

Trial Report: Slicing Cucumber Variety Evaluation Fall 2014

Conducted by:

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Methods

Location: Tifton, GA

Planting Date: 15 Aug 2014. Transplants were approximately 11 days old.

Plant Spacing: 6' centers plastic mulch, 8" in-row spacing (10,890 per acre population)

Plot size: 16 plants per plot with 4 foot alleys between adjacent plots

Plastic mulch: White, TIF plastic

Fumigation: Pic-Chlor 60 applied in July when plastic was laid

Fertility: 1000 lbs/acre 10-10-10 preplant and 7-0-7 weekly at 12 lbs N/acre per week starting 1 week after planting. Total for the season was 172 lbs N/acre.

Herbicide: Between rows- Dual II Magnum + Curbit (Sonalan) + Valor + Round Up

Pest Control: Weekly fungicide sprays according to UGA recommendations (+ copper) Venom and Coragen applied during growth.

Bees: 3 honeybee hives located approximately 500 feet from planting.

Pollenizer: Poinsett 76 utilized between plots (2 per plot) plant as a pollinizer.

Stand Count conducted: 13 Oct 2014

Harvest dates: 10, 12, 15, 18, 22, 24 Sept. 2014 and 2 Oct 2014. **Fruit picked on the 24 Sept. harvest were poorly shaped. All fruit were removed on 26 Sept. and plants were harvested again on 2 Oct.**

Nearly all culls appeared curved/misshapen regardless of variety.

Fruit graded into superselect, select, and cull counted and weighed. Length to width ratio, color, and uniformity were recorded for the second and third harvests and averaged for each variety.

Shape was recorded for the second, third, fifth and sixth harvest and averaged for each variety.

Downy Mildew was rated on 16 Oct. 2014. Plants had few if any symptoms during harvest, but after the last harvest fungicide programs were terminated and disease symptoms were quickly observed and documented.

Climate conditions: Hot and dry Appendix A.

| Table 1. Entries included in the Spring 2014 trial. | | | |
|---|------------------|------------|----------|
| US Agriseeds | Emerald Seed Co. | Seminis | Syngenta |
| USACX10429 | Laser | Impact | Diomede |
| USACX10428 | | Darlington | |
| Superior | | Dasher II | |
| Cobra | | SV8592CS | |
| | | SV4220CS | |
| | | SV4719CS | |
| | | SV3462CS | |



Plots from Fall Cucumber Trial

Results

There were four varieties that were closely grouped for highest total yield, though statistically these were no significant differences in total yield among the top 8 yielding varieties. It should be noted if the trial had been terminated after the 24 Sept. Harvest the results would have been slightly different. A significant (approx. 1/3) portion of total yield occurred on the last harvest data 2 Oct. 2014. As noted in the methods section the harvest on 24 Sept. was low with many fruit being misshapen and culled. After all misshapen (immature and mature) fruit were pulled on 26 Sept. new fruit were set, resulting in an exceptionally large harvest of plots on 2 Oct. Please see Figure 1 for the proportion of total fruit which were harvested on 2 Oct (40 Days after Transplant [DAT]). Nonetheless, while total yields were much greater in the fall relative yields amongst varieties were similar to those in the spring trial. There were also differences in Downy Mildew symptoms as illustrated in Table 4.

Table 2. Yields measurements for cucumber grown in Tifton, Fall 2014.

| Variety | Total Marketable Yield ^{z,y} | | Super Select | | Select | | Cull | |
|------------|---------------------------------------|-----|--------------|-----|--------|-----|------|-----|
| | Boxes/acre | | | | | | (%) | |
| SV8592CS | 2410 | a | 920 | abc | 1490 | a | 27.8 | a |
| SV3462CS | 2400 | a | 930 | abc | 1470 | a | 22.2 | abc |
| Dasher II | 2390 | a | 980 | ab | 1410 | ab | 25.8 | abc |
| USACX10428 | 2360 | a | 1040 | a | 1320 | abc | 18.4 | bc |
| SV4220CS | 2320 | ab | 1030 | a | 1290 | abc | 22.3 | abc |
| SV4719CS | 2180 | abc | 820 | a-d | 1370 | abc | 25.1 | abc |
| Impact | 2080 | abc | 860 | a-d | 1220 | abc | 22.9 | abc |
| Cobra | 2070 | abc | 1000 | a | 1070 | bc | 18.0 | c |
| Superior | 1860 | bc | 830 | a-d | 1030 | c | 22.1 | abc |
| USACX10429 | 1790 | c | 690 | cd | 1100 | bc | 25.5 | abc |
| Diomedea | 1780 | c | 730 | bcd | 1050 | bc | 28.4 | a |
| Darlington | 1740 | c | 660 | d | 1070 | bc | 19.6 | bc |
| Laser | 1710 | c | 650 | d | 1060 | bc | 26.3 | ab |

^zDue to rounding and accounting for significant digits, total yield may not be the exact summation of Super Select and Select yields.

^yYield calculated in 24-count boxes per acre.

^xShape calculated on a 1-9 scale with 1 = perfectly straight and ideal, 5 = market average, 9 = curved, completely unmarketable. Shape based on entire harvest.

Table 3. Quality measurements for cucumber grown in Tifton, Fall 2014.

| | Shape ^z | | Uniformity ^y | | Length:Width ^x | | Color ^w | |
|------------|--------------------|-----|-------------------------|----|---------------------------|---|--------------------|---|
| Variety | (1-9 scale) | | | | | | | |
| Superior | 4.2 | a | 3.6 | a | 4.0 | a | 4.2 | a |
| Impact | 4.3 | a | 4.0 | ab | 4.1 | a | 3.8 | a |
| Cobra | 4.4 | a | 4.0 | ab | 3.8 | a | 3.8 | a |
| SV3462CS | 4.6 | ab | 4.0 | ab | 3.6 | a | 4.3 | a |
| USACX10428 | 4.6 | ab | 3.6 | a | 3.8 | a | 4.8 | a |
| SV4220CS | 4.8 | ab | 4.0 | ab | 3.7 | a | 4.2 | a |
| Diomede | 4.9 | bc | 4.0 | ab | 4.1 | a | 4.8 | a |
| SV8592CS | 5.1 | abc | 5.2 | b | 3.8 | a | 5.0 | a |
| SV4719CS | 5.2 | abc | 4.9 | ab | 3.7 | a | 4.0 | a |
| Dasher II | 5.4 | bc | 4.9 | ab | 3.7 | a | 4.9 | a |
| Laser | 5.4 | bc | 4.8 | ab | 4.2 | a | 4.5 | a |
| USACX10429 | 5.5 | bc | 4.4 | ab | 3.8 | a | 4.1 | a |
| Darlington | 6.0 | c | 4.4 | ab | 4.0 | a | 4.8 | a |

^zShape calculated on a 1-9 scale with 1 = perfectly straight and ideal, 5 = market average, 9 = curved, completely unmarketable. Shape based on entire harvest.

^yUniformity on a 1-9 scale with 1=highly uniform, 5 = average, 9= high variability

^xLength to width ratio of fruit

^wColor on a 1-9 scale with 1= deep dark green, 5 = average medium green, 9 = pale green, poor color for market

Table 4. Downy mildew ratings for cucumber grown in Tifton, Fall 2014.

| Variety | Downy Mildew ^z | |
|------------|---------------------------|------|
| | (0-100 scale) | |
| SV4220CS | 31 | a |
| SV8592CS | 33 | a |
| SV4719CS | 34 | ab |
| SV3462CS | 35 | abc |
| Cobra | 38 | abcd |
| Impact | 41 | bcde |
| USACX10428 | 43 | cde |
| USACX10429 | 45 | de |
| Dasher II | 46 | de |
| Laser | 46 | de |
| Darlington | 46 | de |
| Superior | 49 | e |
| Diomede | 49 | e |

^zDowny Mildew Rated on a 1-100 scale with 0 = no evidence of Downy Mildew and 100 = complete coverage of all leaves with symptoms of Downy Mildew

Fig 1. Cucumber Total Yield Proportion by Harvest

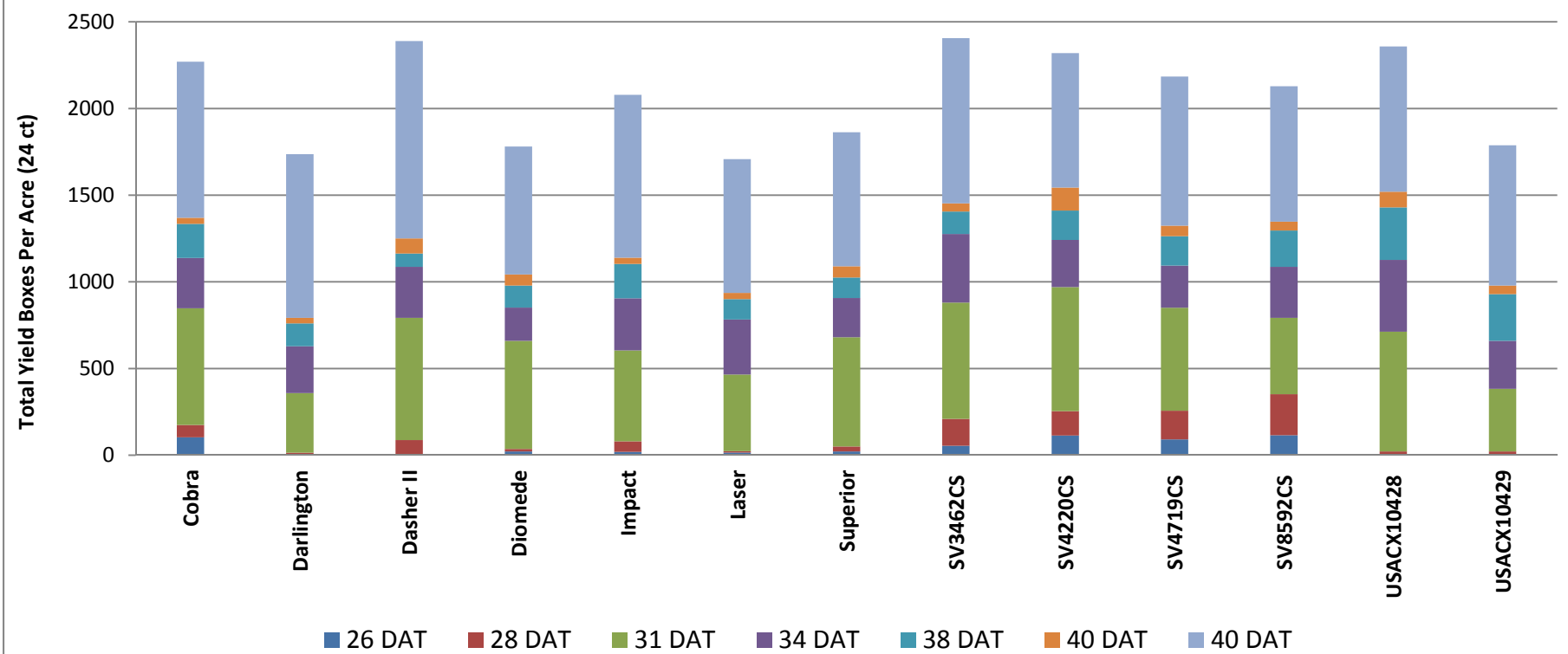
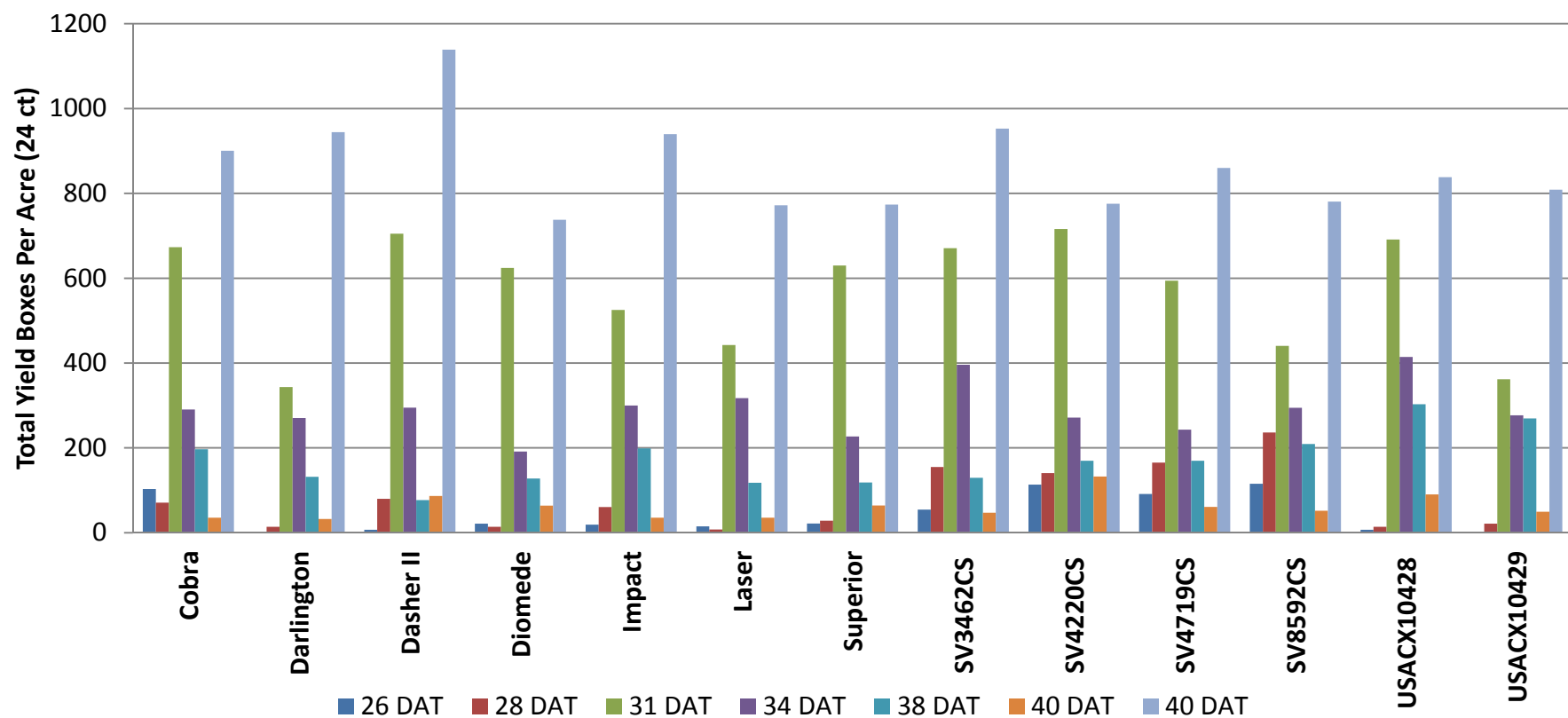


Fig. 2. Cucumber Total Yield by Harvest



Cucumber Varieties Tested



Cobra



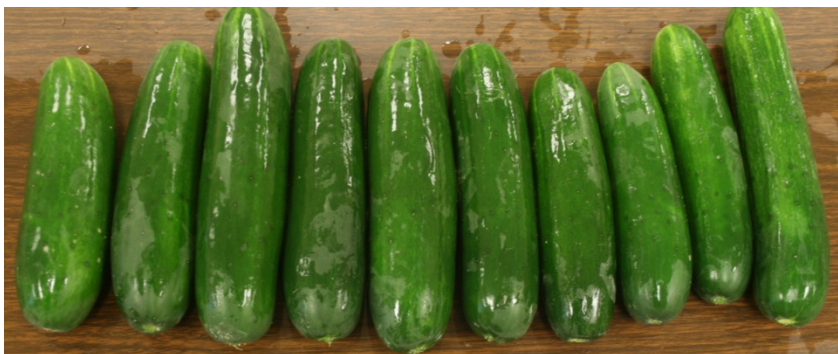
Darlington



Dasher II



Diomedede



Impact



Laser



Superior



SV3462CS



SV4220CS



SV4719CS



SV8592CS



USACX10428



Appendix A: Weather conditions for Tifton, GA research site.

| Date | Max Temp. | Min. Temp. | Rainfall (in.) |
|--------------|-----------|------------|----------------|
| Aug 15, 2014 | 93.2 | 69.4 | 0.00 |
| Aug 16, 2014 | 93.7 | 69.1 | 0.00 |
| Aug 17, 2014 | 94.8 | 72.3 | 0.00 |
| Aug 18, 2014 | 91.2 | 71.1 | 0.23 |
| Aug 19, 2014 | 89.8 | 71.6 | 0.12 |
| Aug 20, 2014 | 92.7 | 70.2 | 0.16 |
| Aug 21, 2014 | 95.7 | 70.2 | 0.00 |
| Aug 22, 2014 | 96.1 | 69.6 | 0.00 |
| Aug 23, 2014 | 97.5 | 74.5 | 0.00 |
| Aug 24, 2014 | 92.1 | 73.2 | 0.00 |
| Aug 25, 2014 | 87.8 | 70.2 | 0.00 |
| Aug 26, 2014 | 89.6 | 68.4 | 0.00 |
| Aug 27, 2014 | 90.1 | 65.1 | 0.00 |
| Aug 28, 2014 | 92.8 | 66.2 | 0.00 |
| Aug 29, 2014 | 95.2 | 67.8 | 0.00 |
| Aug 30, 2014 | 93.0 | 74.5 | 0.28 |
| Aug 31, 2014 | 93.6 | 72.0 | 0.19 |
| Sep 1, 2014 | 94.5 | 72.0 | 0.00 |
| Sep 2, 2014 | 94.3 | 72.1 | 0.83 |
| Sep 3, 2014 | 90.9 | 69.8 | 1.32 |
| Sep 4, 2014 | 91.4 | 70.2 | 0.01 |
| Sep 5, 2014 | 90.9 | 72.3 | 0.00 |
| Sep 6, 2014 | 86.7 | 72.1 | 0.02 |
| Sep 7, 2014 | 89.4 | 69.8 | 1.70 |
| Sep 8, 2014 | 81.9 | 71.6 | 0.01 |
| Sep 9, 2014 | 86.5 | 70.3 | 0.34 |
| Sep 10, 2014 | 89.1 | 70.9 | 0.01 |
| Sep 11, 2014 | 92.3 | 73.4 | 0.00 |
| Sep 12, 2014 | 93.4 | 72.0 | 0.00 |
| Sep 13, 2014 | 91.9 | 72.7 | 0.05 |
| Sep 14, 2014 | 90.5 | 71.2 | 0.20 |
| Sep 15, 2014 | 89.8 | 71.6 | 0.01 |
| Sep 16, 2014 | 86.4 | 71.4 | 0.49 |
| Sep 17, 2014 | 89.2 | 67.5 | 0.01 |
| Sep 18, 2014 | 85.6 | 65.8 | 0.00 |
| Sep 19, 2014 | 83.5 | 68.9 | 0.48 |
| Sep 20, 2014 | 82.4 | 67.3 | 0.00 |
| Sep 21, 2014 | 86.5 | 59.9 | 0.00 |
| Sep 22, 2014 | 87.4 | 63.1 | 0.16 |
| Sep 23, 2014 | 78.3 | 65.5 | 0.01 |
| Sep 24, 2014 | 66.7 | 57.4 | 0.00 |
| Sep 25, 2014 | 72.7 | 60.6 | 0.00 |
| Sep 26, 2014 | 80.4 | 63.3 | 0.01 |
| Sep 27, 2014 | 75.7 | 67.3 | 0.00 |
| Sep 28, 2014 | 77.4 | 69.8 | 0.00 |
| Sep 29, 2014 | 75.0 | 69.3 | 0.29 |
| Sep 30, 2014 | 76.8 | 65.1 | 0.00 |
| Oct 1, 2014 | 83.8 | 61.0 | 0.01 |
| Oct 2, 2014 | 86.2 | 66.4 | 0.00 |