# 2002 University of Delaware Processing Sweet Corn Variety Trial

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**Purpose:** To evaluate new standard and sugar enhanced processing sweet corn varieties for yield and quality factors under Delaware growing conditions. Standard and sugar enhanced varieties were separated from the supersweet varieties. Each group is reported independently.

**Locations:** Field 25

**Cultural Practices:** The plots were planted in 30-inch rows with 9 inch spacing between seeds in the row. The plots were 3 row plots, 75 feet in length. The middle row of the plots was the record row. The plots were designed using the randomized complete block design with three replications. The trial received overhead sprinkler irrigation at 1-1.5 inches of water per week.

The field was fertilized according to soil test. On April 24, 2002, the rows for the plots were marked with a Kinze planter. A 10-34-0 starter fertilizer at the rate of 18 lbs. of nitrogen was used in the planter with Force 3G at 5.5 lbs./A when the rows were marked. The plots were hand-planted on April 24, 2002 using a jab planter. A pre-emergence herbicide of Bicep II Magnum at 1.8 quarts/A was applied on April 26, 2002. The plots were sidedressed on June 12 with 30% UAN at the rate of 157 lbs.N/A. Warrior was applied at 3.5 oz./A on 6/27/02, 7/1/02, 7/5/02 and 7/10/02 for insect control.

**Harvest:**
A thirty-foot harvest section was hand harvested for yield. The ears were counted and weighed. The corn was cut using a commercial cutter and percent moisture was taken. Our thanks to S.E.W Friel for the use of their cutter and microwave during the harvest of these trials.

**Results & Discussion:**
Tables 1 presents the yield, recovery, ear data and plant data for both trials. Varieties are ranked according to the harvest weight (tons/A). Harvest dates, days after planting and percent moisture for three replications are included on Table 2. Tasseling and silking data for the trial is found on Table 3.

The 2002 growing season began very cool at the time of planting. There were definite differences in initial vigor, with EX 5206 the first to emerge. GH 2041 and EX 4110 had good vigor and would be the first to mature of the 13 varieties. GH 2385 and GH 2547 were affected by the cool conditions early in the growing season.

The highest yielding variety in the standard and sugar enhanced trial was EX 4110 at 9.64 tons/A. The top yielding variety was not significantly different in yield to the top eight varieties.

We hope that you find this information informative and useful. If you have questions, please feel free to contact us.

**ACKNOWLEDGEMENTS**

The authors wish to thank the following people and companies for their support, interest and guidance in the 2002 Processing Sweet Corn Variety Trials.

Participating Seed Companies

| | |
|---|---|
| Rogers Brand-Syngenta Seed Co. | Gilroy, California |
| Harris Moran | Modesto, California |
| Seminis | Kalamazoo, Michigan |
| Crookham | Caldwell, Indiana |
| PureLine | Moscow, Idaho |

We wish to thank Victor Green, Ward Harris, Brian Hearn, and the staff at the University of Delaware Research & Education Center, Georgetown for their assistance in planting, spraying, and irrigating of the trial.

Thanks to S.E.W. Friel for the use of their cutter and microwave during the harvest of these trials.

The plots could not have been harvested without the assistance of the following university students: Rusty Tressler, John Eisenbrey, Derrick Dickerson, and Brandon Hazzard.

Table 1. Yield, Maturity, Ear Characteristics, and Plant Characteristics for the Yellow Standard and Sugar Enhanced Varieties in the 2002 University of Delaware Processing Sweet Corn Variety Trial.

| Variety | Days To Harvest | Harvest Weight (tons/A) | % Moisture[1] | Wt. Of Husked Ears (lbs/A) | Cut Corn (lbs/A) | % Recovery[2] | # Ears Harvest Per Plot | Ear Data[3] | | | | Plant Data[3] | | | Seed Source |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Kernel Depth Rating[4] | Ear Length (inches)[5] | # Rows | Ear Diameter (inches) | Plant Height (feet) | Height Ear to Ground (inches) | # Plants/ Harvest Section | |
| EX 4110 | 83 | 9.64 | 77.28 | 12294 | 6776 | 35 | 40.7 | 2.5 | 8.15 | 16.4 | 1.66 | 6.47 | 20 | 34 | Seminis |
| Climax | 87 | 9.61 | 75.71 | 10430 | 4937 | 26 | 31.0 | 1.6 | 8.28 | 16.4 | 1.86 | 6.61 | 22 | 22 | Seminis |
| PLS 538 | 91 | 9.57 | 71.13 | 12390 | 7018 | 37 | 34.3 | 2.4 | 8.83 | 19.1 | 1.93 | 7.25 | 28 | 21 | Pure Line |
| Eliminator | 90 | 9.28 | 72.17 | 12681 | 6098 | 33 | 37.3 | 2.0 | 8.50 | 17.7 | 1.82 | 7.03 | 22 | 30 | Crookham |
| Bonus | 91 | 9.12 | 73.94 | 12448 | 5687 | 31 | 37.0 | 2.1 | 7.70 | 19.8 | 1.8 | 6.94 | 22 | 27 | Syngenta |
| Intrique | 92 | 8.12 | 69.28 | 10648 | 5518 | 34 | 29.0 | 2.0 | 7.90 | 18.3 | 1.85 | 5.58 | 16 | 21 | Crookham |
| GH-2041 | 83 | 8.08 | 75.36 | 9801 | 4792 | 30 | 38.7 | 3.0 | 8.21 | 17.3 | 1.72 | 5.75 | 22 | 18 | Syngenta |
| Dynamo | 87 | 8.08 | 74.28 | 11096 | 5566 | 34 | 31.7 | 2.6 | 8.60 | 16.1 | 1.73 | 5.78 | 22 | 30 | Harris Moran |
| EX 5206 | 87 | 7.47 | 73.83 | 9995 | 6921 | 48 | 27.7 | 2.2 | 8.22 | 20.0 | 1.77 | 7.33 | 27 | 24 | Seminis |
| GH-2385 | 92 | 6.49 | 73.76 | 8881 | 4404 | 34 | 24.0 | 2.3 | 7.80 | 18.2 | 1.82 | 6.72 | 22 | 13 | Syngenta |
| GH-9595 | 92 | 6.32 | 74.98 | 8059 | 4404 | 35 | 27.3 | 1.4 | 6.88 | 21.8 | 1.78 | 5.89 | 20 | 20 | Syngenta |
| GH-1829 | 87 | 6.16 | 73.17 | 7962 | 3606 | 29 | 21.7 | 1.4 | 9.10 | 16.5 | 1.63 | 5.75 | 16 | 19 | Syngenta |
| GH-2547 | 91 | 5.61 | 73.03 | 6219 | 2517 | 23 | 22.3 | 1.9 | 8.23 | 18.8 | 1.72 | 8.50 | 30 | 14 | Syngenta |
| LSD $_{0.05}$ | | 1.72 | 1.57 | 2208.1 | 1956 | 14 | 9.48 | | | | | | | 4 | |

[1] - Microwave Method
[2] - Relative To Harvest Weight – Cut Corn Divided By Harvest Weight
[3] - Average of 3 Replications
[4] - 1 = Shallow; 3 = Deep
[5] - Range from 3 ears/rep; 3 replications

Table 2. Harvest Dates, Days After Planting, and Percent Moisture for the 2002 Standard & Sugar Enhanced Processing Sweet Corn Variety Trial.

| | | *DAP* | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **No.** | **Variety** | ***Date*** | **7/10** | **7/11** | **7/12** | **7/13** | **7/14** | **7/15** | **7/16** | **7/17** | **7/18** | **7/19** | **7/20** | **7/21** | **7/22** | **7/23** | **7/24** |
| | | **Sug. Mat.** | **% Moisture** | | | | | | | | | | | | | | |
| 1 | EX 5206 | 80 | | | | | | 81.53 | | | | **73.83*** | | | | | |
| 2 | Bonus | 83 | | | | | | | | | | | | | 74.12 | **73.94** | |
| 3 | Intrique | 84 | | | | | | | | | | | | | | | **69.28** |
| 4 | Climax | 80 | | | | | | | | | | **75.71** | | | | | |
| 5 | GH-2041 | 74 | 79.88 | | | | | **75.36** | | | | | | | | | |
| 6 | PLS 538 | | | | | | | | | | | | | | 74.51 | **71.13** | |
| 7 | GH-2385 | 81 | | | | | | | | | | | | | | | **73.76** |
| 8 | EX 4110 | 75 | 83.42 | | | | | **77.28** | | | | | | | | | |
| 9 | GH-1829 | 80 | | | | | | | | | | **73.17** | | | | | |
| 10 | Dynamo | 78 | | | | | | 78.52 | | | | **74.28** | | | | | |
| 11 | GH-2547 | 85 | | | | | | | | | | | | | 74.08 | **73.03** | |
| 12 | Eliminator | 81 | | | | | | | | | | | | | **72.17** | | |
| 13 | GH-9595 | 83 | | | | | | | | | | | | | 76.26 | | **74.98** |

***Bold indicates harvest date.

| *Table 3. 2002 University of Delaware Processing Sweet Corn Variety Trial Tassling and Silking Data* | | | | | |
|---|---|---|---|---|---|
| Planted: April 24, 2002 | | | | | |
| Date: | | 24-Jun | 26-Jun | 2-Jul | 3-Jul |
| Trt. | Variety | | | | |
| 1 | EX 5206 | 10% Exposed | 1-100% Expanded, 2-Expanded | 1-100% Silk, 2-100% Silk | 1-100% Silk, 2-100 % Silk |
| | | | 3-40% Yellow Silk | 3-100% Silk | 3-100% Silk |
| 2 | Bonus | | 1-20 % Exposed, 80% Whorl | 1-70% Silk, 2-30% Silk | 1-70% Silk, 2- 40% Silk |
| | | | 2-30% Expanded, 3-70% Exposed | 3-20% Silk | 3-70 % Silk |
| 3 | Intrique | 5% Exposed | 1-5% Expanded, Red Silk | 1-70% Silk,2-80% Silk | 1-70% Silk, 2- 90% Silk |
| | | | 2-100% Expanded, Red Silk, 3-Exposed | 3-90% Silk | 3-80 % Silk |
| 4 | Climax | | 1-90% Exposed, 2-40 % Expanded | 1- 100% Red, 2-90% Red | 1-100% Red, 2-90% Red |
| | | | 3-60% Emerging | 3- 100% Red | 3-100% Red |
| 5 | GH-2041 | 50% Expanded | 100% Yellow Silk, | 1-30% Br, 2-30% Br | 1-30% Br, 2- 30% Br |
| | | | 2&3-40%start to Br, Ears Filling | 3- 30% Br | 3-30% Br |
| 6 | PLS 538 | 5% in Whorl | 1-50% Exposed, 50% Whorl | 1-90% Silk, 2- 90% Silk | 1-90% Silk, 2- 90% Silk |
| | | | 2-100% Expanded,3-20% Yellow Silk | 3- 50% Silk | 3-50 % Silk |
| 7 | GH-2385 | 10% Exposed | 1-40% Expanded, 2-20% Exposed | 90% Expanded, 1-60% Silk | 1-100% Silk, 2- 100% Silk |
| | | | 3-60% Expanded,10% Yellow, | 2- 10% Silk, 3- 40% Silk | 3-70 % Silk |
| 8 | EX 4110 | 50% Expanded | 1-60% Yellow, 2-100% Expanded | 1-10% Br, 2-10% Br | 1-100% Silk, 2- 80% Br |
| | | | 3-100% Yellow Silk, Some Double Ears | 3-30% Br | 3-70 % Yellow |
| 9 | GH-1829 | Exposed not Expanded | 1-90% Expanded, No Silk | 1-90% Silk, 2-90% Silk | 2-20% Br, 80 % Yellow |
| | | | 2-40% Yellow, 3-100% Expand | 3-60% Silk | 3-30 % Br |
| 10 | Dynamo | Exposed not Expanded | 1-100% Expanded, 2-20%Yellow | 1-100% Silk, 2-100% Silk | 1-100% Br, 2-100% Br |
| | | | 3-100% Yellow Silk | 3-100% Silk | 3-100% Br |
| 11 | GH-2547 | | 1-10% Exposed | 1-100% Silk, 2-100% Silk | 1-30% Br, 2-80% Silk |
| | | | 2-50% Expanded,3-50% Emerged | 3-100% Silk | 3-100% Silk |
| 12 | Eliminator | Just Emerging | 1-75% Exposed, 2-50% Expanded | 1-80% Silk, 2-50% Silk | 100% Expanded |
| | | | 3-50% Expanded, 10% Yellow | 3-70% Silk | 0% Silk |
| 13 | GH-9595 | In Whorl | 1-Just Emerging, 10% Exposed | 100% Expanded | 100% Expanded |
| | | | 2-30% Expanded, 3-70%Expanded, No Silk | 0% Silk | 0% Silk |

1=Rep 1, 2=Rep 2, 3=Rep 3, Br= brown

***Table 3 (continued). 2002 Univeristy of Delaware Processing Sweet Corn Variety Trial Tassling and Silking Data***

| Planted: April 24, 2002 | | | | | | |
|---|---|---|---|---|---|---|
| Date: | | 8-Jul | 10-Jul | 12-Jul | 15-Jul | 17-Jul |
| Trt. | Variety | | | | | |
| 1 | EX 5206 | 1- 100% Br, Ears Filling | 1-100% Br | 1-100% Br | 1-100% Br | 1-100% Br |
| | | 2-80% Br, 3- 80% Br | 2-100% Br, 3-90% Br | 2-100% Br, 3-100% Br | 2-100% Br, 3-100% Br | 2-100% Br, 3-100% Br |
| 2 | Bonus | 1-70% Br, 2-40% Br | 1-70% Br, 2- 90% Br | 1-80% Br, 2- 90% Br | 1-90% Br, 2- 100% Br | 1-90% Br, 2- 100% Br |
| | | 3-30% Br | 3- 80% Br | 3- 90% Br | 3- 90% Br | 3- 90% Br |
| 3 | Intrique | 1-100% Red, 2-90% Red | 1- 100 % Br, 2-100% Br | 1- 100 % Br, 2-100% Br | 1- 100 % Br, 2-100% Br | 1- 100 % Br, 2-100% Br |
| | | 3-60% Red/ 40% Br | 3-80% Br | 3-100% Br | 3-100% Br | 3-100% Br |
| 4 | Climax | 1-100% Red, 2-100 Red | 1- 100% Br, 2- 40% Br | 1- 100% Br, 2- 100% Br | 1- 100% Br, 2- 100% Br | 1- 100% Br, 2- 100% Br |
| | | 2-100% Red, Filling | 3-50% Br | 3-100% Br | 3-100% Br | 3-100% Br |
| 5 | GH-2041 | 1- 90% Br, 2- 100% Br | 1- 100% Br, 2- 100% Br | 1- 100% Br, 2- 100% Br | 1- 100% Br, 2- 100% Br | 1- 100% Br, 2- 100% Br |
| | | 3- 100% Br | 3- 100% Br, Smut | 3- 100% Br, Smut | 3- 100% Br, Smut | 3- 100% Br, Smut |
| 6 | PLS 538 | 1- 90% Br, 2- 100% Br | 1- 100% Br, 2- Smut | 1- 100% Br, 2- Smut | 1- 100% Br, 2- Smut | 1- 100% Br, 2- Smut |
| | | 3- 100% Br | 3- 100 Br | 3- 100 Br | 3- 100 Br | 3- 100 Br |
| 7 | GH-2385 | 1- 50% Br, 2- 70% Br | 1- 80% Br, 2- 70% Br | 1- 80% Br, 2- 80% Br | 1- 80% Br, 2- 90% Br | 1- 80% Br, 2- 90% Br |
| | | 3- 20% Br | 3- 60% Br | 3- 80% Br | 3- 80% Br | 3- 80% Br |
| 8 | EX 4110 | 1- 100% Br, 2-100% Br | 1- 100% Br, 2-100% Br | 1- 100% Br, 2-100% Br | 1- 100% Br, 2-100% Br | 1- 100% Br, 2-100% Br |
| | | 3- 100% Br | 3- 100% Br | 3- 100% Br | 3- 100% Br | 3- 100% Br |
| 9 | GH-1829 | 1-90% Br, 2- 60% Br | 1- 100% Br/ Smut | 1- 100% Br/ Smut | 1- 100% Br/ Smut | 1- 100% Br/ Smut |
| | | 3-70% Br | 2-90% Br, 3-90% Br | 2-90% Br, 3-90% Br | 2-100% Br, 3-100% Br | 2-100% Br, 3-100% Br |
| 10 | Dynamo | 1-100% Br, 2-100% Br | 1-100% Br, 2-100% Br | 1-100% Br, 2-100% Br | 1-100% Br, 2-100% Br | 1-100% Br, 2-100% Br |
| | | 3-100% Br | 3-100% Br/ Smut | 3-100% Br/ Smut | 3-100% Br/ Smut | 3-100% Br/ Smut |
| 11 | GH-2547 | 1- 10% Br, 2- 100 % Silk | 1- 50% Br, 2-20% Br | 1- 60% Br, 2-60% Br | 1- 90% Br, 2-90% Br | 1- 90% Br, 2-90% Br |
| | | 3- 20% Br | 3- 90% Br | 3- 90% Br | 3- 100% Br | 3- 100% Br |
| 12 | Eliminator | 1- 100% Br, 2- 70% Br | 1- 100% Br, 2- 100 % Br | 1- 100% Br, 2- 100 % Br | 1- 100% Br, 2- 100 % Br | 1- 100% Br, 2- 100 % Br |
| | | 3- 90% Br | 3- 90% Br | 3- 90% Br | 3- 90% Br | 3- 90% Br |
| 13 | GH-9595 | 1- 80% Silk, 2- 10% Br | 1- 90 % Silk, 2- 30% Br | 1- 60 % Br, 2- 70% Br | 1- 80% Br, 2- 70% Br | 1- 80% Br, 2- 70% Br |
| | | 3- 10 % Br | 3- 50% Br | 3- 70% Br | 3- 100% Br | 3- 100% Br |

1=Rep 1, 2=Rep 2, 3=Rep 3, Br= brown

Table 4. 2002 University of Delaware Processing Sweet Corn Entries, Seed Source and Photos.

**Date Planted: 4/24/02**

| Variety | July 11, 2002 | Harvested | Source |
|---|---|---|---|
| EX 5206 |  |  | Seminis |
| Bonus |  |  | Syngenta |
| Intrique |  |  | Crookham |
| Climax |  |  | Seminis |
| GH-2041 |  |  | Syngenta |

| | | | |
|---|---|---|---|
| PLS 538 |  |  | Pure Line |
| GH-2385 |  |  | Syngenta |
| EX 4110 |  |  | Seminis |
| GH-1829 |  |  | Syngenta |
| Dynamo |  |  | Harris Moran |
| GH-2547 |  |  | Syngenta |

| | | | |
|---|---|---|---|
| Eliminator |  |  | Crookham |
| GH-9595 |  |  | Syngenta |