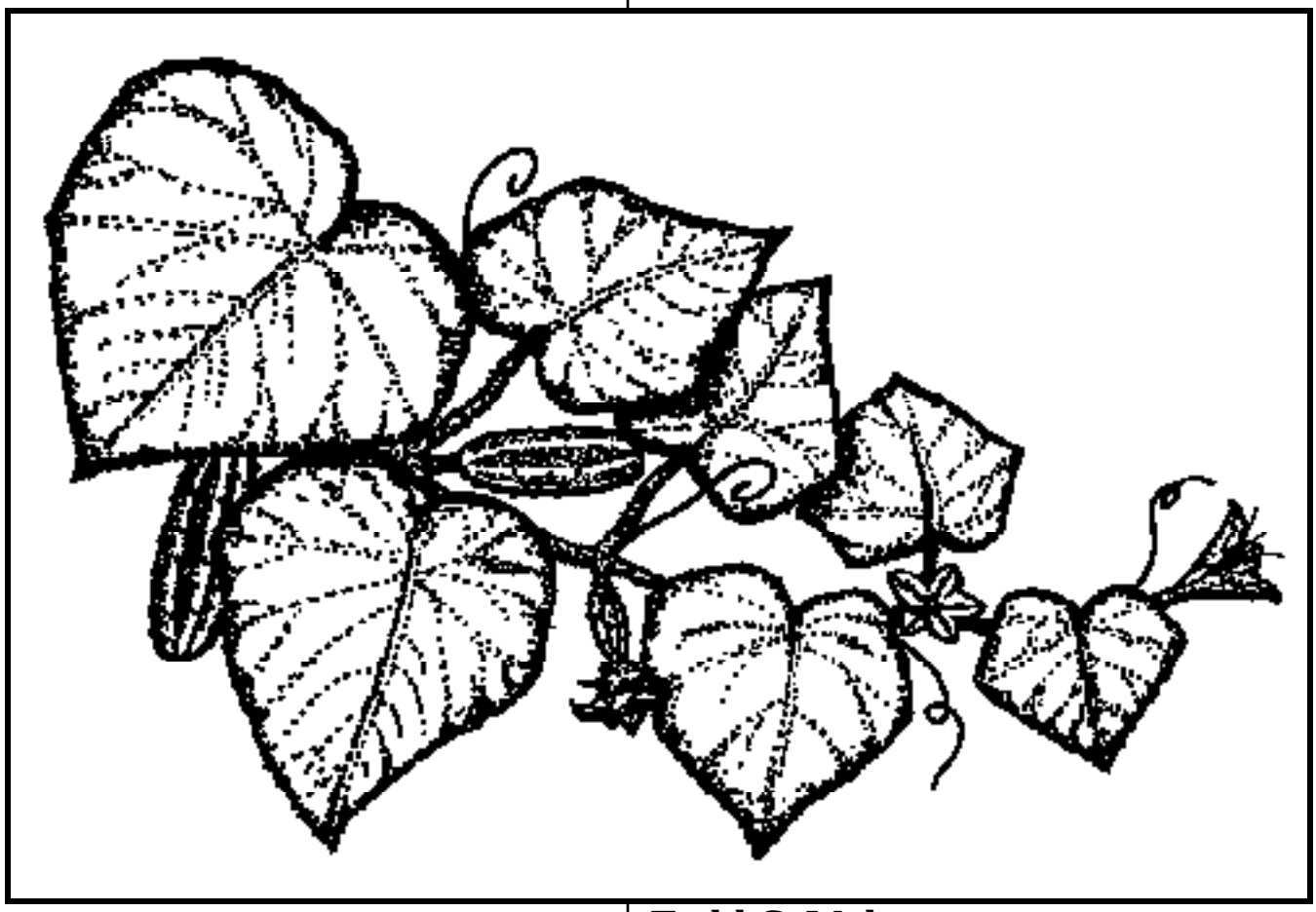
$3.00

# NC State Cucumber Trials Summary 2000



**Todd C. Wehner**
**Professor**

**Tammy L. Ellington**
**Agric. Res. Tech. III**

**Department of Horticultural Science**
**North Carolina State University**
**Raleigh, NC 27695-7609**

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## About This Report

The data contained in this publication are made available to interested persons so that they will be informed as to the nature and scope of our cucumber breeding program. Since the results of the trials are based on one year's data, they should be interpreted cautiously. Genotype x environment interactions make it likely that the performance of any given cultigen (cultivar or breeding line) will be significantly different in other trials. Often, cultigens that perform well for yield, earliness, fruit quality, or disease resistance in one trial will perform significantly worse in other trials.

Other factors, known only to the researchers, may complicate the interpretation of the results, making it difficult for others to interpret differences from one year to the next. For example, the effect of seed lot, pollenizer, harvest labor, irrigation, fertilizer, pollinating insects and weather patterns may cause some test plots in the field to receive better or worse treatment than average. Therefore, we urge caution in interpreting these data. Conclusions drawn by the reader will be more accurate if they are of a general nature. For example, note which cultigens performed in the top third for yield, rather than which one was at the very top.

## Pricing schemes

Value of production figures were obtained by assigning the following prices for the marketable grades:

| Grade | Spring $/cwt | Summer $/cwt |
|---|---|---|
| No.1 (< 1 1/16") | $18.30 | $18.30 |
| No.2 (1 1/16 - 1 1/2") | 9.55 | 9.55 |
| No.3 (1 1/2 - 2") | 6.45 | 6.45 |
| No.4 (> 2") | 0.00 | 0.00 |

The pricing system is the one currently in use in North Carolina (averaged over the spring and summer crops) and is revised annually. The same pricing systems are applied to all production in a particular year even though commercial prices for summer production are usually higher than for spring production.

**Progression of breeding lines through trials:**

| Stage 1 trial | | Stage 2 trial | | Stage 3 trial | | Stage 4 trial |
|---|---|---|---|---|---|---|
| 2 replications | --> | 1 replication | --> | 3 replications | --> | 3 replications |
| 1 harvest | | 6 harvests | | 6 harvests | | 6 harvests |
| | | | | spring season | | summer season |

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The cost of planning these trials, doing the field work, running the data analysis, and summarizing the results for this report was approximately $48,000 for the brinestock, pickling and slicing cucumber trials. Printing and binding charges were approximately $3.00 per report.

Please direct correspondence to:
Todd C. Wehner, Professor
Department of Horticultural Science
North Carolina State University
Raleigh, NC 27695-7609

Phone: 919.515.5363
Fax: 919.515.2505
EMail: todd_wehner@ncsu.edu
Web: http://cuke.hort.ncsu.edu/

# Contents

# Pickling Cucumbers

## Brinestock Evaluation - 2000

Spring (Stage 3) Pickle Trial

Todd C. Wehner and Tammy L. Ellington[z]
Department of Horticultural Science
North Carolina State University

**Introduction**

Cucumbers from the first and third harvests of the stage 3 spring pickling cucumber trial were each placed in one brine tank at Mt. Olive Pickle Co. The tanks were purged with nitrogen to remove excess carbon dioxide from the brine.

**Methods**

The cultigens (cultivars and breeding lines) were evaluated for fruit quality (shape, external color, texture, seedcell size, and lot uniformity), firmness, bloaters, and other defects in October. Quality was evaluated by judges from industry: Phil Denlinger, Sonny Coghill, Lawrence Crocker, Bob Quinn, and Tim Smith (Mt. Olive), Eddie Quill, Jeanine Suggs, and JW Jackson (Dean Foods), Curtiss Cates and Duncan Malloy (Addis Cates Co.), Richard Wojciak and Michael Cain (Sunseeds), Chris Ware and Bill Rankin (Harris Moran), and Darrel Hawley.

Fruit quality was evaluated using a rating system (that approximated letter grades) from 1 to 9, where 9 = A+, 8 = A, 7 = A-, 6 = B+, 5 = B, 4 = B-, 3 = C, 2 = D, 1 = F. Bloaters and defects were measured as percentage of fruits with damage in a sample of 20 grade 3B fruits. Firmness was measured by punching 10 grade 2B fruits with a Magness-Taylor tester (having a 5/16" diameter tip). All cultigens were randomized, replicated and coded to prevent bias and provide a measure of error variance.

**Results**

The cultigens are presented in order by decreasing fruit quality in Table 1, and are ranked for resistance to bloaters and defects in Tables 2 and 3, respectively. Fruit texture and firmness rankings are in Table 4. The average quality ratings assigned by each judge in the test are presented in Table 5, showing how lenient each judge was relative to the others. Due to insufficient replication, the bloater data showed few significant differences among cultigens.

**Summary**

- The cultigens with best fruit quality in brinestock were WI6890Ax6813A, Vlasstar, WI6846Ax6848A, UW 00 78, HMX-8461, Jackson, UW 00 69, UW 00 77, SXQP 1882, Johnston, Vlaspik, and Raleigh.
- The most bloater susceptible cultigens were Akord, Royal, Patton, Napoleon, SRQP-2627, and Cross Country.
- As usual, brinestock firmness (from the punch test) was only partially correlated with texture (subjective rating from the judges), so the two traits are measurements of different aspects of cucumber fruit firmness.
- Judges ranged from Crocker, who was the most liberal in quality ratings to Hawley, who was the most conservative. Analysis of variance indicated significant differences among judges for the way they rated fruit quality. However, interaction of judge with cultigen was non-significant (all judges gave good cultigens high ratings, and bad cultigens low ratings).

[z] Thanks to Mt. Olive Pickle Co., Mt. Olive, N.C. for assistance in brining the cucumbers, and for providing the facilities for evaluating the cultigens tested. Thanks also to the personnel at the Horticultural Crops Research Station, Clinton, N.C. for help in running the field trials.

Table 1. Brinestock evaluation - quality ratings (cultigens are ranked by average quality).[z]

| Rank | Cultivar or line | Seed source | Average quality | Shape | Extrnal color | Text-ure | Seed cell | Uniform-ity |
|---|---|---|---|---|---|---|---|---|
| 1 | WI6890Ax6813A | Wis-USDA | 6.2 | 4.8 | 6.6 | 6.4 | 7.0 | 6.3 |
| 2 | Vlasstar(10489) | Seminis | 6.1 | 6.4 | 6.1 | 6.0 | 5.8 | 6.4 |
| 3 | WI6846Ax6848A | Wis-USDA | 6.1 | 6.4 | 5.8 | 6.1 | 6.0 | 6.4 |
| 4 | UW 00 78 | Univ. Wis. | 6.1 | 5.7 | 6.3 | 6.2 | 6.0 | 6.4 |
| 5 | HMX-8461 | Harris Moran | 6.1 | 5.4 | 5.7 | 6.4 | 6.8 | 6.0 |
| 6 | Jackson(3540) | SunSeeds | 5.9 | 6.1 | 6.7 | 5.4 | 5.3 | 6.0 |
| 7 | UW 00 69 | Univ. Wis. | 5.8 | 5.7 | 6.4 | 5.7 | 5.4 | 5.9 |
| 8 | UW 00 77 | Univ. Wis. | 5.8 | 5.3 | 6.4 | 5.8 | 5.7 | 5.9 |
| 9 | SXQP-1882 | SunSeeds | 5.8 | 5.6 | 6.7 | 5.5 | 5.3 | 5.9 |
| 10 | Johnston | NCState Univ | 5.8 | 5.7 | 6.5 | 5.6 | 5.3 | 5.9 |
| 11 | Vlaspik | Seminis | 5.8 | 5.8 | 6.0 | 5.6 | 5.5 | 5.9 |
| 12 | Raleigh | NCState Univ | 5.7 | 5.8 | 6.2 | 5.3 | 4.9 | 6.2 |
| 13 | UW 00 R | Univ. Wis. | 5.6 | 5.8 | 5.9 | 5.3 | 5.2 | 6.0 |
| 14 | Patton (3528) | SunSeeds | 5.6 | 5.4 | 6.8 | 5.2 | 5.0 | 5.6 |
| 15 | Napoleon(3502) | SunSeeds | 5.5 | 5.7 | 6.7 | 5.2 | 4.2 | 5.9 |
| 16 | UW 00 90 | Univ. Wis. | 5.5 | 4.8 | 6.6 | 5.5 | 4.7 | 6.0 |
| 17 | WI6856Ax6760B | Wis-USDA | 5.5 | 5.8 | 5.5 | 5.4 | 5.3 | 5.6 |
| 18 | Lafayette | SunSeeds | 5.4 | 5.3 | 6.2 | 5.3 | 4.8 | 5.5 |
| 19 | Calypso | NCState Univ | 5.3 | 5.3 | 5.0 | 5.5 | 5.3 | 5.6 |
| 20 | Palomino(1911) | Seminis | 5.3 | 4.9 | 6.0 | 5.3 | 4.9 | 5.5 |
| 21 | HMX-3469 | Harris Moran | 5.3 | 4.4 | 5.9 | 5.4 | 5.1 | 5.4 |
| 22 | SRQP-2627 | SunSeeds | 5.2 | 5.1 | 5.4 | 5.2 | 4.7 | 5.5 |
| 23 | Royal | Harris Moran | 5.2 | 5.1 | 5.4 | 5.3 | 4.8 | 5.1 |
| 24 | Akord(Bj1802) | BejoSeeds | 5.1 | 4.5 | 4.7 | 5.5 | 5.5 | 5.2 |
| 25 | Wis.SMR 18 | Univ. Wis. | 5.1 | 4.6 | 4.4 | 5.4 | 5.5 | 5.3 |
| 26 | Manteo | NCState Univ | 5.0 | 4.2 | 6.3 | 5.2 | 4.4 | 5.0 |
| 27 | Alibi | BejoSeeds | 5.0 | 4.5 | 5.4 | 5.2 | 4.4 | 5.4 |
| 28 | CrossCountry(4318 | Harris Moran | 4.8 | 4.6 | 5.1 | 5.0 | 4.4 | 5.0 |
| | LSD (5%) | | 0.4 | 0.6 | 0.6 | 0.6 | 0.7 | 0.6 |
| | Mean | | 5.6 | 5.3 | 5.9 | 5.5 | 5.3 | 5.7 |
| | CV (%) | | 15.4 | 23.3 | 18.1 | 21.6 | 26.7 | 19.7 |

[z] Quality rated 1 to 9 (9=A+, 8=A, 7=A-, 6=B+, 5=B, 4=B-, 3=C, 2=D, 1=F).
Correlation (Shape with Uniformity) = 0.75**
Correlation (Texture with Seedcell) = 0.92**

Table 2. Brinestock evaluation - percentage of fruit damaged by bloaters (cultigens are ranked by balloon bloater resistance).

| Rank | Cultivar or line | Seed source | Total bloaters | Balloon | Lens | Honey-comb |
|---|---|---|---|---|---|---|
| 1 | WI6890Ax6813A | Wis-USDA | 0 | 0 | 0 | 0 |
| 2 | Vlasstar(10489) | Seminis | 0 | 0 | 0 | 0 |
| 3 | WI6846Ax6848A | Wis-USDA | 0 | 0 | 0 | 0 |
| 4 | UW 00 78 | Univ. Wis. | 0 | 0 | 0 | 0 |
| 5 | UW 00 69 | Univ. Wis. | 0 | 0 | 0 | 0 |
| 6 | UW 00 77 | Univ. Wis. | 0 | 0 | 0 | 0 |
| 7 | Raleigh | NCState Univ | 0 | 0 | 0 | 0 |
| 8 | UW 00 90 | Univ. Wis. | 0 | 0 | 0 | 0 |
| 9 | Lafayette | SunSeeds | 0 | 0 | 0 | 0 |
| 10 | Calypso | NCState Univ | 0 | 0 | 0 | 0 |
| 11 | Wis.SMR 18 | Univ. Wis. | 0 | 0 | 0 | 0 |
| 12 | HMX-8461 | Harris Moran | 0 | 0 | 0 | 0 |
| 13 | Manteo | NCState Univ | 0 | 0 | 0 | 0 |
| 14 | Palomino(1911) | Seminis | 1 | 0 | 0 | 1 |
| 15 | Vlaspik | Seminis | 1 | 0 | 0 | 1 |
| 16 | Johnston | NCState Univ | 2 | 0 | 0 | 2 |
| 17 | WI6856Ax6760B | Wis-USDA | 2 | 0 | 0 | 2 |
| 18 | UW 00 R | Univ. Wis. | 2 | 1 | 0 | 1 |
| 19 | Alibi | BejoSeeds | 3 | 1 | 0 | 2 |
| 20 | SXQP-1882 | SunSeeds | 2 | 2 | 0 | 0 |
| 21 | Jackson(3540) | SunSeeds | 4 | 2 | 0 | 2 |
| 22 | HMX-3469 | Harris Moran | 3 | 3 | 0 | 0 |
| 23 | Akord(Bj1802) | BejoSeeds | 5 | 3 | 0 | 2 |
| 24 | Royal | Harris Moran | 6 | 3 | 0 | 3 |
| 25 | Patton (3528) | SunSeeds | 8 | 5 | 0 | 3 |
| 26 | Napoleon(3502) | SunSeeds | 6 | 6 | 0 | 0 |
| 27 | SRQP-2627 | SunSeeds | 6 | 6 | 0 | 0 |
| 28 | CrossCountry(4318 | Harris Moran | 15 | 15 | 0 | 0 |
| | LSD (5%) | | 7 | 7 | - | 2 |
| | Mean | | 2 | 2 | 0 | 1 |
| | CV (%) | | 153 | 200 | - | 183 |

Table 3. Brinestock evaluation - percentage of fruit damaged by defects (cultigens are ranked by resistance to defects).

| Rank | Cultivar or line | Seed source | Total defects | Placental hollows | Blossom-end defects | Soft centers |
|---|---|---|---|---|---|---|
| 1 | WI6890Ax6813A | Wis-USDA | 0 | 0 | 0 | 0 |
| 2 | Akord(Bj1802) | BejoSeeds | 2 | 0 | 0 | 2 |
| 3 | Vlasstar(10489) | Seminis | 3 | 0 | 0 | 3 |
| 4 | WI6846Ax6848A | Wis-USDA | 3 | 0 | 0 | 3 |
| 5 | Wis.SMR 18 | Univ. Wis. | 3 | 0 | 0 | 3 |
| 6 | HMX-8461 | Harris Moran | 3 | 2 | 0 | 1 |
| 7 | Johnston | NCState Univ | 3 | 0 | 0 | 3 |
| 8 | UW 00 R | Univ. Wis. | 3 | 0 | 0 | 3 |
| 9 | UW 00 78 | Univ. Wis. | 4 | 0 | 0 | 4 |
| 10 | Raleigh | NCState Univ | 4 | 0 | 0 | 4 |
| 11 | Palomino(1911) | Seminis | 4 | 0 | 0 | 4 |
| 12 | UW 00 77 | Univ. Wis. | 4 | 0 | 1 | 3 |
| 13 | Jackson(3540) | SunSeeds | 4 | 0 | 0 | 4 |
| 14 | UW 00 69 | Univ. Wis. | 5 | 0 | 0 | 5 |
| 15 | WI6856Ax6760B | Wis-USDA | 5 | 0 | 0 | 5 |
| 16 | Alibi | BejoSeeds | 5 | 0 | 0 | 5 |
| 17 | Patton (3528) | SunSeeds | 5 | 2 | 0 | 4 |
| 18 | Vlaspik | Seminis | 6 | 1 | 0 | 5 |
| 19 | SXQP-1882 | SunSeeds | 6 | 0 | 0 | 6 |
| 20 | Calypso | NCState Univ | 6 | 0 | 0 | 6 |
| 21 | HMX-3469 | Harris Moran | 6 | 0 | 0 | 6 |
| 22 | Royal | Harris Moran | 6 | 0 | 0 | 6 |
| 23 | SRQP-2627 | SunSeeds | 6 | 0 | 0 | 6 |
| 24 | Lafayette | SunSeeds | 8 | 0 | 0 | 8 |
| 25 | Napoleon(3502) | SunSeeds | 8 | 0 | 0 | 8 |
| 26 | CrossCountry(4318 | Harris Moran | 9 | 0 | 0 | 9 |
| 27 | UW 00 90 | Univ. Wis. | 10 | 0 | 0 | 10 |
| 28 | Manteo | NCState Univ | 12 | 2 | 0 | 10 |
| | LSD (5%) | | 6 | 2 | 1 | 7 |
| | Mean | | 5 | 0 | 0 | 5 |
| | CV (%) | | 64 | 365 | 748 | 70 |

Table 4. Brinestock evaluation - firmness and texture of fruit, and resistance to bloaters and defects (cultigens are ranked by firmness).[z]

| Rank | Cultivar or line | Seed source | Firm-ness (lb.) | Text-ure | Total bloaters & defects | Total bloaters | Bal-loon | Defects |
|---|---|---|---|---|---|---|---|---|
| 1 | Wis.SMR 18 | Univ. Wis. | 17.3 | 5.4 | 3 | 0 | 0 | 3 |
| 2 | UW 00 77 | Univ. Wis. | 17.1 | 5.8 | 4 | 0 | 0 | 4 |
| 3 | Akord(Bj1802) | BejoSeeds | 16.5 | 5.5 | 7 | 5 | 3 | 2 |
| 4 | Johnston | NCState Univ | 16.4 | 5.6 | 5 | 2 | 0 | 3 |
| 5 | WI6890Ax6813A | Wis-USDA | 15.9 | 6.4 | 0 | 0 | 0 | 0 |
| 6 | Calypso | NCState Univ | 15.8 | 5.5 | 6 | 0 | 0 | 6 |
| 7 | Vlasstar(10489) | Seminis | 15.5 | 6.0 | 3 | 0 | 0 | 3 |
| 8 | SRQP-2627 | SunSeeds | 15.5 | 5.2 | 12 | 6 | 6 | 6 |
| 9 | HMX-8461 | Harris Moran | 15.4 | 6.4 | 3 | 0 | 0 | 3 |
| 10 | UW 00 90 | Univ. Wis. | 15.4 | 5.5 | 10 | 0 | 0 | 10 |
| 11 | CrossCountry(4318 | Harris Moran | 15.2 | 5.0 | 24 | 15 | 15 | 9 |
| 12 | Vlaspik | Seminis | 15.1 | 5.6 | 7 | 1 | 0 | 6 |
| 13 | UW 00 69 | Univ. Wis. | 14.9 | 5.7 | 5 | 0 | 0 | 5 |
| 14 | UW 00 R | Univ. Wis. | 14.9 | 5.3 | 5 | 2 | 1 | 3 |
| 15 | Alibi | BejoSeeds | 14.8 | 5.2 | 8 | 3 | 1 | 5 |
| 16 | WI6856Ax6760B | Wis-USDA | 14.7 | 5.4 | 7 | 2 | 0 | 5 |
| 17 | WI6846Ax6848A | Wis-USDA | 14.4 | 6.1 | 3 | 0 | 0 | 3 |
| 18 | UW 00 78 | Univ. Wis. | 14.2 | 6.2 | 4 | 0 | 0 | 4 |
| 19 | Royal | Harris Moran | 14.2 | 5.3 | 12 | 6 | 3 | 6 |
| 20 | Patton (3528) | SunSeeds | 14.1 | 5.2 | 13 | 8 | 5 | 5 |
| 21 | Lafayette | SunSeeds | 13.8 | 5.3 | 8 | 0 | 0 | 8 |
| 22 | Manteo | NCState Univ | 13.8 | 5.2 | 12 | 0 | 0 | 12 |
| 23 | Raleigh | NCState Univ | 13.7 | 5.3 | 4 | 0 | 0 | 4 |
| 24 | HMX-3469 | Harris Moran | 13.6 | 5.4 | 9 | 3 | 3 | 6 |
| 25 | Palomino(1911) | Seminis | 13.5 | 5.3 | 5 | 1 | 0 | 4 |
| 26 | SXQP-1882 | SunSeeds | 13.0 | 5.5 | 7 | 2 | 2 | 6 |
| 27 | Napoleon(3502) | SunSeeds | 12.6 | 5.2 | 14 | 6 | 6 | 8 |
| 28 | Jackson(3540) | SunSeeds | 11.4 | 5.4 | 8 | 4 | 2 | 4 |
| | LSD (5%) | | 2.0 | 0.6 | 10 | 7 | 7 | 6 |
| | Mean | | 14.7 | 5.5 | 7 | 2 | 2 | 5 |
| | CV (%) | | 6.7 | 21.7 | 71 | 153 | 199 | 64 |

[z] Firmness determined by punch-testing (Magness-Taylor) 10 grade 2B fruits.
Correlation of Texture with: Firmness = 0.46**, Balloon = -0.50**
Correlation of Texture with: Honeycomb = -0.23*, Soft centers = -0.77**

Table 5. Brinestock evaluation - quality ratings assigned by the judges (judges are ranked by leniency).[z]

| Rank | Judge | Average quality | Shape | External color | Texture | Seed cell | Uniform-ity |
|---|---|---|---|---|---|---|---|
| 1 | Crocker | 6.9 | 6.3 | 7.3 | 7.0 | 6.9 | 7.2 |
| 2 | Quinn | 6.1 | 5.6 | 6.3 | 6.7 | 4.9 | 7.0 |
| 3 | Coghill | 6.0 | 6.2 | 6.5 | 5.8 | 5.6 | 6.1 |
| 4 | Denlinger | 6.0 | 5.5 | 6.2 | 5.8 | 6.2 | 6.2 |
| 5 | CCates | 5.9 | 6.3 | 6.1 | 5.8 | 5.6 | 5.8 |
| 6 | Smith | 5.8 | 5.6 | 5.9 | 6.0 | 5.2 | 6.5 |
| 7 | Suggs | 5.7 | 5.3 | 6.1 | 5.9 | 5.6 | 5.6 |
| 8 | Rankin | 5.5 | 5.0 | 5.6 | 5.3 | 5.5 | 5.8 |
| 9 | Quill | 5.4 | 5.1 | 6.3 | 5.0 | 5.1 | 5.6 |
| 10 | Jackson | 5.3 | 5.1 | 5.9 | 5.1 | 5.1 | 5.4 |
| 11 | Cain | 5.3 | 5.7 | 5.9 | 5.1 | 4.4 | 5.5 |
| 12 | Malloy | 5.1 | 4.6 | 5.2 | 5.2 | 5.3 | 5.2 |
| 13 | Wojciak | 4.9 | 4.6 | 5.3 | 4.8 | 5.1 | 4.9 |
| 14 | Ware | 4.8 | 4.3 | 5.6 | 5.2 | 4.4 | 4.6 |
| 15 | Hawley | 4.5 | 4.5 | 5.0 | 4.3 | 4.2 | 4.8 |

[z] Quality rated 1 to 9 (9=A+, 8=A, 7=A-, 6=B+, 5=B, 4=B-, 3=C, 2=D, 1=F).

## Preliminary (Stage 1) Pickling Cucumber Trial 2000

The stage 1 pickle trial was not run this year.

## Observational (Stage 2) Pickling Cucumber Trial 2000

The stage 2 pickle trial was not run this year.

## Summer (Stage 4) Pickling Cucumber Trial 2000

The stage 4 pickle trial was not harvested this year, but disease ratings were taken (the disease ratings are in the stage 3 trial).

## Spring (Stage 3) Pickling Cucumber Trial 2000

Todd C. Wehner and Tammy L. Ellington

**Experiment Design**

1. A randomized complete block with 3 replications of pickle cultivars and breeding lines (collectively referred to as cultigens) was grown.
2. Plots were single 20 ft. rows with 5 ft. alleys at each end.
3. Rows were on raised 18" beds spaced 60" apart (center to center).
4. Fertilizer consisted of 80-80-80 lb/A (N-P-K) broadcast preplant and 30-0-0 lb/A (N-P-K) sideplaced at the 2 to 4 leaf stage.
5. Curbit was applied preemergence at the rate of 1 lb. a.i./A.
6. The trial was planted 24 April, and harvested 6 times (Mondays and Thursdays) between 19 June and 6 July.

**Data Collection**

1. Firmness was measured on 3 Grade 3 fruits using a Magness-Taylor tester with a 5/16" tip.
2. Length/Diameter ratio was calculated by measuring 5 Grade 2 fruits.
3. Quality ratings were from 1 to 9, with 1 = worst, 9 = best.
4. Disease ratings were from 0 to 9, with 0 = no disease, 1-2 = trace, 3-4 = slight, 5-6 = moderate, 7-8 = severe, 9 = plant dead.

**Results**

The following cultigens performed well, and could be advanced to the next stage:

| | | |
|---|---|---|
| 1 | Vlaspik | Seminis |
| 2 | UW 00 78 | Univ. Wis. |
| 3 | Jackson | SunSeeds |
| 4 | Patton | SunSeeds |
| 5 | UW 00 90 | Univ. Wis. |
| 6 | UW 00 R | Univ. Wis. |
| 7 | UW 00 69 | Univ. Wis. |
| 8 | WI6856Ax6760B | USDA-Wis. |

Table 6. Stage 3 spring pickle trial - yield data (cultigens are ranked by fruit value).

| Rank | Cultivar or line | Seed source | Value ($) | Weight (cwt) | Fruit grade distribution (% by weight) Cull | No.1 | No.2 | No.3 | No.4 | Plants per A (x1000) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Vlaspik | Seminis | 2494 | 338 | 13 | 10 | 31 | 38 | 8 | 18 |
| 2 | WI6856Ax6760B | Wis-USDA | 2105 | 307 | 12 | 8 | 30 | 38 | 12 | 19 |
| 3 | UW 00 78 | Univ. Wis. | 1899 | 267 | 15 | 10 | 31 | 36 | 8 | 23 |
| 4 | Jackson(3540) | SunSeeds | 1863 | 284 | 11 | 8 | 28 | 38 | 15 | 24 |
| 5 | Patton (3528) | SunSeeds | 1737 | 285 | 11 | 8 | 24 | 37 | 20 | 20 |
| 6 | UW 00 90 | Univ. Wis. | 1719 | 246 | 18 | 11 | 28 | 34 | 8 | 23 |
| 7 | UW 00 69 | Univ. Wis. | 1690 | 231 | 16 | 11 | 31 | 37 | 4 | 20 |
| 8 | UW 00 R | Univ. Wis. | 1667 | 291 | 12 | 7 | 20 | 40 | 21 | 21 |
| 9 | Napoleon(3502) | SunSeeds | 1645 | 232 | 12 | 10 | 31 | 35 | 12 | 22 |
| 10 | Vlasstar(10489) | Seminis | 1623 | 237 | 10 | 11 | 26 | 38 | 15 | 20 |
| 11 | Johnston | NCState Univ | 1585 | 225 | 15 | 11 | 31 | 31 | 11 | 18 |
| 12 | Alibi | BejoSeeds | 1576 | 248 | 12 | 9 | 25 | 39 | 15 | 23 |
| 13 | Royal | Harris Moran | 1520 | 242 | 17 | 7 | 25 | 39 | 12 | 24 |
| 14 | HMX-3469 | Harris Moran | 1510 | 266 | 13 | 9 | 24 | 32 | 22 | 25 |
| 15 | Lafayette | SunSeeds | 1495 | 231 | 15 | 10 | 28 | 34 | 13 | 25 |
| 16 | UW 00 77 | Univ. Wis. | 1486 | 223 | 9 | 8 | 27 | 44 | 13 | 24 |
| 17 | WI6846Ax6848A | Wis-USDA | 1473 | 234 | 16 | 9 | 23 | 37 | 15 | 18 |
| 18 | Palomino(1911) | Seminis | 1470 | 238 | 20 | 7 | 27 | 34 | 12 | 23 |
| 19 | Akord(Bj1802) | BejoSeeds | 1431 | 247 | 10 | 8 | 23 | 35 | 24 | 23 |
| 20 | Calypso | NCState Univ | 1430 | 239 | 13 | 7 | 25 | 36 | 19 | 23 |
| 21 | HMX-8461 | Harris Moran | 1405 | 220 | 15 | 11 | 24 | 32 | 18 | 23 |
| 22 | SRQP-2627 | SunSeeds | 1367 | 239 | 15 | 6 | 25 | 38 | 16 | 21 |
| 23 | Raleigh | NCState Univ | 1339 | 213 | 12 | 9 | 21 | 43 | 15 | 17 |
| 24 | CrossCountry(4318 | Harris Moran | 1290 | 206 | 14 | 8 | 27 | 36 | 15 | 25 |
| 25 | SXQP-1882 | SunSeeds | 1250 | 236 | 18 | 7 | 20 | 37 | 18 | 20 |
| 26 | Manteo | NCState Univ | 1216 | 207 | 26 | 7 | 26 | 34 | 8 | 20 |
| 27 | WI6890Ax6813A | Wis-USDA | 1007 | 125 | 15 | 16 | 38 | 26 | 6 | 14 |
| 28 | Wis.SMR 18 | Univ. Wis. | 800 | 167 | 18 | 4 | 21 | 32 | 24 | 22 |
| | LSD (5%) | | 636 | 102 | 5 | 3 | 9 | 8 | 12 | 5 |
| | Mean | | 1539 | 240 | 14 | 9 | 26 | 36 | 14 | 21 |
| | CV (%) | | 25 | 26 | 21 | 22 | 21 | 13 | 51 | 15 |

Correlation (Fruit value with fruit weight) = 0.87**

Table 7. Stage 3 spring pickle trial - earliness data (cultigens are ranked by fruit value in harvests 1 and 2).

| Rank | Cultivar or line | Seed source | Cumulative fruit value and % of total value[z] (6 harvests) for harvest: 1 $/A | 1 % | 1-2 $/A | 1-2 % | 1-3 $/A | 1-3 % | 1-4 $/A | 1-4 % | 1-5 $/A | 1-5 % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Vlaspik | Seminis | 534 | 21 | 875 | 35 | 1339 | 55 | 1800 | 71 | 2174 | 87 |
| 2 | UW 00 78 | Univ. Wis. | 331 | 17 | 670 | 36 | 1005 | 53 | 1376 | 73 | 1667 | 87 |
| 3 | UW 00 90 | Univ. Wis. | 429 | 25 | 651 | 38 | 963 | 56 | 1278 | 74 | 1553 | 90 |
| 4 | UW 00 R | Univ. Wis. | 433 | 26 | 619 | 37 | 992 | 59 | 1301 | 78 | 1494 | 90 |
| 5 | Jackson(3540) | SunSeeds | 346 | 19 | 619 | 33 | 1010 | 55 | 1402 | 75 | 1611 | 86 |
| 6 | Patton (3528) | SunSeeds | 368 | 21 | 566 | 32 | 964 | 55 | 1223 | 70 | 1473 | 85 |
| 7 | UW 00 69 | Univ. Wis. | 308 | 17 | 552 | 32 | 922 | 53 | 1228 | 72 | 1458 | 86 |
| 8 | Johnston | NCState Univ | 314 | 18 | 551 | 33 | 855 | 53 | 1123 | 70 | 1396 | 88 |
| 9 | Lafayette | SunSeeds | 334 | 22 | 551 | 36 | 800 | 53 | 1079 | 72 | 1296 | 87 |
| 10 | HMX-3469 | Harris Moran | 357 | 23 | 523 | 34 | 884 | 58 | 1116 | 73 | 1319 | 87 |
| 11 | WI6846Ax6848A | Wis-USDA | 323 | 22 | 519 | 35 | 853 | 58 | 1102 | 75 | 1314 | 89 |
| 12 | HMX-8461 | Harris Moran | 279 | 19 | 498 | 35 | 710 | 50 | 966 | 68 | 1171 | 83 |
| 13 | Royal | Harris Moran | 319 | 21 | 497 | 33 | 776 | 51 | 1064 | 70 | 1293 | 85 |
| 14 | Raleigh | NCState Univ | 321 | 24 | 495 | 37 | 818 | 61 | 1011 | 76 | 1163 | 87 |
| 15 | Palomino(1911) | Seminis | 257 | 18 | 471 | 32 | 751 | 51 | 1053 | 71 | 1315 | 89 |
| 16 | Vlasstar(10489) | Seminis | 296 | 18 | 459 | 28 | 743 | 46 | 1044 | 64 | 1327 | 82 |
| 17 | SRQP-2627 | SunSeeds | 292 | 22 | 455 | 34 | 789 | 58 | 1008 | 74 | 1192 | 87 |
| 18 | SXQP-1882 | SunSeeds | 258 | 21 | 430 | 35 | 680 | 55 | 895 | 72 | 1066 | 85 |
| 19 | Calypso | NCState Univ | 225 | 16 | 426 | 30 | 722 | 50 | 1001 | 70 | 1223 | 86 |
| 20 | Manteo | NCState Univ | 236 | 20 | 418 | 34 | 666 | 55 | 867 | 71 | 1043 | 86 |
| 21 | Napoleon(3502) | SunSeeds | 209 | 13 | 418 | 26 | 776 | 47 | 1109 | 68 | 1441 | 88 |
| 22 | WI6856Ax6760B | Wis-USDA | 203 | 10 | 401 | 21 | 749 | 38 | 1323 | 64 | 1619 | 78 |
| 23 | Akord(Bj1802) | BejoSeeds | 201 | 14 | 385 | 27 | 695 | 49 | 929 | 65 | 1209 | 84 |
| 24 | Alibi | BejoSeeds | 115 | 7 | 364 | 23 | 630 | 40 | 1020 | 65 | 1258 | 80 |
| 25 | UW 00 77 | Univ. Wis. | 196 | 13 | 361 | 24 | 625 | 42 | 1007 | 67 | 1257 | 84 |
| 26 | CrossCountry(4318 | Harris Moran | 98 | 8 | 305 | 24 | 536 | 42 | 867 | 67 | 1089 | 84 |
| 27 | Wis.SMR 18 | Univ. Wis. | 100 | 13 | 208 | 26 | 355 | 45 | 529 | 66 | 631 | 78 |
| 28 | WI6890Ax6813A | Wis-USDA | 85 | 7 | 188 | 16 | 411 | 38 | 592 | 57 | 816 | 81 |
| | LSD (5%) | | 179 | 7 | 247 | 8 | 351 | 9 | 479 | 8 | 547 | 5 |
| | Mean | | 277 | 18 | 481 | 31 | 786 | 51 | 1082 | 70 | 1317 | 85 |
| | CV (%) | | 39 | 25 | 31 | 17 | 27 | 11 | 27 | 7 | 25 | 4 |

Correlation (Fruit value with value in harvests 1 and 2) = 0.79**

Table 8. Stage 3 spring pickle trial - fruit quality data (cultigens are ranked by average quality).

| Rank | Cultivar or line | Seed source | Average quality[z] | Shape[z] | Color[y] | Seed-cell[z] | Overall impression[z] |
|---|---|---|---|---|---|---|---|
| 1 | Vlaspik | Seminis | 7.7 | 7 | 7 | 8 | 8 |
| 2 | UW 00 77 | Univ. Wis. | 7.6 | 7 | 7 | 8 | 8 |
| 3 | WI6890Ax6813A | Wis-USDA | 7.3 | 7 | 7 | 8 | 7 |
| 4 | Vlasstar(10489) | Seminis | 7.3 | 7 | 7 | 8 | 7 |
| 5 | UW 00 78 | Univ. Wis. | 7.2 | 7 | 7 | 7 | 8 |
| 6 | UW 00 R | Univ. Wis. | 7.2 | 7 | 7 | 7 | 7 |
| 7 | WI6856Ax6760B | Wis-USDA | 7.1 | 7 | 7 | 6 | 8 |
| 8 | Jackson(3540) | SunSeeds | 7.0 | 7 | 8 | 6 | 7 |
| 9 | HMX-8461 | Harris Moran | 7.0 | 7 | 6 | 7 | 8 |
| 10 | HMX-3469 | Harris Moran | 7.0 | 6 | 6 | 7 | 8 |
| 11 | CrossCountry(4318 | Harris Moran | 6.9 | 7 | 7 | 7 | 6 |
| 12 | Patton (3528) | SunSeeds | 6.9 | 7 | 7 | 7 | 7 |
| 13 | UW 00 69 | Univ. Wis. | 6.9 | 7 | 8 | 7 | 7 |
| 14 | Napoleon(3502) | SunSeeds | 6.8 | 7 | 7 | 7 | 6 |
| 15 | Lafayette | SunSeeds | 6.8 | 7 | 7 | 6 | 7 |
| 16 | Palomino(1911) | Seminis | 6.8 | 7 | 7 | 7 | 7 |
| 17 | Akord(Bj1802) | BejoSeeds | 6.7 | 7 | 6 | 6 | 7 |
| 18 | SRQP-2627 | SunSeeds | 6.6 | 7 | 7 | 7 | 6 |
| 19 | WI6846Ax6848A | Wis-USDA | 6.6 | 7 | 6 | 5 | 7 |
| 20 | Johnston | NCState Univ | 6.3 | 7 | 7 | 5 | 7 |
| 21 | Royal | Harris Moran | 6.3 | 7 | 7 | 6 | 6 |
| 22 | SXQP-1882 | SunSeeds | 6.3 | 7 | 7 | 6 | 6 |
| 23 | Calypso | NCState Univ | 6.2 | 7 | 7 | 6 | 6 |
| 24 | Raleigh | NCState Univ | 6.1 | 6 | 6 | 6 | 6 |
| 25 | UW 00 90 | Univ. Wis. | 6.1 | 7 | 7 | 6 | 5 |
| 26 | Alibi | BejoSeeds | 6.0 | 7 | 6 | 5 | 6 |
| 27 | Manteo | NCState Univ | 6.0 | 7 | 7 | 5 | 6 |
| 28 | Wis.SMR 18 | Univ. Wis. | 4.7 | 5 | 4 | 4 | 4 |
| | LSD (5%) | | 0.9 | 1 | 1 | 1 | 1 |
| | Mean | | 6.7 | 7 | 7 | 6 | 7 |
| | CV (%) | | 8.2 | 8 | 13 | 16 | 13 |

[z] Quality rated 1 to 9 (1 = poor, 5 = average, 9 = excellent).
[y] Color rated 1 to 9 (1 = white, 5 = medium green, 9 = very dark green).
Correlation (Fruit value with average quality) = 0.45**

Table 9. Stage 3 spring pickle trial - other quality data (cultigens are ranked by average quality).[z]

| Rank | Cultivar or line | Seed source | Firm-ness | L/D ratio | Defects1° 2 | Defects1° 4 | Defects1° 6 | Defects2° 2 | Defects2° 4 | Defects2° 6 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | UW 00 77 | Univ. Wis. | 18.0 | 2.8 | H | T | H | K | K | K |
| 2 | HMX-8461 | Harris Moran | 18.0 | 3.0 | T | T | K | M | K | N |
| 3 | Royal | Harris Moran | 17.7 | 3.1 | T | D | K | K | T | T |
| 4 | Alibi | BejoSeeds | 17.3 | 2.6 | H | V | H | W | A | K |
| 5 | Vlaspik | Seminis | 16.7 | 3.0 | K | K | K | T | K | T |
| 6 | UW 00 R | Univ. Wis. | 16.7 | 3.1 | K | K | D | M | K | K |
| 7 | HMX-3469 | Harris Moran | 16.7 | 3.1 | H | K | N | M | K | K |
| 8 | Patton (3528) | SunSeeds | 16.3 | 3.0 | K | H | K | T | K | D |
| 9 | SRQP-2627 | SunSeeds | 16.3 | 2.7 | H | H | D | T | T | T |
| 10 | Vlasstar(10489) | Seminis | 16.0 | 3.0 | T | H | K | H | K | T |
| 11 | UW 00 78 | Univ. Wis. | 16.0 | 3.2 | K | G | T | T | K | D |
| 12 | Akord(Bj1802) | BejoSeeds | 16.0 | 2.8 | W | H | H | H | K | K |
| 13 | Raleigh | NCState Univ | 16.0 | 2.8 | K | H | T | K | K | H |
| 14 | WI6890Ax6813A | Wis-USDA | 15.7 | 3.7 | G | G | G | T | K | K |
| 15 | CrossCountry(4318 | Harris Moran | 15.7 | 3.1 | H | T | K | M | K | K |
| 16 | Johnston | NCState Univ | 15.7 | 3.2 | H | T | K | T | K | T |
| 17 | Calypso | NCState Univ | 15.7 | 3.0 | H | H | T | M | K | H |
| 18 | UW 00 90 | Univ. Wis. | 15.7 | 3.2 | T | H | M | M | K | T |
| 19 | Napoleon(3502) | SunSeeds | 15.3 | 3.0 | H | K | H | K | T | K |
| 20 | Lafayette | SunSeeds | 15.3 | 3.2 | K | T | T | H | K | K |
| 21 | WI6856Ax6760B | Wis-USDA | 15.0 | 3.0 | K | K | T | T | K | K |
| 22 | Wis.SMR 18 | Univ. Wis. | 15.0 | 2.9 | W | W | T | Y | T | Y |
| 23 | WI6846Ax6848A | Wis-USDA | 14.7 | 2.9 | K | T | T | T | K | K |
| 24 | Manteo | NCState Univ | 14.7 | 3.2 | T | T | N | K | K | T |
| 25 | Jackson(3540) | SunSeeds | 14.0 | 2.9 | K | K | H | K | T | K |
| 26 | UW 00 69 | Univ. Wis. | 14.0 | 3.3 | T | K | T | K | G | D |
| 27 | Palomino(1911) | Seminis | 14.0 | 2.9 | T | T | D | K | K | K |
| 28 | SXQP-1882 | SunSeeds | 14.0 | 3.1 | T | N | T | K | T | K |
| | LSD (5%) | | 2.6 | 0.2 | | | | | | |
| | Mean | | 15.7 | 3.0 | | | | | | |
| | CV (%) | | 10.1 | 4.9 | | | | | | |

[z] Quality rated 1 to 9 (1 = poor, 5 = average, 9 = excellent).
Defects were rated as follows (giving primary and secondary for each harvest):

A - wArty fruit
B - Blossom end defects
C - Crooks excessive
D - Dogbone shape
E - Early maturity
F - Four celled
G - lonG fruit
H - sHort fruit
I - strIped fruit
J - RiDGed
K - Keep(excellent)
L - Late maturity
M - Mottled fruit
N - Nubs excessive
O - Offtype fruit
P - Placental hollows
Q -
R - Reject (poor)
S - Separated carpels
T - Tapered ends
U - Uniform green
V - Varicolor (dark stem end, light blossom end)
W - White fruit
X - neCKS on fruit
Y - Yellow fruit
Z - diSeased fruit

Table 10. Stage 3 spring pickle trial - fruit keeping ability data (cultigens are ranked by % weight loss).

| Rank | Cultivar or line | Seed source | Weight loss (%)[z] | Rating (0 - 9)[y] Shriv-eling | Rots & disease | Firm-ness (lb.)[x] |
|---|---|---|---|---|---|---|
| 1 | Jackson(3540) | SunSeeds | 15 | 3 | 1 | 13 |
| 2 | Manteo | NCState Univ | 15 | 4 | 1 | 17 |
| 3 | WI6856Ax6760B | Wis-USDA | 16 | 4 | 1 | 17 |
| 4 | Alibi | BejoSeeds | 17 | 3 | 1 | 15 |
| 5 | SXQP-1882 | SunSeeds | 17 | 4 | 1 | 15 |
| 6 | UW 00 77 | Univ. Wis. | 17 | 5 | 1 | 16 |
| 7 | Royal | Harris Moran | 17 | 6 | 1 | 16 |
| 8 | Vlaspik | Seminis | 17 | 6 | 1 | 16 |
| 9 | UW 00 R | Univ. Wis. | 17 | 5 | 1 | 15 |
| 10 | WI6846Ax6848A | Wis-USDA | 17 | 4 | 2 | 14 |
| 11 | Lafayette | SunSeeds | 18 | 4 | 1 | 15 |
| 12 | WI6890Ax6813A | Wis-USDA | 18 | 5 | 1 | 15 |
| 13 | Vlasstar(10489) | Seminis | 18 | 6 | 2 | 14 |
| 14 | Palomino(1911) | Seminis | 18 | 3 | 1 | 12 |
| 15 | Johnston | NCState Univ | 19 | 5 | 1 | 15 |
| 16 | Patton (3528) | SunSeeds | 19 | 5 | 2 | 14 |
| 17 | Akord(Bj1802) | BejoSeeds | 19 | 4 | 1 | 15 |
| 18 | UW 00 69 | Univ. Wis. | 20 | 7 | 2 | 13 |
| 19 | Napoleon(3502) | SunSeeds | 21 | 5 | 1 | 15 |
| 20 | Wis.SMR 18 | Univ. Wis. | 21 | 8 | 1 | 15 |
| 21 | CrossCountry(4318 | Harris Moran | 21 | 7 | 3 | 14 |
| 22 | HMX-3469 | Harris Moran | 21 | 6 | 1 | 15 |
| 23 | UW 00 78 | Univ. Wis. | 21 | 6 | 2 | 15 |
| 24 | UW 00 90 | Univ. Wis. | 22 | 7 | 3 | 13 |
| 25 | Calypso | NCState Univ | 23 | 4 | 1 | 17 |
| 26 | SRQP-2627 | SunSeeds | 24 | 7 | 2 | 15 |
| 27 | Raleigh | NCState Univ | 24 | 7 | 1 | 15 |
| 28 | HMX-8461 | Harris Moran | 25 | 6 | 2 | 15 |
| | LSD (5%) | | 7 | 3 | 2 | 3 |
| | Mean | | 19 | 5 | 1 | 15 |
| | CV (%) | | 22 | 32 | 95 | 12 |

[z] After storage at room temperature for 8 days in open kraft paper bags.
[y] Shriveling & disease rated 0-9 (0=none, 1-3=slight, 4-6=moderate, 7-9=advanced).
[x] Firmness after storage using Magness-Taylor fruit punch tester.
Correlation (Weight loss with shriveling) = 0.45**
Correlation (Weight loss with firmness) = 0.28*

Table 11. Stage 3 spring pickle trial - bloater resistance data (cultigens are ranked by bloater resistance).[z]

| Rank | Cultivar or line | Seed source | Total bloater damage | Balloon | Lens | Honey-comb |
|---|---|---|---|---|---|---|
| 1 | UW 00 77 | Univ. Wis. | 0 | 0 | 0 | 0 |
| 2 | UW 00 R | Univ. Wis. | 0 | 0 | 0 | 0 |
| 3 | WI6890Ax6813A | Wis-USDA | 0 | 0 | 0 | 0 |
| 4 | Vlasstar(10489) | Seminis | 0 | 0 | 0 | 0 |
| 5 | Johnston | NCState Univ | 0 | 0 | 0 | 0 |
| 6 | Akord(Bj1802) | BejoSeeds | 0 | 0 | 0 | 0 |
| 7 | UW 00 78 | Univ. Wis. | 0 | 0 | 0 | 0 |
| 8 | UW 00 90 | Univ. Wis. | 0 | 0 | 0 | 0 |
| 9 | Palomino(1911) | Seminis | 1 | 0 | 0 | 1 |
| 10 | Vlaspik | Seminis | 1 | 0 | 1 | 0 |
| 11 | Lafayette | SunSeeds | 1 | 0 | 1 | 0 |
| 12 | Calypso | NCState Univ | 1 | 1 | 0 | 0 |
| 13 | UW 00 69 | Univ. Wis. | 2 | 2 | 0 | 0 |
| 14 | Raleigh | NCState Univ | 2 | 1 | 0 | 1 |
| 15 | WI6846Ax6848A | Wis-USDA | 3 | 3 | 0 | 0 |
| 16 | HMX-3469 | Harris Moran | 3 | 3 | 0 | 0 |
| 17 | CrossCountry(4318 | Harris Moran | 3 | 2 | 1 | 1 |
| 18 | WI6856Ax6760B | Wis-USDA | 4 | 3 | 0 | 1 |
| 19 | Wis.SMR 18 | Univ. Wis. | 4 | 3 | 1 | 0 |
| 20 | Manteo | NCState Univ | 4 | 3 | 0 | 1 |
| 21 | Alibi | BejoSeeds | 4 | 4 | 0 | 0 |
| 22 | Royal | Harris Moran | 4 | 4 | 0 | 0 |
| 23 | Napoleon(3502) | SunSeeds | 4 | 4 | 0 | 0 |
| 24 | SXQP-1882 | SunSeeds | 5 | 4 | 0 | 1 |
| 25 | HMX-8461 | Harris Moran | 5 | 5 | 0 | 1 |
| 26 | Patton (3528) | SunSeeds | 6 | 6 | 0 | 0 |
| 27 | SRQP-2627 | SunSeeds | 10 | 10 | 0 | 0 |
| 28 | Jackson(3540) | SunSeeds | 14 | 13 | 1 | 0 |
| | LSD (5%) | | 2 | 6 | 1 | 1 |
| | Mean | | 3 | 2 | 0 | 0 |
| | CV (%) | | 130 | 150 | 420 | 345 |

[z] Data are means of 2 harvests, 5 fruits/cultigen.
Fruits tested in 5 gal. pails purged with 100% $CO_2$.

Table 12. Stage 3 spring pickle trial - bloater resistance data (cultigens are ranked by total bloater + defect resistance).[z]

| Rank | Cultivar or line | Seed source | Bloaters + defects | Total bloater damage | Total defects | Blossom -end defects | Placen -tal hollow | Soft center |
|---|---|---|---|---|---|---|---|---|
| 1 | UW 00 77 | Univ. Wis. | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | WI6890Ax6813A | Wis-USDA | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Vlasstar(10489) | Seminis | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | UW 00 78 | Univ. Wis. | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | UW 00 90 | Univ. Wis. | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | Akord(Bj1802) | BejoSeeds | 1 | 0 | 1 | 0 | 1 | 0 |
| 7 | Lafayette | SunSeeds | 1 | 1 | 0 | 0 | 0 | 0 |
| 8 | UW 00 R | Univ. Wis. | 1 | 0 | 1 | 1 | 0 | 0 |
| 9 | Palomino(1911) | Seminis | 1 | 1 | 1 | 0 | 1 | 0 |
| 10 | Calypso | NCState Univ | 1 | 1 | 0 | 0 | 0 | 0 |
| 11 | Vlaspik | Seminis | 2 | 1 | 1 | 1 | 0 | 0 |
| 12 | Johnston | NCState Univ | 2 | 0 | 2 | 0 | 1 | 1 |
| 13 | UW 00 69 | Univ. Wis. | 2 | 2 | 0 | 0 | 0 | 0 |
| 14 | Raleigh | NCState Univ | 2 | 2 | 0 | 0 | 0 | 0 |
| 15 | HMX-3469 | Harris Moran | 3 | 3 | 1 | 0 | 0 | 1 |
| 16 | CrossCountry(4318 | Harris Moran | 3 | 3 | 0 | 0 | 0 | 0 |
| 17 | WI6846Ax6848A | Wis-USDA | 4 | 3 | 1 | 1 | 0 | 1 |
| 18 | Alibi | BejoSeeds | 4 | 4 | 0 | 0 | 0 | 0 |
| 19 | WI6856Ax6760B | Wis-USDA | 5 | 4 | 1 | 0 | 1 | 0 |
| 20 | Royal | Harris Moran | 5 | 4 | 1 | 1 | 0 | 0 |
| 21 | Wis.SMR 18 | Univ. Wis. | 5 | 4 | 1 | 0 | 0 | 1 |
| 22 | Manteo | NCState Univ | 5 | 4 | 1 | 0 | 1 | 0 |
| 23 | Napoleon(3502) | SunSeeds | 5 | 4 | 1 | 0 | 0 | 1 |
| 24 | SXQP-1882 | SunSeeds | 5 | 5 | 1 | 1 | 0 | 0 |
| 25 | HMX-8461 | Harris Moran | 5 | 5 | 0 | 0 | 0 | 0 |
| 26 | Patton (3528) | SunSeeds | 7 | 6 | 1 | 0 | 0 | 1 |
| 27 | SRQP-2627 | SunSeeds | 10 | 10 | 0 | 0 | 0 | 0 |
| 28 | Jackson(3540) | SunSeeds | 16 | 14 | 2 | 0 | 0 | 2 |
| | LSD (5%) | | 7 | 6 | 2 | 1 | 1 | 2 |
| | Mean | | 3 | 3 | 1 | 0 | 0 | 0 |
| | CV (%) | | 120 | 130 | 236 | 344 | 433 | 373 |

[z] Data are means of 2 harvests, 5 fruits/cultigen.
Fruits tested in 5 gal. pails purged with 100% $CO_2$.

Table 13. Stage 3 spring pickle trial - sex expression and vine data (cultigens are ranked by gynoecious rating).

| Rank | Cultivar or line | Seed source | Gyn. rating[z] | Vine size[y] | Vine color[x] |
|---|---|---|---|---|---|
| 1 | Akord(Bj1802) | BejoSeeds | 8 | 7 | 7 |
| 2 | WI6846Ax6848A | Wis-USDA | 8 | 7 | 6 |
| 3 | UW 00 90 | Univ. Wis. | 8 | 7 | 8 |
| 4 | SXQP-1882 | SunSeeds | 8 | 7 | 8 |
| 5 | Raleigh | NCState Univ | 8 | 7 | 6 |
| 6 | HMX-3469 | Harris Moran | 8 | 7 | 8 |
| 7 | UW 00 R | Univ. Wis. | 7 | 7 | 7 |
| 8 | SRQP-2627 | SunSeeds | 7 | 7 | 8 |
| 9 | UW 00 78 | Univ. Wis. | 7 | 7 | 8 |
| 10 | Patton (3528) | SunSeeds | 7 | 7 | 7 |
| 11 | Lafayette | SunSeeds | 7 | 6 | 8 |
| 12 | Palomino(1911) | Seminis | 7 | 6 | 7 |
| 13 | Royal | Harris Moran | 7 | 8 | 6 |
| 14 | UW 00 69 | Univ. Wis. | 7 | 7 | 7 |
| 15 | HMX-8461 | Harris Moran | 7 | 7 | 7 |
| 16 | UW 00 77 | Univ. Wis. | 7 | 6 | 7 |
| 17 | Jackson(3540) | SunSeeds | 7 | 6 | 8 |
| 18 | Vlaspik | Seminis | 7 | 7 | 6 |
| 19 | Vlasstar(10489) | Seminis | 7 | 6 | 6 |
| 20 | Calypso | NCState Univ | 7 | 6 | 7 |
| 21 | Johnston | NCState Univ | 6 | 6 | 6 |
| 22 | Napoleon(3502) | SunSeeds | 6 | 6 | 8 |
| 23 | Alibi | BejoSeeds | 6 | 6 | 7 |
| 24 | CrossCountry(4318 | Harris Moran | 6 | 7 | 7 |
| 25 | Manteo | NCState Univ | 5 | 5 | 7 |
| 26 | Wis.SMR 18 | Univ. Wis. | 5 | 9 | 6 |
| 27 | WI6856Ax6760B | Wis-USDA | 5 | 7 | 6 |
| 28 | WI6890Ax6813A | Wis-USDA | 5 | 6 | 7 |
| | LSD (5%) | | 2 | 2 | 2 |
| | Mean | | 7 | 7 | 7 |
| | CV (%) | | 14 | 18 | 14 |

[z] Gynoecious rating (1 = androecious, 2-3 = andromonoecious, 4-6 = monoecious, 7-8 = predominately gynoecious, 9 = gynoecious).
[y] Size rated 1 to 9 (1=very small, 9=very large).
[x] Color rated 1 to 9 (1=yellow, 9=very dark green).
Correlation (Yield with gynoecious rating) = 0.04ns
Correlation (Yield with vine size) = 0.09ns

Table 14. Stage 3 spring pickle trial - disease data (cultigens are ranked by average disease).[z]

| Rank | Cultivar or line | Seed source | Anthrac -nose | Virus (PRSV?) | Powdery mildew |
|---|---|---|---|---|---|
| 1 | Patton (3528) | SunSeeds | 3.0 | 5 | 1 |
| 2 | Raleigh | NCState Univ | 3.0 | 6 | 1 |
| 3 | UW 00 77 | Univ. Wis. | 3.3 | 5 | 1 |
| 4 | Royal | Harris Moran | 3.3 | 6 | 1 |
| 5 | Alibi | BejoSeeds | 3.3 | 8 | 1 |
| 6 | UW 00 69 | Univ. Wis. | 3.7 | 4 | 1 |
| 7 | WI6890Ax6813A | Wis-USDA | 3.7 | 5 | 1 |
| 8 | Lafayette | SunSeeds | 3.7 | 5 | 1 |
| 9 | UW 00 90 | Univ. Wis. | 4.0 | 4 | 1 |
| 10 | CrossCountry(4318 | Harris Moran | 4.0 | 5 | 1 |
| 11 | Jackson(3540) | SunSeeds | 4.0 | 7 | 1 |
| 12 | UW 00 78 | Univ. Wis. | 4.3 | 3 | 1 |
| 13 | SXQP-1882 | SunSeeds | 4.3 | 4 | 1 |
| 14 | HMX-3469 | Harris Moran | 4.3 | 4 | 1 |
| 15 | Akord(Bj1802) | BejoSeeds | 4.3 | 5 | 1 |
| 16 | Vlasstar(10489) | Seminis | 4.3 | 5 | 2 |
| 17 | Palomino(1911) | Seminis | 4.3 | 8 | 1 |
| 18 | WI6846Ax6848A | Wis-USDA | 4.7 | 6 | 1 |
| 19 | Calypso | NCState Univ | 5.0 | 5 | 1 |
| 20 | UW 00 R | Univ. Wis. | 5.0 | 5 | 2 |
| 21 | HMX-8461 | Harris Moran | 5.7 | 4 | 1 |
| 22 | Vlaspik | Seminis | 5.7 | 4 | 1 |
| 23 | Manteo | NCState Univ | 5.7 | 7 | 1 |
| 24 | SRQP-2627 | SunSeeds | 6.0 | 4 | 1 |
| 25 | Johnston | NCState Univ | 6.0 | 5 | 1 |
| 26 | WI6856Ax6760B | Wis-USDA | 6.0 | 6 | 1 |
| 27 | Napoleon(3502) | SunSeeds | 6.0 | 7 | 1 |
| 28 | Wis.SMR 18 | Univ. Wis. | 8.0 | 4 | 3 |
| | LSD (5%) | | 2.1 | 3 | 1 |
| | Mean | | 4.6 | 5 | 1 |
| | CV (%) | | 28.6 | 29 | 64 |

[z] Disease rated 0 to 9 (0=none, 1-2=trace, 3-4=slight, 5-6=moderate, 7-8=advanced, 9=plant dead).
Correlation (Yield vs. disease rating) = -0.05ns

Table 15. Stage 3 spring pickle trial - selection indexes (cultigens ranked by SWI1).[z]

| Rank | Cultivar or line | Seed source | Simple weighted SWI1 | Simple weighted SWI2 | Average rank ARI1 | Average rank ARI2 |
|---|---|---|---|---|---|---|
| 1 | Vlaspik | Seminis | 10.1 | 8.3 | 8.4 | 9.5 |
| 2 | UW 00 78 | Univ. Wis. | 8.6 | 7.3 | 9.9 | 10.5 |
| 3 | Jackson(3540) | SunSeeds | 8.4 | 7.2 | 9.7 | 11.2 |
| 4 | Patton (3528) | SunSeeds | 8.1 | 7.0 | 10.6 | 10.0 |
| 5 | UW 00 90 | Univ. Wis. | 8.1 | 6.8 | 13.6 | 12.5 |
| 6 | UW 00 R | Univ. Wis. | 8.0 | 6.9 | 11.1 | 11.0 |
| 7 | UW 00 69 | Univ. Wis. | 7.9 | 6.8 | 12.0 | 13.6 |
| 8 | WI6856Ax6760B | Wis-USDA | 7.7 | 6.8 | 14.1 | 15.8 |
| 9 | Lafayette | SunSeeds | 7.6 | 6.5 | 12.8 | 12.7 |
| 10 | Vlasstar(10489) | Seminis | 7.5 | 6.5 | 12.7 | 13.8 |
| 11 | Royal | Harris Moran | 7.4 | 6.4 | 14.6 | 12.9 |
| 12 | HMX-3469 | Harris Moran | 7.3 | 6.4 | 13.6 | 12.7 |
| 13 | Johnston | NCState Univ | 7.3 | 6.2 | 16.0 | 15.8 |
| 14 | UW 00 77 | Univ. Wis. | 7.2 | 6.3 | 11.0 | 11.8 |
| 15 | Palomino(1911) | Seminis | 7.1 | 6.2 | 14.4 | 15.1 |
| 16 | WI6846Ax6848A | Wis-USDA | 7.1 | 6.2 | 14.4 | 14.4 |
| 17 | Napoleon(3502) | SunSeeds | 7.0 | 6.1 | 15.6 | 17.0 |
| 18 | Raleigh | NCState Univ | 7.0 | 6.1 | 16.1 | 14.0 |
| 19 | Alibi | BejoSeeds | 7.0 | 6.0 | 15.3 | 14.6 |
| 20 | HMX-8461 | Harris Moran | 6.9 | 6.1 | 14.7 | 13.8 |
| 21 | Akord(Bj1802) | BejoSeeds | 6.8 | 6.0 | 15.0 | 15.2 |
| 22 | Calypso | NCState Univ | 6.7 | 5.9 | 17.4 | 16.6 |
| 23 | SRQP-2627 | SunSeeds | 6.6 | 5.9 | 17.3 | 16.4 |
| 24 | SXQP-1882 | SunSeeds | 6.6 | 5.9 | 17.6 | 16.8 |
| 25 | CrossCountry(4318 | Harris Moran | 6.4 | 5.7 | 16.1 | 17.0 |
| 26 | Manteo | NCState Univ | 6.2 | 5.5 | 19.9 | 19.0 |
| 27 | WI6890Ax6813A | Wis-USDA | 5.7 | 5.1 | 14.9 | 16.6 |
| 28 | Wis.SMR 18 | Univ. Wis. | 4.0 | 3.8 | 27.4 | 25.8 |
| | LSD (5%) | | 1.9 | 1.4 | 5.8 | 6.1 |
| | Mean | | 7.2 | 6.2 | 14.5 | 14.5 |
| | CV (%) | | 15.8 | 13.8 | 24.5 | 25.7 |

[z] SWI is simple weighted index calculated from the performance of a cultigen for yield; earliness; fruit shape, seedcell size and overall impression; and disease resistance. The index is calculated with 2 different methods of weighting each trait (10 is best, 1 is worst).

ARI is the average ranking of each cultigen for yield, earliness, fruit quality and disease resistance. The index is calculated with 2 different sets of secondary traits added in with the primary traits (1 is best).

Correlation (Yield with SWI1) = 0.93**

Correlation (Yield with ARI1) = -0.68**

# Slicing Cucumbers

## Preliminary (Stage 1) Slicing Cucumber Trial 2000

The stage 1 slicer trial was not run this year.

## Observational (Stage 2) Slicing Cucumber Trial 2000

The stage 2 slicer trial was not run this year.

## Summer (Stage 4) Slicing Cucumber Trial 2000

The stage 4 slicer trial was not harvested this year (the disease ratings are in the stage 3 trial).

## Spring (Stage 3) Slicing Cucumber Trial 2000

Todd C. Wehner and Tammy L. Ellington

**Experiment Design**

1. A randomized complete block with 3 replications of slicer cultivars and breeding lines (collectively referred to as cultigens) was grown.
2. Plots were single 20 ft. rows with 5 ft. alleys at each end.
3. Rows were on raised 18" beds spaced 60" apart (center to center).
4. Fertilizer consisted of 80-80-80 lb/A (N-P-K) broadcast preplant and 30-0-0 lb/A (N-P-K) sideplaced at the 2 to 4 leaf stage.
5. Curbit was applied preemergence at the rate of 1 lb. a.i./A.
6. The trial was planted 24 April, and harvested 6 times (Mondays and Thursdays) between 22 June through 10 July.

**Data Collection**

1. Fruits were weighed after sorting into No.1, No.2 and cull (nubs and crooks) grades according to U.S.D.A. standards.
2. Fruit length, diameter and weight were recorded for 3 fruit per plot.
3. Quality ratings were from 1 to 9, with 1 = worst, 9 = best.
4. Disease ratings were from 0 to 9, with 0 = no disease, 1-2 = trace, 3-4 = slight, 5-6 = moderate, 7-8 = severe, 9 = plant dead.

**Results**

The following cultigens performed well, and could be advanced to the next stage:

| | | |
|---|---|---|
| 1 | XP3501217 | Seminis |
| 2 | HMX-8416 | Harris Moran |
| 3 | Revenue | Harris Moran |
| 4 | Daytona | Seminis |
| 5 | EX4676088 | Seminis |
| 6 | SVR4675898 | Seminis |
| 7 | SRQS-2387 | SunSeeds |

Table 16. Stage 3 spring slicer trial - yield data (cultigens ranked by cwt/A of Fancy + No. 1 grade fruit).

| Rank | Cultivar or line | Seed source | Yield(cwt/A) Fancy +No.1 | Yield(cwt/A) Market-able | Percent Fancy +No.1 | Percent culls | Plants per A (x1000) |
|---|---|---|---|---|---|---|---|
| 1 | HMX-8416 | HarrisMoran | 139 | 254 | 45 | 17 | 24 |
| 2 | XP3501217 | Seminis | 130 | 263 | 36 | 25 | 20 |
| 3 | Revenue (4289) | HarrisMoran | 130 | 244 | 41 | 22 | 24 |
| 4 | Daytona | Seminis | 118 | 252 | 39 | 16 | 24 |
| 5 | Greensleeves(0431 | HarrisMoran | 118 | 240 | 40 | 15 | 22 |
| 6 | General Lee(4440) | HarrisMoran | 116 | 228 | 42 | 14 | 22 |
| 7 | EX4676088 | Seminis | 116 | 236 | 39 | 20 | 24 |
| 8 | Marketmore 76 | Check | 114 | 179 | 61 | 5 | 19 |
| 9 | Turbo | Seminis | 108 | 239 | 40 | 11 | 24 |
| 10 | SRQS-2387 | SunSeeds | 106 | 254 | 30 | 26 | 19 |
| 11 | SVR4675898 | Seminis | 99 | 218 | 33 | 28 | 14 |
| 12 | Indy | Seminis | 98 | 211 | 38 | 17 | 20 |
| 13 | Thunder(1700) | Seminis | 97 | 202 | 37 | 23 | 24 |
| 14 | Panther(3727) | SunSeeds | 96 | 215 | 35 | 21 | 23 |
| 15 | SRQS-2646 | SunSeeds | 96 | 247 | 30 | 19 | 23 |
| 16 | Dasher II | Seminis | 90 | 211 | 35 | 16 | 21 |
| 17 | SRQS-2389 | SunSeeds | 87 | 198 | 33 | 25 | 23 |
| 18 | EX4675958 | Seminis | 79 | 179 | 28 | 34 | 22 |
| 19 | Poinsett 76 | CornellUniv | 58 | 200 | 23 | 22 | 23 |
| | LSD (5%) | | 57 | 75 | 12 | 10 | 8 |
| | Mean | | 105 | 225 | 37 | 20 | 22 |
| | CV (%) | | 33 | 20 | 20 | 30 | 23 |

Correlation (Marketable yield with % culls) = -0.27*

Table 17. Stage 3 spring slicer trial - earliness data (cultigens ranked by weight of Fancy + No.1 grade fruit in harvests 1 and 2).

| Rank | Cultivar or line | Seed source | Cumulative fruit weight and % of total weight (6 harvests) for harvest: 1 wt. | 1 % | 1-2 wt. | 1-2 % | 1-3 wt. | 1-3 % | 1-4 wt. | 1-4 % | 1-5 wt. | 1-5 % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | XP3501217 | Seminis | 94 | 37 | 131 | 51 | 142 | 57 | 210 | 79 | 238 | 91 |
| 2 | HMX-8416 | HarrisMoran | 21 | 9 | 99 | 38 | 137 | 54 | 173 | 68 | 223 | 88 |
| 3 | Revenue (4289) | HarrisMoran | 17 | 7 | 92 | 38 | 134 | 55 | 177 | 73 | 209 | 86 |
| 4 | Thunder(1700) | Seminis | 49 | 24 | 89 | 44 | 105 | 53 | 149 | 74 | 179 | 89 |
| 5 | SVR4675898 | Seminis | 49 | 22 | 82 | 38 | 110 | 50 | 163 | 75 | 185 | 86 |
| 6 | Greensleeves(0431 | HarrisMoran | 18 | 7 | 79 | 34 | 113 | 47 | 146 | 61 | 183 | 76 |
| 7 | Daytona | Seminis | 10 | 4 | 77 | 30 | 120 | 47 | 174 | 69 | 195 | 77 |
| 8 | EX4675958 | Seminis | 18 | 10 | 71 | 40 | 97 | 55 | 144 | 81 | 158 | 88 |
| 9 | SRQS-2387 | SunSeeds | 20 | 8 | 71 | 29 | 108 | 43 | 172 | 67 | 210 | 82 |
| 10 | EX4676088 | Seminis | 21 | 9 | 68 | 29 | 108 | 46 | 173 | 73 | 203 | 86 |
| 11 | SRQS-2646 | SunSeeds | 11 | 4 | 67 | 27 | 123 | 50 | 161 | 65 | 202 | 82 |
| 12 | General Lee(4440) | HarrisMoran | 8 | 3 | 62 | 24 | 100 | 41 | 162 | 71 | 188 | 83 |
| 13 | Indy | Seminis | 13 | 7 | 59 | 28 | 94 | 45 | 139 | 67 | 175 | 83 |
| 14 | Dasher II | Seminis | 9 | 4 | 57 | 26 | 80 | 38 | 126 | 60 | 157 | 74 |
| 15 | Panther(3727) | SunSeeds | 5 | 2 | 54 | 24 | 98 | 45 | 147 | 68 | 169 | 79 |
| 16 | SRQS-2389 | SunSeeds | 1 | 0 | 42 | 22 | 76 | 40 | 106 | 55 | 159 | 81 |
| 17 | Turbo | Seminis | 2 | 1 | 29 | 12 | 107 | 44 | 154 | 65 | 194 | 82 |
| 18 | Poinsett 76 | CornellUniv | 2 | 1 | 19 | 9 | 48 | 23 | 104 | 50 | 151 | 75 |
| 19 | Marketmore 76 | Check | 1 | 1 | 16 | 9 | 34 | 19 | 96 | 54 | 128 | 71 |
| | LSD (5%) | | 19 | 7 | 48 | 18 | 49 | 16 | 64 | 14 | 63 | 10 |
| | Mean | | 19 | 8 | 66 | 29 | 102 | 100 | 151 | 67 | 184 | 82 |
| | CV (%) | | 59 | 51 | 43 | 37 | 29 | 0 | 25 | 12 | 20 | 7 |

Correlation (Marketable yield with yield in harvests 1-2) = 0.54**
Correlation (Marketable yield with % of yield in harvests 1-2) = 0.16ns

Table 18. Stage 3 spring slicer trial - fruit quality data (cultigens ranked by average quality).[z]

| Rank | Cultivar or line | Seed source | Average quality | Shape | Color | Seed-cell | Overall impression |
|---|---|---|---|---|---|---|---|
| 1 | HMX-8416 | HarrisMoran | 7.2 | 7 | 7 | 8 | 7 |
| 2 | Daytona | Seminis | 7.2 | 7 | 8 | 8 | 7 |
| 3 | Marketmore 76 | Check | 7.1 | 7 | 7 | 6 | 8 |
| 4 | General Lee(4440) | HarrisMoran | 7.1 | 7 | 7 | 7 | 7 |
| 5 | Indy | Seminis | 7.1 | 7 | 7 | 7 | 7 |
| 6 | Turbo | Seminis | 7.1 | 7 | 6 | 7 | 7 |
| 7 | Greensleeves(0431 | HarrisMoran | 7.0 | 7 | 6 | 7 | 7 |
| 8 | SVR4675898 | Seminis | 6.9 | 7 | 8 | 7 | 7 |
| 9 | SRQS-2389 | SunSeeds | 6.9 | 7 | 5 | 7 | 7 |
| 10 | Thunder(1700) | Seminis | 6.7 | 7 | 8 | 6 | 7 |
| 11 | XP3501217 | Seminis | 6.7 | 7 | 7 | 6 | 7 |
| 12 | Revenue (4289) | HarrisMoran | 6.7 | 7 | 6 | 7 | 7 |
| 13 | EX4676088 | Seminis | 6.7 | 7 | 7 | 7 | 6 |
| 14 | EX4675958 | Seminis | 6.6 | 7 | 8 | 6 | 7 |
| 15 | Poinsett 76 | CornellUniv | 6.3 | 7 | 7 | 6 | 6 |
| 16 | Dasher II | Seminis | 6.3 | 6 | 7 | 7 | 6 |
| 17 | Panther(3727) | SunSeeds | 6.1 | 5 | 6 | 7 | 6 |
| 18 | SRQS-2646 | SunSeeds | 6.0 | 6 | 6 | 7 | 6 |
| 19 | SRQS-2387 | SunSeeds | 5.9 | 6 | 7 | 5 | 6 |
| | LSD (5%) | | 1.0 | 1 | 2 | 1 | 2 |
| | Mean | | 6.7 | 7 | 7 | 7 | 7 |
| | CV (%) | | 9.9 | 13 | 13 | 12 | 16 |

[z] Quality rated 1 to 9 (1 = poor, 5 = average, 9 = excellent; except color where 1 = white, 5 = medium green, 9 = very dark green).
Correlation (Marketable yield with average quality) = -0.04ns

Table 19. Stage 3 spring slicer trial - fruit dimensions and comments (cultigens ranked by average quality rating).[z]

| Rank | Cultivar or line | Seed source | Length (0.1") | Diameter (0.1") | Wt. (lb.) | Defect1° 2 | Defect1° 4 | Defect1° 6 | Defect2° 2 | Defect2° 4 | Defect2° 6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | HMX-8416 | HarrisMoran | 8.7 | 2.1 | 0.83 | T | T | D | K | K | T |
| 2 | Daytona | Seminis | 8.2 | 2.1 | 0.78 | H | K | T | T | K | K |
| 3 | Marketmore 76 | Check | 8.1 | 2.2 | 0.84 | T | H | T | K | K | K |
| 4 | General Lee(4440) | HarrisMoran | 8.1 | 2.2 | 0.79 | H | S | H | K | K | D |
| 5 | Indy | Seminis | 8.2 | 2.2 | 0.77 | H | K | M | T | D | K |
| 6 | Turbo | Seminis | 7.7 | 2.1 | 0.72 | M | K | M | T | K | T |
| 7 | Greensleeves(0431 | HarrisMoran | 8.4 | 2.1 | 0.85 | H | T | T | K | K | M |
| 8 | SVR4675898 | Seminis | 8.1 | 2.1 | 0.75 | H | H | M | K | T | H |
| 9 | SRQS-2389 | SunSeeds | 7.9 | 2.3 | 0.84 | K | D | K | D | H | D |
| 10 | Thunder(1700) | Seminis | 8.2 | 2.1 | 0.79 | K | D | S | T | S | K |
| 11 | XP3501217 | Seminis | 8.8 | 2.2 | 0.90 | K | S | K | T | H | T |
| 12 | Revenue (4289) | HarrisMoran | 8.3 | 2.2 | 0.82 | T | D | I | K | T | K |
| 13 | EX4676088 | Seminis | 8.6 | 2.2 | 0.84 | T | K | T | D | H | C |
| 14 | EX4675958 | Seminis | 8.7 | 2.2 | 0.91 | T | D | T | N | T | C |
| 15 | Poinsett 76 | CornellUniv | 7.3 | 2.0 | 0.63 | H | H | H | T | T | T |
| 16 | Dasher II | Seminis | 8.1 | 2.1 | 0.79 | H | H | H | T | K | M |
| 17 | Panther(3727) | SunSeeds | 7.6 | 2.0 | 0.67 | H | T | 7 | K | K | H |
| 18 | SRQS-2646 | SunSeeds | 8.0 | 2.2 | 0.80 | H | S | H | T | D | T |
| 19 | SRQS-2387 | SunSeeds | 7.7 | 2.1 | 0.71 | H | S | H | C | H | N |
| | LSD (5%) | | 0.6 | 0.1 | 0.17 | | | | | | |
| | Mean | | 8.1 | 2.1 | 0.79 | | | | | | |
| | CV (%) | | 4.6 | 5.6 | 13.69 | | | | | | |

[z] Defects were rated as follows (giving primary and secondary for each harvest):

A - wArty fruit
B - Blossom end defects
C - Crooks excessive
D - Dogbone shape
E - Early maturity
F - Four celled
G - lonG fruit
H - sHort fruit
I - strIped fruit
J - RiDGed
K - Keep(excellent)
L - Late maturity
M - Mottled fruit
N - Nubs excessive
O - Offtype fruit
P - Placental hollows
Q -
R - Reject (poor)
S - Separated carpels
T - Tapered ends
U - Uniform green
V - Varicolor (dark stem end, light blossom end)
W - White fruit
X - neCKS on fruit
Y - Yellow fruit
Z - diSeased fruit

Table 20. Stage 3 spring slicer trial - fruit keeping ability data (cultigens are ranked by % weight loss).

| Rank | Cultivar or line | Seed source | Weight loss (%)[z] | Rating (0 - 9)[y] Shriveling | Rating (0 - 9)[y] Rots & disease | Firmness (lb.)[x] |
|---|---|---|---|---|---|---|
| 1 | HMX-8416 | HarrisMoran | 16 | 3 | 1 | 16 |
| 2 | Daytona | Seminis | 13 | 6 | 1 | 17 |
| 3 | Marketmore 76 | Check | 12 | 4 | 1 | 18 |
| 4 | General Lee(4440) | HarrisMoran | 11 | 4 | 1 | 17 |
| 5 | Indy | Seminis | 12 | 3 | 3 | 18 |
| 6 | Turbo | Seminis | 11 | 4 | 1 | 17 |
| 7 | Greensleeves(0431 | HarrisMoran | 12 | 5 | 2 | 17 |
| 8 | SVR4675898 | Seminis | 17 | 6 | 1 | 16 |
| 9 | SRQS-2389 | SunSeeds | 23 | 7 | 4 | 15 |
| 10 | Thunder(1700) | Seminis | 15 | 5 | 1 | 19 |
| 11 | XP3501217 | Seminis | 14 | 4 | 1 | 17 |
| 12 | Revenue (4289) | HarrisMoran | 13 | 4 | 1 | 16 |
| 13 | EX4676088 | Seminis | 16 | 6 | 4 | 15 |
| 14 | EX4675958 | Seminis | 13 | 6 | 3 | 19 |
| 15 | Poinsett 76 | CornellUniv | 13 | 4 | 2 | 15 |
| 16 | Dasher II | Seminis | 14 | 5 | 1 | 18 |
| 17 | Panther(3727) | SunSeeds | 14 | 5 | 1 | 17 |
| 18 | SRQS-2646 | SunSeeds | 17 | 5 | 4 | 15 |
| 19 | SRQS-2387 | SunSeeds | 12 | 6 | 2 | 15 |
| | LSD (5%) | | 10 | 3 | 4 | 4 |
| | Mean | | 14 | 5 | 2 | 17 |
| | CV (%) | | 44 | 36 | 123 | 14 |

[z] After storage at room temperature for 8 days in open kraft paper bags.
[y] Shriveling & disease rated 0-9 (0=none, 1-3=slight, 4-6=moderate, 7-9=advanced).
[x] Firmness after storage using Magness-Taylor fruit punch tester.
Correlation (Weight loss with shriveling) = 0.47**
Correlation (Weight loss with firmness) = -0.53**

Table 21. Stage 3 spring slicer trial - sex expression and vine data (cultigens ranked by gynoecious rating).

| Rank | Cultivar or line | Seed source | Gyn. rating[z] | Early yield (cwt/A) | Earliness (%)[x] | Vine size[w] | Vine color[w] |
|---|---|---|---|---|---|---|---|
| 1 | SRQS-2646 | SunSeeds | 8 | 67 | 27 | 7 | 8 |
| 2 | EX4675958 | Seminis | 8 | 71 | 40 | 7 | 7 |
| 3 | SRQS-2389 | SunSeeds | 8 | 42 | 22 | 6 | 7 |
| 4 | XP3501217 | Seminis | 7 | 131 | 51 | 8 | 6 |
| 5 | SVR4675898 | Seminis | 7 | 82 | 38 | 6 | 7 |
| 6 | Thunder(1700) | Seminis | 7 | 89 | 44 | 7 | 7 |
| 7 | HMX-8416 | HarrisMoran | 7 | 99 | 38 | 8 | 7 |
| 8 | SRQS-2387 | SunSeeds | 7 | 71 | 29 | 7 | 7 |
| 9 | Greensleeves(0431 | HarrisMoran | 7 | 79 | 34 | 6 | 7 |
| 10 | Indy | Seminis | 6 | 59 | 28 | 6 | 9 |
| 11 | Turbo | Seminis | 5 | 29 | 12 | 8 | 7 |
| 12 | General Lee(4440) | HarrisMoran | 5 | 62 | 24 | 6 | 7 |
| 13 | Dasher II | Seminis | 5 | 57 | 26 | 6 | 7 |
| 14 | Revenue (4289) | HarrisMoran | 5 | 92 | 38 | 8 | 7 |
| 15 | Daytona | Seminis | 4 | 77 | 30 | 8 | 8 |
| 16 | Panther(3727) | SunSeeds | 4 | 54 | 24 | 7 | 7 |
| 17 | EX4676088 | Seminis | 3 | 68 | 29 | 7 | 7 |
| 18 | Marketmore 76 | Check | 2 | 16 | 9 | 7 | 7 |
| 19 | Poinsett 76 | CornellUniv | 2 | 19 | 9 | 7 | 7 |
| | LSD (5%) | | 3 | 48 | 18 | 2 | 2 |
| | Mean | | 6 | 66 | 29 | 7 | 7 |
| | CV (%) | | 27 | 43 | 37 | 17 | 16 |

[z] Gynoecious rating (1 = androecious, 2-3 = andromonoecious, 4-6 = monoecious, 7-8 = predominately gynoecious, 9 = gynoecious).

[y] Early yield is weight of Fancy+No.1 grade fruit produced in harvests 1 and 2.

[x] Earliness is the percent of the yield (Fancy + No.1 grade fruit) of 6 harvests that was produced in harvests 1 and 2.

[w]Vine size & color are rated 1 (small or yellow green) to 9 (large or dark green).

Correlation (Marketable yield with gynoecious rating) = 0.04ns

Table 22. Stage 3 spring slicer trial - disease ratings (cultigens ranked by GSB resistance).[z]

| Rank | Cultivar or line | Seed source | Anthrac -nose | Downy mildew | Powdery mildew | Virus (PRSV?) |
|---|---|---|---|---|---|---|
| 1 | SRQS-2387 | SunSeeds | 3.0 | 1 | 1 | 6 |
| 2 | SRQS-2389 | SunSeeds | 3.3 | 2 | 1 | 6 |
| 3 | HMX-8416 | HarrisMoran | 3.7 | 1 | 1 | 5 |
| 4 | EX4676088 | Seminis | 3.7 | 3 | 1 | 1 |
| 5 | Indy | Seminis | 4.0 | 2 | 1 | 6 |
| 6 | Poinsett 76 | CornellUniv | 4.3 | 1 | 1 | 7 |
| 7 | EX4675958 | Seminis | 4.3 | 3 | 2 | 4 |
| 8 | SVR4675898 | Seminis | 4.7 | 1 | 1 | 3 |
| 9 | General Lee(4440) | HarrisMoran | 4.7 | 2 | 1 | 6 |
| 10 | Panther(3727) | SunSeeds | 4.7 | 2 | 2 | 5 |
| 11 | Revenue (4289) | HarrisMoran | 4.7 | 3 | 5 | 5 |
| 12 | XP3501217 | Seminis | 5.0 | 1 | 1 | 6 |
| 13 | Dasher II | Seminis | 5.0 | 1 | 1 | 5 |
| 14 | Marketmore 76 | Check | 5.3 | 1 | 1 | 6 |
| 15 | Turbo | Seminis | 5.3 | 2 | 1 | 6 |
| 16 | Daytona | Seminis | 6.0 | 3 | 1 | 3 |
| 17 | Greensleeves(0431 | HarrisMoran | 6.3 | 2 | 1 | 6 |
| 18 | SRQS-2646 | SunSeeds | 6.7 | 3 | 1 | 5 |
| 19 | Thunder(1700) | Seminis | 8.3 | 2 | 2 | 4 |
| | LSD (5%) | | 2.9 | 2 | 1 | 2 |
| | Mean | | 4.9 | 2 | 1 | 5 |
| | CV (%) | | 36.4 | 76 | 40 | 23 |

[z] Disease rated 0 to 9 (0=none, 1-2=trace, 3-4=slight, 5-6=moderate, 7-8=advanced, 9=plant dead).
Correlation (Marketable yield with disease rating) = -0.15ns

Table 23. Stage 3 spring slicer trial - selection indexes (cultigens ranked by SWI1).[z]

| Rank | Cultivar or line | Seed source | Simple weighted indexes SWI1 | Simple weighted indexes SWI2 | Average rank indexes ARI1 | Average rank indexes ARI2 |
|---|---|---|---|---|---|---|
| 1 | XP3501217 | Seminis | 7.1 | 6.5 | 8.5 | 7.9 |
| 2 | HMX-8416 | HarrisMoran | 7.0 | 6.4 | 6.5 | 6.4 |
| 3 | Revenue (4289) | HarrisMoran | 6.5 | 5.9 | 9.1 | 8.6 |
| 4 | Daytona | Seminis | 6.1 | 5.7 | 8.3 | 8.6 |
| 5 | EX4676088 | Seminis | 6.1 | 5.6 | 9.0 | 8.6 |
| 6 | SVR4675898 | Seminis | 6.0 | 5.7 | 9.0 | 9.0 |
| 7 | SRQS-2387 | SunSeeds | 6.0 | 5.5 | 10.8 | 9.4 |
| 8 | Greensleeves(0431 | HarrisMoran | 5.9 | 5.6 | 9.4 | 9.7 |
| 9 | General Lee(4440) | HarrisMoran | 5.9 | 5.5 | 8.8 | 9.3 |
| 10 | Indy | Seminis | 5.8 | 5.4 | 8.3 | 8.7 |
| 11 | EX4675958 | Seminis | 5.5 | 5.2 | 10.7 | 10.5 |
| 12 | Thunder(1700) | Seminis | 5.5 | 5.2 | 11.0 | 11.3 |
| 13 | Dasher II | Seminis | 5.3 | 5.0 | 11.9 | 11.7 |
| 14 | SRQS-2389 | SunSeeds | 5.3 | 5.0 | 9.9 | 10.2 |
| 15 | Turbo | Seminis | 5.2 | 4.9 | 10.1 | 10.8 |
| 16 | SRQS-2646 | SunSeeds | 5.2 | 4.8 | 13.1 | 12.4 |
| 17 | Panther(3727) | SunSeeds | 5.2 | 4.9 | 11.8 | 11.4 |
| 18 | Marketmore 76 | Check | 5.0 | 4.8 | 10.3 | 11.9 |
| 19 | Poinsett 76 | CornellUniv | 4.4 | 4.2 | 13.6 | 13.5 |
| | LSD (5%) | | 1.6 | 1.2 | 3.9 | 4.0 |
| | Mean | | 5.7 | 5.4 | 10.0 | 10.0 |
| | CV (%) | | 16.6 | 13.9 | 23.4 | 24.4 |

[z] SWI is simple weighted index calculated from the performance of a cultigen for yield; earliness; fruit shape, seedcell size and overall impression; and disease resistance. The index is calculated with 2 different methods of weighting each trait (10 is best, 1 is worst).
ARI is the average ranking of each cultigen for yield, earliness, fruit quality and disease resistance. The index is calculated with 2 different sets of secondary traits added in with the primary traits (1 is best).
Correlation (Marketable yield with SWI1) = 0.76**
Correlation (Marketable yield with ARI1) = -0.43**