2018 Sweet Corn

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Sweet corn is an important crop in both the fresh market and shipping market in Sandusky County and throughout North Central Ohio, where a significant percentage of Ohio vegetables are grown. Many different varieties of sweet corn are grown by producers with fresh market roadside stands, and still others are grown for early, mid, and late season shipping and processing markets, meaning growers demand a diverse selection of sweet corn varieties and maturities. Growers have indicated this diversity should focus on SH2 varieties with different stages of maturity, and variance in other traits. Many new varieties are becoming available to meet these grower demands, and this study sought to determine which ones would perform acceptably in Northern Ohio, and which would have the desired traits growers are seeking. For this trial, 32 SH2 varieties were grown in 4 replicated plots at the Ohio State University’s North Central Agricultural Research Station near Fremont, Ohio.

Materials and Methods

The purpose of this trial was to evaluate a significant number of newer varieties of sweet corn, helping seed companies determine which varieties would be suitable to continue breeding and developing for commercial seed sales, and helping growers determine which currently available varieties would be best suited for their specific market demands, including fresh market, shipping, and processing.

Growers and seed companies suggested varieties to be grown, with a strong preference for inclusion given to new and experimental varieties, for comparison alongside industry standard varieties. The evaluation used four replicated plots, grown under best management practices, to give growers a fair comparison of the different varieties grown on lake bed soils, within a normal Northern Ohio growing season. Plots were planted in 35 foot rows, with blocks of 4 rows per variety, replicated 4 times, with randomized variety location within each replication. After germination and stand counts, rows were trimmed to 25 feet and thinned to uniform population across varieties.

The SH2 trial was conducted on Colwood fine sandy loam soil on field AW at the North Central Agricultural Research Station. Best management practices were utilized prior to and during the trial. On September 21, 2017 the test site (wheat stubble) was treated with 48 oz / acre of Credit 41 Extra (glyphosate) and 8 oz / acre of Choice. The field was disk chiseled on April 13, 2018. On May 1, 2018 the test site was worked with a Perfecta field cultivator. Fertilizer was applied which included 500 lbs / acre 0-0-60, 150 lbs / acre, 11-52-0, 200 lbs / acre 46-0-0, and 7 lbs of 10% Boron. The plot was worked on May 2, 2018 to incorporate the fertilizer.

Several rain events prevented planting for 3 weeks. On May 24, 2018 the test plot was prepped for planting using a Landoll finish-all and packer. The test plot was planted in 30” rows using a John Deere 7000 planter with Almaco units. A herbicide application of 20 oz / acre Dual II Magnum and 2.8 oz of Compadre was made immediately after planting. Very little rain fell in the 2 weeks following making it necessary to control weeds with 3 oz / acre Landis with 16 oz / acre Atrazine, 1.5 lbs / acre AMS, 22.5 oz / acre MSO, and 2.8 oz / acre Compadre.

The test plot was thinned to a consistent stand of 33 – 34 plants per row giving a target spacing of 9 inches. At harvest the measured population was 26,400.

Electric fence was installed around the entire trial on July 20 to protect against wildlife damage. No fungicide applications were made. Insecticide applications were made as follows:

July 10

* 10 oz / acre Hero

July 16

* 6 oz / acre Radiant

July 23

* 5 oz / acre Coragen

July 30

* 1.9 oz / acre Warrior II

August 3

* 5 oz / acre Coragen

For data collection, only the 2 center rows of each variety block were harvested. Harvest dates for individual varieties can be found in the tables below.

Sweet corn plants were evaluated at harvest for the following characteristics, which are summarized in the tables: ease of harvesting ear (snap rating), ear height, stand population, harvested dozens per acres, and marketable dozens per acre. Immediately following harvest, 5 random marketable ears per variety were evaluated for flags, husk cover, tip fill, number of kernel rows/ear, kernel color, ear length, ear diameter, tenderness, sweetness, and overall flavor.

Results and Discussion

Results of the harvest and ear evaluation for each variety of sweet corn can be seen in the tables below, with total harvest data compiled and averaged from the three highest yielding plots of the 4 harvested. This was to allow for several plots that had significant damage from birds, pests or compaction. When interpreting yield data, it should be noted that with the thinning of the trial to a uniform population in early June, easy comparisons can be made on yield potential by analyzing harvest data. An average population of 26,400 was measured at harvest.

In determining the ear evaluation scores, a team of 5 individuals, including the principal investigator and 2 members of the research station staff and two student employees each made their individual rankings on the 5 ears for each characteristic, and the final reported value was the combined average from all 3 individual scores. This process held true for the tenderness, sweetness, and overall flavor scores as well, determined by raw taste testing by the 5 aforementioned individuals.

Rainfall (in inches) from planting May 25 to harvest August 14 –

May 31 - .1 June 27 - .9

June 1 - .1 July 5 - .3

June 9 - .05 July 10 - .6

June 10 - .45 July 16 - .15

June 11 - .4 July 18 - .6 (irrigation)

June 12 - 1.2 July 23 - .6

June 18 - .35 July 26 - .1

June 19 - .05 August 6 - .6

June 20 - .1 August 7 - .25

June 23 - .5 August 10 - .65

**TOTAL 8.05 inches**

**Table 1.** Variety characteristics, emergence, observed maturity, and individual ear yield

All varieties planted on May 25, 2018

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variety #** | **Variety Name** | **Color** | **Listed Maturity** | **Harvest Date** | **Observed Maturity** | **Population data row June 20** | **Harvested Ears** | **Marketable Ears** |
| 1 | Seminole Sweet XR | bicolor | 80 | 8/10 | 77 | 26,400 | 70 | 69 |
| 2 | Raquel | bicolor | 72 | 8/1 | 68 | 26,400 | 67 | 67 |
| 3 | Rosie | bicolor | 74 | 8/3 | 70 | 26,400 | 67 | 67 |
| 4 | Kate | bicolor | 77 | 8/6 | 73 | 26,400 | 74 | 74 |
| 5 | HMX603 | bicolor | 74 | 8/3 | 70 | 26,400 | 71 | 67 |
| 6 | HMX605 | bicolor | 76 | 8/3 | 70 | 26,400 | 71 | 68 |
| 7 | Cumberland | bicolor | 76 | 8/3 | 70 | 26,400 | 69 | 68 |
| 8 | BSS1075 | bicolor | 77 | 8/8 | 75 | 26,400 | 78 | 76 |
| 9 | BSS8021 | bicolor | 81 | 8/10 | 77 | 26,400 | 70 | 70 |
| 10 | WSS8072 | white | 78 | 8/8 | 75 | 26,400 | 72 | 70 |
| 11 | EX08767143 | bicolor | 81 | 8/10 | 77 | 26,400 | 81 | 79 |
| 12 | Affection | bicolor | 78 | 8/6 | 73 | 26,400 | 75 | 70 |
| 13 | SVSA6954 | bicolor | 78 | 8/8 | 75 | 26,400 | 72 | 71 |
| 14 | SVSA2234 | bicolor | 82 | 8/10 | 77 | 26,400 | 72 | 70 |
| 15 | SC1336 | yellow | 81 | 8/10 | 77 | 26,400 | 73 | 72 |
| 16 | Jubilation | yellow | 78 | 8/10 | 77 | 26,400 | 80 | 77 |
| 17 | SV1580SC | white | 81 | 8/8 | 75 | 26,400 | 79 | 76 |
| 18 | Coastal | bicolor | 78 | 8/6 | 73 | 26,400 | 71 | 69 |
| 19 | CSAWF15-1012 |  |  | 8/6 | 73 | 26,400 | 71 | 69 |
| 20 | Euphoria | bicolor | 72 | 8/1 | 68 | 26,400 | 66 | 65 |
| 21 | Nirvana | bicolor | 75 | 8/3 | 70 | 26,400 | 69 | 68 |
| 22 | AP 426 | bicolor | 76 | 8/8 | 75 | 26,400 | 69 | 68 |
| 23 | Everglades | bicolor | 77 | 8/6 | 73 | 26,400 | 76 | 73 |
| 24 | Yellowstone | yellow | 77 | 8/8 | 75 | 26,400 | 82 | 80 |
| 25 | Takeoff | yellow | 70 | 8/1 | 68 | 26,400 | 66 | 65 |
| 26 | Freedom MXR | white | 73 | 8/1 | 68 | 26,400 | 73 | 71 |
| 27 | Resolve | white | 71 | 8/1 | 68 | 26,400 | 69 | 66 |
| 28 | Kickoff | bicolor | 70 | 8/1 | 68 | 26,400 | 71 | 69 |
| 29 | 274A | bicolor | 74 | 8/1 | 68 | 26,400 | 70 | 70 |
| 30 | Anthem | bicolor | 73 | 8/1 | 68 | 26,400 | 66 | 62 |
| 31 | Caliber | bicolor | 75 | 8/3 | 70 | 26,400 | 74 | 73 |
| 32 | American Dream | bicolor | 77 | 8/6 | 73 | 26,400 | 75 | 74 |

**Table 2.** Harvest Data. Simulated uniform population of 26,400 by thinning on June 15. “Perfect” yield of 1 ear per stalk in thinned population would equal 2200 dozen.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variety #** | **Variety Name** | **Ear Height (in.)** | **Snap** | **Harvested Dozen/acre** | **Marketable Dozen/acre** |
| 1 | Seminole Sweet XR | 25 | 4 | 2040 | 2001 |
| 2 | Raquel | 26 | 5 | 1953 | 1933 |
| 3 | Rosie | 25 | 4 | 1953 | 1933 |
| 4 | Kate | 28 | 3 | 2146 | 2136 |
| 5 | HMX603 | 25 | 4 | 2049 | 1933 |
| 6 | HMX605 | 30 | 2 | 2049 | 1982 |
| 7 | Cumberland | 23 | 3 | 2011 | 1962 |
| 8 | BSS1075 | 33 | 2 | 2252 | 2214 |
| 9 | BSS8021 | 22 | 4 | 2040 | 2030 |
| 10 | WSS8072 | 26 | 4 | 2098 | 2040 |
| 11 | EX08767143 | 23 | 4 | 2359 | 2301 |
| 12 | Affection | 28 | 3 | 2185 | 2020 |
| 13 | SVSA6954 | 29 | 3 | 2088 | 2059 |
| 14 | SVSA2234 | 23 | 4 | 2088 | 2040 |
| 15 | SC1336 | 21 | 3 | 2107 | 2088 |
| 16 | Jubilation | 24 | 3 | 2320 | 2243 |
| 17 | SV1580SC | 30 | 5 | 2281 | 2194 |
| 18 | Coastal | 28 | 3 | 2059 | 2011 |
| 19 | CSAWF15-1012 | 26 | 3 | 2049 | 2014 |
| 20 | Euphoria | 18 | 3 | 1904 | 1875 |
| 21 | Nirvana | 22 | 5 | 2011 | 1972 |
| 22 | AP 426 | 23 | 4 | 1991 | 1972 |
| 23 | Everglades | 29 | 4 | 2214 | 2127 |
| 24 | Yellowstone | 30 | 3 | 2368 | 2320 |
| 25 | Takeoff | 27 | 3 | 1904 | 1875 |
| 26 | Freedom MXR | 29 | 3 | 2117 | 2049 |
| 27 | Resolve | 24 | 4 | 2001 | 1924 |
| 28 | Kickoff | 26 | 3 | 2049 | 1991 |
| 29 | 274A | 25 | 4 | 2040 | 2030 |
| 30 | Anthem | 27 | 3 | 1904 | 1798 |
| 31 | Caliber | 30 | 2 | 2136 | 2117 |
| 32 | American Dream | 31 | 4 | 2185 | 2156 |

**Ear Height** Height in inches (rounded) **Snap** 5 very easy

**Lodge** 5 straight up 1 difficult

3 leaning

1 down

**Table 3.** Ear Evaluation. \*All data is reported as the average rating of 5 ears from each variety

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variety #** | **Variety Name** | **Husk Cover** | **Flags** | **Overall Husk** | **Shank** | **Tip Fill** | **Rows \*** | **Rowing** | **Color** | **Length (inches)** | **Diameter (inches)** |
| 1 | Seminole Sweet XR | 3.25 | 3.5 | 3.5 | 3.25 | 2.5 | 16-18 | 2.5 | 3.25 | 8.2 | 1.6 |
| 2 | Raquel | 3 | 3.5 | 3.5 | 3.5 | 3.5 | 16-18 | 3.5 | 2 | 9.0 | 1.8 |
| 3 | Rosie | 2 | 3.5 | 2.5 | 4.5 | 2.25 | 18-20 | 2.75 | 3.75 | 8.6 | 1.7 |
| 4 | Kate | 2.75 | 3.5 | 4 | 2.75 | 3.25 | 18-20 | 2.5 | 3 | 8.4 | 1.7 |
| 5 | HMX603 | 1.25 | 3.5 | 2.25 | 3.5 | 3 | 16-20 | 2.75 | 3.75 | 9.3 | 1.9 |
| 6 | HMX605 | 3 | 3.25 | 3 | 3.75 | 4 | 16-18 | 4 | 4 | 8.6 | 1.7 |
| 7 | Cumberland | 2 | 2.75 | 2.75 | 2.25 | 4.5 | 16-18 | 3.75 | 3.5 | 9.3 | 1.9 |
| 8 | BSS1075 | 1.5 | 2 | 2 | 4 | 3.25 | 18-20 | 4 | 2.75 | 8.6 | 1.7 |
| 9 | BSS8021 | 2.75 | 4.25 | 3.25 | 3.75 | 4.5 | 16 | 4 | 4 | 8.1 | 1.6 |
| 10 | WSS8072 | 2.25 | 3.5 | 2.5 | 3 | 3.25 | 16-18 | 4 | 2.25 | 8.8 | 1.8 |
| 11 | EX08767143 | 2 | 3.75 | 3 | 3.75 | 4 | 16-18 | 4 | 4 | 8.9 | 1.8 |
| 12 | Affection | 3.5 | 2.5 | 2.5 | 2.5 | 4.25 | 16-18 | 3.75 | 2.5 | 8.0 | 1.6 |
| 13 | SVSA6954 | 1.5 | 2 | 1.5 | 3.5 | 4.5 | 16-20 | 3.5 | 2.5 | 9.4 | 1.9 |
| 14 | SVSA2234 | 3.75 | 4 | 4 | 3..5 | 3.5 | 16-18 | 3.25 | 3.75 | 7.7 | 1.5 |
| 15 | SC1336 | 2.25 | 3.75 | 3.25 | 3.75 | 1.75 | 18-20 | 1.5 | 4 | 8.4 | 1.7 |
| 16 | Jubilation | 3 | 3 | 3 | 4 | 3.75 | 16-18 | 2 | 4.5 | 9.0 | 1.8 |
| 17 | SV1580SC | 1 | 2.5 | 1.5 | 2.5 | 4 | 16-18 | 3.75 | 3.5 | 8.8 | 1.8 |
| 18 | Coastal | 2.5 | 3.25 | 3 | 3 | 3.5 | 16-18 | 3.5 | 4 | 9.2 | 1.8 |
| 19 | CSAWF15-1012 | 2.25 | 2.75 | 3.25 | 4.25 | 3.5 | 16-18 | 3.75 | 3.75 | 9.0 | 1.8 |
| 20 | Euphoria | 2.5 | 3 | 3.25 | 3 | 4 | 14-16 | 3.5 | 3.25 | 8.3 | 1.7 |
| 21 | Nirvana | 2.75 | 2 | 2.75 | 2.75 | 4 | 16-18 | 4 | 3.25 | 8.5 | 1.7 |
| 22 | AP 426 | 2 | 4 | 3 | 4.75 | 4 | 16 | 4 | 4 | 8.9 | 1.8 |
| 23 | Everglades | 2.25 | 2.5 | 2.75 | 3.5 | 4 | 16 | 4 | 2.5 | 8.1 | 1.6 |
| 24 | Yellowstone | 2 | 3 | 3 | 4 | 4.5 | 16-18 | 3.25 | 3.5 | 8.6 | 1.7 |
| 25 | Takeoff | 2 | 3.25 | 3.5 | 3.5 | 4 | 16-18 | 4 | 4 | 9.2 | 1.8 |
| 26 | Freedom MXR | 2.25 | 3 | 2.75 | 3.5 | 4 | 18 | 4 | 4 | 8.6 | 1.7 |
| 27 | Resolve | 2 | 3.5 | 3.5 | 3 | 4 | 16-18 | 4 | 4 | 8.9 | 1.8 |
| 28 | Kickoff | 3 | 4 | 4 | 4.5 | 4 | 16-18 | 4 | 4 | 8.9 | 1.8 |
| 29 | 274A | 2.25 | 3 | 2.5 | 3.5 | 2.5 | 16-18 | 3 | 3.5 | 8.9 | 1.8 |
| 30 | Anthem | 2.5 | 3 | 3 | 4 | 3.5 | 16-18 | 4 | 3.75 | 8.4 | 1.7 |
| 31 | Caliber | 2 | 3.5 | 3.25 | 2.75 | 3.5 | 16-18 | 3.5 | 4 | 8.5 | 1.7 |
| 32 | American Dream | 2.75 | 3.5 | 3.75 | 2.5 | 4.5 | 16 | 3.25 | 2.75 | 7.8 | 1.6 |

**Rating Scale for Table 3 \*All scores are reported as the average of 5 ears from each variety**

|  |  |  |  |
| --- | --- | --- | --- |
| **Rating Scale** | **1** | **3** | **5** |
| **Husk Cover (at tip)** | Exposed | 2 fingers of cover | 4 fingers of cover |
| **Flags** | None | Noticeable/attractive | Many, long, attractive |
| **Overall Husk** | Poor | Good | Outstanding |
| **Shank** | Short | Average | Long |
| **Tip Fill** | 2 in. blank | 1 in. blank | Complete |
| **Rows** | number of rows around entire cob, rounded to the nearest whole number | |  |
| **Rowing** | Scrambled | Mainly straight | All straight |
| **Color** | Dull/flat | Average | Bright/attractive |
| **Length** | measured from tip to base of shank with husk removed | | |
| **Diameter** | measured at center of cob with husk removed | |  |

**Table 4.** SH2 Ear Evaluation. \*All data is reported as the average rating of 5 ears from each variety

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Variety #** | **Variety Name** | **Tenderness** | **Sweetness** | **Flavor** | **Harvest Brix Reading** |
| 1 | Seminole Sweet XR | 3.25 | 3.5 | 3.25 |  |
| 2 | Raquel | 3 | 2 | 2.5 |  |
| 3 | Rosie | 3.5 | 3.5 | 4 |  |
| 4 | Kate | 3.5 | 4 | 4.25 |  |
| 5 | HMX603 | 2.5 | 2 | 2.5 |  |
| 6 | HMX605 | 3 | 3 | 3 |  |
| 7 | Cumberland | 3.75 | 3.25 | 2.75 |  |
| 8 | BSS1075 | 1 | 2.5 | 1 |  |
| 9 | BSS8021 | 2 | 2 | 2.75 |  |
| 10 | WSS8072 | 1.75 | 2 | 1.5 |  |
| 11 | EX08767143 | 2.25 | 3 | 2.5 |  |
| 12 | Affection | 3 | 2.75 | 2.25 |  |
| 13 | SVSA6954 | 2 | 3.75 | 3 |  |
| 14 | SVSA2234 | 3.25 | 3.25 | 3 |  |
| 15 | SC1336 | 3 | 2.75 | 3 |  |
| 16 | Jubilation | 1.75 | 2 | 2.25 |  |
| 17 | SV1580SC | 1.5 | 3.25 | 2 |  |
| 18 | Coastal | 3.5 | 3 | 3.25 |  |
| 19 | CSAWF15-1012 | 3.25 | 3 | 2.25 |  |
| 20 | Euphoria | 4 | 4 | 3.75 |  |
| 21 | Nirvana | 4 | 4.5 | 4 |  |
| 22 | AP 426 | 3 | 3 | 2.75 |  |
| 23 | Everglades | 2 | 1.75 | 2.5 |  |
| 24 | Yellowstone | 2.5 | 3 | 2.5 |  |
| 25 | Takeoff | 2.5 | 3 | 3.5 |  |
| 26 | Freedom MXR | 4 | 2 | 2.5 |  |
| 27 | Resolve | 4 | 3 | 3 |  |
| 28 | Kickoff | 3 | 4 | 4 |  |
| 29 | 274A | 3.75 | 4 | 4 |  |
| 30 | Anthem | 3 | 3 | 3 |  |
| 31 | Caliber | 3 | 3 | 3 |  |
| 32 | American Dream | 2.75 | 3.5 | 3.25 |  |

**Rating Scale for Table 4**

|  |  |  |  |
| --- | --- | --- | --- |
| **Rating Scale** | **1** | **3** | **5** |
| **Sweetness** | Starchy/bland | Average | Very sweet/sugary |
| **Tenderness** | Tough | Average | Very Tender |
| **Flavor** | Poor | Good | Outstanding |
| **BRIX (sugar content)** | Refractometer readings at noted interval post-harvest | | |

**\*All scores are reported as the average of 5 ears from each variety.**

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