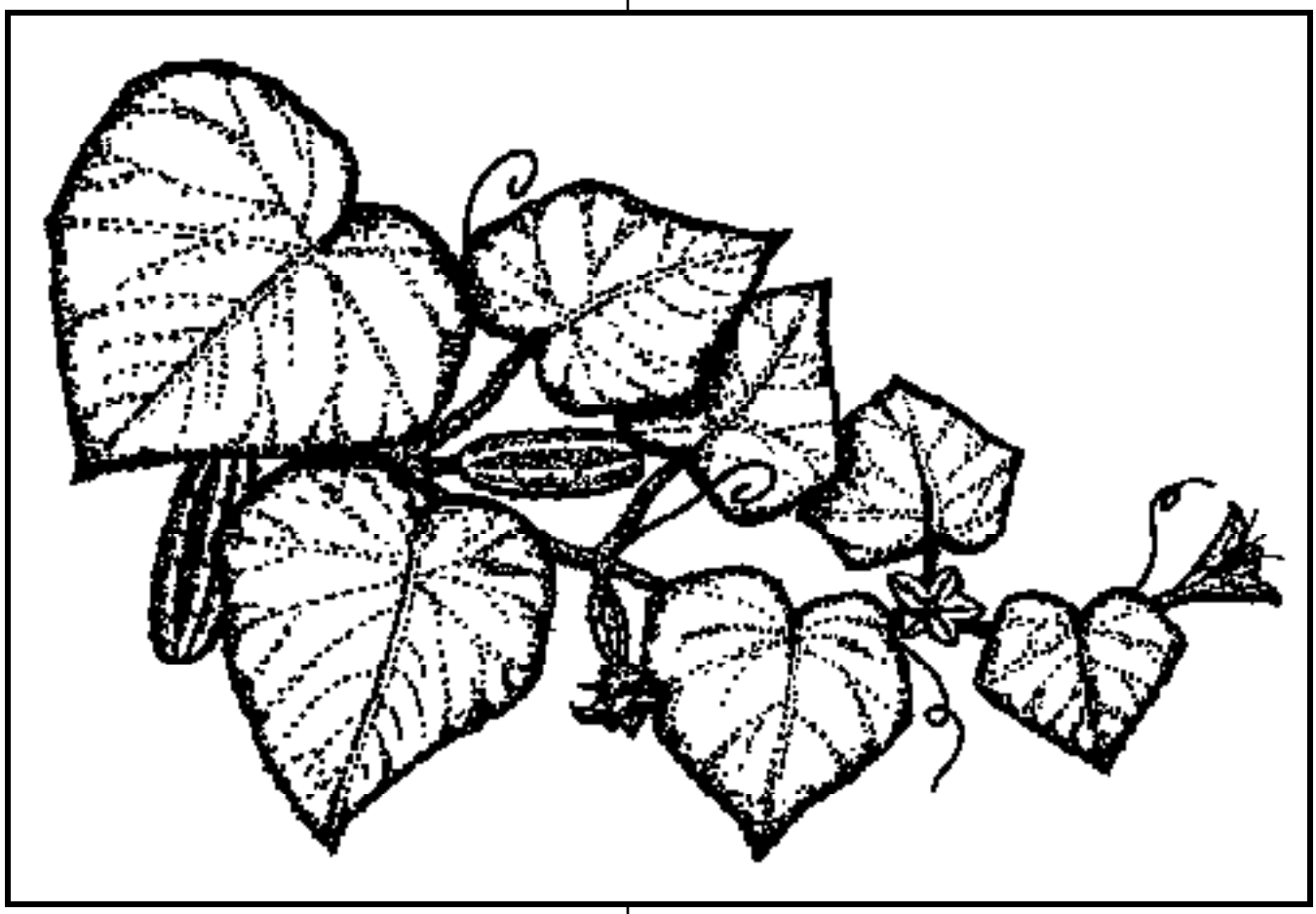
$5.00

NC State Cucumber Trials 2004



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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")	$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.

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 spring season	6 harvests 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.

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Pickling Cucumbers

Brinestock Evaluation

Spring (Stage 3) Pickle Trial

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Introduction

Cucumbers from harvests 3, 5 and 7 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, Lawrence Crocker, Bob Quinn, Tim Smith, and Nick Flores (Mt. Olive), Eddie Quill, JW Jackson, and Nick Matthews (Dean Foods), Curtiss Cates, John Cates, and Duncan Malloy (Addis Cates Co.), Steve Apol (Toisnot), Chris Ware and Bill Rankin (Harris Moran), and Mike Cain (Sunseeds).

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 Vlasstar, HMX-1477, NC-Longhurst, Feisty, Calypso, Cross Country, NC-Davie, and Raleigh.
- Most cultigens were bloater resistant; several were susceptible: G5xNC-52, SRQP-3100, Colt and HMX-1477.
- The firmest cultigens were NC-Lexington, G5xNC-55, Vlasstar, Calypso, and Feisty.
- 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 assigned the highest quality ratings, to Cain 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 (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	Vlasstar(10489	Seminis	6.2	6.3	5.9	6.4	6.0	6.3
2	HMX-1477	Harris Moran	5.7	5.6	6.0	5.4	5.8	5.9
3	NC-Longhurst(P	NCState Univ	5.7	5.4	5.2	5.8	6.2	6.0
4	Feisty(9464)	Harris Moran	5.6	5.4	6.2	5.4	5.4	5.7
5	Calypso	NCState Univ	5.6	5.3	5.4	5.7	5.7	6.0
6	CrossCountry	Harris Moran	5.5	4.5	6.3	5.9	5.8	5.2
7	NC-Davie	NCState Univ	5.4	5.1	5.7	5.6	5.4	5.4
8	Raleigh	NCState Univ	5.4	5.1	5.8	5.4	5.2	5.4
9	SVR045-06115	Seminis	5.4	4.5	5.6	5.7	5.8	5.3
10	NCSU M 21	NCState Univ	5.3	4.7	5.8	5.5	5.4	5.0
11	NC-Moriah	NCState Univ	5.3	4.3	5.6	5.6	5.2	5.8
12	Bejo-2582	Bejo Seeds	5.3	5.2	5.3	5.4	5.2	5.2
13	NC-Linda(P	NCState Univ	5.2	4.7	5.3	5.2	5.5	5.5
14	NC-Duplin	NCState Univ	5.2	5.3	5.7	5.0	4.8	5.2
15	SRQP-3100	SunSeeds	5.2	4.0	5.8	5.2	5.6	5.2
16	NC-Longhurst	NCState Univ	5.1	4.2	5.8	5.0	4.9	5.8
17	G5xNC-52	NCState Univ	5.1	5.1	5.8	4.4	4.7	5.6
18	Sassy(9465)	Harris Moran	5.0	3.8	6.2	4.8	5.1	4.9
19	Jackson(3540)	SunSeeds	5.0	4.5	6.0	4.7	4.5	5.2
20	Wis.SMR 18	Univ. Wis.	4.9	4.7	3.8	5.5	5.5	5.2
21	Colt	Seminis	4.9	4.1	6.0	4.8	5.0	4.8
22	Palomino	Seminis	4.9	4.3	5.6	4.6	5.0	5.0
23	NC-Lexington(P	NCState Univ	4.9	5.4	4.5	4.2	4.5	5.7
24	SRQP-2913	SunSeeds	4.9	4.5	6.2	4.1	4.2	5.2
25	SRQP-3129	SunSeeds	4.8	3.1	5.8	5.3	5.4	4.6
26	NC-Lexington	NCState Univ	4.8	4.4	5.2	4.4	4.4	5.5
27	G5xNC-55	NCState Univ	4.7	4.2	5.8	4.6	4.5	4.7
28	NC-Merritt	NCState Univ	4.7	4.4	5.7	4.1	4.0	5.4
29	SVR045-03228	Seminis	4.6	3.9	5.8	3.8	4.0	5.2
30	NC-Linda	NCState Univ	4.5	3.9	5.4	3.8	3.8	5.4
31	G4xNC-53	NCState Univ	4.4	3.4	5.4	4.2	4.2	5.0
32	Johnston	NCState Univ	4.4	3.4	5.8	4.1	4.2	4.2
33	G4xNC-52	NCState Univ	4.1	2.4	5.4	4.2	4.0	4.8
34	Coolgreen	Seminis	4.0	3.5	5.1	3.1	3.1	5.0
	CV (%)		16	25	15	29	26	22
	Mean		5.1	4.5	5.6	4.9	4.9	5.3
	LSD (5%)		0.3	0.5	0.3	0.6	0.5	0.5

[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) = 0.76**
Correlation (Texture with Seedcell) = 0.94**

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-Longhurst(P	NCState Univ	0	0	0	0
2	Raleigh	NCState Univ	0	0	0	0
3	NC-Linda(P	NCState Univ	0	0	0	0
4	NC-Longhurst	NCState Univ	0	0	0	0
5	Jackson(3540)	SunSeeds	0	0	0	0
6	Wis.SMR 18	Univ. Wis.	0	0	0	0
7	NC-Lexington	NCState Univ	0	0	0	0
8	NC-Linda	NCState Univ	0	0	0	0
9	Johnston	NCState Univ	0	0	0	0
10	G4xNC-52	NCState Univ	0	0	0	0
11	Coolgreen	Seminis	1	0	1	0
12	SRQP-2913	SunSeeds	1	0	1	0
13	NC-Merritt	NCState Univ	1	0	1	0
14	CrossCountry	Harris Moran	0	0	0	0
15	Sassy(9465)	Harris Moran	0	0	0	0
16	NC-Lexington(P	NCState Univ	0	0	0	0
17	G5xNC-55	NCState Univ	0	0	0	0
18	Calypso	NCState Univ	1	0	1	0
19	Bejo-2582	Bejo Seeds	1	0	1	0
20	SVR045-06115	Seminis	1	0	1	0
21	NC-Davie	NCState Univ	0	0	0	0
22	NCSU M 21	NCState Univ	0	0	0	0
23	Vlasstar(10489	Seminis	0	0	0	0
24	Feisty(9464)	Harris Moran	0	0	0	0
25	Palomino	Seminis	0	0	0	0
26	NC-Duplin	NCState Univ	1	1	0	0
27	NC-Moriah	NCState Univ	2	1	1	0
28	G4xNC-53	NCState Univ	1	1	0	0
29	SRQP-3129	SunSeeds	1	1	0	0
30	SVR045-03228	Seminis	1	1	0	0
31	G5xNC-52	NCState Univ	3	3	0	0
32	SRQP-3100	SunSeeds	4	4	0	0
33	Colt	Seminis	5	4	1	0
34	HMX-1477	Harris Moran	5	5	0	0
	CV (%)		213	249	335	.
	Mean		1	1	0	0
	LSD (5%)		3	2	1	.

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-Longhurst(P	NCState Univ	0	0	0	0
2	Wis.SMR 18	Univ. Wis.	1	0	0	1
3	CrossCountry	Harris Moran	1	1	0	0
4	NC-Moriah	NCState Univ	1	0	0	1
5	NC-Linda(P	NCState Univ	1	0	0	1
6	Calypso	NCState Univ	1	1	0	1
7	Raleigh	NCState Univ	2	0	0	2
8	NC-Longhurst	NCState Univ	2	0	0	2
9	SVR045-06115	Seminis	2	1	0	1
10	HMX-1477	Harris Moran	2	1	0	1
11	Sassy(9465)	Harris Moran	2	1	0	2
12	Vlasstar(10489	Seminis	2	2	0	0
13	Johnston	NCState Univ	3	0	0	3
14	G5xNC-55	NCState Univ	3	1	0	2
15	NCSU M 21	NCState Univ	3	2	0	1
16	NC-Merritt	NCState Univ	3	0	0	3
17	Jackson(3540)	SunSeeds	3	0	0	3
18	SRQP-3129	SunSeeds	3	2	0	1
19	Bejo-2582	Bejo Seeds	3	1	0	3
20	NC-Duplin	NCState Univ	3	2	0	1
21	G4xNC-53	NCState Univ	3	1	0	2
22	NC-Lexington	NCState Univ	4	0	0	4
23	SRQP-3100	SunSeeds	4	2	0	2
24	NC-Linda	NCState Univ	4	0	0	4
25	NC-Lexington(P	NCState Univ	4	1	0	4
26	NC-Davie	NCState Univ	5	2	0	3
27	G5xNC-52	NCState Univ	5	1	0	3
28	Colt	Seminis	5	3	0	1
29	Feisty(9464)	Harris Moran	5	3	1	1
30	Palomino	Seminis	7	3	0	3
31	G4xNC-52	NCState Univ	7	0	0	7
32	SVR045-03228	Seminis	7	0	0	7
33	SRQP-2913	SunSeeds	9	0	0	9
34	Coolgreen	Seminis	11	0	0	11
	CV (%)		99	159	1010	119
	Mean		3	1	0	3
	LSD (5%)		6	2	0	5

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	Firmness (lb.)	Texture	Total bloaters & defects	Total bloaters	Balloon	Defects
1	NC-Lexington	NCState Univ	20.6	4.4	4	0	0	4
2	G5xNC-55	NCState Univ	20.4	4.6	3	0	0	3
3	Vlasstar(10489	Seminis	20.2	6.4	3	0	0	2
4	Calypso	NCState Univ	19.4	5.7	2	1	0	1
5	Feisty(9464)	Harris Moran	19.4	5.4	5	0	0	5
6	NCSU M 21	NCState Univ	19.3	5.5	3	0	0	3
7	Wis.SMR 18	Univ. Wis.	19.2	5.5	1	0	0	1
8	Palomino	Seminis	18.8	4.6	7	0	0	7
9	NC-Longhurst	NCState Univ	18.8	5.0	2	0	0	2
10	NC-Duplin	NCState Univ	18.8	5.0	4	1	1	3
11	Johnston	NCState Univ	18.6	4.1	3	0	0	3
12	NC-Lexington(P	NCState Univ	18.6	4.2	4	0	0	4
13	NC-Longhurst(P	NCState Univ	18.1	5.8	0	0	0	0
14	SVR045-06115	Seminis	18.0	5.7	3	1	0	2
15	Bejo-2582	Bejo Seeds	18.0	5.4	4	1	0	3
16	NC-Davie	NCState Univ	17.9	5.6	5	0	0	5
17	Raleigh	NCState Univ	17.8	5.4	2	0	0	2
18	Colt	Seminis	17.8	4.8	10	5	4	5
19	CrossCountry	Harris Moran	17.8	5.9	1	0	0	1
20	G4xNC-53	NCState Univ	17.6	4.2	4	1	1	3
21	SRQP-3129	SunSeeds	17.4	5.3	4	1	1	3
22	SRQP-3100	SunSeeds	16.8	5.2	8	4	4	4
23	NC-Moriah	NCState Univ	16.7	5.6	2	2	1	1
24	NC-Merritt	NCState Univ	16.6	4.1	4	1	0	3
25	Sassy(9465)	Harris Moran	16.4	4.8	2	0	0	2
26	G5xNC-52	NCState Univ	16.3	4.4	7	3	3	5
27	G4xNC-52	NCState Univ	16.1	4.2	7	0	0	7
28	NC-Linda	NCState Univ	16.0	3.8	4	0	0	4
29	NC-Linda(P	NCState Univ	15.6	5.2	1	0	0	1
30	Jackson(3540)	SunSeeds	15.3	4.7	3	0	0	3
31	HMX-1477	Harris Moran	15.2	5.4	7	5	5	2
32	SVR045-03228	Seminis	14.9	3.8	9	1	1	7
33	SRQP-2913	SunSeeds	14.4	4.1	10	1	0	9
34	Coolgreen	Seminis	10.3	3.1	12	1	0	11
	CV (%)		7.8	29	97	213	249	99
	Mean		17.4	4.9	4	1	1	3
	LSD (5%)				7	3	2	6

[z] Firmness determined by punch-testing (Magness-Taylor) 10 grade 2B fruits.
Correlation of Texture with: Firmness = 0.32**, Balloon = -0.09ns
Correlation of Texture with: Honeycomb = ????ns, Soft centers = -0.68**

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

Rank	Judge	Average quality	External Shape	External color	External Texture	Seed cell	Uniform-ity
1	Crocker	5.8	5.5	6.7	4.9	6.1	5.9
2	Smith	5.5	5.2	5.9	5.3	5.2	6.2
3	Jackson	5.4	4.5	5.5	5.5	5.6	6.0
4	Rankin	5.4	4.9	6.1	5.3	5.3	5.3
5	Denlinger	5.3	4.7	6.1	5.1	5.0	5.6
6	Quill	5.3	4.2	6.3	5.1	5.2	5.8
7	Cates,C	5.3	5.5	6.0	4.8	4.8	5.4
8	Apol	5.2	5.2	5.2	5.2	5.2	5.2
9	Flores	5.2	4.2	5.4	5.2	5.1	5.9
10	Matthews	5.1	4.8	5.7	5.7	4.9	4.4
11	Malloy	4.8	4.7	5.2	4.6	4.8	4.7
12	Quinn	4.7	3.9	5.3	4.0	3.3	7.0
13	Ware	4.7	3.8	5.5	5.4	5.0	3.7
14	Cates,J	4.5	3.3	4.8	4.3	5.3	4.9
15	Cain	3.6	3.3	4.3	3.2	3.5	3.7

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

Pickling Cucumbers

Preliminary (Stage 1) Pickling Cucumber Trial 2004

The stage 1 pickle trial was not run this year.

Observational (Stage 2) Pickling Cucumber Trial 2004

The stage 2 pickle trial was not run this year.

Spring (Stage 3) Pickling Cucumber Trial 2004

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 19 April, and harvested 8 times (Mondays and Thursdays) between 7 June and 1 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:

01	HMX-1477	Harris Moran
02	SVR045-03228	Seminis
03	Vlasstar(10489	Seminis
04	SRQP-2913	SunSeeds
05	SVR045-06115	Seminis
06	NC-Davie	NCState Univ
07	Feisty(9464)	Harris Moran
08	Raleigh	NCState Univ
09	Palomino	Seminis
10	NC-Lexington(Parth)	NCState Univ
11	Jackson(3540)	SunSeeds
12	NC-Duplin	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) Cull	No.1	No.2	No.3	No.4	Plants per A (x1000)
1	HMX-1477	Harris Moran	2225	344	11	4	21	56	7	26
2	SVR045-03228	Seminis	2036	336	21	5	21	50	3	26
3	Vlasstar(10489	Seminis	1907	327	15	4	19	52	11	26
4	SRQP-2913	SunSeeds	1564	260	28	6	30	32	4	26
5	Jackson(3540)	SunSeeds	1268	200	27	7	32	31	3	26
6	SVR045-06115	Seminis	1254	181	21	8	37	32	1	26
7	Raleigh	NCState Univ	1249	198	22	8	24	38	8	26
8	NC-Duplin	NCState Univ	1161	194	27	8	24	35	7	26
9	NC-Lexington	NCState Univ	1136	166	20	7	40	30	4	25
10	NC-Lexington(P	NCState Univ	1135	147	12	12	36	34	5	24
11	Palomino	Seminis	1132	215	29	4	19	42	6	26
12	Feisty(9464)	Harris Moran	1101	179	27	7	26	36	4	23
13	Calypso	NCState Univ	1047	163	23	8	32	35	3	26
14	NC-Davie	NCState Univ	1035	186	27	4	24	38	7	26
15	NC-Moriah	NCState Univ	1033	161	24	8	31	35	2	24
16	NC-Linda	NCState Univ	1024	130	32	21	38	8	0	11
17	G4xNC-53	NCState Univ	1010	189	31	5	17	42	5	19
18	NC-Merritt	NCState Univ	1003	151	21	10	28	37	5	16
19	Wis.SMR 18	Univ. Wis.	989	263	25	3	14	30	27	23
20	NC-Longhurst(P	NCState Univ	965	107	16	20	40	23	1	16
21	Bejo-2582	Bejo Seeds	924	152	23	10	26	32	9	26
22	G5xNC-52	NCState Univ	909	161	28	7	28	31	6	20
23	CrossCountry	Harris Moran	908	156	30	6	26	33	4	26
24	NC-Longhurst	NCState Univ	900	113	25	18	36	20	0	13
25	G5xNC-55	NCState Univ	897	160	31	6	22	38	3	20
26	SRQP-3100	SunSeeds	853	124	28	10	35	27	0	26
27	Coolgreen	Seminis	807	147	22	4	22	45	6	15
28	Colt	Seminis	704	127	35	6	21	34	4	26
29	SRQP-3129	SunSeeds	649	116	44	10	22	23	1	26
30	Sassy(9465)	Harris Moran	619	108	45	9	27	18	1	26
31	Johnston	NCState Univ	594	88	34	12	34	20	0	18
32	NCSU M 21	NCState Univ	590	89	24	11	26	36	4	12
33	G4xNC-52	NCState Univ	498	95	42	8	18	28	4	20
34	NC-Linda(P	NCState Univ	451	46	27	35	34	4	0	13
	CV (%)		44	46	34	40	28	40	87	15
	Mean		1046	170	26	9	27	33	5	22
	LSD (5%)		753	129	15	6	12	21	6	6

Correlation (Fruit value with fruit weight) = 0.91**

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 $/A	1 %	1-2 $/A	1-2 %	1-3 $/A	1-3 %	1-4 $/A	1-4 %	1-5 $/A	1-5 %
1	HMX-1477	Harris Moran	806	34	920	39	1327	57	1486	65	1775	79
2	SVR045-03228	Seminis	778	38	855	42	1172	56	1384	67	1716	84
3	Vlasstar(10489	Seminis	593	30	665	34	1024	53	1270	65	1588	83
4	SRQP-2913	SunSeeds	480	30	577	36	895	56	1126	71	1318	83
5	Palomino	Seminis	435	39	479	43	739	65	837	74	978	86
6	SVR045-06115	Seminis	405	31	426	33	699	55	789	61	993	77
7	G4xNC-53	NCState Univ	339	29	387	33	683	69	804	80	881	87
8	NC-Davie	NCState Univ	276	23	365	30	480	44	583	53	690	63
9	Raleigh	NCState Univ	327	24	355	27	650	49	815	63	991	76
10	NC-Duplin	NCState Univ	276	20	338	26	575	44	737	57	924	75
11	Wis.SMR 18	Univ. Wis.	233	23	301	30	485	48	630	63	793	80
12	Jackson(3540)	SunSeeds	226	17	295	22	645	50	843	65	1129	88
13	Feisty(9464)	Harris Moran	228	16	269	20	409	29	526	42	773	65
14	G5xNC-55	NCState Univ	224	20	265	24	418	40	493	48	711	75
15	NC-Lexington(P	NCState Univ	202	16	264	22	394	33	510	43	657	56
16	NC-Merritt	NCState Univ	213	18	247	21	505	46	617	59	796	78
17	Colt	Seminis	218	30	246	34	377	53	434	63	553	78
18	G5xNC-52	NCState Univ	202	18	239	22	403	38	483	47	670	67
19	SRQP-3100	SunSeeds	199	25	235	29	370	44	550	65	700	82
20	NC-Lexington	NCState Univ	194	15	229	18	443	37	607	53	817	70
21	Coolgreen	Seminis	182	18	220	22	468	48	564	65	746	91
22	Sassy(9465)	Harris Moran	197	30	219	35	300	48	370	60	450	71
23	CrossCountry	Harris Moran	185	17	217	20	430	42	521	52	687	70
24	Bejo-2582	Bejo Seeds	184	11	211	13	312	24	435	40	646	61
25	Calypso	NCState Univ	104	7	199	14	358	32	541	51	764	72
26	SRQP-3129	SunSeeds	121	16	193	27	314	46	439	67	507	77
27	NC-Moriah	NCState Univ	98	7	130	10	399	33	486	45	773	71
28	G4xNC-52	NCState Univ	117	22	124	23	195	36	266	50	352	63
29	NC-Longhurst	NCState Univ	32	3	105	10	204	21	353	37	523	57
30	NC-Longhurst(P	NCState Univ	45	4	104	11	160	16	306	31	389	39
31	Johnston	NCState Univ	81	12	104	17	226	37	322	53	437	73
32	NCSU M 21	NCState Univ	46	7	69	12	123	21	217	38	363	63
33	NC-Linda	NCState Univ	8	1	41	5	106	11	222	23	435	43
34	NC-Linda(P	NCState Univ	11	2	41	10	75	17	133	30	178	39
	CV (%)		79	53	74	46	65	33	57	20	53	14
	Mean		243	19	292	24	481	41	609	54	785	71
	LSD (5%)		314	17	351	18	511	22	569	18	682	16

Correlation (Fruit value with value in harvests 1 and 2) = 0.92**

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	Vlasstar(10489	Seminis	7.8	8.0	7.0	7.0	8.3
2	Calypso	NCState Univ	7.4	8.0	6.7	7.0	7.3
3	Feisty(9464)	Harris Moran	7.3	7.7	8.0	6.7	7.7
4	SVR045-06115	Seminis	7.3	7.3	7.0	7.7	7.0
5	NC-Moriah	NCState Univ	7.2	7.7	8.0	6.7	7.3
6	Colt	Seminis	7.2	6.7	8.0	8.0	7.0
7	NC-Merritt	NCState Univ	7.2	7.7	7.7	6.3	7.7
8	Raleigh	NCState Univ	7.1	7.7	7.0	6.0	7.7
9	HMX-1477	Harris Moran	7.0	7.3	8.0	6.7	7.0
10	Johnston	NCState Univ	6.9	6.7	8.3	8.0	6.0
11	NC-Lexington(P	NCState Univ	6.8	7.0	5.0	6.3	7.0
12	CrossCountry	Harris Moran	6.8	6.7	7.0	6.7	7.0
13	Jackson(3540)	SunSeeds	6.8	7.0	8.3	6.7	6.7
14	NC-Davie	NCState Univ	6.7	7.3	6.7	5.7	7.0
15	NC-Linda(P	NCState Univ	6.6	6.7	5.7	6.3	6.7
16	G5xNC-52	NCState Univ	6.4	7.0	7.3	5.3	7.0
17	Palomino	Seminis	6.4	6.7	6.7	6.0	6.7
18	NC-Lexington	NCState Univ	6.4	7.3	6.3	5.7	6.3
19	NC-Longhurst(P	NCState Univ	6.4	6.7	5.3	7.0	5.7
20	NCSU M 21	NCState Univ	6.4	6.7	6.7	6.3	6.3
21	NC-Linda	NCState Univ	6.3	7.0	7.3	5.3	6.7
22	SRQP-2913	SunSeeds	6.3	6.7	8.7	6.0	6.3
23	G5xNC-55	NCState Univ	6.1	6.0	7.7	6.0	6.3
24	Sassy(9465)	Harris Moran	6.1	6.0	8.3	6.3	6.0
25	SRQP-3129	SunSeeds	6.1	6.0	7.7	6.3	6.0
26	NC-Duplin	NCState Univ	6.0	6.3	6.7	5.7	6.0
27	NC-Longhurst	NCState Univ	5.8	6.3	7.7	5.0	6.0
28	SVR045-03228	Seminis	5.8	6.0	6.7	5.3	6.0
29	Bejo-2582	Bejo Seeds	5.8	5.7	6.7	5.3	6.3
30	G4xNC-53	NCState Univ	5.4	6.0	7.3	5.0	5.3
31	SRQP-3100	SunSeeds	5.4	5.7	8.0	5.0	5.7
32	Coolgreen	Seminis	5.3	6.0	4.7	4.3	5.7
33	Wis.SMR 18	Univ. Wis.	4.9	6.0	5.0	4.3	4.3
34	G4xNC-52	NCState Univ	4.4	5.0	6.3	4.0	4.3
	CV (%)		12.1	13.8	10.3	16.0	14.4
	Mean		6.4	6.7	7.0	6.1	6.5
	LSD (5%)		1.3	1.5	1.2	1.6	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) = -0.13^{ns}

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	NC-Lexington	NCState Univ	18	3.0	K	H	K	H	K	H
2	Johnston	NCState Univ	18	3.7	G	G	D	T	T	G
3	NC-Longhurst	NCState Univ	18	3.5	A	X	N	X	G	V
4	NC-Lexington(P	NCState Univ	17	3.0	X	W	K	T	K	W
5	G5xNC-55	NCState Univ	17	3.7	G	G	G	T	K	K
6	NC-Linda(P	NCState Univ	17	3.6	G	X	K	T	W	I
7	Palomino	Seminis	16	3.2	G	K	T	K	N	D
8	NC-Longhurst(P	NCState Univ	16	3.5	A	X	G	X	W	X
9	NC-Duplin	NCState Univ	16	3.1	K	D	C	T	K	H
10	SRQP-3100	SunSeeds	16	3.1	T	T	N	C	G	C
11	Calypso	NCState Univ	16	3.1	H	K	T	K	K	N
12	NC-Davie	NCState Univ	16	2.9	H	H	H	T	K	K
13	G5xNC-52	NCState Univ	16	3.4	G	G	K	K	K	C
14	SVR045-06115	Seminis	15	3.1	H	H	H	K	T	T
15	Colt	Seminis	15	3.2	C	K	K	N	T	N
16	Raleigh	NCState Univ	15	3.1	K	K	K	T	G	C
17	Sassy(9465)	Harris Moran	15	3.5	T	T	T	K	G	N
18	G4xNC-53	NCState Univ	15	3.1	H	T	D	T	K	N
19	Bejo-2582	Bejo Seeds	15	3.1	G	M	H	K	H	T
20	Feisty(9464)	Harris Moran	14	3.2	T	K	K	K	T	T
21	HMX-1477	Harris Moran	14	3.0	K	K	H	H	M	K
22	Jackson(3540)	SunSeeds	14	3.1	K	T	N	H	K	C
23	NCSU M 21	NCState Univ	14	3.3	K	M	G	G	G	K
24	NC-Linda	NCState Univ	14	3.4	G	G	K	T	X	G
25	Vlasstar(10489	Seminis	14	3.0	K	K	K	H	K	D
26	SRQP-3129	SunSeeds	14	3.4	G	C	G	K	T	C
27	G4xNC-52	NCState Univ	14	2.7	H	N	C	N	H	N
28	NC-Merritt	NCState Univ	13	3.0	K	K	H	T	T	K
29	CrossCountry	Harris Moran	13	3.1	K	K	N	H	T	C
30	NC-Moriah	NCState Univ	13	3.7	K	K	G	G	G	K
31	SRQP-2913	SunSeeds	13	2.9	K	H	N	H	K	C
32	SVR045-03228	Seminis	13	3.1	T	T	H	K	M	T
33	Wis.SMR 18	Univ. Wis.	12	3.1	Y	Y	Y	T	W	N
34	Coolgreen	Seminis	11	3.4	G	T	T	X	G	H
	CV (%)		12	6.8						
	Mean		15	3.2						
	LSD (5%)		3	0.4						

[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] Shriveling	Rating (0 - 9)[y] Rots & disease	Firmness (lb.)[x]
1	Sassy(9465)	Harris Moran	2	4	3	11
2	SRQP-2913	SunSeeds	14	3	1	8
3	NC-Longhurst	NCState Univ	15	2	1	15
4	Colt	Seminis	16	4	3	14
5	Feisty(9464)	Harris Moran	16	2	2	13
6	Bejo-2582	Bejo Seeds	17	3	3	13
7	NC-Lexington	NCState Univ	17	2	1	14
8	NC-Davie	NCState Univ	17	3	4	14
9	Johnston	NCState Univ	18	2	1	14
10	Palomino	Seminis	18	3	3	15
11	G4xNC-53	NCState Univ	18	4	2	13
12	Calypso	NCState Univ	18	4	3	14
13	NC-Lexington(P	NCState Univ	18	2	2	15
14	CrossCountry	Harris Moran	18	5	5	13
15	NC-Longhurst(P	NCState Univ	18	5	4	12
16	Jackson(3540)	SunSeeds	19	4	2	10
17	HMX-1477	Harris Moran	19	5	4	12
18	G5xNC-55	NCState Univ	19	5	2	14
19	SVR045-06115	Seminis	20	4	2	13
20	SRQP-3100	SunSeeds	20	4	4	12
21	NC-Linda	NCState Univ	20	5	4	13
22	G4xNC-52	NCState Univ	20	5	4	13
23	G5xNC-52	NCState Univ	20	6	4	13
24	SRQP-3129	SunSeeds	21	5	3	15
25	Vlasstar(10489	Seminis	21	5	3	15
26	NC-Moriah	NCState Univ	21	5	4	13
27	NCSU M 21	NCState Univ	21	3	2	13
28	Raleigh	NCState Univ	22	5	3	12
29	NC-Duplin	NCState Univ	22	5	5	10
30	SVR045-03228	Seminis	22	7	4	11
31	Wis.SMR 18	Univ. Wis.	23	7	5	12
32	NC-Merritt	NCState Univ	24	6	4	13
33	NC-Linda(P	NCState Univ	25	3	1	13
34	Coolgreen	Seminis	32	8	6	7
	CV (%)		31	40	66	22
	Mean		19	4	3	13
	LSD (5%)		10	3	3	5

[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) = 0.51**
Correlation (Weight loss with firmness) = -0.04^{ns}

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	Sassy(9465)	Harris Moran	0	0	0	0
2	Palomino	Seminis	0	0	0	0
3	CrossCountry	Harris Moran	0	0	0	0
4	NC-Linda(P	NCState Univ	0	0	0	0
5	Coolgreen	Seminis	0	0	0	0
6	NCSU M 21	NCState Univ	1	1	0	0
7	NC-Linda	NCState Univ	1	0	0	1
8	NC-Longhurst	NCState Univ	1	1	0	0
9	NC-Longhurst(P	NCState Univ	1	1	0	0
10	Wis.SMR 18	Univ. Wis.	1	1	0	0
11	G5xNC-55	NCState Univ	2	0	0	2
12	Vlasstar(10489	Seminis	2	0	0	2
13	G4xNC-53	NCState Univ	2	0	0	1
14	NC-Merritt	NCState Univ	2	1	0	1
15	SRQP-3129	SunSeeds	2	0	1	1
16	NC-Davie	NCState Univ	2	2	0	0
17	NC-Lexington(P	NCState Univ	2	2	0	0
18	NC-Moriah	NCState Univ	2	0	0	2
19	Feisty(9464)	Harris Moran	2	2	0	1
20	SRQP-3100	SunSeeds	3	0	2	1
21	Calypso	NCState Univ	3	1	0	2
22	NC-Lexington	NCState Univ	3	1	0	2
23	Johnston	NCState Univ	3	1	0	1
24	Raleigh	NCState Univ	3	3	0	0
25	Colt	Seminis	4	3	0	1
26	NC-Duplin	NCState Univ	4	4	0	0
27	G5xNC-52	NCState Univ	4	2	0	2
28	SVR045-06115	Seminis	5	0	3	2
29	Bejo-2582	Bejo Seeds	5	3	0	3
30	HMX-1477	Harris Moran	6	5	0	1
31	Jackson(3540)	SunSeeds	6	4	0	2
32	SVR045-03228	Seminis	7	5	3	0
33	G4xNC-52	NCState Univ	8	3	2	3
34	SRQP-2913	SunSeeds	8	5	3	0
	CV (%)		126	192	377	149
	Mean		3	2	0	1
	LSD (5%)		6	5	2	2

[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	NC-Linda(P	NCState Univ	0	0	0	0	0	0
2	NC-Linda	NCState Univ	1	1	0	0	0	0
3	NC-Longhurst	NCState Univ	1	1	0	0	0	0
4	NC-Longhurst(P	NCState Univ	1	1	0	0	0	0
5	NCSU M 21	NCState Univ	2	1	1	0	1	0
6	NC-Lexington(P	NCState Univ	2	2	0	0	0	0
7	NC-Moriah	NCState Univ	2	2	0	0	0	0
8	Feisty(9464)	Harris Moran	2	2	0	0	0	0
9	Wis.SMR 18	Univ. Wis.	3	1	1	0	1	0
10	G5xNC-55	NCState Univ	3	2	1	0	1	0
11	NC-Lexington	NCState Univ	3	3	0	0	0	0
12	Johnston	NCState Univ	3	3	0	0	0	0
13	NC-Merritt	NCState Univ	3	2	1	0	0	1
14	Palomino	Seminis	3	0	3	0	3	0
15	CrossCountry	Harris Moran	3	0	3	0	3	0
16	G4xNC-53	NCState Univ	3	2	2	0	2	0
17	NC-Davie	NCState Univ	3	2	1	1	1	0
18	Raleigh	NCState Univ	3	3	1	0	1	0
19	SRQP-3100	SunSeeds	4	3	1	0	1	0
20	Calypso	NCState Univ	4	3	1	1	1	0
21	Coolgreen	Seminis	4	0	4	0	0	4
22	Vlasstar(10489	Seminis	4	2	3	0	0	3
23	G5xNC-52	NCState Univ	4	4	0	0	0	0
24	SRQP-3129	SunSeeds	5	2	3	0	3	0
25	HMX-1477	Harris Moran	6	6	0	0	0	0
26	Jackson(3540)	SunSeeds	6	6	0	0	0	0
27	SVR045-06115	Seminis	6	5	1	0	1	0
28	Sassy(9465)	Harris Moran	7	0	7	0	2	5
29	NC-Duplin	NCState Univ	7	4	3	0	3	0
30	SRQP-2913	SunSeeds	8	8	0	0	0	0
31	Bejo-2582	Bejo Seeds	9	5	3	0	1	2
32	Colt	Seminis	9	4	6	0	6	0
33	G4xNC-52	NCState Univ	10	8	2	0	1	1
34	SVR045-03228	Seminis	17	7	9	0	0	9
	CV (%)		98	126	183	703	213	350
	Mean		5	3	2	0	1	1
	LSD (5%)		7	6	5	0	3	4

[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	Vlasstar(10489	Seminis	9	7	8
2	SVR045-06115	Seminis	9	7	7
3	Sassy(9465)	Harris Moran	9	7	8
4	SVR045-03228	Seminis	9	7	9
5	Palomino	Seminis	9	6	8
6	G4xNC-53	NCState Univ	9	6	8
7	SRQP-3100	SunSeeds	9	6	8
8	G4xNC-52	NCState Univ	9	5	7
9	SRQP-3129	SunSeeds	9	5	8
10	NC-Moriah	NCState Univ	9	8	7
11	Feisty(9464)	Harris Moran	9	7	8
12	SRQP-2913	SunSeeds	8	6	8
13	Jackson(3540)	SunSeeds	8	6	8
14	G5xNC-55	NCState Univ	8	6	7
15	Colt	Seminis	8	5	7
16	HMX-1477	Harris Moran	7	8	8
17	Calypso	NCState Univ	7	7	5
18	CrossCountry	Harris Moran	7	7	8
19	Johnston	NCState Univ	7	6	7
20	G5xNC-52	NCState Univ	6	6	8
21	NC-Linda(P	NCState Univ	6	5	6
22	NC-Merritt	NCState Univ	6	6	7
23	Raleigh	NCState Univ	6	6	8
24	NC-Lexington	NCState Univ	6	6	7
25	NC-Davie	NCState Univ	6	7	7
26	NC-Lexington(P	NCState Univ	6	6	7
27	Bejo-2582	Bejo Seeds	6	6	8
28	NC-Linda	NCState Univ	5	5	5
29	NC-Duplin	NCState Univ	5	6	8
30	Wis.SMR 18	Univ. Wis.	4	9	4
31	Coolgreen	Seminis	4	7	6
32	NC-Longhurst	NCState Univ	4	5	6
33	NC-Longhurst(P	NCState Univ	3	7	7
34	NCSU M 21	NCState Univ	3	5	7
	CV (%)		19	14	13
	Mean		7	6	7
	LSD (5%)		2	1	2

[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) = 0.29**

Correlation (Yield with vine size) = 0.64**

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

Rank	Cultivar or line	Seed source	Downy mildew
1	NC-Linda(P	NCState Univ	1.7
2	NC-Davie	NCState Univ	2.3
3	NC-Lexington(P	NCState Univ	2.3
4	SVR045-06115	Seminis	2.7
5	Feisty(9464)	Harris Moran	2.7
6	HMX-1477	Harris Moran	2.7
7	SVR045-03228	Seminis	3.0
8	G5xNC-55	NCState Univ	3.0
9	Sassy(9465)	Harris Moran	3.3
10	G4xNC-52	NCState Univ	3.3
11	SRQP-3129	SunSeeds	3.3
12	G5xNC-52	NCState Univ	3.3
13	NC-Linda	NCState Univ	3.3
14	Johnston	NCState Univ	4.0
15	NCSU M 21	NCState Univ	4.0
16	Colt	Seminis	4.3
17	Vlasstar(10489	Seminis	4.7
18	NC-Moriah	NCState Univ	4.7
19	CrossCountry	Harris Moran	4.7
20	G4xNC-53	NCState Univ	5.3
21	SRQP-2913	SunSeeds	5.7
22	Jackson(3540)	SunSeeds	5.7
23	Calypso	NCState Univ	5.7
24	NC-Merritt	NCState Univ	5.7
25	NC-Lexington	NCState Univ	5.7
26	Bejo-2582	Bejo Seeds	5.7
27	Raleigh	NCState Univ	6.0
28	NC-Duplin	NCState Univ	6.0
29	NC-Longhurst(P	NCState Univ	6.0
30	Palomino	Seminis	6.3
31	NC-Longhurst	NCState Univ	6.3
32	SRQP-3100	SunSeeds	6.7
33	Wis.SMR 18	Univ. Wis.	7.3
34	Coolgreen	Seminis	7.3
	CV (%)		32.8
	Mean		4.5
	LSD (5%)		2.4

[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) = 0.04^{ns}

Table 15. Stage 3 spring pickle 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	HMX-1477	Harris Moran	10.2	8.4	8.6	9.1
2	SVR045-03228	Seminis	9.2	7.7	14.4	13.3
3	Vlasstar(10489	Seminis	8.7	7.5	8.3	10.6
4	SRQP-2913	SunSeeds	7.4	6.4	14.2	15.1
5	SVR045-06115	Seminis	7.1	6.2	10.0	10.8
6	NC-Davie	NCState Univ	6.4	5.7	14.6	13.7
7	Feisty(9464)	Harris Moran	6.4	5.7	12.4	13.9
8	Raleigh	NCState Univ	6.3	5.6	14.6	15.8
9	Palomino	Seminis	6.2	5.6	16.3	14.8
10	NC-Lexington(P	NCState Univ	6.2	5.5	13.4	13.1
11	Jackson(3540)	SunSeeds	6.1	5.5	15.0	16.5
12	NC-Duplin	NCState Univ	5.8	5.1	20.1	19.0
13	G4xNC-53	NCState Univ	5.7	5.1	21.8	19.4
14	G5xNC-55	NCState Univ	5.6	5.1	18.2	16.1
15	NC-Merritt	NCState Univ	5.6	5.1	14.7	17.6
16	NC-Lexington	NCState Univ	5.6	4.9	17.6	17.4
17	G5xNC-52	NCState Univ	5.6	5.1	17.1	16.6
18	Calypso	NCState Univ	5.6	5.0	15.3	17.2
19	NC-Moriah	NCState Univ	5.5	5.0	14.8	17.6
20	Colt	Seminis	5.3	5.0	14.5	15.0
21	CrossCountry	Harris Moran	5.3	4.9	16.3	17.9
22	NC-Linda	NCState Univ	5.1	4.7	18.8	19.8
23	Sassy(9465)	Harris Moran	5.0	4.7	19.1	17.5
24	SRQP-3129	SunSeeds	4.9	4.6	19.0	18.5
25	Bejo-2582	Bejo Seeds	4.9	4.4	22.8	22.5
26	Wis.SMR 18	Univ. Wis.	4.8	4.5	25.1	23.3
27	NC-Longhurst(P	NCState Univ	4.8	4.2	19.7	20.6
28	Johnston	NCState Univ	4.8	4.3	18.6	18.4
29	SRQP-3100	SunSeeds	4.8	4.3	23.7	21.9
30	NC-Longhurst	NCState Univ	4.6	4.1	23.7	22.4
31	NC-Linda(P	NCState Univ	4.4	4.0	19.7	19.1
32	NCSU M 21	NCState Univ	4.4	4.1	20.1	21.2
33	Coolgreen	Seminis	4.3	3.9	25.4	25.3
34	G4xNC-52	NCState Univ	4.0	3.8	27.1	24.1
	CV (%)		24.3	21.4	23.1	21.4
	Mean		5.8	5.2	17.5	17.5
	LSD (5%)		2.3	1.8	6.6	6.1

[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 (Yield with SWI1) = 0.90**
Correlation (Yield with ARI1) = -0.59**

Summer (Stage 4) Pickling Cucumber Trial 2004

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 15 July, and harvested 5 times (Mondays and Thursdays) between 23 August and 7 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:

01	SVR045-06115	Seminis
02	Raleigh	NCState Univ
03	Vlasstar(10489	Seminis
04	SRQP-2913	SunSeeds
05	SVR045-03228	Seminis
06	Feisty(9464)	Harris Moran
07	SRQP-3129	SunSeeds
08	NCSU M 21	NCState Univ
09	NC-Davie	NCState Univ
10	G5xNC-55	NCState Univ
11	G5xNC-52	NCState Univ
12	HMX-1477	Harris Moran

Table 16. 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) Cull	No.1	No.2	No.3	No.4	Plants per A (x1000)
1	SVR045-06115	Seminis	763	135	41	8	32	18	1	26
2	Raleigh	NCState Univ	495	95	40	7	24	23	5	25
3	SVR045-03228	Seminis	417	108	48	4	13	33	2	26
4	SRQP-2913	SunSeeds	410	72	50	8	35	7	0	24
5	Vlasstar(10489	Seminis	405	88	48	7	18	24	3	26
6	Feisty(9464)	Harris Moran	389	68	49	9	27	14	0	24
7	NC-Davie	NCState Univ	361	60	39	11	28	20	2	21
8	G5xNC-52	NCState Univ	348	49	36	21	28	13	2	11
9	G5xNC-55	NCState Univ	321	71	54	9	20	16	2	17
10	SRQP-3129	SunSeeds	314	73	58	9	20	12	2	24
11	NCSU M 21	NCState Univ	309	39	31	17	38	13	0	12
12	Bejo-2582	Bejo Seeds	306	52	32	8	28	29	3	26
13	HMX-1477	Harris Moran	304	60	54	8	19	17	2	26
14	Colt	Seminis	256	55	59	10	22	9	0	26
15	G4xNC-52	NCState Univ	243	60	62	8	19	12	0	23
16	NC-Lexington	NCState Univ	236	36	38	14	34	10	4	25
17	Johnston	NCState Univ	234	50	51	9	24	11	5	17
18	SRQP-3100	SunSeeds	234	51	54	8	24	13	1	25
19	G4xNC-53	NCState Univ	231	58	54	8	15	18	6	20
20	NC-Moriah	NCState Univ	210	42	50	6	15	27	2	17
21	CrossCountry	Harris Moran	202	48	60	6	22	10	2	25
22	NC-Lexington(P	NCState Univ	201	39	51	9	34	7	0	26
23	NC-Duplin	NCState Univ	190	29	52	12	29	7	0	13
24	Calypso	NCState Univ	186	34	48	12	26	12	2	26
25	Palomino	Seminis	180	60	71	6	15	7	1	25
26	Jackson(3540)	SunSeeds	139	31	61	8	21	9	0	26
27	Sassy(9465)	Harris Moran	134	45	72	8	10	6	4	26
28	NC-Merritt	NCState Univ	101	31	68	7	14	11	0	12
29	NC-Longhurst(P	NCState Univ	101	15	43	15	33	9	0	14
30	NC-Longhurst	NCState Univ	101	20	67	7	21	5	0	15
31	NC-Linda	NCState Univ	63	13	63	15	20	3	0	13
32	NC-Linda(P	NCState Univ	47	10	76	16	9	0	0	7
33	Wis.SMR 18	Univ. Wis.	26	5	61	21	6	12	0	26
34	Coolgreen	Seminis	5	3	60	3	0	0	3	10
	CV (%)		54	47	30	72	38	82	198	13
	Mean		249	50	53	10	22	13	2	21
	LSD (5%)		221	39	26	12	14	17	5	4

Correlation (Fruit value with fruit weight) = 0.90**

Table 17. 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 $/A	1 %	1-2 $/A	1-2 %	1-3 $/A	1-3 %	1-4 $/A	1-4 %	1-5 $/A	1-5 %
1	SVR045-06115	Seminis	376	38	549	69	741	98	760	100	763	100
2	SVR045-03228	Seminis	125	27	286	69	404	97	410	98	417	100
3	Raleigh	NCState Univ	127	26	272	55	467	95	489	99	495	100
4	SRQP-2913	SunSeeds	132	24	261	61	388	92	410	100	410	100
5	Feisty(9464)	Harris Moran	153	28	251	51	377	95	386	99	389	100
6	Vlasstar(10489	Seminis	96	22	248	61	393	97	401	99	405	100
7	G5xNC-55	NCState Univ	86	29	213	68	317	99	321	100	321	100
8	SRQP-3129	SunSeeds	76	23	187	59	314	100	314	100	314	100
9	HMX-1477	Harris Moran	60	14	184	43	292	97	300	99	304	100
10	G4xNC-53	NCState Univ	72	30	177	75	219	95	231	100	231	100
11	G4xNC-52	NCState Univ	95	36	171	69	224	93	240	99	243	100
12	G5xNC-52	NCState Univ	33	11	170	47	308	91	314	92	348	100
13	Colt	Seminis	61	21	160	58	256	100	256	100	256	100
14	NC-Davie	NCState Univ	19	5	149	42	313	88	332	92	361	100
15	NCSU M 21	NCState Univ	14	4	146	49	258	81	287	91	309	100
16	Johnston	NCState Univ	67	21	126	43	216	94	234	100	234	100
17	Palomino	Seminis	47	28	125	71	175	97	177	98	180	100
18	Bejo-2582	Bejo Seeds	26	6	122	33	248	77	257	79	306	100
19	SRQP-3100	SunSeeds	20	9	104	44	211	91	225	96	234	100
20	CrossCountry	Harris Moran	37	22	103	57	194	97	202	100	202	100
21	NC-Lexington	NCState Univ	11	4	89	36	202	85	223	94	236	100
22	NC-Duplin	NCState Univ	15	3	82	40	157	65	183	94	190	100
23	NC-Lexington(P	NCState Univ	8	3	71	35	185	94	199	98	201	100
24	NC-Moriah	NCState Univ	13	4	60	51	153	82	192	94	210	100
25	Jackson(3540)	SunSeeds	10	6	57	39	124	91	133	96	139	100
26	Sassy(9465)	Harris Moran	17	22	52	38	130	97	132	98	134	100
27	NC-Merritt	NCState Univ	7	7	46	46	92	91	96	95	101	100
28	Calypso	NCState Univ	7	4	42	25	164	89	179	96	186	100
29	NC-Longhurst	NCState Univ	6	5	19	16	87	60	87	60	101	67
30	Wis.SMR 18	Univ. Wis.	7	13	17	33	26	100	26	100	26	100
31	NC-Linda	NCState Univ	0	0	16	42	49	82	56	90	63	100
32	NC-Linda(P	NCState Univ	0	0	15	14	44	64	44	64	47	67
33	NC-Longhurst(P	NCState Univ	3	2	9	5	67	74	79	82	101	100
34	Coolgreen	Seminis	5	33	5	33	5	33	5	33	5	33
	CV (%)		135	104	76	51	57	22	57	20	54	17
	Mean		54	16	135	46	229	88	240	92	249	96
	LSD (5%)		119	27	166	38	212	32	222	29	221	27

Correlation (Fruit value with value in harvests 1 and 2) = 0.94**

Table 18. 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 impression[z]
1	Raleigh	NCState Univ	7.1	7.7	7.3	6.0	7.7
2	NC-Moriah	NCState Univ	6.9	7.3	6.3	6.7	6.7
3	NCSU M 21	NCState Univ	6.6	7.0	7.0	5.7	7.0
4	Johnston	NCState Univ	6.3	6.3	7.0	6.3	6.3
5	NC-Merritt	NCState Univ	6.3	6.3	6.7	6.3	6.3
6	SVR045-06115	Seminis	6.2	6.7	6.3	5.3	6.7
7	Vlasstar(10489	Seminis	6.2	6.3	8.3	6.3	6.0
8	Bejo-2582	Bejo Seeds	6.1	6.7	6.3	5.0	6.7
9	NC-Longhurst(P	NCState Univ	6.1	6.3	6.0	5.7	6.3
10	NC-Davie	NCState Univ	6.1	7.3	7.0	4.3	6.7
11	G5xNC-52	NCState Univ	6.0	6.3	6.3	5.0	6.7
12	NC-Linda	NCState Univ	6.0	6.3	7.0	5.7	6.0
13	NC-Linda(P	NCState Univ	6.0	6.3	6.0	5.3	6.3
14	G5xNC-55	NCState Univ	6.0	6.0	7.7	6.0	6.0
15	HMX-1477	Harris Moran	5.9	6.3	7.3	5.0	6.3
16	NC-Longhurst	NCState Univ	5.9	6.3	7.3	5.0	6.3
17	SRQP-3129	SunSeeds	5.9	5.7	7.7	6.0	6.0
18	Colt	Seminis	5.9	5.0	7.7	7.7	5.0
19	NC-Duplin	NCState Univ	5.8	6.3	7.0	4.7	6.3
20	SRQP-2913	SunSeeds	5.8	5.7	8.7	5.3	6.3
21	Palomino	Seminis	5.8	5.7	7.7	6.3	5.3
22	Feisty(9464)	Harris Moran	5.8	5.3	8.3	6.0	6.0
23	Calypso	NCState Univ	5.7	6.3	6.0	5.0	5.7
24	SRQP-3100	SunSeeds	5.7	5.7	9.0	5.0	6.3
25	Sassy(9465)	Harris Moran	5.7	5.7	8.0	5.7	5.7
26	Jackson(3540)	SunSeeds	5.6	5.7	8.7	5.3	5.7
27	NC-Lexington(P	NCState Univ	5.4	6.3	6.7	4.3	5.7
28	SVR045-03228	Seminis	5.4	6.0	7.0	4.7	5.7
29	NC-Lexington	NCState Univ	5.3	5.0	5.7	5.7	5.3
30	CrossCountry	Harris Moran	5.0	5.7	7.3	4.3	5.0
31	G4xNC-52	NCState Univ	5.0	5.3	7.0	4.7	5.0
32	G4xNC-53	NCState Univ	5.0	4.7	7.0	5.7	4.7
33	Wis.SMR 18	Univ. Wis.	4.4	4.0	4.3	4.7	4.7
34	Coolgreen	Seminis	4.3	4.7	4.7	4.0	4.3
	CV (%)		10.7	15.1	11.3	15.4	15.2
	Mean		5.8	6.0	7.0	5.4	6.0
	LSD (5%)		1.0	1.5	1.3	1.4	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) = 0.39**

Table 19. Stage 4 summer pickle trial - other quality data (cultigens are ranked by average quality).[z]

Rank	Cultivar or line	Seed source	Firm-ness	L/D ratio	Defects 1° 2	Defects 1° 4	Defects 1° 6	Defects 2° 2	Defects 2° 4	Defects 2° 6
1	SVR045-06115	Seminis	14	2.8	K	K	D	D	C	M
2	Johnston	NCState Univ	12	3.4	G	G	K	T	K	C
3	Vlasstar(10489	Seminis	12	2.9	N	N	D	C	K	N
4	Colt	Seminis	12	2.9	D	N	C	T	C	N
5	NC-Merritt	NCState Univ	11	3.2	T	T	H	H	N	D
6	NC-Davie	NCState Univ	11	2.9	K	C	K	T	K	D
7	G5xNC-52	NCState Univ	11	3.1	K	K	K	L	T	D
8	G5xNC-55	NCState Univ	11	3.3	N	G	D	D	T	N
9	Palomino	Seminis	11	2.9	N	N	T	K	T	N
10	NC-Longhurst	NCState Univ	11	3.2	T	T	T	K	G	D
11	Calypso	NCState Univ	11	2.7	H	N	K	M	M	N
12	NC-Moriah	NCState Univ	11	3.3	T	T	K	K	C	T
13	NC-Longhurst(P	NCState Univ	11	3.4	K	V	X	K	X	I
14	NC-Linda	NCState Univ	11	3.1	K	T	T	K	N	N
15	SRQP-2913	SunSeeds	11	2.7	D	H	T	H	K	H
16	SRQP-3100	SunSeeds	11	3.1	T	T	K	H	N	T
17	Raleigh	NCState Univ	10	2.9	K	K	K	T	C	D
18	SRQP-3129	SunSeeds	10	3.1	N	D	T	K	T	N
19	G4xNC-53	NCState Univ	10	2.5	N	N	D	T	T	N
20	NCSU M 21	NCState Univ	10	3.2	K	G	K	T	K	D
21	NC-Linda(P	NCState Univ	10	3.0	T	T	T	V	L	N
22	NC-Lexington	NCState Univ	10	2.7	H	N	H	V	V	N
23	Bejo-2582	Bejo Seeds	10	3.0	M	C	K	N	N	M
24	Sassy(9465)	Harris Moran	10	3.3	N	D	H	T	T	N
25	Jackson(3540)	SunSeeds	10	2.7	N	H	D	H	N	N
26	CrossCountry	Harris Moran	10	3.1	N	N	C	N	T	N
27	G4xNC-52	NCState Univ	9	2.6	N	N	D	M	K	N
28	HMX-1477	Harris Moran	9	2.7	T	T	T	K	D	N
29	Feisty(9464)	Harris Moran	9	3.0	T	D	T	G	C	N
30	NC-Lexington(P	NCState Univ	9	2.6	H	V	T	V	H	D
31	SVR045-03228	Seminis	9	2.8	T	D	T	K	T	N
32	NC-Duplin	NCState Univ	8	2.9	K	N	T	H	K	N
33	Wis.SMR 18	Univ. Wis.	8	2.5	W	N	Y	T	W	D
34	Coolgreen	Seminis	6	2.4	T	N	H	G	R	D
	CV (%)		18	7.6						
	Mean		10	2.9						
	LSD (5%)		3	0.4						

[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 20. 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	SVR045-06115	Seminis	8	7	7
2	SVR045-03228	Seminis	8	7	6
3	G4xNC-52	NCState Univ	8	6	8
4	SRQP-3129	SunSeeds	8	6	6
5	G4xNC-53	NCState Univ	8	6	8
6	SRQP-2913	SunSeeds	8	5	6
7	Vlasstar(10489	Seminis	8	7	6
8	Palomino	Seminis	8	6	7
9	G5xNC-52	NCState Univ	8	6	6
10	NC-Linda(P	NCState Univ	7	4	7
11	Sassy(9465)	Harris Moran	7	7	8
12	G5xNC-55	NCState Univ	7	7	8
13	Feisty(9464)	Harris Moran	7	7	7
14	Johnston	NCState Univ	6	6	7
15	SRQP-3100	SunSeeds	6	7	7
16	CrossCountry	Harris Moran	5	8	8
17	Raleigh	NCState Univ	5	7	7
18	Calypso	NCState Univ	5	6	6
19	NC-Moriah	NCState Univ	5	6	7
20	NC-Duplin	NCState Univ	5	6	7
21	NC-Linda	NCState Univ	5	4	6
22	Colt	Seminis	4	6	7
23	NC-Merritt	NCState Univ	4	6	8
24	Jackson(3540)	SunSeeds	4	5	5
25	NC-Davie	NCState Univ	4	6	6
26	NC-Lexington(P	NCState Univ	4	5	5
27	NC-Longhurst(P	NCState Univ	4	4	5
28	HMX-1477	Harris Moran	3	7	7
29	Wis.SMR 18	Univ. Wis.	3	7	4
30	NC-Longhurst	NCState Univ	3	5	5
31	Bejo-2582	Bejo Seeds	3	7	5
32	NCSU M 21	NCState Univ	3	5	8
33	NC-Lexington	NCState Univ	3	5	6
34	Coolgreen	Seminis	2	5	5
	CV (%)		27	11	13
	Mean		6	6	7
	LSD (5%)		2	1	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) = 0.39**
Correlation (Yield with vine size) = 0.46**

Table 21. Stage 4 summer pickle trial - disease data (cultigens are ranked by average disease resistance).[z]

Rank	Cultivar or line	Seed source	Downy mildew
1	NC-Linda(P	NCState Univ	4.3
2	NC-Lexington(P	NCState Univ	4.7
3	NC-Longhurst(P	NCState Univ	4.7
4	Sassy(9465)	Harris Moran	5.0
5	Bejo-2582	Bejo Seeds	5.0
6	SVR045-06115	Seminis	5.3
7	SRQP-3129	SunSeeds	5.3
8	Johnston	NCState Univ	5.3
9	NC-Moriah	NCState Univ	5.3
10	NC-Merritt	NCState Univ	5.3
11	NC-Duplin	NCState Univ	5.7
12	Jackson(3540)	SunSeeds	5.7
13	NCSU M 21	NCState Univ	5.7
14	SVR045-03228	Seminis	6.0
15	SRQP-2913	SunSeeds	6.0
16	G5xNC-52	NCState Univ	6.0
17	Feisty(9464)	Harris Moran	6.0
18	Raleigh	NCState Univ	6.0
19	NC-Davie	NCState Univ	6.0
20	HMX-1477	Harris Moran	6.0
21	Vlasstar(10489	Seminis	6.3
22	SRQP-3100	SunSeeds	6.3
23	Calypso	NCState Univ	6.3
24	G4xNC-52	NCState Univ	6.7
25	G4xNC-53	NCState Univ	7.0
26	G5xNC-55	NCState Univ	7.0
27	CrossCountry	Harris Moran	7.0
28	NC-Linda	NCState Univ	7.0
29	NC-Lexington	NCState Univ	7.0
30	Palomino	Seminis	7.3
31	Wis.SMR 18	Univ. Wis.	7.3
32	NC-Longhurst	NCState Univ	7.7
33	Colt	Seminis	8.0
34	Coolgreen	Seminis	9.0
	CV (%)		12.2
	Mean		6.2
	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) = 0.00[ns]

Table 22. Stage 4 summer pickle 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	SVR045-06115	Seminis	5.9	5.5	9.8	8.4
2	Raleigh	NCState Univ	4.7	4.7	8.6	10.5
3	Vlasstar(10489	Seminis	4.3	4.4	12.1	11.7
4	SRQP-2913	SunSeeds	4.2	4.3	14.1	13.8
5	SVR045-03228	Seminis	4.2	4.4	15.5	15.1
6	Feisty(9464)	Harris Moran	4.1	4.1	15.1	15.9
7	SRQP-3129	SunSeeds	3.9	4.2	13.4	12.6
8	NCSU M 21	NCState Univ	3.9	4.0	11.4	14.0
9	NC-Davie	NCState Univ	3.9	3.9	13.2	14.0
10	G5xNC-55	NCState Univ	3.8	4.1	14.9	14.2
11	G5xNC-52	NCState Univ	3.8	3.9	13.7	14.6
12	HMX-1477	Harris Moran	3.8	3.8	16.3	17.0
13	Bejo-2582	Bejo Seeds	3.8	3.8	14.6	15.2
14	Johnston	NCState Univ	3.7	3.8	13.9	13.7
15	NC-Moriah	NCState Univ	3.6	3.9	13.2	14.5
16	SRQP-3100	SunSeeds	3.4	3.6	18.2	18.2
17	Colt	Seminis	3.4	3.6	18.5	17.8
18	NC-Lexington(P	NCState Univ	3.3	3.5	17.9	18.0
19	G4xNC-52	NCState Univ	3.3	3.8	20.6	18.3
20	NC-Duplin	NCState Univ	3.3	3.5	17.7	19.2
21	G4xNC-53	NCState Univ	3.2	3.8	21.2	18.8
22	NC-Merritt	NCState Univ	3.2	3.6	15.7	15.9
23	Palomino	Seminis	3.2	3.8	19.7	17.6
24	Sassy(9465)	Harris Moran	3.2	3.5	18.8	18.0
25	Jackson(3540)	SunSeeds	3.2	3.4	20.3	20.3
26	NC-Longhurst(P	NCState Univ	3.1	2.9	18.5	19.4
27	NC-Linda(P	NCState Univ	3.1	3.0	18.7	19.4
28	Calypso	NCState Univ	3.0	3.0	20.2	20.6
29	CrossCountry	Harris Moran	3.0	3.4	23.2	21.3
30	NC-Lexington	NCState Univ	3.0	3.1	21.4	21.9
31	NC-Linda	NCState Univ	2.8	3.1	21.3	22.0
32	NC-Longhurst	NCState Univ	2.7	2.6	22.8	23.8
33	Wis.SMR 18	Univ. Wis.	2.0	2.3	29.2	28.6
34	Coolgreen	Seminis	1.7	2.0	31.4	31.1
	CV (%)		16.0	14.9	20.6	17.6
	Mean		3.5	3.7	17.5	17.5
	LSD (5%)		0.9	0.9	5.9	5.0

[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) = -0.62**

Slicing Cucumbers

Preliminary (Stage 1) Slicing Cucumber Trial 2004

The stage 1 slicer trial was not run this year.

Observational (Stage 2) Slicing Cucumber Trial 2004

The stage 2 slicer trial was not run this year.

Spring (Stage 3) Slicing Cucumber Trial 2004

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 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	Dasher II	Seminis
02	Stonewall	Harris Moran
03	NC-Stratford	NC State Univ
04	SVR147-10886	Seminis
05	Speedway	Seminis
06	G57xNC-58	NC State Univ
07	G57xNC-62	NC State Univ
08	Marketmore 86	Check
09	G83xNC-63	NC State Univ
10	Intimidator	Seminis

Table 23. 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	Dasher II	Seminis	143	222	53	20	26
2	Speedway	Seminis	117	191	50	20	26
3	SVR147-10886	Seminis	110	185	49	17	25
4	NC-Stratford	NC State Univ	108	180	41	34	26
5	Stonewall	Harris Moran	101	177	45	26	26
6	G83xNC-59	NC State Univ	88	150	45	23	26
7	G57xNC-62	NC State Univ	87	149	44	25	25
8	Thunder	Seminis	83	140	49	19	26
9	G57xNC-58	NC State Univ	82	154	41	21	25
10	G83xNC-63	NC State Univ	80	142	47	18	26
11	Intimidator	Seminis	79	131	43	28	26
12	SRQS-2914	SunSeeds	79	151	40	27	26
13	Cherokee 87	Check	79	139	42	25	26
14	Panther	SunSeeds	75	157	28	31	26
15	Marketmore 86	Check	74	147	35	31	26
16	General Lee	Harris Moran	72	140	44	19	26
17	G83xNC-62	NC State Univ	65	116	44	22	26
18	NC-Sunshine	NC State Univ	63	107	30	47	26
19	Revenue(4289)	Harris Moran	60	100	46	20	25
20	HMX 4441	Harris Moran	57	108	37	29	26
21	SRQS-2983	SunSeeds	54	108	37	27	25
22	G57xNC-59	NC State Univ	48	100	32	33	26
23	G57xNC-63	NC State Univ	45	80	33	40	23
24	Ashley	Check	45	71	39	33	18
25	SVR147-10887	Seminis	42	74	31	30	25
26	Poinsett 76	Cornell Univ.	41	66	33	13	19
27	G83xNC-58	NC State Univ	41	78	33	34	26
28	Marketmore 76	Check	39	66	34	12	26
	CV (%)		56	55	32	40	8
	Mean		73	130	40	26	25
	LSD (5%)		68	116	21	17	3

Correlation (Marketable yield with % culls) = -0.41**

Table 24. 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	Speedway	Seminis	50	26	98	51	118	61	172	91	180	95
2	NC-Stratford	NC State Univ	42	18	94	49	106	57	159	87	167	92
3	Dasher II	Seminis	31	13	92	38	112	49	171	76	196	88
4	Stonewall	Harris Moran	27	11	82	35	92	41	141	80	165	93
5	Marketmore 86	Check	7	5	65	42	89	58	116	77	141	96
6	G57xNC-62	NC State Univ	33	22	63	42	73	49	119	80	138	93
7	Cherokee 87	Check	30	16	62	35	74	49	108	83	125	92
8	SVR147-10886	Seminis	16	8	62	32	105	55	155	85	174	94
9	G57xNC-58	NC State Univ	22	12	56	33	81	48	121	79	149	97
10	G83xNC-63	NC State Univ	22	11	56	30	62	34	108	69	135	95
11	Intimidator	Seminis	31	21	54	38	64	47	119	92	126	96
12	NC-Sunshine	NC State Univ	13	6	52	29	67	46	92	83	105	96
13	Panther	SunSeeds	6	2	51	18	74	33	118	62	150	94
14	G83xNC-62	NC State Univ	19	13	47	31	54	36	93	65	107	85
15	SRQS-2914	SunSeeds	13	6	46	27	66	40	116	76	138	91
16	General Lee	Harris Moran	15	6	37	17	52	33	117	85	126	89
17	HMX 4441	Harris Moran	9	10	36	25	47	38	92	82	101	95
18	Revenue(4289)	Harris Moran	4	5	35	30	45	40	73	72	94	90
19	G57xNC-63	NC State Univ	20	21	34	42	46	58	70	85	78	97
20	G83xNC-59	NC State Univ	12	8	33	21	58	39	103	69	130	87
21	Thunder	Seminis	17	9	33	21	68	41	113	77	133	93
22	G57xNC-59	NC State Univ	19	14	32	30	44	41	85	76	96	97
23	Ashley	Check	3	2	18	10	22	12	48	32	65	65
24	SVR147-10887	Seminis	7	8	15	14	35	39	64	82	68	93
25	SRQS-2983	SunSeeds	3	2	15	10	35	36	86	81	98	92
26	G83xNC-58	NC State Univ	4	5	12	16	24	31	38	53	51	70
27	Poinsett 76	Cornell Univ.	1	1	8	8	13	13	33	33	55	55
28	Marketmore 76	Check	3	2	7	8	15	16	31	32	44	47
	CV (%)		111	86	92	60	77	47	60	24	57	17
	Mean		17	10	46	28	62	41	102	73	119	88
	LSD (5%)		31	14	70	28	79	31	100	28	111	25

Correlation (Marketable yield with yield in harvests 1-2) = 0.91**

Correlation (Marketable yield with % of yield in harvests 1-2) = 0.74^{ns}

Table 25. 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	Dasher II	Seminis	8.0	8	9	8	8
2	Stonewall	Harris Moran	7.4	7	9	8	7
3	SVR147-10886	Seminis	7.3	8	9	6	7
4	G57xNC-58	NC State Univ	7.3	7	8	7	8
5	Poinsett 76	Cornell Univ.	7.3	7	8	7	8
6	General Lee	Harris Moran	7.2	7	8	7	8
7	Thunder	Seminis	7.2	7	8	7	7
8	Marketmore 86	Check	7.1	7	8	7	7
9	NC-Sunshine	NC State Univ	7.1	7	9	8	6
10	NC-Stratford	NC State Univ	7.0	7	9	6	7
11	Intimidator	Seminis	7.0	7	8	7	7
12	G83xNC-63	NC State Univ	6.9	7	8	7	7
13	G57xNC-62	NC State Univ	6.8	7	8	6	7
14	SRQS-2914	SunSeeds	6.8	7	8	6	7
15	G83xNC-59	NC State Univ	6.8	7	8	7	6
16	SVR147-10887	Seminis	6.8	7	8	8	6
17	G83xNC-62	NC State Univ	6.7	7	9	7	7
18	HMX 4441	Harris Moran	6.7	7	8	7	6
19	Panther	SunSeeds	6.6	7	7	7	6
20	Speedway	Seminis	6.6	6	9	7	7
21	G83xNC-58	NC State Univ	6.4	6	9	8	5
22	G57xNC-63	NC State Univ	6.3	7	9	6	6
23	Marketmore 76	Check	6.3	6	7	7	6
24	Revenue(4289)	Harris Moran	6.2	6	7	6	6
25	SRQS-2983	SunSeeds	6.1	6	9	7	5
26	G57xNC-59	NC State Univ	5.8	6	7	6	6
27	Cherokee 87	Check	5.3	5	6	5	5
28	Ashley	Check	4.8	5	5	5	4
	CV (%)		8.3	14	9	12	12
	Mean		6.7	7	8	7	7
	LSD (5%)		0.9	2	1	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) = 0.13[ns]

Table 26. 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.)	Defect1° 2	Defect1° 4	Defect1° 6	Defect2° 2	Defect2° 4	Defect2° 6
1	Dasher II	Seminis	8.0	2.0	0.74	K	K	K	T	H	H
2	Stonewall	Harris Moran	8.1	1.9	0.60	K	K	T	T	T	H
3	SVR147-10886	Seminis	8.3	2.0	0.79	K	K	G	H	G	K
4	G57xNC-58	NC State Univ	8.4	2.0	0.76	H	K	K	K	T	T
5	Poinsett 76	Cornell Univ.	7.6	2.0	0.65	K	H	K	H	T	T
6	General Lee	Harris Moran	8.0	2.1	0.78	H	K	K	K	K	H
7	Thunder	Seminis	7.6	1.9	0.57	K	K	K	H	G	T
8	Marketmore 86	Check	8.7	2.1	0.84	J	K	D	K	G	T
9	NC-Sunshine	NC State Univ	7.8	1.8	0.60	K	K	H	G	H	D
10	NC-Stratford	NC State Univ	8.4	2.0	0.79	K	G	G	P	K	K
11	Intimidator	Seminis	8.0	2.0	0.69	K	H	H	K	K	K
12	G83xNC-63	NC State Univ	8.4	2.1	0.83	K	K	H	I	H	K
13	G57xNC-62	NC State Univ	7.9	1.9	0.64	K	K	T	H	G	G
14	SRQS-2914	SunSeeds	8.0	1.8	0.63	H	G	G	K	K	K
15	G83xNC-59	NC State Univ	7.5	1.8	0.61	H	H	H	K	K	K
16	SVR147-10887	Seminis	10.2	2.0	0.73	H	T	M	M	G	T
17	G83xNC-62	NC State Univ	8.2	1.9	0.67	K	K	T	H	T	G
18	HMX 4441	Harris Moran	7.3	2.0	0.69	H	H	H	K	K	K
19	Panther	SunSeeds	7.4	1.9	0.60	H	K	H	K	K	K
20	Speedway	Seminis	7.7	2.0	0.70	H	H	H	K	K	K
21	G83xNC-58	NC State Univ	7.6	1.8	0.58	H	H	T	H	T	D
22	G57xNC-63	NC State Univ	8.1	2.0	0.72	H	H	T	K	T	H
23	Marketmore 76	Check	7.5	1.9	0.61	H	J	K	K	K	T
24	Revenue(4289)	Harris Moran	7.0	1.9	0.55	H	T	T	L	K	H
25	SRQS-2983	SunSeeds	7.7	1.9	0.55	T	H	H	J	T	T
26	G57xNC-59	NC State Univ	7.6	2.1	0.72	H	H	H	K	K	T
27	Cherokee 87	Check	7.5	2.1	0.70	H	H	I	M	I	M
28	Ashley	Check	7.1	1.8	0.58	H	M	I	M	T	D
	CV (%)		12.2	7.4	17.54						
	Mean		7.9	1.9	0.68						
	LSD (5%)		1.6	0.2	0.19						

[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 27. 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	Dasher II	Seminis	9	2	1	18
2	Stonewall	Harris Moran	11	3	2	16
3	SVR147-10886	Seminis	10	2	1	17
4	G57xNC-58	NC State Univ	10	3	1	18
5	Poinsett 76	Cornell Univ.	11	2	1	15
6	General Lee	Harris Moran	9	3	2	18
7	Thunder	Seminis	10	3	1	18
8	Marketmore 86	Check	10	4	2	14
9	NC-Sunshine	NC State Univ	10	4	4	14
10	NC-Stratford	NC State Univ	11	3	2	16
11	Intimidator	Seminis	10	3	1	18
12	G83xNC-63	NC State Univ	9	5	1	14
13	G57xNC-62	NC State Univ	11	2	1	16
14	SRQS-2914	SunSeeds	10	2	2	16
15	G83xNC-59	NC State Univ	12	3	3	17
16	SVR147-10887	Seminis	10	3	1	20
17	G83xNC-62	NC State Univ	12	3	2	14
18	HMX 4441	Harris Moran	12	4	2	18
19	Panther	SunSeeds	10	3	1	15
20	Speedway	Seminis	9	3	1	17
21	G83xNC-58	NC State Univ	10	3	2	15
22	G57xNC-63	NC State Univ	10	6	6	16
23	Marketmore 76	Check	9	3	1	15
24	Revenue(4289)	Harris Moran	10	3	2	17
25	SRQS-2983	SunSeeds	10	5	4	15
26	G57xNC-59	NC State Univ	13	3	1	19
27	Cherokee 87	Check	11	3	2	19
28	Ashley	Check	12	4	2	15
	CV (%)		17	44	69	10
	Mean		10	3	2	16
	LSD (5%)		3	2	2	3

[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) = 0.15^{ns}
Correlation (Weight loss with firmness) = -0.14^{ns}

Table 28. 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	Dasher II	Seminis	9	92	38	8	7
2	SVR147-10886	Seminis	9	62	32	7	9
3	SRQS-2914	SunSeeds	9	46	27	7	9
4	G57xNC-62	NC State Univ	9	63	42	7	7
5	Intimidator	Seminis	9	54	38	6	5
6	Panther	SunSeeds	9	51	18	6	7
7	G57xNC-58	NC State Univ	9	56	33	6	8
8	Thunder	Seminis	9	33	21	6	6
9	HMX 4441	Harris Moran	9	36	25	6	8
10	Speedway	Seminis	9	98	51	6	8
11	G57xNC-59	NC State Univ	9	32	30	5	8
12	SVR147-10887	Seminis	9	15	14	5	9
13	G57xNC-63	NC State Univ	9	34	42	5	7
14	Stonewall	Harris Moran	9	82	35	7	8
15	SRQS-2983	SunSeeds	9	15	10	5	8
16	General Lee	Harris Moran	8	37	17	7	8
17	Revenue(4289)	Harris Moran	7	35	30	6	7
18	NC-Sunshine	NC State Univ	7	52	29	5	7
19	NC-Stratford	NC State Univ	5	94	49	7	5
20	G83xNC-63	NC State Univ	5	56	30	6	6
21	G83xNC-62	NC State Univ	4	47	31	6	8
22	Marketmore 86	Check	4	65	42	6	8
23	Cherokee 87	Check	4	62	35	6	8
24	Ashley	Check	3	18	10	5	7
25	G83xNC-59	NC State Univ	3	33	21	7	7
26	Marketmore 76	Check	3	7	8	6	8
27	G83xNC-58	NC State Univ	3	12	16	6	7
28	Poinsett 76	Cornell Univ.	3	8	8	5	7
	CV (%)		16	92	60	23	14
	Mean		7	46	28	6	7
	LSD (5%)		2	70	28	2	2

[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) = 0.22*

Table 29. Stage 3 spring slicer trial - disease ratings (cultigens ranked by average disease resistance).[z]

Rank	Cultivar or line	Seed source	Downy mildew
1	Poinsett 76	Cornell Univ.	2.0
2	SVR147-10887	Seminis	2.3
3	SVR147-10886	Seminis	2.7
4	G57xNC-59	NC State Univ	2.7
5	Stonewall	Harris Moran	2.7
6	G57xNC-58	NC State Univ	3.3
7	HMX 4441	Harris Moran	4.3
8	G57xNC-63	NC State Univ	4.7
9	General Lee	Harris Moran	4.7
10	NC-Stratford	NC State Univ	4.7
11	Cherokee 87	Check	4.7
12	Thunder	Seminis	5.0
13	SRQS-2983	SunSeeds	5.0
14	G83xNC-59	NC State Univ	5.0
15	Marketmore 76	Check	5.0
16	NC-Sunshine	NC State Univ	5.3
17	Dasher II	Seminis	5.7
18	SRQS-2914	SunSeeds	5.7
19	G57xNC-62	NC State Univ	5.7
20	Speedway	Seminis	5.7
21	Ashley	Check	5.7
22	Intimidator	Seminis	6.0
23	Panther	SunSeeds	6.0
24	G83xNC-63	NC State Univ	6.0
25	Marketmore 86	Check	6.0
26	Revenue(4289)	Harris Moran	6.3
27	G83xNC-62	NC State Univ	6.3
28	G83xNC-58	NC State Univ	6.3
	CV (%)		34.2
	Mean		4.8
	LSD (5%)		2.7

[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) = 0.26*

Table 30. 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	Dasher II	Seminis	6.9	6.3	7.0	8.2
2	Stonewall	Harris Moran	6.4	5.9	8.9	8.9
3	NC-Stratford	NC State Univ	6.3	5.9	10.9	10.3
4	SVR147-10886	Seminis	6.3	5.9	8.7	8.6
5	Speedway	Seminis	6.2	5.8	12.8	11.9
6	G57xNC-58	NC State Univ	5.6	5.3	10.6	10.6
7	G57xNC-62	NC State Univ	5.3	5.1	13.5	13.1
8	Marketmore 86	Check	5.2	4.9	13.0	13.2
9	G83xNC-63	NC State Univ	5.1	4.7	14.3	14.5
10	Intimidator	Seminis	5.0	4.8	13.8	14.1
11	Thunder	Seminis	4.9	4.7	12.4	13.4
12	G83xNC-59	NC State Univ	4.9	4.6	13.6	13.9
13	General Lee	Harris Moran	4.9	4.6	12.8	13.7
14	SRQS-2914	SunSeeds	4.9	4.6	14.6	14.8
15	NC-Sunshine	NC State Univ	4.9	4.6	13.9	14.5
16	Panther	SunSeeds	4.8	4.4	16.7	17.2
17	Cherokee 87	Check	4.8	4.5	18.4	16.4
18	HMX 4441	Harris Moran	4.6	4.4	15.2	14.9
19	G83xNC-62	NC State Univ	4.6	4.4	16.3	16.5
20	Poinsett 76	Cornell Univ.	4.4	4.2	12.3	13.3
21	G57xNC-59	NC State Univ	4.3	4.3	17.8	16.1
22	SVR147-10887	Seminis	4.3	4.1	14.6	14.8
23	G57xNC-63	NC State Univ	4.2	4.3	17.1	16.2
24	Revenue(4289)	Harris Moran	4.1	4.0	18.6	18.2
25	SRQS-2983	SunSeeds	4.0	3.7	18.3	18.2
26	G83xNC-58	NC State Univ	3.6	3.5	17.6	18.6
27	Marketmore 76	Check	3.6	3.4	19.2	19.7
28	Ashley	Check	3.2	3.0	23.1	22.2
	CV (%)		25.4	22.1	22.5	24.6
	Mean		4.9	4.6	14.5	14.5
	LSD (5%)		2.0	1.7	5.3	5.8

[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 (Marketable yield with SWI1) = 0.92**
Correlation (Marketable yield with ARI1) = -0.59**

Summer (Stage 4) Slicing Cucumber Trial 2004

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 15 July, and harvested 4 times (Mondays and Thursdays) between 26 August and 7 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	Intimidator	Seminis
02	Thunder	Seminis
03	NC-Sunshine	NC State Univ
04	HMX 4441	Harris Moran
05	Dasher II	Seminis
06	SVR147-10886	Seminis
07	SVR147-10887	Seminis
08	SRQS-2914	SunSeeds
09	G57xNC-59	NC State Univ
10	NC-Stratford	NC State Univ

Table 31. 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) Fancy +No.1	Yield(cwt/A) Market-able	Percent fancy +No.1	Percent culls	Plants per A (x1000)
1	NC-Sunshine	NC State Univ	30	46	25	63	26
2	Thunder	Seminis	27	47	23	61	25
3	Intimidator	Seminis	27	58	16	55	26
4	NC-Stratford	NC State Univ	16	22	11	83	26
5	SVR147-10887	Seminis	13	26	9	81	26
6	G57xNC-59	NC State Univ	10	42	8	66	26
7	Dasher II	Seminis	8	19	8	74	26
8	G83xNC-63	NC State Univ	8	20	8	78	26
9	G57xNC-62	NC State Univ	8	10	9	87	26
10	SVR147-10886	Seminis	7	25	6	69	26
11	Stonewall	Harris Moran	4	11	8	79	26
12	HMX 4441	Harris Moran	2	24	3	31	26
13	G83xNC-59	NC State Univ	2	12	2	87	26
14	Panther	SunSeeds	2	21	3	74	26
15	G83xNC-58	NC State Univ	2	9	3	82	26
16	G57xNC-58	NC State Univ	1	2	2	97	26
17	SRQS-2983	SunSeeds	1	3	3	56	26
18	G83xNC-62	NC State Univ	1	5	2	89	26
19	G57xNC-63	NC State Univ	1	3	2	94	26
20	Speedway	Seminis	1	2	1	70	26
21	SRQS-2914	SunSeeds	0	17	0	77	26
22	Ashley	Check	0	6	0	85	21
23	Poinsett 76	Cornell Univ.	0	5	0	77	26
	CV (%)		188	122	139	32	5
	Mean		7	19	7	75	26
	LSD (5%)		23	38	15	40	2

Correlation (Marketable yield with % culls) = -0.64**

Table 32. 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 Wt.	1 %	1-2 Wt.	1-2 %	1-3 Wt.	1-3 %	1-4 Wt.	1-4 %	1-5 Wt.	1-5 %
1	Intimidator	Seminis	26	32	43	69	47	75	58	100	58	100
2	G57xNC-59	NC State Univ	9	14	41	65	42	67	42	67	42	67
3	Thunder	Seminis	9	17	39	55	41	59	47	100	47	100
4	NC-Sunshine	NC State Univ	3	3	28	44	43	61	46	100	46	100
5	SVR147-10887	Seminis	7	8	24	31	25	32	26	33	26	33
6	G83xNC-63	NC State Univ	1	1	17	30	19	33	20	67	20	67
7	Dasher II	Seminis	3	5	16	61	18	65	19	67	19	67
8	NC-Stratford	NC State Univ	2	13	16	56	19	62	22	100	22	100
9	Panther	SunSeeds	0	0	15	59	20	76	21	100	21	100
10	HMX 4441	Harris Moran	3	5	14	28	18	60	24	100	24	100
11	G57xNC-62	NC State Univ	4	25	9	63	10	67	10	67	10	67
12	SVR147-10886	Seminis	1	1	9	13	23	57	25	67	25	67
13	SRQS-2914	SunSeeds	1	9	8	40	15	80	17	100	17	100
14	Stonewall	Harris Moran	1	5	6	21	9	31	11	67	11	67
15	G83xNC-59	NC State Univ	1	2	6	47	12	67	12	67	12	67
16	G83xNC-62	NC State Univ	1	13	4	67	4	67	5	100	5	100
17	G83xNC-58	NC State Univ	0	0	3	33	4	42	9	100	9	100
18	SRQS-2983	SunSeeds	0	0	3	67	3	67	3	67	3	67
19	G57xNC-63	NC State Univ	1	15	2	26	3	67	3	67	3	67
20	Poinsett 76	Cornell Univ.	0	0	2	16	3	20	5	67	5	67
21	G57xNC-58	NC State Univ	2	67	2	67	2	67	2	67	2	67
22	Ashley	Check	0	0	1	4	4	24	6	33	6	33
23	Speedway	Seminis	0	0	0	0	1	33	2	67	2	67
	CV (%)		244	163	132	79	132	72	122	54	122	54
	Mean		3	10	13	42	17	56	19	77	19	77
	LSD (5%)		13	27	29	54	36	66	38	68	38	68

Correlation (Marketable yield with yield in harvests 1-2) = 0.96**
Correlation (Marketable yield with % of yield in harvests 1-2) = 0.49**

Table 33. 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	NC-Sunshine	NC State Univ	7.3	6	9	9	7
2	SVR147-10886	Seminis	6.9	7	8	7	6
3	HMX 4441	Harris Moran	6.6	6	8	7	6
4	Intimidator	Seminis	6.4	6	9	7	6
5	Dasher II	Seminis	6.4	6	8	7	6
6	SRQS-2914	SunSeeds	6.4	6	8	8	6
7	Thunder	Seminis	6.3	6	8	7	6
8	Speedway	Seminis	6.1	6	8	7	6
9	NC-Stratford	NC State Univ	6.1	6	8	6	6
10	SVR147-10887	Seminis	5.9	6	8	6	5
11	G83xNC-63	NC State Univ	5.9	7	8	6	5
12	Stonewall	Harris Moran	5.8	6	9	7	5
13	Panther	SunSeeds	5.8	5	8	6	6
14	SRQS-2983	SunSeeds	5.6	6	7	5	6
15	G57xNC-59	NC State Univ	5.4	5	7	6	5
16	G83xNC-62	NC State Univ	5.3	5	8	6	5
17	G83xNC-58	NC State Univ	5.3	5	8	5	5
18	G57xNC-63	NC State Univ	5.2	5	8	5	5
19	Poinsett 76	Cornell Univ.	5.2	5	7	6	5
20	G57xNC-62	NC State Univ	5.1	4	7	6	5
21	G83xNC-59	NC State Univ	5.0	5	8	5	5
22	Ashley	Check	4.6	4	6	5	4
23	G57xNC-58	NC State Univ	4.3	4	7	4	4
	CV (%)		10.9	18	9	15	15
	Mean		5.8	6	8	6	5
	LSD (5%)		1.0	2	1	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) = 0.19[ns]

Table 34. 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° 2	4	6	Defect2° 2	4	6
1	NC-Sunshine	NC State Univ	7.5	1.8	0.63	K	K	K	H	K	N
2	SVR147-10886	Seminis	7.1	1.8	0.49	H	K	T	K	T	N
3	HMX 4441	Harris Moran	6.5	1.8	0.48	H	C	H	K	N	K
4	Intimidator	Seminis	6.9	1.8	0.45	K	T	T	H	N	N
5	Dasher II	Seminis	6.9	1.8	0.51	K	H	T	T	N	N
6	SRQS-2914	SunSeeds	7.1	1.8	0.46	N	T	N	T	N	H
7	Thunder	Seminis	7.5	1.9	0.56	K	K	N	N	N	K
8	Speedway	Seminis	6.7	1.7	0.46	H	K	D	T	N	N
9	NC-Stratford	NC State Univ	7.4	2.0	0.65	H	H	H	C	N	N
10	SVR147-10887	Seminis	7.0	1.9	0.50	H	T	T	N	N	N
11	G83xNC-63	NC State Univ	6.9	1.9	0.52	K	T	D	H	N	N
12	Stonewall	Harris Moran	7.1	1.8	0.45	G	C	T	D	N	N
13	Panther	SunSeeds	6.7	1.9	0.47	T	H	T	N	N	N
14	SRQS-2983	SunSeeds	6.4	1.7	0.37	T	T	T	G	N	N
15	G57xNC-59	NC State Univ	6.3	1.9	0.47	H	T	H	K	N	N
16	G83xNC-62	NC State Univ	6.8	1.9	0.46	H	H	D	D	N	N
17	G83xNC-58	NC State Univ	6.3	1.7	0.40	N	K	T	H	N	N
18	G57xNC-63	NC State Univ	6.6	1.9	0.49	C	K	T	T	N	N
19	Poinsett 76	Cornell Univ.	6.0	1.9	0.39	H	H	H	T	N	N
20	G57xNC-62	NC State Univ	6.1	1.9	0.42	C	H	C	N	N	N
21	G83xNC-59	NC State Univ	6.4	1.9	0.47	N	H	C	H	N	N
22	Ashley	Check	6.6	1.7	0.48	H	H	T	D	N	M
23	G57xNC-58	NC State Univ	5.6	1.8	0.25	C	T	C	T	N	N
	CV (%)		9.4	7.4	18.14						
	Mean		6.7	1.8	0.47						
	LSD (5%)		1.0	0.2	0.14						

[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 35. 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)	Earliness (%)[x]	Vine size[w]	Vine color[w]
1	G57xNC-63	NC State Univ	9	2	26	6	6
2	G57xNC-58	NC State Univ	9	2	67	6	7
3	SRQS-2914	SunSeeds	9	8	40	7	6
4	G57xNC-59	NC State Univ	8	41	65	7	7
5	Stonewall	Harris Moran	8	6	21	6	7
6	G57xNC-62	NC State Univ	7	9	63	7	5
7	Thunder	Seminis	7	39	55	7	6
8	G83xNC-58	NC State Univ	6	3	33	6	6
9	Dasher II	Seminis	6	16	61	8	7
10	Intimidator	Seminis	6	43	69	7	7
11	NC-Sunshine	NC State Univ	6	28	44	7	6
12	G83xNC-62	NC State Univ	5	4	67	7	5
13	Speedway	Seminis	5	0	0	6	6
14	SRQS-2983	SunSeeds	5	3	67	6	8
15	HMX 4441	Harris Moran	5	14	28	7	7
16	Panther	SunSeeds	5	15	59	7	6
17	NC-Stratford	NC State Univ	5	16	56	6	5
18	G83xNC-63	NC State Univ	4	17	30	6	6
19	Poinsett 76	Cornell Univ.	4	2	16	6	7
20	SVR147-10887	Seminis	4	24	31	7	8
21	SVR147-10886	Seminis	3	9	13	7	8
22	G83xNC-59	NC State Univ	3	6	47	6	6
23	Ashley	Check	3	1	4	6	7
	CV (%)		33	132	79	13	12
	Mean		6	13	42	7	6
	LSD (5%)		3	29	54	1	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) = 0.02[ns]

Table 36. Stage 4 summer slicer trial - disease ratings (cultigens ranked by average disease resistance).[z]

Rank	Cultivar or line	Seed source	Downy mildew
1	HMX 4441	Harris Moran	3.3
2	SRQS-2914	SunSeeds	4.0
3	SRQS-2983	SunSeeds	4.3
4	Dasher II	Seminis	4.7
5	Poinsett 76	Cornell Univ.	5.0
6	SVR147-10886	Seminis	5.0
7	Thunder	Seminis	5.3
8	G83xNC-58	NC State Univ	5.3
9	Ashley	Check	5.3
10	Speedway	Seminis	5.7
11	NC-Stratford	NC State Univ	5.7
12	Intimidator	Seminis	6.0
13	G83xNC-62	NC State Univ	6.0
14	Panther	SunSeeds	6.0
15	SVR147-10887	Seminis	6.0
16	G57xNC-63	NC State Univ	6.3
17	NC-Sunshine	NC State Univ	6.3
18	G83xNC-59	NC State Univ	6.3
19	G57xNC-59	NC State Univ	6.7
20	G83xNC-63	NC State Univ	6.7
21	Stonewall	Harris Moran	7.0
22	G57xNC-58	NC State Univ	7.7
23	G57xNC-62	NC State Univ	8.0
	CV (%)		15.0
	Mean		5.8
	LSD (5%)		1.4

[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) = 0.18[ns]

Table 37. Stage 4 summer 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	Intimidator	Seminis	3.9	4.2	7.3	7.5
2	Thunder	Seminis	3.9	4.0	8.0	8.1
3	NC-Sunshine	NC State Univ	3.8	3.9	6.4	8.3
4	HMX 4441	Harris Moran	3.5	3.4	8.0	8.2
5	Dasher II	Seminis	3.4	3.8	8.9	9.2
6	SVR147-10886	Seminis	3.3	3.1	8.7	9.8
7	SVR147-10887	Seminis	3.2	3.1	11.9	12.5
8	SRQS-2914	SunSeeds	3.2	3.4	8.8	8.4
9	G57xNC-59	NC State Univ	3.2	3.5	12.5	12.1
10	NC-Stratford	NC State Univ	3.2	3.6	10.5	10.3
11	G83xNC-63	NC State Univ	3.0	3.0	13.0	13.5
12	Panther	SunSeeds	2.9	3.4	11.1	10.8
13	SRQS-2983	SunSeeds	2.8	3.5	11.6	11.0
14	Speedway	Seminis	2.7	2.4	12.3	13.4
15	Stonewall	Harris Moran	2.6	2.6	13.9	14.8
16	G83xNC-58	NC State Univ	2.6	2.8	13.4	12.6
17	G83xNC-62	NC State Univ	2.6	3.2	14.1	13.2
18	Poinsett 76	Cornell Univ.	2.5	2.5	14.8	14.3
19	G83xNC-59	NC State Univ	2.4	2.8	14.9	14.2
20	G57xNC-63	NC State Univ	2.4	2.5	15.7	15.8
21	Ashley	Check	2.2	2.1	16.3	15.4
22	G57xNC-62	NC State Univ	2.2	2.9	15.7	15.3
23	G57xNC-58	NC State Univ	1.9	2.7	18.1	17.3
	CV (%)		17.6	21.2	22.2	21.2
	Mean		2.9	3.2	12.0	12.0
	LSD (5%)		0.8	1.1	4.4	4.2

[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) = 0.83**
Correlation (Marketable yield with ARI1) = -0.59**