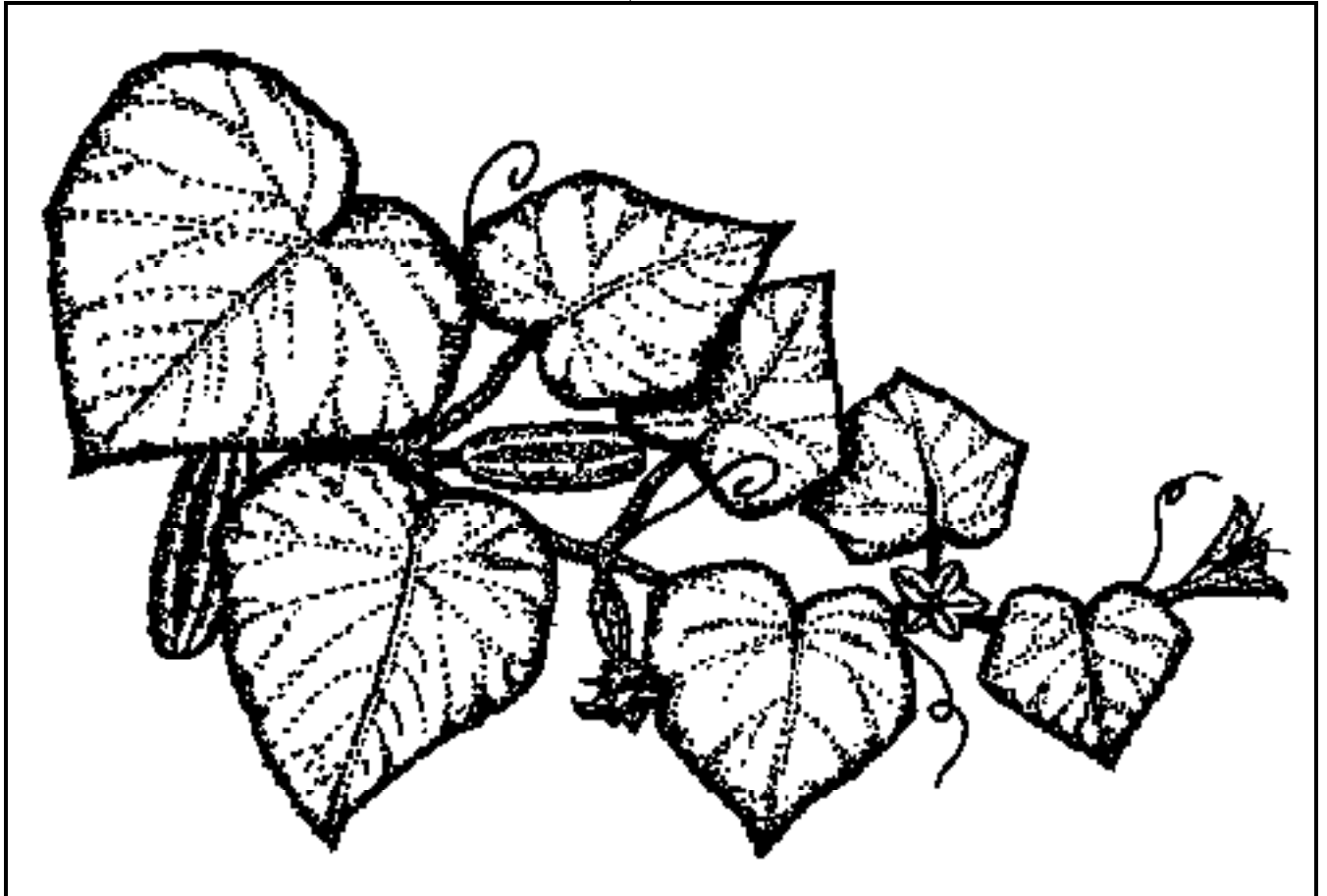


\$5.00

NC State Cucumber Trials 2008



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The authors gratefully acknowledge the assistance of Robbie Brogden and the personnel at the Horticultural Crops Research Station, Clinton, NC for help in planting, maintaining, and harvesting the trials.

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")	\$19.30	\$19.30
No.2 (1 1/16 - 1 1/2")	11.05	11.05
No.3 (1 1/2 - 2")	7.75	7.75
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.

Yield is presented in cwt/A to make it easy to convert to other useful values. For example, approximation of bu/A can be obtained by taking cwt/A x2, MT/ha by taking cwt/A x 1/10, and t/A by taking cwt/A x 1/20.

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

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.

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Pickling Cucumbers

Brinestock Evaluation

Spring (Stage 3) Pickle Trial

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Introduction

Cucumbers from harvests 3, 5 and 6 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, Henry Woods, Bob Quinn, and Lisa Moeller (Mt. Olive), Eddie Quill, Darrell Hawley, JW Jackson, and Rickey Jackson (Bay Valley), Steve Apol (Toisnot), Dan Bader (Carolina's Best), Thomas Joyner (Nash Produce), Sara Walpole (Nunhems) and Chris Ware (Harris Moran).

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. Because of low bloater incidence, the bloater data showed few significant differences among cultigens.

Summary

- The cultigens with best fruit quality in brinestock were Exp06-3566, NC-Danbury, Exp06-3575, NC-Duplin, Feisty, Exp07-5654, Raleigh, CrossCountry, Exp06-3589, EGP-410, and EGP-411.
- Most cultigens were bloater resistant; several were susceptible: Colt, and EX147-27140.
- The firmest cultigens were Treasure, Johnston, LB-27, Vlaspiik, EGP-410, NC-Lexington, Sumter, Exp07-5654, Exp06-3566, and Vlasspear.
- 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 Denlinger who assigned the highest quality ratings, to Jackson who assigned the lowest. Analysis of variance indicated significant differences among judges for the way they rated fruit quality. However, interaction of judge with cultigen was non-significant (the judges agreed on which were good cultigens, and which were bad cultigens).

² 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).²

Rank	Cultivar or line	Seed source	Average quality	Shape	Extrnal color	Text- ure	Seed cell	Uniform- ity
1	Exp06-3566	Bejo Seeds	6.1	5.6	5.7	6.5	6.5	6.2
2	NC-Danbury	NCState Univ	6.0	5.8	6.0	6.2	6.0	6.1
3	Exp06-3575	Bejo Seeds	5.9	5.4	5.9	6.4	6.2	5.7
4	NC-Duplin	NCState Univ	5.7	5.5	5.8	5.6	5.6	5.7
5	Feisty	Harris Moran	5.6	5.3	5.8	5.7	5.6	5.7
6	Exp07-5654	Bejo Seeds	5.6	5.3	5.8	5.6	5.5	5.6
7	Raleigh	NCState Univ	5.5	5.2	5.8	5.7	5.5	5.5
8	CrossCountry	Harris Moran	5.5	5.5	5.7	5.5	5.4	5.5
9	Exp06-3589	Bejo Seeds	5.5	4.7	5.3	6.0	6.0	5.4
10	EGP-410	EmeraldSeeds	5.5	5.2	5.4	5.8	5.5	5.5
11	EGP-411	EmeraldSeeds	5.5	5.2	5.8	5.4	5.3	5.6
12	NC-Leland	NCState Univ	5.4	6.2	6.3	4.4	4.0	6.2
13	NC-Longhurst	NCState Univ	5.3	5.4	5.8	4.7	4.7	6.0
14	Johnston	NCState Univ	5.3	5.1	5.5	5.4	5.1	5.5
15	Calypso	NCState Univ	5.3	5.1	5.2	5.5	5.3	5.4
16	Supreme	Nunhems	5.3	5.0	5.7	5.4	5.1	5.4
17	LB-27	Baker Seeds	5.3	4.8	5.6	5.4	5.3	5.3
18	LB-09	Baker Seeds	5.3	4.9	5.9	5.3	5.0	5.3
19	Colt	Seminis	5.2	5.0	5.5	5.3	5.1	5.2
20	Sumter	Clemson Univ	5.2	4.6	5.0	5.7	5.4	5.4
21	Lafayette	Nunhems	5.2	4.8	5.5	5.2	5.2	5.3
22	Vlasspear	Seminis	5.2	4.8	5.3	5.4	5.3	5.1
23	EX147-45479	Seminis	5.2	4.0	5.3	5.7	5.7	5.1
24	Vlasstar	Seminis	5.1	4.8	5.5	5.2	4.9	5.2
25	Wainwright	Nunhems	5.0	4.8	5.7	4.8	4.6	5.1
26	EX147-35234	Seminis	5.0	4.4	5.7	5.0	4.9	5.0
27	PP12-102	Rijk Zwaan	5.0	4.5	5.7	4.9	4.6	5.2
28	NC-Davie	ZeraimGedera	4.9	5.2	5.5	4.7	4.3	5.1
29	Treasure	Harris Moran	4.9	4.5	5.2	5.1	4.8	5.1
30	Wis.SMR 18	Univ. Wis.	4.8	4.4	4.3	5.2	4.9	5.1
31	NC-Lexington	NCState Univ	4.8	4.7	4.7	4.6	4.4	5.4
32	PP12-103	Rijk Zwaan	4.7	4.2	4.9	4.9	4.6	5.0
33	Vlaspik	Seminis	4.7	4.6	5.2	4.6	4.3	4.9
34	EX147-27140	Seminis	4.7	4.1	5.7	4.6	4.4	4.8
35	HSX-900	HortAg Seed	4.6	4.1	5.1	4.8	4.5	4.6
36	HMX-7426	Harris Moran	4.5	4.2	5.1	4.4	4.2	4.8
37	H-19	Seminis	4.2	4.8	4.2	3.8	3.2	5.2
38	NC-Merritt	NCState Univ	4.2	3.8	4.5	3.9	3.7	5.2
39	Coolgreen	Seminis	3.3	3.1	4.2	2.4	2.4	4.5
	CV (%)		17	24	18	22	25	21
	Mean		5.1	4.8	5.4	5.1	4.9	5.3
	LSD (5%)		0.4	0.5	0.4	0.5	0.5	0.5

² 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) = 0.89**

Correlation (Texture with Seedcell) = 0.97**

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	NC-Danbury	NCState Univ	0	0	0	0
2	Exp06-3575	Bejo Seeds	0	0	0	0
3	NC-Leland	NCState Univ	0	0	0	0
4	NC-Longhurst	NCState Univ	0	0	0	0
5	LB-27	Baker Seeds	0	0	0	0
6	Sumter	Clemson Univ	0	0	0	0
7	EX147-45479	Seminis	0	0	0	0
8	EX147-35234	Seminis	0	0	0	0
9	Wis.SMR 18	Univ. Wis.	0	0	0	0
10	NC-Lexington	NCState Univ	0	0	0	0
11	H-19	Seminis	0	0	0	0
12	NC-Merritt	NCState Univ	0	0	0	0
13	Exp06-3566	Bejo Seeds	0	0	0	0
14	Feisty	Harris Moran	0	0	0	0
15	Exp07-5654	Bejo Seeds	0	0	0	0
16	CrossCountry	Harris Moran	0	0	0	0
17	Johnston	NCState Univ	0	0	0	0
18	Calypso	NCState Univ	0	0	0	0
19	Vlasspear	Seminis	0	0	0	0
20	Treasure	Harris Moran	0	0	0	0
21	Raleigh	NCState Univ	0	0	0	0
22	PP12-103	Rijk Zwaan	0	0	0	0
23	Vlasstar	Seminis	0	0	0	0
24	Supreme	Nunhems	0	0	0	0
25	NC-Duplin	NCState Univ	0	0	0	0
26	PP12-102	Rijk Zwaan	0	0	0	0
27	NC-Davie	ZeraimGedera	1	1	0	0
28	Exp06-3589	Bejo Seeds	1	1	0	0
29	HSX-900	HortAg Seed	1	1	0	0
30	Wainwright	Nunhems	1	1	0	0
31	Lafayette	Nunhems	1	1	0	0
32	EGP-411	EmeraldSeeds	2	2	0	0
33	Vlaspik	Seminis	3	3	0	0
34	Coolgreen	Seminis	4	4	0	0
35	HMX-7426	Harris Moran	5	5	0	0
36	LB-09	Baker Seeds	5	5	0	0
37	EGP-410	EmeraldSeeds	5	5	0	0
38	Colt	Seminis	7	7	0	0
39	EX147-27140	Seminis	10	10	0	0
CV (%)			316	316	-	-
Mean			1	1	-	-
LSD (5%)			6	6	-	-

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	NC-Danbury	NCState Univ	0	0	0	0
2	Sumter	Clemson Univ	0	0	0	0
3	NC-Leland	NCState Univ	1	0	0	1
4	EX147-45479	Seminis	1	0	1	0
5	EX147-35234	Seminis	1	0	0	1
6	Wis.SMR 18	Univ. Wis.	1	0	0	1
7	Exp06-3566	Bejo Seeds	1	0	0	0
8	Feisty	Harris Moran	1	1	0	0
9	Vlasspear	Seminis	1	1	0	0
10	Wainwright	Nunhems	1	1	0	0
11	Exp06-3575	Bejo Seeds	1	0	1	0
12	CrossCountry	Harris Moran	1	1	0	0
13	Raleigh	NCState Univ	1	1	0	0
14	Exp06-3589	Bejo Seeds	1	0	0	1
15	Calypso	NCState Univ	2	1	0	1
16	HSX-900	HortAg Seed	2	0	0	2
17	LB-27	Baker Seeds	2	0	1	1
18	NC-Lexington	NCState Univ	2	0	0	2
19	NC-Merritt	NCState Univ	2	0	0	2
20	Johnston	NCState Univ	2	1	0	1
21	EGP-411	EmeraldSeeds	2	1	1	0
22	Vlaspik	Seminis	2	1	0	1
23	NC-Longhurst	NCState Univ	2	0	0	2
24	Exp07-5654	Bejo Seeds	2	1	0	1
25	Lafayette	Nunhems	2	1	0	1
26	HMX-7426	Harris Moran	2	0	0	2
27	PP12-103	Rijk Zwaan	3	1	0	1
28	Treasure	Harris Moran	3	1	0	2
29	Vlasstar	Seminis	4	2	0	2
30	NC-Duplin	NCState Univ	4	3	1	0
31	LB-09	Baker Seeds	4	3	0	1
32	Supreme	Nunhems	4	3	0	2
33	PP12-102	Rijk Zwaan	4	1	0	3
34	EGP-410	EmeraldSeeds	5	4	1	0
35	H-19	Seminis	5	0	0	5
36	NC-Davie	ZeraimGedera	7	1	1	5
37	Colt	Seminis	7	4	1	1
38	EX147-27140	Seminis	12	8	1	3
39	Coolgreen	Seminis	17	0	0	17
	CV (%)		131	226	342	154
	Mean		3	1	0	2
	LSD (5%)		6	4	1	4

Table 4. Brinestock evaluation - firmness and texture of fruit, and resistance to bloaters and defects (cultigens are ranked by firmness).²

Rank	Cultivar or line	Seed source	Firm- ness (lb.)	Text- ure	Total bloaters & defects	Total bloaters	Bal- loon	Defects
1	Treasure	Harris Moran	22.8	5.1	3	0	0	3
2	Johnston	NCState Univ	22.7	5.4	2	0	0	2
3	LB-27	Baker Seeds	22.6	5.4	2	0	0	2
4	Vlaspik	Seminis	22.4	4.6	5	3	3	2
5	EGP-410	EmeraldSeeds	22.4	5.8	10	5	5	5
6	NC-Lexington	NCState Univ	22.3	4.6	2	0	0	2
7	Sumter	Clemson Univ	22.1	5.7	0	0	0	0
8	Exp07-5654	Bejo Seeds	22.1	5.6	2	0	0	2
9	Exp06-3566	Bejo Seeds	21.9	6.5	1	0	0	1
10	Vlasspear	Seminis	21.9	5.4	1	0	0	1
11	Exp06-3589	Bejo Seeds	21.8	6.0	2	1	1	1
12	Exp06-3575	Bejo Seeds	21.7	6.4	1	0	0	1
13	Vlasstar	Seminis	21.4	5.2	4	0	0	4
14	NC-Danbury	NCState Univ	21.3	6.2	0	0	0	0
15	EX147-45479	Seminis	21.3	5.7	1	0	0	1
16	Calypso	NCState Univ	21.3	5.5	2	0	0	2
17	EX147-35234	Seminis	21.2	5.0	1	0	0	1
18	PP12-102	Rijk Zwaan	21.2	4.9	5	0	0	4
19	Colt	Seminis	21.1	5.3	14	7	7	7
20	Feisty	Harris Moran	21.0	5.7	1	0	0	1
21	LB-09	Baker Seeds	20.9	5.3	9	5	5	4
22	NC-Longhurst	NCState Univ	20.9	4.7	2	0	0	2
23	Wis.SMR 18	Univ. Wis.	20.8	5.2	1	0	0	1
24	Raleigh	NCState Univ	20.8	5.7	1	0	0	1
25	EGP-411	EmeraldSeeds	20.7	5.4	4	2	2	2
26	HSX-900	HortAg Seed	20.4	4.8	3	1	1	2
27	Supreme	Nunhems	20.3	5.4	4	0	0	4
28	PP12-103	Rijk Zwaan	20.3	4.9	3	0	0	3
29	NC-Duplin	NCState Univ	20.2	5.6	4	0	0	4
30	NC-Leland	NCState Univ	20.2	4.4	1	0	0	1
31	EX147-27140	Seminis	20.2	4.6	22	10	10	12
32	Lafayette	Nunhems	20.0	5.2	3	1	1	2
33	NC-Davie	ZeraimGedera	20.0	4.7	7	1	1	7
34	H-19	Seminis	19.8	3.8	5	0	0	5
35	Wainwright	Nunhems	19.7	4.8	2	1	1	1
36	CrossCountry	Harris Moran	18.7	5.5	1	0	0	1
37	HMX-7426	Harris Moran	18.6	4.4	7	5	5	2
38	NC-Merritt	NCState Univ	18.4	3.9	2	0	0	2
39	Coolgreen	Seminis	10.8	2.4	21	4	4	17
CV (%)			7	22	167	316	316	131
Mean			20.7	5.1	4	1	1	3
LSD (5%)			2.3	0.5	11	6	6	6

² Firmness determined by punch-testing (Magness-Taylor) 10 grade 2B fruits.
Correlation of Texture with: Firmness = 0.43**, Balloon = -0.17ns
Correlation of Texture with: Honeycomb = ns, Soft centers = -0.65**

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	Uniformity
1	Denlinger	6.3	6.1	7.1	5.7	5.5	7.0
2	Joyner	5.9	6.1	6.1	5.8	5.3	6.0
3	Moeller	5.9	6.0	6.5	6.0	5.1	5.8
4	Bader	5.8	5.8	6.1	5.7	5.5	6.0
5	Quill	5.7	4.7	5.8	5.7	6.4	6.2
6	Woods	5.5	5.2	5.3	6.0	5.8	5.4
7	Quinn	5.1	4.0	5.1	5.0	4.2	7.2
8	Ware	4.9	4.0	4.7	5.8	5.8	4.3
9	JacksonJW	4.5	4.1	5.3	4.2	4.4	4.7
10	Hawley	4.5	4.0	4.6	4.6	4.5	4.6
11	Apol	4.4	4.4	4.4	4.4	4.4	4.4
12	Walpole	4.2	4.1	4.5	4.4	4.1	3.9
13	JacksonRk	4.1	4.4	4.8	3.7	3.5	4.0

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

Pickling Cucumbers

Preliminary (Stage 1) Pickling Cucumber Trial 2008

The stage 1 pickle trial was not run this year.

Observational (Stage 2) Pickling Cucumber Trial 2008

The stage 2 pickle trial was not run this year.

Spring (Stage 3) Pickling Cucumber Trial 2008

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 1 May, and harvested 8 times (Mondays and Thursdays) between 16 June and 10 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	PP12-102	Rijk Zwaan
2	Exp06-3566	Bejo Seeds
3	Exp07-5654	Bejo Seeds
4	Colt	Seminis
5	Supreme	Nunhems
6	EX147-35234	Seminis
7	Vlaspik	Seminis
8	Johnston	NCState Univ
9	Wainwright	Nunhems
10	Calypso	NCState Univ
11	EGP-410	EmeraldSeeds
12	LB-27	Baker Seeds
13	Exp06-3575	Bejo Seeds
14	HMX-7426	Harris Moran
15	NC-Danbury	NCState Univ

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)					Plants per A (x1000)
					Cull	No.1	No.2	No.3	No.4	
1	Exp06-3566	Bejo Seeds	2682	349	20	8	36	29	7	24
2	PP12-102	Rijk Zwaan	2506	272	23	15	44	17	1	25
3	Exp07-5654	Bejo Seeds	2500	349	24	6	32	31	6	26
4	NC-Lexington	NCState Univ	2409	234	9	18	49	22	2	22
5	NC-Danbury	NCState Univ	2284	238	9	12	45	30	4	9
6	Johnston	NCState Univ	2253	273	21	11	32	33	4	9
7	Supreme	Nunhems	2247	270	19	8	40	29	4	26
8	EX147-35234	Seminis	2198	270	28	11	41	19	1	26
9	Calypso	NCState Univ	2166	291	18	8	32	33	9	24
10	Wainwright	Nunhems	2125	251	21	11	42	25	2	26
11	Vlaspik	Seminis	2119	280	28	8	36	25	2	26
12	NC-Davie	ZeraimGedera	2076	233	18	12	43	25	2	26
13	Raleigh	NCState Univ	2018	238	15	9	38	34	4	17
14	Exp06-3575	Bejo Seeds	2016	266	26	9	32	29	4	26
15	Vlasspear	Seminis	2003	293	32	6	35	25	2	26
16	NC-Denton	NCState Univ	1996	252	26	10	38	23	3	26
17	CrossCountry	Harris Moran	1983	263	18	7	35	33	8	24
18	HSX-900	HortAg Seed	1975	274	22	7	30	34	7	24
19	EGP-410	EmeraldSeeds	1974	259	24	7	38	27	4	23
20	Colt	Seminis	1968	262	27	8	31	32	2	26
21	Vlasstar	Seminis	1967	247	26	12	36	22	4	26
22	Exp06-3589	Bejo Seeds	1961	249	25	9	36	28	2	26
23	LB-27	Baker Seeds	1960	247	28	11	33	26	2	26
24	EGP-411	EmeraldSeeds	1953	235	22	11	40	24	3	26
25	LB-09	Baker Seeds	1931	237	24	9	41	23	3	26
26	Feisty	Harris Moran	1917	227	22	9	45	21	2	26
27	NC-Longhurst	NCState Univ	1911	165	13	29	48	9	0	21
28	Lafayette	Nunhems	1869	232	26	9	42	22	1	26
29	NC-Moriah	NCState Univ	1847	285	29	6	26	32	7	24
30	EX147-45479	Seminis	1843	271	31	7	32	23	6	26
31	H-19	Seminis	1830	160	6	23	52	16	2	24
32	PP12-103	Rijk Zwaan	1824	196	22	15	47	17	0	26
33	HMX-7426	Harris Moran	1822	265	31	6	30	32	2	26
34	Coolgreen	Seminis	1798	209	18	13	39	25	6	15
35	NC-Leland	NCState Univ	1714	139	11	33	50	6	0	21
36	EX147-27140	Seminis	1664	214	34	11	40	14	1	26
37	NC-Duplin	NCState Univ	1627	212	19	9	33	30	10	16
38	Treasure	Harris Moran	1608	254	32	8	25	27	8	26
39	NC-Merritt	NCState Univ	1488	187	21	8	37	30	3	14
40	NC-Dawson	NCState Univ	1481	199	28	8	39	22	3	26
41	Sumter	Clemson Univ	1400	211	29	7	26	31	7	26
42	Wis.SMR 18	Univ. Wis.	1385	223	29	4	29	30	8	22
CV (%)			23	23	19	23	13	23	66	13
Mean			1959	245	23	11	38	25	4	23
LSD (5%)			726	93	7	4	8	9	4	5

Correlation (Fruit value with fruit weight) = 0.80**

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 (8 harvests) for harvest:									
			1		1-2		1-3		1-4		1-5	
			\$/A	%	\$/A	%	\$/A	%	\$/A	%	\$/A	%
1	PP12-102	Rijk Zwaan	545	21	871	35	1425	56	1683	68	1936	77
2	Colt	Seminis	434	21	652	33	1113	54	1381	71	1585	81
3	Exp07-5654	Bejo Seeds	321	13	596	24	1115	44	1496	61	1775	71
4	EX147-35234	Seminis	370	17	569	25	1056	48	1335	61	1582	72
5	HMX-7426	Harris Moran	416	23	551	31	982	54	1303	72	1469	80
6	LB-27	Baker Seeds	362	18	538	28	1074	54	1284	66	1450	75
7	Vlaspik	Seminis	346	17	531	26	1076	51	1299	62	1513	72
8	Exp06-3566	Bejo Seeds	241	8	528	19	971	36	1341	50	1605	60
9	Treasure	Harris Moran	326	20	524	32	730	45	1044	65	1155	71
10	PP12-103	Rijk Zwaan	299	17	507	28	986	54	1229	67	1379	75
11	LB-09	Baker Seeds	248	14	454	25	955	51	1209	64	1470	77
12	Calypso	NCState Univ	264	11	444	19	1002	44	1367	62	1579	72
13	EX147-27140	Seminis	295	16	444	25	893	53	1137	67	1236	73
14	HSX-900	HortAg Seed	263	12	436	21	870	43	1082	54	1308	67
15	Exp06-3575	Bejo Seeds	219	11	426	21	917	46	1100	55	1308	65
16	EGP-410	EmeraldSeeds	177	8	414	20	857	42	1292	64	1494	74
17	Supreme	Nunhems	226	11	413	20	1072	49	1286	58	1531	69
18	Raleigh	NCState Univ	209	10	411	20	800	39	1044	51	1271	63
19	Johnston	NCState Univ	235	12	409	19	838	39	1108	51	1488	66
20	Lafayette	Nunhems	267	12	406	20	874	42	1036	52	1200	60
21	EGP-411	EmeraldSeeds	90	4	401	20	827	41	1229	61	1491	75
22	Wainwright	Nunhems	271	12	395	19	1035	48	1300	61	1462	68
23	Exp06-3589	Bejo Seeds	198	10	384	20	730	37	1047	53	1242	63
24	Vlasspear	Seminis	235	11	384	18	955	45	1320	64	1522	74
25	NC-Moriah	NCState Univ	225	12	369	20	897	47	1160	62	1366	73
26	Vlasstar	Seminis	192	9	357	18	933	47	1203	60	1429	72
27	NC-Davie	ZeraimGedera	119	5	353	16	875	42	1225	59	1455	71
28	Feisty	Harris Moran	155	8	337	18	699	36	1042	55	1228	64
29	EX147-45479	Seminis	239	12	313	16	853	44	1107	59	1280	69
30	NC-Denton	NCState Univ	148	7	300	15	852	42	1095	54	1357	67
31	NC-Duplin	NCState Univ	105	7	281	17	639	40	857	53	1081	67
32	CrossCountry	Harris Moran	157	7	264	12	549	26	897	42	1207	59
33	NC-Merritt	NCState Univ	114	8	225	15	543	37	725	49	941	64
34	NC-Danbury	NCState Univ	62	3	204	10	474	22	815	37	1047	48
35	Wis.SMR 18	Univ. Wis.	61	4	199	14	520	37	752	54	916	65
36	Sumter	Clemson Univ	48	3	199	14	604	43	832	59	985	71
37	NC-Dawson	NCState Univ	77	4	198	13	585	37	888	60	1035	69
38	NC-Lexington	NCState Univ	85	3	157	6	527	20	867	34	1294	52
39	Coolgreen	Seminis	34	2	126	7	389	22	683	38	914	51
40	NC-Longhurst	NCState Univ	20	1	30	1	168	8	286	14	702	35
41	NC-Leland	NCState Univ	4	0	17	1	44	2	112	5	433	24
42	H-19	Seminis	0	0	0	0	0	0	87	4	561	29
CV (%)			60	45	40	27	37	21	30	16	29	13
Mean			207	10	372	19	793	40	1062	54	1293	65
LSD (5%)			200	7	243	8	473	14	525	14	600	14

Correlation (Fruit value with value in harvests 1 and 2) = 0.61**

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 impres- sion ^z
1	Exp06-3566	Bejo Seeds	7.4	8.0	7.3	7.0	7.3
2	NC-Danbury	NCState Univ	7.4	8.0	7.7	6.7	7.7
3	EGP-410	EmeraldSeeds	7.3	7.7	6.3	7.0	7.3
4	Wainwright	Nunhems	7.1	7.3	6.7	7.0	7.0
5	Supreme	Nunhems	7.1	6.3	8.0	7.7	7.3
6	CrossCountry	Harris Moran	7.0	7.7	6.3	6.0	7.3
7	EGP-411	EmeraldSeeds	7.0	7.3	6.7	6.3	7.3
8	EX147-27140	Seminis	6.9	6.3	7.3	8.0	6.3
9	EX147-45479	Seminis	6.9	5.7	7.0	8.3	6.7
10	NC-Denton	NCState Univ	6.9	6.7	7.3	7.3	6.7
11	Feisty	Harris Moran	6.8	7.3	7.3	6.0	7.0
12	Lafayette	Nunhems	6.8	6.7	6.0	7.0	6.7
13	NC-Davie	ZeraimGedera	6.7	7.3	7.3	5.3	7.3
14	Johnston	NCState Univ	6.7	6.3	7.0	6.7	7.0
15	Exp06-3589	Bejo Seeds	6.7	6.3	6.3	7.3	6.3
16	Colt	Seminis	6.6	7.0	7.3	6.3	6.3
17	Exp06-3575	Bejo Seeds	6.6	7.0	7.0	6.3	6.3
18	NC-Leland	NCState Univ	6.6	5.7	6.3	7.0	7.0
19	Vlasstar	Seminis	6.6	7.0	7.0	6.3	6.3
20	Exp07-5654	Bejo Seeds	6.4	7.0	7.3	6.3	6.0
21	Calypso	NCState Univ	6.4	6.7	5.7	6.0	6.7
22	Sumter	Clemson Univ	6.4	6.3	4.7	6.3	6.7
23	HMX-7426	Harris Moran	6.4	6.0	6.7	6.7	6.7
24	NC-Longhurst	NCState Univ	6.4	6.0	6.3	7.0	6.3
25	Raleigh	NCState Univ	6.3	7.0	6.0	5.7	6.3
26	NC-Duplin	NCState Univ	6.3	7.0	6.7	5.7	6.3
27	EX147-35234	Seminis	6.3	6.0	7.7	6.3	6.7
28	Vlaspik	Seminis	6.2	6.3	6.7	5.3	7.0
29	LB-09	Baker Seeds	6.2	6.3	7.7	5.7	6.7
30	HSX-900	HortAg Seed	6.2	6.3	6.7	6.3	6.0
31	NC-Dawson	NCState Univ	6.1	6.0	7.7	6.0	6.3
32	NC-Merritt	NCState Univ	6.1	5.7	8.3	5.7	7.0
33	Vlasspear	Seminis	6.0	6.7	6.7	4.7	6.7
34	Treasure	Harris Moran	6.0	6.3	5.0	6.0	5.7
35	NC-Lexington	NCState Univ	6.0	6.3	5.7	5.7	6.0
36	PP12-102	Rijk Zwaan	6.0	6.0	7.7	5.7	6.3
37	PP12-103	Rijk Zwaan	5.9	6.0	7.7	5.7	6.0
38	LB-27	Baker Seeds	5.8	6.0	7.3	5.0	6.3
39	NC-Moriah	NCState Univ	5.6	5.7	6.0	6.0	5.0
40	H-19	Seminis	5.3	6.0	5.0	4.0	6.0
41	Coolgreen	Seminis	5.3	5.3	5.0	5.7	5.0
42	Wis.SMR 18	Univ. Wis.	5.1	5.7	3.7	5.3	4.3
	CV (%)		9.1	11.3	12.9	18.9	13.9
	Mean		6.4	6.5	6.7	6.2	6.5
	LSD (5%)		0.9	1.2	1.4	1.9	1.5

^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) = 0.20*

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°			Defects2°		
					2	4	6	2	4	6
1	Sumter	Clemson Univ	21	3.2	W	K	W	K	A	D
2	EGP-410	EmeraldSeeds	20	3.2	K	K	K	C	K	H
3	Calypso	NCState Univ	20	3.2	V	K	G	K	M	K
4	NC-Longhurst	NCState Univ	20	3.5	K	K	K	L	A	G
5	NC-Lexington	NCState Univ	20	3.0	H	M	H	W	K	V
6	Exp06-3589	Bejo Seeds	20	3.2	H	A	H	M	V	D
7	NC-Leland	NCState Univ	20	3.1	K	A	K	L	M	V
8	Vlaspik	Seminis	20	3.5	K	G	G	G	K	K
9	PP12-103	Rijk Zwaan	19	3.0	H	H	K	D	K	D
10	LB-27	Baker Seeds	18	3.4	K	K	D	D	N	G
11	Exp06-3566	Bejo Seeds	18	3.2	K	K	K	H	G	G
12	Supreme	Nunhems	18	3.2	H	V	K	K	K	H
13	EGP-411	EmeraldSeeds	18	3.4	K	K	T	K	K	K
14	HMX-7426	Harris Moran	18	3.2	G	M	D	D	G	G
15	EX147-45479	Seminis	18	3.2	H	K	K	D	K	D
16	EX147-35234	Seminis	18	3.7	G	G	G	D	D	K
17	HSX-900	HortAg Seed	18	3.0	M	M	M	H	H	K
18	Treasure	Harris Moran	18	3.4	M	M	W	B	G	T
19	Feisty	Harris Moran	17	3.4	K	K	D	K	D	T
20	Vlasstar	Seminis	17	3.2	D	D	K	H	K	G
21	LB-09	Baker Seeds	17	3.3	K	K	K	D	K	D
22	Wainwright	Nunhems	17	3.3	H	G	K	M	K	D
23	EX147-27140	Seminis	17	3.6	D	G	G	C	K	K
24	NC-Denton	NCState Univ	17	3.5	G	K	M	M	G	D
25	Johnston	NCState Univ	17	3.5	G	G	G	K	K	K
26	Colt	Seminis	17	3.2	D	A	K	O	M	G
27	Exp06-3575	Bejo Seeds	17	3.0	K	K	G	M	D	D
28	Exp07-5654	Bejo Seeds	17	3.0	H	C	M	M	K	H
29	Raleigh	NCState Univ	17	3.2	T	G	D	M	M	K
30	H-19	Seminis	17	2.9	V	V	V	K	K	K
31	NC-Duplin	NCState Univ	17	3.3	M	A	K	H	K	H
32	PP12-102	Rijk Zwaan	17	3.0	D	K	T	V	K	G
33	Lafayette	Nunhems	16	3.3	G	G	G	M	K	K
34	NC-Davie	ZeraimGedera	16	3.2	K	K	K	D	A	D
35	Vlasspear	Seminis	16	3.2	K	A	K	G	K	D
36	CrossCountry	Harris Moran	15	3.3	K	K	K	M	M	G
37	NC-Danbury	NCState Univ	15	3.4	K	K	K	K	V	G
38	NC-Moriah	NCState Univ	15	3.4	M	M	M	D	G	D
39	NC-Dawson	NCState Univ	15	3.3	D	K	K	M	T	T
40	Wis.SMR 18	Univ. Wis.	15	3.1	Y	B	Y	W	T	W
41	NC-Merritt	NCState Univ	14	3.3	K	K	T	D	T	K
42	Coolgreen	Seminis	12	3.6	G	G	T	T	T	K
CV (%)			9	10.6						
Mean			17	3.3						
LSD (5%)			3	0.6						

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

Table 10. Stage 3 spring pickle trial - sex expression and vine data (cultigens are ranked by gynoeocious rating).

Rank	Cultivar or line	Seed source	Gyn. rating ^z	Vine size ^y	Vine color ^x
1	Treasure	Harris Moran	9	7	5
2	EX147-45479	Seminis	9	6	7
3	EX147-27140	Seminis	9	6	6
4	PP12-102	Rijk Zwaan	9	5	7
5	PP12-103	Rijk Zwaan	9	5	8
6	Exp06-3566	Bejo Seeds	9	7	5
7	Johnston	NCState Univ	9	6	7
8	Vlasspear	Seminis	9	6	4
9	EX147-35234	Seminis	8	7	7
10	Colt	Seminis	8	6	7
11	LB-09	Baker Seeds	8	5	8
12	LB-27	Baker Seeds	8	6	8
13	Supreme	Nunhems	8	5	8
14	Exp07-5654	Bejo Seeds	7	7	6
15	EGP-410	EmeraldSeeds	7	5	6
16	Raleigh	NCState Univ	7	5	7
17	Vlaspik	Seminis	7	6	5
18	HMX-7426	Harris Moran	7	6	5
19	Vlasstar	Seminis	7	5	7
20	Calypso	NCState Univ	7	7	6
21	Exp06-3589	Bejo Seeds	7	6	7
22	Wainwright	Nunhems	7	5	8
23	Lafayette	Nunhems	6	6	8
24	Exp06-3575	Bejo Seeds	6	6	7
25	Feisty	Harris Moran	6	7	6
26	NC-Merritt	NCState Univ	6	5	7
27	NC-Danbury	NCState Univ	6	4	7
28	HSX-900	HortAg Seed	6	6	8
29	CrossCountry	Harris Moran	5	6	8
30	NC-Davie	ZerainGedera	5	7	9
31	NC-Duplin	NCState Univ	5	4	8
32	Wis.SMR 18	Univ. Wis.	5	7	4
33	NC-Denton	NCState Univ	5	7	8
34	EGP-411	EmeraldSeeds	4	6	6
35	NC-Moriah	NCState Univ	4	7	6
36	Sumter	Clemson Univ	3	7	8
37	H-19	Seminis	3	4	5
38	NC-Dawson	NCState Univ	3	5	7
39	NC-Leland	NCState Univ	3	4	7
40	NC-Lexington	NCState Univ	3	5	6
41	Coolgreen	Seminis	2	5	5
42	NC-Longhurst	NCState Univ	2	4	5
	CV (%)		22	17	17
	Mean		6	6	7
	LSD (5%)		2	2	2

^z Gynoeocious rating (1 = androeocious, 2-3 = andromonoecious, 4-6 = monoecious, 7-8 = predominately gynoeocious, 9 = gynoeocious).

^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 w/ gynoeocious rating) = 0.19*; (Yield w/ vine size) = 0.29**

Table 11. Stage 3 spring pickle trial - disease data (cultigens are ranked by average disease resistance).^z

Rank	Cultivar or line	Seed source	Downy mildew
1	Treasure	Harris Moran	1.0
2	EX147-45479	Seminis	1.0
3	EX147-27140	Seminis	1.0
4	PP12-102	Rijk Zwaan	1.0
5	PP12-103	Rijk Zwaan	1.0
6	Johnston	NCState Univ	1.0
7	Colt	Seminis	1.0
8	LB-27	Baker Seeds	1.0
9	Supreme	Nunhems	1.0
10	Exp07-5654	Bejo Seeds	1.0
11	EGP-410	EmeraldSeeds	1.0
12	Raleigh	NCState Univ	1.0
13	Vlaspik	Seminis	1.0
14	HMX-7426	Harris Moran	1.0
15	Vlasstar	Seminis	1.0
16	Exp06-3589	Bejo Seeds	1.0
17	Wainwright	Nunhems	1.0
18	Lafayette	Nunhems	1.0
19	Exp06-3575	Bejo Seeds	1.0
20	Feisty	Harris Moran	1.0
21	NC-Merritt	NCState Univ	1.0
22	NC-Danbury	NCState Univ	1.0
23	HSX-900	HortAg Seed	1.0
24	CrossCountry	Harris Moran	1.0
25	NC-Davie	ZerainGedera	1.0
26	NC-Duplin	NCState Univ	1.0
27	NC-Denton	NCState Univ	1.0
28	EGP-411	EmeraldSeeds	1.0
29	NC-Moriah	NCState Univ	1.0
30	Sumter	Clemson Univ	1.0
31	H-19	Seminis	1.0
32	NC-Dawson	NCState Univ	1.0
33	NC-Leland	NCState Univ	1.0
34	NC-Lexington	NCState Univ	1.0
35	Vlasspear	Seminis	1.7
36	Calypso	NCState Univ	1.7
37	Exp06-3566	Bejo Seeds	2.3
38	EX147-35234	Seminis	2.7
39	LB-09	Baker Seeds	2.7
40	NC-Longhurst	NCState Univ	3.0
41	Wis.SMR 18	Univ. Wis.	6.3
42	Coolgreen	Seminis	7.0
CV (%)			51.2
Mean			1.5
LSD (5%)			1.2

^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) = -0.07ns

Table 12. Stage 3 spring pickle trial - selection indexes (cultigens ranked by SWI1).^z

Rank	Cultivar or line	Seed source	Simple weighted indexes		Average rank indexes	
			SWI1	SWI2	ARI1	ARI2
1	PP12-102	Rijk Zwaan	10.4	8.4	18.8	17.7
2	Exp06-3566	Bejo Seeds	9.8	8.4	12.4	14.8
3	Exp07-5654	Bejo Seeds	9.7	8.3	16.9	16.6
4	Colt	Seminis	9.0	7.6	18.5	17.7
5	Supreme	Nunhems	8.8	7.7	15.5	16.5
6	EX147-35234	Seminis	8.8	7.4	19.8	18.8
7	Vlaspik	Seminis	8.8	7.5	19.8	17.1
8	Johnston	NCState Univ	8.7	7.6	18.1	18.5
9	Wainwright	Nunhems	8.6	7.4	15.4	17.8
10	Calypso	NCState Univ	8.5	7.3	20.8	18.9
11	EGP-410	EmeraldSeeds	8.5	7.3	15.7	15.7
12	LB-27	Baker Seeds	8.4	7.2	22.3	19.8
13	Exp06-3575	Bejo Seeds	8.4	7.3	18.9	18.7
14	HMX-7426	Harris Moran	8.4	7.2	20.1	17.9
15	NC-Danbury	NCState Univ	8.3	7.4	16.0	20.8
16	EGP-411	EmeraldSeeds	8.3	7.2	17.4	18.6
17	NC-Davie	ZerainGedera	8.3	7.2	18.1	20.4
18	Raleigh	NCState Univ	8.2	7.1	20.4	20.6
19	HSX-900	HortAg Seed	8.2	7.1	22.3	20.6
20	PP12-103	Rijk Zwaan	8.2	6.9	23.1	21.0
21	Exp06-3589	Bejo Seeds	8.2	7.1	19.9	18.4
22	Vlasstar	Seminis	8.1	7.1	20.3	20.4
23	Lafayette	Nunhems	8.0	7.0	19.6	21.1
24	Feisty	Harris Moran	8.0	7.0	18.9	19.9
25	NC-Denton	NCState Univ	8.0	7.1	18.9	20.5
26	LB-09	Baker Seeds	8.0	6.9	22.9	21.9
27	NC-Lexington	NCState Univ	8.0	7.0	24.0	23.2
28	Vlasspear	Seminis	7.9	7.0	24.2	24.2
29	EX147-27140	Seminis	7.9	6.8	20.0	20.3
30	CrossCountry	Harris Moran	7.9	7.0	18.1	21.5
31	Treasure	Harris Moran	7.8	6.8	23.8	20.3
32	EX147-45479	Seminis	7.7	6.9	21.0	20.6
33	NC-Moriah	NCState Univ	7.6	6.7	27.0	25.1
34	NC-Duplin	NCState Univ	7.2	6.4	24.5	24.6
35	NC-Merritt	NCState Univ	6.7	6.1	26.3	27.6
36	NC-Dawson	NCState Univ	6.6	6.0	27.8	28.9
37	NC-Longhurst	NCState Univ	6.6	5.8	26.0	27.0
38	Sumter	Clemson Univ	6.5	5.9	25.8	23.9
39	NC-Leland	NCState Univ	6.5	5.8	25.6	26.0
40	H-19	Seminis	6.3	5.6	30.8	30.9
41	Coolgreen	Seminis	5.6	5.0	32.2	34.2
42	Wis.SMR 18	Univ. Wis.	5.3	4.7	35.4	34.5
CV (%)			14.1	12.3	21.5	19.5
Mean			8.0	6.9	21.5	21.5
LSD (5%)			1.8	1.4	7.5	6.8

^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) = 0.89** Correlation (Yield with ARI1) = -0.48**

Summer (Stage 4) Pickling Cucumber Trial 2008

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 10 July, and harvested 8 times (Mondays and Thursdays) between 18 August and 11 September.

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 10 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	PP12-102	Rijk Zwaan
2	PP12-103	Rijk Zwaan
3	Colt	Seminis
4	Supreme	Nunhems
5	EX147-35234	Seminis
6	Exp06-3575	Bejo Seeds
7	EX147-45479	Seminis
8	HSX-900	HortAg Seed
9	LB-09	Baker Seeds
10	Vlaspik	Seminis
11	EX147-27140	Seminis
12	LB-27	Baker Seeds
13	Treasure	Harris Moran
14	Wainwright	Nunhems
15	Exp06-3566	Bejo Seeds
16	NC-Davie	ZeraimGedera
17	Raleigh	NCState Univ

Table 13. Stage 4 summer pickle trial - yield data (cultigens are ranked by fruit value).

Rank	Cultivar or line	Seed source	Value (\$)	Weight (cwt)	Fruit grade distribution (% by weight)				Plants per A (x1000)	
					Cull	No.1	No.2	No.3		No.4
1	PP12-102	Rijk Zwaan	2840	332	22	11	43	23	1	35
2	PP12-103	Rijk Zwaan	2370	265	18	11	39	31	0	35
3	Supreme	Nunhems	2143	302	24	5	28	40	3	35
4	Colt	Seminis	2123	331	26	5	18	46	6	35
5	Exp06-3575	Bejo Seeds	2119	320	21	5	22	41	11	35
6	EX147-35234	Seminis	2109	271	21	8	26	43	2	35
7	EX147-45479	Seminis	2055	300	23	7	23	38	9	35
8	Vlaspik	Seminis	2038	294	33	10	27	26	4	34
9	LB-09	Baker Seeds	1962	327	28	5	19	38	10	35
10	HSX-900	HortAg Seed	1947	294	22	6	19	43	10	33
11	NC-Davie	ZerainGedera	1938	309	27	7	22	32	12	34
12	EX147-27140	Seminis	1858	250	27	9	31	29	4	35
13	Exp06-3566	Bejo Seeds	1848	264	25	6	26	36	8	35
14	LB-27	Baker Seeds	1837	281	29	7	20	38	6	35
15	NC-Moriah	NCState Univ	1817	353	42	5	20	22	11	34
16	Exp06-3589	Bejo Seeds	1793	272	22	5	23	38	11	35
17	Wainwright	Nunhems	1793	264	27	8	24	33	7	35
18	Treasure	Harris Moran	1750	303	35	5	22	29	9	35
19	Raleigh	NCState Univ	1725	287	22	6	19	36	17	26
20	Exp07-5654	Bejo Seeds	1534	220	24	6	24	40	6	35
21	Feisty	Harris Moran	1531	259	34	6	25	24	11	34
22	EGP-410	EmeraldSeeds	1525	273	33	4	21	31	11	35
23	Lafayette	Nunhems	1445	221	35	7	24	28	6	33
24	Vlasspear	Seminis	1438	208	28	5	30	33	3	35
25	Johnston	NCState Univ	1396	233	36	7	22	29	7	22
26	Vlasstar	Seminis	1346	204	30	9	23	30	9	35
27	NC-Merritt	NCState Univ	1323	220	33	7	20	33	7	28
28	HMX-7426	Harris Moran	1295	243	45	8	13	27	7	31
29	NC-Denton	NCState Univ	1268	244	48	7	20	19	5	34
30	NC-Danbury	NCState Univ	1259	201	29	7	26	29	10	20
31	CrossCountry	Harris Moran	1169	210	36	5	22	27	10	30
32	EGP-411	EmeraldSeeds	1156	195	34	7	23	26	10	35
33	Calypso	NCState Univ	1135	227	43	6	20	22	10	34
34	Sumter	Clemson Univ	1121	209	35	5	19	29	11	34
35	NC-Lexington	NCState Univ	894	153	34	6	23	29	9	33
36	NC-Longhurst	NCState Univ	803	167	50	5	22	20	4	33
37	NC-Leland	NCState Univ	441	71	52	13	18	15	3	30
38	Wis.SMR 18	Univ. Wis.	387	79	45	4	26	15	10	30
CV (%)			33	29	23	33	18	25	54	10
Mean			1593	249	31	7	23	31	8	33
LSD (5%)			856	118	12	4	7	13	7	5

Correlation (Fruit value with fruit weight) = 0.89**

Table 14. Stage 4 summer 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		1-2		1-3		1-4		1-5	
			\$/A	%	\$/A	%	\$/A	%	\$/A	%	\$/A	%
1	PP12-102	Rijk Zwaan	1313	43	1748	59	2448	84	2550	89	2794	98
2	PP12-103	Rijk Zwaan	1021	42	1457	61	2050	86	2164	91	2355	99
3	Supreme	Nunhems	974	44	1276	58	1827	85	1907	88	2081	97
4	EX147-35234	Seminis	941	43	1228	57	1732	81	1835	86	2057	98
5	Colt	Seminis	891	40	1188	56	1646	78	1761	83	2067	97
6	HSX-900	HortAg Seed	804	40	1132	56	1622	82	1772	90	1909	98
7	LB-09	Baker Seeds	733	38	1090	56	1619	83	1747	89	1915	97
8	Exp06-3575	Bejo Seeds	802	36	1089	50	1652	77	1807	85	2032	95
9	EX147-45479	Seminis	706	34	1033	50	1582	78	1734	85	2005	98
10	LB-27	Baker Seeds	651	36	959	53	1450	80	1568	86	1765	96
11	EX147-27140	Seminis	572	30	919	50	1521	82	1644	89	1812	98
12	Vlaspik	Seminis	449	22	914	44	1590	78	1716	84	1968	97
13	Treasure	Harris Moran	455	26	908	52	1454	83	1610	92	1712	98
14	Wainwright	Nunhems	610	35	902	51	1448	81	1529	86	1723	96
15	Raleigh	NCState Univ	550	29	808	44	1286	72	1406	80	1607	92
16	Exp06-3566	Bejo Seeds	500	23	804	39	1352	70	1511	80	1784	96
17	Vlasspear	Seminis	522	35	746	52	1181	82	1303	90	1426	99
18	Lafayette	Nunhems	482	27	694	43	1068	71	1204	81	1401	97
19	Exp06-3589	Bejo Seeds	473	22	675	34	1122	58	1357	74	1716	95
20	Feisty	Harris Moran	382	22	674	42	1143	73	1275	82	1479	97
21	NC-Davie	ZeraimGedera	252	11	653	32	1244	62	1557	79	1830	94
22	HMX-7426	Harris Moran	341	18	635	40	999	67	1184	89	1265	97
23	EGP-410	EmeraldSeeds	329	20	611	37	1115	71	1235	79	1483	97
24	EGP-411	EmeraldSeeds	274	20	591	48	940	79	1072	93	1149	99
25	Vlasstar	Seminis	258	18	590	42	929	69	1085	81	1305	97
26	Exp07-5654	Bejo Seeds	380	24	558	35	923	60	1114	73	1434	93
27	NC-Denton	NCState Univ	179	13	487	37	935	74	1074	85	1215	96
28	NC-Merritt	NCState Univ	190	14	436	34	900	70	1113	87	1263	97
29	Johnston	NCState Univ	207	14	422	28	837	57	979	68	1311	93
30	Calypso	NCState Univ	173	13	414	36	847	75	955	85	1080	95
31	NC-Moriah	NCState Univ	85	6	388	23	1131	65	1522	85	1774	98
32	Sumter	Clemson Univ	122	11	318	28	645	57	853	76	1047	93
33	CrossCountry	Harris Moran	137	8	301	21	708	56	836	68	1080	91
34	NC-Danbury	NCState Univ	101	8	273	21	594	46	813	64	1104	87
35	Wis.SMR 18	Univ. Wis.	38	12	120	36	282	80	314	87	384	100
36	NC-Lexington	NCState Univ	14	1	44	5	264	29	408	45	763	85
37	NC-Longhurst	NCState Univ	12	2	42	5	206	26	402	51	728	91
38	NC-Leland	NCState Univ	0	0	3	0	63	7	124	17	307	55
	CV (%)		61	40	47	26	39	15	36	10	34	7
	Mean		445	23	714	40	1167	69	1317	79	1530	95
	LSD (5%)		444	15	550	17	740	17	774	14	842	11

Correlation (Fruit value with value in harvests 1 and 2) = 0.90**

Table 15. Stage 4 summer 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 impres- sion ^z
1	Colt	Seminis	7.8	8.0	8.7	7.0	8.3
2	NC-Danbury	NCState Univ	7.7	8.0	7.0	6.7	8.3
3	EX147-45479	Seminis	7.6	7.3	7.3	7.3	8.0
4	Vlaspik	Seminis	7.6	7.0	7.3	8.3	7.3
5	EGP-410	EmeraldSeeds	7.3	8.0	5.7	6.7	7.3
6	EGP-411	EmeraldSeeds	7.3	8.0	6.7	6.0	8.0
7	EX147-27140	Seminis	7.3	7.7	7.0	7.0	7.3
8	Exp06-3575	Bejo Seeds	7.3	7.0	7.0	7.3	7.7
9	Vlasstar	Seminis	7.3	7.0	7.0	7.7	7.3
10	NC-Davie	ZeraimGedera	7.2	7.7	7.0	6.0	8.0
11	NC-Merritt	NCState Univ	7.1	7.7	8.7	5.7	8.0
12	Treasure	Harris Moran	7.1	7.0	6.3	6.3	8.0
13	Feisty	Harris Moran	7.0	7.7	8.3	5.7	7.7
14	Exp06-3566	Bejo Seeds	7.0	6.7	8.0	8.0	6.3
15	Calypso	NCState Univ	6.9	7.3	6.7	6.3	7.0
16	Exp07-5654	Bejo Seeds	6.9	6.7	8.0	7.7	6.3
17	CrossCountry	Harris Moran	6.9	6.7	6.7	6.3	7.7
18	Lafayette	Nunhems	6.9	6.7	6.7	7.3	6.7
19	Exp06-3589	Bejo Seeds	6.8	7.0	6.7	7.0	6.3
20	Johnston	NCState Univ	6.8	6.7	6.7	6.7	7.0
21	NC-Longhurst	NCState Univ	6.8	6.7	7.7	6.3	7.3
22	NC-Moriah	NCState Univ	6.7	7.3	6.3	6.0	6.7
23	Vlasspear	Seminis	6.7	7.0	7.0	6.3	6.7
24	Wainwright	Nunhems	6.7	6.7	6.3	6.7	6.7
25	NC-Denton	NCState Univ	6.7	6.7	8.0	6.3	7.0
26	EX147-35234	Seminis	6.7	6.3	8.3	6.7	7.0
27	NC-Leland	NCState Univ	6.7	6.0	7.3	7.0	7.0
28	Sumter	Clemson Univ	6.6	6.0	5.3	7.3	6.3
29	LB-09	Baker Seeds	6.4	7.0	8.0	5.7	6.7
30	Raleigh	NCState Univ	6.4	6.0	7.0	6.7	6.7
31	LB-27	Baker Seeds	6.3	6.7	7.0	5.3	7.0
32	NC-Lexington	NCState Univ	6.3	6.3	6.0	6.0	6.7
33	Supreme	Nunhems	6.3	6.0	7.7	7.0	6.0
34	HSX-900	HortAg Seed	6.2	6.3	7.3	6.3	6.0
35	HMX-7426	Harris Moran	6.1	6.7	6.0	5.0	6.7
36	PP12-103	Rijk Zwaan	6.0	6.7	8.0	4.7	6.7
37	PP12-102	Rijk Zwaan	5.8	6.3	8.3	4.3	6.7
38	Wis.SMR 18	Univ. Wis.	5.1	5.7	4.7	4.7	5.0
	CV (%)		7.8	9.9	11.1	15.5	11.7
	Mean		6.8	6.9	7.1	6.5	7.0
	LSD (5%)		0.9	1.1	1.3	1.6	1.3

^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) = 0.14^{ns}

Table 16. Stage 4 summer pickle trial - other quality data (cultigens are ranked by average quality).²

Rank	Cultivar or line	Seed source	Firm- ness	L/D ratio	Defects1°			Defects2°		
					2	4	6	2	4	6
1	EGP-410	EmeraldSeeds	20	3.1	W	H	K	H	W	T
2	Calypso	NCState Univ	20	3.2	K	K	K	W	T	A
3	NC-Longhurst	NCState Univ	20	3.3	K	G	K	T	T	A
4	Sumter	Clemson Univ	20	3.0	H	W	K	W	K	W
5	Vlaspik	Seminis	20	3.6	K	K	K	G	G	L
6	CrossCountry	Harris Moran	18	3.1	K	H	K	G	T	L
7	NC-Danbury	NCState Univ	18	3.5	K	K	K	K	K	A
8	EGP-411	EmeraldSeeds	18	3.1	K	K	K	W	H	I
9	Vlasstar	Seminis	18	3.1	K	K	K	G	K	L
10	NC-Davie	ZerainGedera	18	3.2	K	K	K	G	K	A
11	Colt	Seminis	17	3.1	K	K	K	O	T	K
12	EX147-27140	Seminis	17	3.4	K	K	K	G	D	T
13	Treasure	Harris Moran	17	3.4	K	G	K	M	K	A
14	NC-Denton	NCState Univ	17	3.4	K	K	L	O	G	K
15	EX147-45479	Seminis	17	3.3	K	K	K	K	M	T
16	Exp06-3575	Bejo Seeds	17	3.1	K	H	K	H	M	A
17	Feisty	Harris Moran	17	3.3	K	T	K	G	M	K
18	Exp06-3589	Bejo Seeds	17	2.9	K	K	K	H	H	K
19	LB-27	Baker Seeds	17	3.3	K	G	K	H	T	C
20	NC-Lexington	NCState Univ	17	2.8	W	H	K	K	V	B
21	Exp06-3566	Bejo Seeds	17	3.0	H	M	K	I	D	C
22	Exp07-5654	Bejo Seeds	17	2.9	H	H	K	M	V	K
23	NC-Leland	NCState Univ	17	3.4	T	T	T	K	X	K
24	PP12-103	Rijk Zwaan	17	2.8	H	H	H	M	V	K
25	Wis.SMR 18	Univ. Wis.	17	3.0	W	Y	B	Y	W	Y
26	LB-09	Baker Seeds	16	3.2	K	D	K	M	K	C
27	Raleigh	NCState Univ	16	3.1	H	K	K	M	T	K
28	NC-Merritt	NCState Univ	16	3.1	K	K	K	G	K	K
29	Wainwright	Nunhems	16	3.3	K	H	H	M	M	T
30	HMX-7426	Harris Moran	16	3.1	T	H	K	M	W	A
31	Lafayette	Nunhems	16	3.3	K	G	L	G	K	C
32	Johnston	NCState Univ	16	3.6	K	K	K	G	G	L
33	NC-Moriah	NCState Univ	16	3.3	K	W	K	O	G	W
34	Vlasspear	Seminis	16	3.0	K	H	H	G	O	K
35	Supreme	Nunhems	16	2.7	H	H	K	M	T	I
36	PP12-102	Rijk Zwaan	16	2.9	K	H	K	M	V	K
37	EX147-35234	Seminis	15	3.5	M	K	K	H	G	T
38	HSX-900	HortAg Seed	15	3.2	H	K	K	M	M	N
CV (%)			9	5.9						
Mean			17	3.2						
LSD (5%)			3	0.3						

² 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	J - RiDGed	S - Separated carpels
B - Blossom end defects	K - Keep(excellent)	T - Tapered ends
C - Crooks excessive	L - Late maturity	U - Uniform green
D - Dogbone shape	M - Mottled fruit	V - Varicolor (dark stem end, light blossom end)
E - Early maturity	N - Nubs excessive	W - White fruit
F - Four celled	O - Offtype fruit	X - neCKS on fruit
G - lonG fruit	P - Placental hollows	Y - Yellow fruit
H - sHort fruit	Q -	Z - diSeased fruit
I - strIPed fruit	R - Reject (poor)	

Not for publication

Table 17. Stage 4 summer 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	PP12-103	Rijk Zwaan	9	6	7
2	PP12-102	Rijk Zwaan	9	7	7
3	LB-09	Baker Seeds	8	8	6
4	Supreme	Nunhems	8	8	8
5	Raleigh	NCState Univ	8	7	8
6	Exp06-3575	Bejo Seeds	8	8	8
7	Lafayette	Nunhems	8	7	8
8	EX147-27140	Seminis	8	7	7
9	LB-27	Baker Seeds	8	7	8
10	Exp06-3566	Bejo Seeds	8	7	7
11	Vlasspear	Seminis	8	6	7
12	Treasure	Harris Moran	7	8	8
13	Colt	Seminis	7	7	8
14	EGP-411	EmeraldSeeds	7	9	6
15	EX147-45479	Seminis	7	8	7
16	Feisty	Harris Moran	7	8	8
17	EGP-410	EmeraldSeeds	7	8	6
18	EX147-35234	Seminis	7	8	8
19	Vlasstar	Seminis	7	7	6
20	CrossCountry	Harris Moran	7	6	8
21	HMX-7426	Harris Moran	7	7	7
22	Johnston	NCState Univ	7	6	6
23	HSX-900	HortAg Seed	6	7	7
24	Exp07-5654	Bejo Seeds	6	7	8
25	Wainwright	Nunhems	6	7	8
26	NC-Longhurst	NCState Univ	6	6	6
27	NC-Leland	NCState Univ	6	5	7
28	NC-Lexington	NCState Univ	6	5	7
29	NC-Merritt	NCState Univ	6	6	7
30	Exp06-3589	Bejo Seeds	5	7	8
31	Calypso	NCState Univ	5	7	5
32	Vlaspik	Seminis	5	7	8
33	Wis.SMR 18	Univ. Wis.	4	8	4
34	NC-Danbury	NCState Univ	4	6	6
35	NC-Davie	ZeraimGedera	4	9	7
36	NC-Moriah	NCState Univ	3	7	7
37	NC-Denton	NCState Univ	3	8	8
38	Sumter	Clemson Univ	3	7	8
	CV (%)		18	16	11
	Mean		6	7	7
	LSD (5%)		2	2	1

^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)=0.33** Yield with vine size=0.49**

Table 18. Stage 4 summer pickle trial - disease data (cultigens are ranked by average disease resistance).^z

Rank	Cultivar or line	Seed source	Average disease	Downy mildew	Anthrac- nose
1	Feisty	Harris Moran	1.0	1	3
2	NC-Lexington	NCState Univ	1.0	1	3
3	Lafayette	Nunhems	1.0	1	4
4	EX147-27140	Seminis	1.0	1	5
5	LB-27	Baker Seeds	1.0	1	5
6	NC-Leland	NCState Univ	1.3	1	3
7	NC-Denton	NCState Univ	1.3	1	4
8	HMX-7426	Harris Moran	1.3	1	4
9	Wainwright	Nunhems	1.3	1	4
10	Vlaspik	Seminis	1.3	1	4
11	Exp06-3589	Bejo Seeds	1.3	1	5
12	Exp06-3575	Bejo Seeds	1.3	1	5
13	Treasure	Harris Moran	1.3	1	5
14	HSX-900	HortAg Seed	1.3	1	5
15	PP12-103	Rijk Zwaan	1.3	1	6
16	Raleigh	NCState Univ	1.7	2	3
17	CrossCountry	Harris Moran	1.7	2	3
18	Exp07-5654	Bejo Seeds	1.7	2	4
19	Calypso	NCState Univ	1.7	2	4
20	Vlasstar	Seminis	1.7	2	6
21	EX147-45479	Seminis	1.7	2	6
22	Colt	Seminis	2.0	2	4
23	NC-Longhurst	NCState Univ	2.0	2	4
24	Exp06-3566	Bejo Seeds	2.0	2	4
25	Johnston	NCState Univ	2.0	2	5
26	NC-Moriah	NCState Univ	2.0	2	5
27	Vlasspear	Seminis	2.0	2	6
28	Supreme	Nunhems	2.0	2	6
29	EGP-411	EmeraldSeeds	2.0	2	7
30	NC-Danbury	NCState Univ	2.3	2	3
31	EX147-35234	Seminis	2.3	2	4
32	LB-09	Baker Seeds	2.3	2	4
33	EGP-410	EmeraldSeeds	2.3	2	4
34	NC-Davie	ZerainGedera	2.3	2	5
35	PP12-102	Rijk Zwaan	2.3	2	6
36	Sumter	Clemson Univ	3.0	3	3
37	NC-Merritt	NCState Univ	3.0	3	4
38	Wis.SMR 18	Univ. Wis.	4.0	4	5
	CV (%)		50.1	50	32
	Mean		1.8	2	4
	LSD (5%)		1.5	1	2

^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) = -0.03ns

Table 19. Stage 4 summer pickle trial - selection indexes (cultigens ranked by SWI1).^z

Rank	Cultivar or line	Seed source	Simple weighted indexes		Average rank indexes	
			SWI1	SWI2	ARI1	ARI2
1	PP12-102	Rijk Zwaan	13.5	10.0	21.5	20.4
2	PP12-103	Rijk Zwaan	12.1	9.1	17.1	16.1
3	Colt	Seminis	11.2	9.1	9.8	11.3
4	Supreme	Nunhems	11.1	8.7	19.3	18.0
5	EX147-35234	Seminis	10.9	8.6	17.6	18.1
6	Exp06-3575	Bejo Seeds	10.8	8.7	12.5	13.2
7	EX147-45479	Seminis	10.5	8.5	12.6	14.4
8	HSX-900	HortAg Seed	10.3	8.3	18.6	18.0
9	LB-09	Baker Seeds	10.2	8.3	20.2	18.9
10	Vlaspik	Seminis	10.2	8.3	12.6	12.7
11	EX147-27140	Seminis	9.9	8.1	12.6	13.6
12	LB-27	Baker Seeds	9.7	8.0	18.3	16.6
13	Treasure	Harris Moran	9.5	8.0	15.3	14.5
14	Wainwright	Nunhems	9.4	7.8	18.3	18.6
15	Exp06-3566	Bejo Seeds	9.3	7.7	17.1	18.2
16	NC-Davie	ZeraimGedera	8.9	7.6	17.5	18.5
17	Raleigh	NCState Univ	8.9	7.5	21.6	20.7
18	Exp06-3589	Bejo Seeds	8.8	7.4	18.7	18.8
19	Feisty	Harris Moran	8.6	7.4	16.7	16.6
20	Lafayette	Nunhems	8.3	7.0	18.1	19.0
21	Vlasspear	Seminis	8.3	7.0	21.2	21.5
22	EGP-410	EmeraldSeeds	8.2	7.0	18.4	17.8
23	Exp07-5654	Bejo Seeds	8.0	6.9	19.2	20.4
24	Vlasstar	Seminis	7.9	6.8	18.9	19.5
25	NC-Moriah	NCState Univ	7.8	7.0	20.5	21.8
26	HMX-7426	Harris Moran	7.6	6.6	23.3	21.7
27	EGP-411	EmeraldSeeds	7.6	6.5	18.5	18.3
28	NC-Denton	NCState Univ	7.4	6.6	22.1	21.2
29	Johnston	NCState Univ	7.2	6.3	21.9	22.3
30	NC-Merritt	NCState Univ	7.2	6.4	21.3	23.6
31	Calypso	NCState Univ	6.9	6.2	21.9	20.2
32	NC-Danbury	NCState Univ	6.8	6.1	16.8	19.1
33	CrossCountry	Harris Moran	6.5	5.9	22.8	22.5
34	Sumter	Clemson Univ	6.2	5.6	26.4	25.0
35	NC-Lexington	NCState Univ	5.2	4.8	25.6	25.3
36	NC-Longhurst	NCState Univ	5.1	4.8	26.1	25.8
37	NC-Leland	NCState Univ	4.4	4.0	25.9	26.9
38	Wis.SMR 18	Univ. Wis.	3.8	3.8	34.3	32.3
	CV (%)		22.2	17.5	23.3	21.1
	Mean		8.5	7.2	19.5	19.5
	LSD (5%)		3.1	2.0	7.4	6.7

^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) = 0.96**

Correlation (Yield with ARI1) = -0.63**

Slicing Cucumbers

Preliminary (Stage 1) Slicing Cucumber Trial 2008

The stage 1 slicer trial was not run this year.

Observational (Stage 2) Slicing Cucumber Trial 2008

The stage 2 slicer trial was not run this year.

Spring (Stage 3) Slicing Cucumber Trial 2008

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 1 May, and harvested 6 times (Mondays and Thursdays) between 19 June and 7 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:

01	NC-Sunshine	NC StateUniv
02	EGSB-160	EmeraldSeeds
03	Cherokee 87	Check
04	G57xNC-58	NC StateUniv
05	NC-Stratford	NC StateUniv
06	G57xNC-59	NC StateUniv
07	G83xNC-63	NC StateUniv

Table 20. 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)		Percent fancy +No.1	Percent culls	Plants per A (x1000)
			Fancy +No.1	Market- able			
1	Cherokee 87	Check	96	171	44	23	18
2	G57xNC-59	NC StateUniv	93	171	45	18	22
3	NC-Sunshine	NC StateUniv	88	184	36	26	25
4	G57xNC-58	NC StateUniv	88	173	39	24	25
5	EGSB-160	EmeraldSeeds	80	146	45	16	26
6	G57xNC-62	NC StateUniv	79	136	41	31	25
7	G83xNC-63	NC StateUniv	55	142	27	30	26
8	G57xNC-63	NC StateUniv	54	112	39	22	21
9	NC-Stratford	NC StateUniv	54	142	29	34	23
10	Dasher II	Seminis	53	124	33	22	25
11	G83xNC-58	NC StateUniv	51	124	29	31	24
12	EGSB-152	EmeraldSeeds	51	91	37	34	25
13	Ashley	Check	46	98	33	22	17
14	G83xNC-59	NC StateUniv	42	74	41	28	22
15	G83xNC-62	NC StateUniv	42	105	27	35	22
16	PX147-10895	Seminis	36	89	27	26	25
17	Poinsett 76	CornellUniv	34	83	26	38	24
18	PX147-10830	Seminis	33	100	23	26	23
19	HMX-7425	Harris Moran	23	58	25	28	26
20	EGSB-118	EmeraldSeeds	12	27	43	16	23
CV (%)			38	35	30	30	15
Mean			55	117	34	26	23
LSD (5%)			35	67	17	13	6

Correlation (Marketable yield with % culls) = -0.29*

Table 21. 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		1-2		1-3		1-4		1-5	
			Wt.	%	Wt.	%	Wt.	%	Wt.	%	Wt.	%
1	NC-Sunshine	NC StateUniv	29	14	94	51	125	68	144	78	163	88
2	G57xNC-58	NC StateUniv	23	11	78	45	112	66	145	85	153	89
3	NC-Stratford	NC StateUniv	23	12	71	39	90	55	101	64	123	82
4	Cherokee 87	Check	25	11	70	36	126	67	142	80	153	87
5	G57xNC-59	NC StateUniv	23	14	69	40	102	60	130	76	150	88
6	G57xNC-62	NC StateUniv	21	13	68	47	91	64	110	80	126	93
7	G83xNC-63	NC StateUniv	19	9	58	30	92	54	116	78	123	86
8	EGSB-160	EmeraldSeeds	14	7	54	30	79	50	95	62	116	77
9	G83xNC-62	NC StateUniv	8	5	40	30	62	54	75	65	94	90
10	G83xNC-58	NC StateUniv	13	7	40	28	78	58	99	77	112	85
11	G57xNC-63	NC StateUniv	6	5	38	33	64	56	84	74	98	87
12	Dasher II	Seminis	6	5	23	18	44	34	69	54	95	75
13	G83xNC-59	NC StateUniv	4	5	16	20	36	46	46	59	51	66
14	PX147-10895	Seminis	1	0	15	10	27	17	41	32	60	56
15	PX147-10830	Seminis	2	1	13	12	24	21	41	38	64	61
16	HMX-7425	Harris Moran	1	1	11	14	22	34	33	55	44	69
17	EGSB-152	EmeraldSeeds	1	1	7	6	32	29	52	47	81	90
18	Poinsett 76	CornellUniv	1	1	6	6	25	27	40	46	58	68
19	Ashley	Check	0	0	5	4	30	25	48	43	70	65
20	EGSB-118	EmeraldSeeds	0	0	0	0	2	5	4	11	7	22
CV (%)			120	95	66	53	53	34	44	22	40	16
Mean			11	6	39	25	63	45	81	60	97	76
LSD (5%)			22	10	43	22	56	25	59	22	64	20
Correlation (Marketable yield with yield in harvests 1-2)										= 0.90**		
Correlation (Marketable yield with % of yield in harvests 1-2)										= 0.81**		

Table 22. 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	EGSB-160	EmeraldSeeds	7.3	7	8	7	8
2	EGSB-152	EmeraldSeeds	7.1	7	8	7	7
3	PX147-10895	Seminis	7.0	7	7	7	7
4	G83xNC-58	NC StateUniv	6.8	7	8	6	7
5	NC-Stratford	NC StateUniv	6.6	6	8	7	7
6	G83xNC-63	NC StateUniv	6.4	7	9	7	6
7	PX147-10830	Seminis	6.4	7	8	5	7
8	Dasher II	Seminis	6.3	6	6	6	6
9	NC-Sunshine	NC StateUniv	6.3	6	8	7	7
10	G83xNC-62	NC StateUniv	6.2	6	8	6	6
11	HMX-7425	Harris Moran	6.1	7	8	5	6
12	G83xNC-59	NC StateUniv	5.8	6	7	5	6
13	EGSB-118	EmeraldSeeds	5.8	6	6	6	6
14	Poinsett 76	CornellUniv	5.4	5	7	5	6
15	Cherokee 87	Check	5.3	5	5	5	5
16	G57xNC-62	NC StateUniv	5.3	5	6	6	5
17	G57xNC-63	NC StateUniv	5.2	5	5	6	5
18	G57xNC-58	NC StateUniv	5.2	4	5	7	5
19	Ashley	Check	5.0	5	5	5	5
20	G57xNC-59	NC StateUniv	4.9	5	5	6	4
CV (%)			10.0	13	13	15	15
Mean			6.0	6	7	6	6
LSD (5%)			1.0	1	2	2	1

^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) = 0.14^{ns}

Table 23. Stage 3 spring slicer trial - fruit dimensions and comments (cultigens ranked by average quality rating).^z

Rank	Cultivar or line	Seed source	Length (inch)	Diameter (inch)	Wt. (lb.)	Defect 1°			Defect 2°		
						2	4	6	2	4	6
1	EGSB-160	EmeraldSeeds	8.4	2.0	0.66	K	K	D	T	T	H
2	EGSB-152	EmeraldSeeds	8.2	2.1	0.71	M	K	K	H	G	K
3	PX147-10895	Seminis	8.1	1.9	0.65	G	K	K	C	G	T
4	G83xNC-58	NC StateUniv	7.2	2.1	0.68	K	K	D	C	T	H
5	NC-Stratford	NC StateUniv	7.4	2.0	0.65	K	H	K	K	K	H
6	G83xNC-63	NC StateUniv	7.6	2.0	0.65	K	K	H	C	T	D
7	PX147-10830	Seminis	7.8	1.9	0.63	K	K	H	C	T	T
8	Dasher II	Seminis	7.5	2.1	0.70	K	H	T	T	T	D
9	NC-Sunshine	NC StateUniv	7.5	2.0	0.69	K	H	D	T	T	H
10	G83xNC-62	NC StateUniv	7.8	1.9	0.69	K	D	K	M	T	M
11	HMX-7425	Harris Moran	7.7	1.9	0.53	K	H	D	C	T	H
12	G83xNC-59	NC StateUniv	7.1	2.2	0.59	K	D	T	K	T	H
13	EGSB-118	EmeraldSeeds	7.7	1.6	0.51	D	D	D	H	H	H
14	Poinsett 76	CornellUniv	6.7	1.9	0.53	K	D	H	T	H	K
15	Cherokee 87	Check	7.1	2.0	0.62	M	M	M	K	T	H
16	G57xNC-62	NC StateUniv	6.8	2.1	0.63	M	M	M	N	H	H
17	G57xNC-63	NC StateUniv	5.6	1.9	0.53	M	M	M	C	H	H
18	G57xNC-58	NC StateUniv	6.6	2.0	0.61	M	M	M	K	H	H
19	Ashley	Check	6.9	1.9	0.59	H	H	M	M	T	H
20	G57xNC-59	NC StateUniv	6.4	2.1	0.71	M	M	M	N	H	H
CV (%)			8.4	6.8	14.41						
Mean			7.3	2.0	0.63						
LSD (5%)			1.0	0.2	0.15						

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

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

Table 24. 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)	Earli- ness (%) ^x	Vine size ^w	Vine color ^w
1	PX147-10830	Seminis	9	13	12	8	8
2	PX147-10895	Seminis	8	15	10	8	7
3	HMX-7425	Harris Moran	8	11	14	7	8
4	Dasher II	Seminis	8	23	18	7	7
5	Cherokee 87	Check	6	70	36	7	7
6	EGSB-160	EmeraldSeeds	6	54	30	7	7
7	G83xNC-62	NC StateUniv	6	40	30	6	6
8	G57xNC-62	NC StateUniv	6	68	47	6	6
9	G83xNC-58	NC StateUniv	5	40	28	7	5
10	G57xNC-58	NC StateUniv	5	78	45	7	7
11	EGSB-152	EmeraldSeeds	5	7	6	7	8
12	G57xNC-59	NC StateUniv	5	69	40	6	7
13	NC-Stratford	NC StateUniv	5	71	39	6	5
14	G83xNC-63	NC StateUniv	3	58	30	7	6
15	NC-Sunshine	NC StateUniv	3	94	51	6	6
16	G57xNC-63	NC StateUniv	3	38	33	5	7
17	Ashley	Check	3	5	4	8	4
18	Poinsett 76	CornellUniv	3	6	6	7	6
19	G83xNC-59	NC StateUniv	3	16	20	6	6
20	EGSB-118	EmeraldSeeds	2	0	0	6	6
CV (%)			27	66	53	21	24
Mean			5	39	25	7	7
LSD (5%)			2	43	22	2	3

^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) = 0.08^{ns}

Table 25. Stage 3 spring slicer trial - disease ratings (cultigens ranked by average disease resistance).^z

Rank	Cultivar or line	Seed source	Downy mildew
1	PX147-10830	Seminis	1.0
2	PX147-10895	Seminis	1.0
3	HMX-7425	Harris Moran	1.0
4	Dasher II	Seminis	1.0
5	Cherokee 87	Check	1.0
6	EGSB-160	EmeraldSeeds	1.0
7	G83xNC-62	NC StateUniv	1.0
8	G57xNC-62	NC StateUniv	1.0
9	G83xNC-58	NC StateUniv	1.0
10	G57xNC-58	NC StateUniv	1.0
11	EGSB-152	EmeraldSeeds	1.0
12	G57xNC-59	NC StateUniv	1.0
13	NC-Stratford	NC StateUniv	1.0
14	G83xNC-63	NC StateUniv	1.0
15	NC-Sunshine	NC StateUniv	1.0
16	G57xNC-63	NC StateUniv	1.0
17	Poinsett 76	CornellUniv	1.0
18	G83xNC-59	NC StateUniv	1.0
19	EGSB-118	EmeraldSeeds	1.0
20	Ashley	Check	2.0
	CV (%)		36.9
	Mean		1.1
	LSD (5%)		0.6

^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) = -0.15^{ns}

Table 26. Stage 3 spring slicer trial - selection indexes (cultigens ranked by SWI1).^z

Rank	Cultivar or line	Seed source	Simple weighted indexes		Average rank indexes	
			SWI1	SWI2	ARI1	ARI2
1	NC-Sunshine	NC StateUniv	6.4	5.8	7.3	6.7
2	EGSB-160	EmeraldSeeds	5.9	5.3	6.1	6.8
3	Cherokee 87	Check	5.7	5.1	10.2	9.2
4	G57xNC-58	NC StateUniv	5.7	5.1	10.4	9.2
5	NC-Stratford	NC StateUniv	5.6	5.0	8.3	8.1
6	G57xNC-59	NC StateUniv	5.5	4.9	11.2	9.8
7	G83xNC-63	NC StateUniv	5.5	4.9	8.7	8.7
8	G57xNC-62	NC StateUniv	5.4	5.0	11.0	10.1
9	G83xNC-58	NC StateUniv	5.1	4.7	8.6	9.0
10	G83xNC-62	NC StateUniv	4.8	4.4	10.5	10.4
11	Dasher II	Seminis	4.7	4.2	9.9	10.0
12	EGSB-152	EmeraldSeeds	4.6	4.1	9.1	10.7
13	G57xNC-63	NC StateUniv	4.5	4.2	12.0	11.1
14	PX147-10895	Seminis	4.5	4.0	9.8	11.1
15	PX147-10830	Seminis	4.3	3.9	10.2	10.9
16	G83xNC-59	NC StateUniv	4.2	3.9	12.3	12.5
17	HMX-7425	Harris Moran	4.0	3.7	11.6	11.9
18	Poinsett 76	CornellUniv	3.8	3.5	13.7	13.8
19	Ashley	Check	3.6	3.2	15.4	15.2
20	EGSB-118	EmeraldSeeds	3.4	3.0	13.9	14.7
CV (%)			14.9	14.3	17.4	17.7
Mean			4.9	4.4	10.5	10.5
LSD (5%)			1.2	1.0	3.0	3.1

^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) = 0.93**

Correlation (Marketable yield with ARI1) = -0.50**

Summer (Stage 4) Slicing Cucumber Trial 2008

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 10 July, and harvested 4 times (Mondays and Thursdays) between 21 August and 8 September.

Data Collection

1. Fruit 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:

01	G57xNC-63	NC StateUniv
02	G57xNC-58	NC StateUniv
03	G57xNC-59	NC StateUniv
04	NC-Sunshine	NC StateUniv
05	Cherokee 87	Check
06	G83xNC-62	NC StateUniv
07	G83xNC-63	NC StateUniv

Table 27. Stage 4 summer slicer trial - yield data (cultigens ranked by cwt/A of Fancy + No. 1 grade fruit).

Rank	Cultivar or line	Seed source	Yield(cwt/A)		Percent fancy +No.1	Percent culls	Plants per A (x1000)
			Fancy +No.1	Market- able			
1	G57xNC-63	NC StateUniv	206	314	51	22	35
2	G57xNC-58	NC StateUniv	181	256	48	32	31
3	G57xNC-59	NC StateUniv	176	224	57	27	35
4	Cherokee 87	Check	127	196	43	33	35
5	NC-Sunshine	NC StateUniv	112	162	46	34	31
6	Poinsett 76	CornellUniv	109	179	47	28	33
7	PX147-10830	Seminis	99	147	44	35	30
8	G83xNC-58	NC StateUniv	99	150	37	43	35
9	Dasher II	Seminis	97	145	44	32	35
10	G83xNC-62	NC StateUniv	95	150	39	37	34
11	G83xNC-63	NC StateUniv	85	132	27	57	30
12	HMX-7425	Harris Moran	79	118	39	37	35
13	G57xNC-62	NC StateUniv	79	126	31	49	35
14	NC-Stratford	NC StateUniv	74	127	30	46	34
15	EGSB-160	EmeraldSeeds	65	107	27	53	33
16	Ashley	Check	61	100	40	34	28
17	G83xNC-59	NC StateUniv	61	111	30	48	35
18	PX147-10895	Seminis	28	49	30	46	31
19	EGSB-118	EmeraldSeeds	21	39	14	68	35
20	EGSB-152	EmeraldSeeds	19	44	18	64	32
CV (%)			54	49	32	33	9
Mean			94	144	37	41	33
LSD (5%)			83	116	20	22	5

Correlation (Marketable yield with % culls) = -0.78^{ns}

Table 28. Stage 4 summer 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		1-2		1-3		1-4		1-5	
			Wt.	%	Wt.	%	Wt.	%	Wt.	%	Wt.	%
1	G57xNC-63	NC StateUniv	102	32	181	58	237	75	287	92	312	99
2	G57xNC-58	NC StateUniv	69	24	125	47	187	72	244	95	256	100
3	NC-Sunshine	NC StateUniv	69	42	98	60	130	79	158	97	162	100
4	G57xNC-59	NC StateUniv	33	15	91	42	144	65	194	87	218	98
5	G57xNC-62	NC StateUniv	36	38	80	70	100	82	124	99	126	100
6	HMX-7425	Harris Moran	28	18	72	70	98	83	113	94	116	96
7	G83xNC-63	NC StateUniv	19	11	68	70	100	87	126	98	128	99
8	NC-Stratford	NC StateUniv	23	18	61	53	74	62	118	93	126	99
9	G83xNC-62	NC StateUniv	11	6	60	40	101	66	137	93	150	100
10	Cherokee 87	Check	17	8	53	27	115	59	165	84	189	96
11	Dasher II	Seminis	23	17	50	47	108	80	141	98	144	100
12	G83xNC-58	NC StateUniv	12	8	46	31	93	60	136	92	148	99
13	G83xNC-59	NC StateUniv	7	6	25	22	66	61	105	94	110	100
14	Ashley	Check	5	5	24	23	59	58	89	90	100	100
15	PX147-10830	Seminis	14	21	23	25	54	42	127	77	144	98
16	Poinsett 76	CornellUniv	1	1	21	10	72	39	144	83	171	96
17	EGSB-160	EmeraldSeeds	1	1	17	21	66	65	101	96	107	100
18	PX147-10895	Seminis	3	5	12	35	25	51	40	85	48	98
19	EGSB-152	EmeraldSeeds	0	0	6	12	22	53	41	96	44	100
20	EGSB-118	EmeraldSeeds	0	0	1	1	10	10	30	50	38	66
	CV (%)		87	70	55	39	51	21	49	15	49	13
	Mean		24	14	56	38	93	62	131	90	142	97
	LSD (5%)		34	16	51	25	78	21	107	22	114	22

Correlation (Marketable yield with yield in harvests 1-2) = 0.81**

Correlation (Marketable yield with % of yield in harvests 1-2) = 0.04^{ns}

Table 29. Stage 4 summer 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	PX147-10830	Seminis	7.4	8	8	7	7
2	Dasher II	Seminis	7.3	7	8	8	8
3	G83xNC-63	NC StateUniv	7.2	7	8	7	8
4	HMX-7425	Harris Moran	7.1	7	8	7	7
5	EGSB-118	EmeraldSeeds	7.0	8	7	7	7
6	PX147-10895	Seminis	7.0	7	7	7	7
7	EGSB-152	EmeraldSeeds	6.9	8	9	6	7
8	NC-Sunshine	NC StateUniv	6.9	7	8	6	8
9	G83xNC-62	NC StateUniv	6.8	7	8	6	7
10	G83xNC-58	NC StateUniv	6.8	7	8	6	7
11	G83xNC-59	NC StateUniv	6.7	7	8	7	6
12	Poinsett 76	CornellUniv	6.6	7	8	6	7
13	EGSB-160	EmeraldSeeds	6.4	6	7	6	7
14	NC-Stratford	NC StateUniv	6.2	6	7	6	7
15	G57xNC-58	NC StateUniv	6.1	6	7	6	7
16	Ashley	Check	6.1	6	6	6	6
17	Cherokee 87	Check	6.1	6	7	6	6
18	G57xNC-63	NC StateUniv	5.3	6	5	5	5
19	G57xNC-62	NC StateUniv	5.2	5	6	5	6
20	G57xNC-59	NC StateUniv	5.1	5	5	5	5
CV (%)			9.2	13	13	13	13
Mean			6.5	7	7	6	7
LSD (5%)			1.0	1	2	1	1

^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) = -0.19^{ns}

Table 30. Stage 4 summer slicer trial - fruit dimensions and comments (cultigens ranked by average quality rating).^z

Rank	Cultivar or line	Seed source	Length (inch)	Diameter (inch)	Wt. (lb.)	Defect1°			Defect2°		
						2	4	6	2	4	6
1	PX147-10830	Seminis	8.2	2.0	0.75	K	H	K	T	I	G
2	Dasher II	Seminis	7.9	2.0	0.75	K	K	K	K	C	H
3	G83xNC-63	NC StateUniv	8.2	2.1	0.88	K	K	K	K	T	K
4	HMX-7425	Harris Moran	8.0	1.9	0.72	K	K	H	T	C	K
5	EGSB-118	EmeraldSeeds	8.2	2.0	0.83	K	K	T	C	C	K
6	PX147-10895	Seminis	7.5	1.8	0.67	K	H	K	G	I	T
7	EGSB-152	EmeraldSeeds	8.3	1.9	0.73	G	K	G	K	K	K
8	NC-Sunshine	NC StateUniv	8.3	2.2	0.96	K	K	T	K	C	K
9	G83xNC-62	NC StateUniv	8.1	2.2	0.90	O	C	K	K	V	T
10	G83xNC-58	NC StateUniv	7.9	2.2	0.90	K	K	H	O	D	K
11	G83xNC-59	NC StateUniv	7.9	2.0	0.76	H	K	K	K	T	K
12	Poinsett 76	CornellUniv	7.2	2.1	0.76	K	K	K	H	H	K
13	EGSB-160	EmeraldSeeds	8.6	1.9	0.78	T	K	K	G	T	T
14	NC-Stratford	NC StateUniv	7.8	2.3	0.88	K	K	H	H	I	K
15	G57xNC-58	NC StateUniv	7.8	2.3	1.01	K	K	H	M	I	M
16	Ashley	Check	7.3	2.1	0.74	H	K	T	M	M	M
17	Cherokee 87	Check	7.8	2.2	0.89	K	K	T	M	V	M
18	G57xNC-63	NC StateUniv	7.4	2.1	0.87	K	H	H	M	V	M
19	G57xNC-62	NC StateUniv	7.5	2.2	0.86	K	K	H	M	V	M
20	G57xNC-59	NC StateUniv	7.0	2.3	0.87	H	K	H	M	V	M
CV (%)			4.8	6.2	12.65						
Mean			7.9	2.1	0.83						
LSD (5%)			0.6	0.2	0.17						

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

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

Table 31. Stage 4 summer 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)	Earli- ness (%) ^x	Vine size ^w	Vine color ^w
1	Cherokee 87	Check	7	53	27	8	7
2	HMX-7425	Harris Moran	7	72	70	8	6
3	PX147-10830	Seminis	6	23	25	8	7
4	EGSB-160	EmeraldSeeds	6	17	21	7	7
5	G57xNC-63	NC StateUniv	6	181	58	8	7
6	G57xNC-58	NC StateUniv	6	125	47	8	8
7	EGSB-152	EmeraldSeeds	6	6	12	7	7
8	G83xNC-63	NC StateUniv	5	68	70	8	6
9	G57xNC-62	NC StateUniv	5	80	70	7	6
10	NC-Sunshine	NC StateUniv	5	98	60	7	6
11	Dasher II	Seminis	5	50	47	8	7
12	PX147-10895	Seminis	5	12	35	8	8
13	G83xNC-62	NC StateUniv	4	60	40	7	7
14	Ashley	Check	4	24	23	7	7
15	NC-Stratford	NC StateUniv	4	61	53	6	6
16	G57xNC-59	NC StateUniv	4	91	42	8	9
17	G83xNC-58	NC StateUniv	4	46	31	8	7
18	Poinsett 76	CornellUniv	4	21	10	8	9
19	G83xNC-59	NC StateUniv	4	25	22	7	7
20	EGSB-118	EmeraldSeeds	3	1	1	7	7
CV (%)			26	55	39	13	13
Mean			5	56	38	7	7
LSD (5%)			2	51	25	2	1

^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) = 0.38**

Table 32. Stage 4 summer slicer trial - disease ratings (cultigens ranked by average disease resistance).^z

Rank	Cultivar or line	Seed source	Average disease	Downy mildew	Anthrac -nose
1	Cherokee 87	Check	2.5	1	4
2	Poinsett 76	CornellUniv	2.5	1	4
3	G83xNC-62	NC StateUniv	3.3	2	5
4	G57xNC-59	NC StateUniv	3.3	2	5
5	G57xNC-63	NC StateUniv	3.5	3	4
6	EGSB-160	EmeraldSeeds	3.7	2	6
7	G83xNC-59	NC StateUniv	3.7	2	5
8	NC-Stratford	NC StateUniv	3.7	3	5
9	G57xNC-62	NC StateUniv	3.8	2	6
10	G83xNC-63	NC StateUniv	3.8	2	6
11	G83xNC-58	NC StateUniv	3.8	3	5
12	EGSB-152	EmeraldSeeds	3.8	3	4
13	G57xNC-58	NC StateUniv	4.0	3	5
14	Ashley	Check	4.0	3	5
15	NC-Sunshine	NC StateUniv	4.0	4	4
16	PX147-10830	Seminis	4.3	2	7
17	EGSB-118	EmeraldSeeds	4.7	3	7
18	Dasher II	Seminis	4.8	2	7
19	PX147-10895	Seminis	5.0	2	8
20	HMX-7425	Harris Moran	5.2	3	8
	CV (%)		20.2	33	23
	Mean		3.9	2	5
	LSD (5%)		1.3	1	2

^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) = -0.42**

Table 33. Stage 4 summer slicer trial - selection indexes (cultigens ranked by SWI1).^z

Rank	Cultivar or line	Seed source	Simple weighted indexes		Average rank indexes	
			SWI1	SWI2	ARI1	ARI2
1	G57xNC-63	NC StateUniv	8.7	7.4	10.9	8.7
2	G57xNC-58	NC StateUniv	7.6	6.6	9.8	9.1
3	G57xNC-59	NC StateUniv	6.7	6.0	11.7	10.0
4	NC-Sunshine	NC StateUniv	6.4	5.9	9.4	9.0
5	Cherokee 87	Check	5.9	5.4	9.7	8.9
6	G83xNC-62	NC StateUniv	5.7	5.3	8.2	8.3
7	G83xNC-63	NC StateUniv	5.7	5.7	7.8	8.1
8	G83xNC-58	NC StateUniv	5.4	5.0	9.5	9.8
9	HMX-7425	Harris Moran	5.4	5.5	9.4	9.9
10	Dasher II	Seminis	5.4	5.3	8.5	9.7
11	Poinsett 76	CornellUniv	5.4	4.8	9.9	9.6
12	PX147-10830	Seminis	5.2	5.0	8.2	9.4
13	G57xNC-62	NC StateUniv	5.1	5.2	12.9	11.8
14	NC-Stratford	NC StateUniv	5.1	5.0	11.7	10.7
15	G83xNC-59	NC StateUniv	4.6	4.3	11.8	11.9
16	EGSB-160	EmeraldSeeds	4.3	4.2	11.5	11.9
17	Ashley	Check	4.2	4.0	12.8	12.9
18	EGSB-152	EmeraldSeeds	3.7	3.5	12.8	13.6
19	PX147-10895	Seminis	3.7	3.9	11.1	12.5
20	EGSB-118	EmeraldSeeds	3.5	3.2	12.5	14.2
CV (%)			23.2	16.1	21.9	19.4
Mean			5.4	5.1	10.5	10.5
LSD (5%)			2.1	1.3	3.8	3.4

^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) = 0.96**

Correlation (Marketable yield with ARI1) = -0.47**