn cultivars at the Saginaw Valley Research and Extension Center, Frankenmuth, Michigan. The trial was planted at 30-inches between rows and 10-inches in the row (21,000 plants/acre). All cultivars were harvested at 87 days after planting.

Variety	Co. ¹	Predicted Maturity (days)	Color	Average Length (in.)	Average Diameter (in.)	L:D	% Tip Fill ²	% Worm Tip ³	Ears/Plant	Bu/A	Lodging ⁴	Height ⁵	Disease Resistance ⁶	Sweetness ⁷
EX08767143	SM	80	BI	8.10	2.41	3.36	0.87	0.33	1.12	4,828.03	1/3	3	3	5.5
SC1336	SM	83	Y	8.18	2.47	3.32	0.93	0.40	1.01	4,340.80	0/3	3	3	5.5
BSS30761	SY	82	BI	7.96	2.44	3.26	0.93	0.13	0.89	3,853.57	1/3	2	1	8
AP426	CR	78	BI	7.83	2.43	3.22	0.80	0.60	0.86	3,720.68	1/3	3	2	6
XTH20173	IFSI	73	BI	7.48	2.45	3.05	0.80	0.27	0.86	3,720.68	1/3	2	1	7.5
AP358	CR	78	BI	7.96	2.38	3.34	0.53	0.47	0.79	3,410.63	1/3	1	2	8.5
Cabo	SY	80	BI	8.13	2.74	2.99	0.93	0.33	0.63	2,834.81	1/3	2	2	9
XTH2475	IFSI	74	BI	8.23	2.66	3.10	1.00	0.27	0.58	2,524.75	3/3	1	2	9

¹Seed companies: SM=Seminis, SY=Syngenta, CR=Crookham, IFSI= Illinois Foundation Seeds, Inc.

²Tip fill is the percentage of 5 ears with full tips.

³Worm tip is the percentage of 5 ears with worms in them.

⁴Lodging represents the quantity of the three plots in which lodging occurred.

⁵Height was a 3-category variable: 1=shortest, 2=medium height, 3=tallest.

⁶Disease Resistance was a 3-category variable: 1=high disease occurrence, 2=medium disease occurrence, 3=low disease occurrence.

⁷Sweetness was measured 1-10: 1=not very sweet, 10=very sweet.