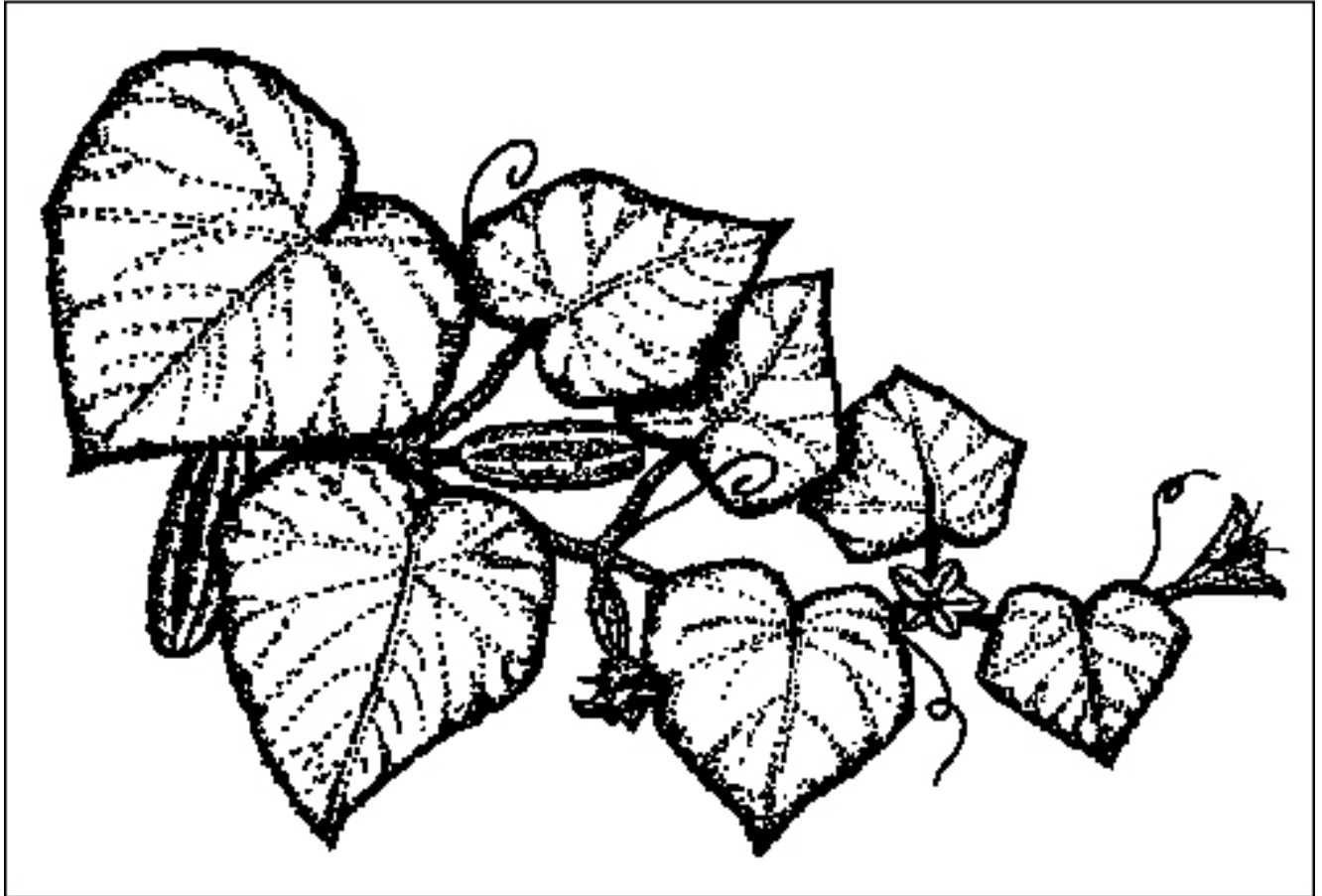


\$25.00

NC State Cucumber Trials 2016



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The authors gratefully acknowledge the assistance of Rodney Mozingo 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. The report is no longer printed, and is available on the web.

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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 brine tanks 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 and Bob Quinn (Mt. Olive), Curtiss and John Cates (Addis Cates Co.), Donovan Brock (Bay Valley), Laura Kornegay (Nash Produce), and Chris Ware (HM-Clause).

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 NC-Johnston, Puccini, Vlaspiik, and NC-Lexington.
- Most cultigens were bloater and defect resistant; some were susceptible: Expedition.
- 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 C.Cates who assigned the highest quality ratings, to G.Pape 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).

^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).²

Rank	Cultivar or line	Seed source	Average quality	Shape	Extrnal color	Text- ure	Seed cell	Uniform- ity
?								

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.??**
 Correlation (Texture with Seedcell) = 0.??**

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
?						

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
?						

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

Rank	Cultivar or line	Seed source	Firm- ness (lb.)	Text- ure	Total bloaters & defects	Total bloaters	Bal- loon	Defects
?								

^z Firmness determined by punch-testing (Magness-Taylor) 10 grade 2B fruits.
 Correlation of Texture with: Firmness = 0.42ns, Balloon = -0.31ns
 Correlation of Texture with: Honeycomb = 0.??ns, Soft centers = -0.??**

Table 5. Brinestock evaluation - quality ratings assigned by the judges (judges are ranked by leniency).²

Rank	Judge	Average quality	Shape	External color	Texture	Seed cell	Uniform- ity
?							

² 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

Spring Pickling Cucumber Trial 2016

Todd C. Wehner and Emily J. Silverman

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 28 April, and harvested 7 times (Mondays and Thursdays) between 9 and 30 June.

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 for yield, earliness, quality and resistance:

1	Expedition	Mon-Seminis
2	Vlaspik	Mon-Seminis
3	NC-Moriah	NC State
4	Lagos	Bejo Seeds
5	MaxPack	Siegers
6	NC-Johnston	NC State
7	NC-56	NC State

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	Expedition	Mon-Seminis	3261	493	23	6	23	39	9	44
2	NC-Moriah	NC State	3035	533	29	4	19	37	11	44
3	Vlaspik	Mon-Seminis	2854	479	27	4	19	40	9	44
4	NC-56	NC State	2744	433	18	5	20	40	16	41
5	NC-Johnston	NC State	2743	435	22	5	21	40	12	44
6	NC-Davie	NC State	2625	404	20	6	18	43	14	44
7	MaxPack	Siegers	2466	369	13	5	19	46	16	44
8	NC-55	NC State	2415	358	18	6	24	39	13	44
9	NC-57	NC State	2223	328	8	6	24	39	23	41
10	Lagos	Bejo Seeds	2211	422	36	3	17	36	8	44
11	NC-54	NC State	2015	367	29	4	14	39	13	44
12	NC-74	NC State	2004	309	8	5	19	44	24	44
13	NC-Merritt	NC State	1583	299	29	4	17	36	14	44
	Mean		2475	402	22	5	20	40	14	43
	LSD (5%)		821	136	7	2	6	7	6	3

Correlation (Fruit value with fruit weight) = 0.88**

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 ² (8 harvests) for harvest:									
			1		1-2		1-3		1-4		1-5	
			\$/A	%	\$/A	%	\$/A	%	\$/A	%	\$/A	%
1	Expedition	Mon-Seminis	1144	35	1772	54	2218	68	2667	82	2950	90
2	Vlaspik	Mon-Seminis	956	33	1588	56	1926	68	2333	82	2610	91
3	NC-Moriah	NC State	857	28	1509	49	1899	62	2255	74	2521	83
4	Lagos	Bejo Seeds	940	43	1261	57	1486	68	1740	79	1956	89
5	NC-56	NC State	432	17	1071	40	1551	57	2112	77	2431	89
6	NC-Johnston	NC State	450	14	1062	37	1534	54	2051	74	2375	86
7	MaxPack	Siegers	351	14	1059	43	1383	56	1851	75	2142	87
8	NC-55	NC State	162	7	864	37	1266	54	1758	74	2104	88
9	NC-Davie	NC State	260	7	819	28	1364	51	1896	72	2268	86
10	NC-Merritt	NC State	134	7	510	29	826	50	1070	66	1272	80
11	NC-74	NC State	125	6	472	24	822	41	1251	63	1671	83
12	NC-57	NC State	17	1	437	19	952	43	1443	65	1751	79
13	NC-54	NC State	68	4	400	21	855	43	1260	63	1634	81
15	Mean		454	17	986	38	1391	55	1822	73	2130	86
16	LSD (5%)		405	13	607	17	615	14	669	10	738	5

Correlation (Fruit value with value in harvests 1 and 2) = 0.81**

Correlation (Fruit value with % in harvests 1 and 2) = 0.91**

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	MaxPack	Siegers	7.3	7.7	8.3	6.7	7.7
2	Lagos	Bejo Seeds	7.3	7.0	7.7	7.7	7.3
3	Expedition	Mon-Seminis	7.2	7.3	7.3	6.7	7.7
4	NC-74	NC State	6.9	7.3	6.7	6.3	7.0
5	NC-57	NC State	6.8	7.7	7.0	5.0	7.7
6	NC-55	NC State	6.6	7.3	7.7	5.3	7.0
7	NC-Johnston	NC State	6.4	7.0	6.3	5.3	7.0
8	NC-Davie	NC State	6.2	7.3	6.0	4.7	6.7
9	NC-Merritt	NC State	5.9	6.0	8.0	5.0	6.7
10	Vlaspik	Mon-Seminis	5.8	6.0	7.3	5.0	6.3
11	NC-Moriah	NC State	5.8	6.3	7.3	4.7	6.3
12	NC-54	NC State	5.7	7.0	5.0	3.7	6.3
13	NC-56	NC State	5.6	6.3	4.3	4.3	6.0
	Mean		6.4	6.9	6.8	5.4	6.9
	LSD (5%)		0.9	1.1	1.3	2.0	1.1

^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) = -0.16^{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 ^o			Defects2 ^o		
					2	4	6	2	4	6
1	NC-74	NC State	20	2.8	H	H	K	K	K	H
2	NC-57	NC State	18	3.0	H	K	K	K	D	K
3	NC-55	NC State	18	3.1	K	A	A	K	K	K
4	MaxPack	Siegers	17	3.2	H	H	H	K	K	K
5	Vlaspik	Mon-Seminis	17	3.5	T	G	G	G	K	K
6	Lagos	Bejo Seeds	17	3.6	G	G	G	T	T	K
7	NC-Johnston	NC State	16	3.5	W	G	K	K	K	T
8	Expedition	Mon-Seminis	16	3.5	G	K	K	K	G	G
9	NC-Davie	NC State	15	3.4	K	W	O	K	K	K
10	NC-56	NC State	15	3.9	W	T	K	K	G	V
11	NC-Merritt	NC State	14	3.1	X	T	X	H	K	K
12	NC-54	NC State	14	3.1	W	W	K	K	H	W
13	NC-Moriah	NC State	12	3.1	H	T	X	K	K	K
15	Mean		16	3.3						
16	LSD (5%)		2	0.9						

^z Quality rated 1 to 9 (1 = poor, 5 = average, 9 = excellent).

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

A - wArty fruit	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)

Not for publication

E - Early maturity
F - Four celled
G - lonG fruit
H - sHort fruit
I - strIPed fruit

N - Nubs excessive
O - Offtype fruit
P - Placental hollows
Q -
R - Reject (poor)

end, light blossom end)
W - White fruit
X - neCKS on fruit
Y - Yellow fruit
Z - diSeased fruit

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	Lagos	Bejo Seeds	9	7	8
2	Vlaspik	Mon-Seminis	8	6	8
3	NC-Moriah	NC State	7	7	9
4	NC-Davie	NC State	7	7	7
5	NC-Johnston	NC State	7	6	6
6	Expedition	Mon-Seminis	7	6	8
7	NC-54	NC State	6	6	8
8	NC-Merritt	NC State	4	6	8
9	NC-57	NC State	4	6	8
10	NC-56	NC State	4	6	8
11	NC-55	NC State	3	8	9
12	MaxPack	Siegers	3	8	9
13	NC-74	NC State	3	7	9
15	Mean		6	7	8
16	LSD (5%)		2	2	2

^z Gynoeocious rating (1 = androecious, 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) = 0.35*; (Yield w/ vine size) = 0.05^{ns}

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	Lagos	Bejo Seeds	2.0
2	NC-74	NC State	2.3
3	NC-57	NC State	3.0
4	NC-56	NC State	3.3
5	NC-55	NC State	3.3
6	MaxPack	Siegers	3.7
7	NC-Davie	NC State	4.0
8	Expedition	Mon-Seminis	4.0
9	Vlaspik	Mon-Seminis	4.7
10	NC-Merritt	NC State	4.7
11	NC-Moriah	NC State	5.0
12	NC-Johnston	NC State	5.0
13	NC-54	NC State	5.7
15	Mean		3.9
16	LSD (5%)		1.7

^z Disease rated 0 to 9 (0=none, 1-2=trace, 3-4=slight, 5-6=moderate, 7-8=advanced, 9=plant dead).

Correlation (Yield vs. disease rating) = 0.05^{ns}

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	Expedition	Mon-Seminis	14.4	11.0	4.1	4.6
2	Vlaspik	Mon-Seminis	12.7	9.8	7.6	6.6
3	NC-Moriah	NC State	12.6	10.0	7.4	7.4
4	Lagos	Bejo Seeds	11.4	9.3	5.1	4.6
5	MaxPack	Siegers	11.0	8.9	5.0	5.4
6	NC-Johnston	NC State	10.9	8.8	6.9	7.1
7	NC-56	NC State	10.8	8.8	8.1	7.5
8	NC-55	NC State	10.1	8.4	6.6	6.6
9	NC-Davie	NC State	10.0	8.3	7.4	7.8
10	NC-57	NC State	8.5	7.5	6.3	6.8
11	NC-74	NC State	8.4	7.3	6.3	6.3
12	NC-54	NC State	7.2	6.5	10.4	10.5
13	NC-Merritt	NC State	7.2	6.4	9.8	9.8
15	Mean		10.4	8.5	7.0	7.0
16	LSD (5%)		3.3	2.2	2.9	2.7

^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) = 0.91** Correlation (Yield with ARI1) = -0.58**

Slicing Cucumbers

Spring Slicing Cucumber Trial 2016

Todd C. Wehner and Emily J. Silverman

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 28 April, and harvested 6 times (Mondays and Thursdays) between 13 and 30 June.

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 for yield, earliness, quality and resistance:

1	Lisboa	Bejo Seeds
2	Dasher II	Mon-Seminis
3	Intimidator	Mon-Seminis
4	Mongoose	Siegers

Table 13. 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	Lisboa	Bejo Seeds	177	407	30	29	44
2	Dasher II	Mon-Seminis	171	354	39	22	44
3	Mongoose	Siegers	153	316	38	23	44
4	Intimidator	Mon-Seminis	150	370	30	25	44
5	Poinsett 76	ClemsonUniv	111	253	29	34	44
	Mean		152	340	33	27	44
	LSD (5%)		74	118	8	6	0

Correlation (Marketable yield with % culls) = -0.45^{ns}

Table 14. 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	Lisboa	Bejo Seeds	253	62	295	73	329	81	366	90	407	100
2	Intimidator	Mon-Seminis	177	47	241	65	271	73	328	89	370	100
3	Dasher II	Mon-Seminis	154	43	197	55	241	69	313	89	354	100
4	Mongoose	Siegers	88	28	133	42	183	60	263	84	316	100
5	Poinsett 76	ClemsonUniv	24	10	91	36	152	61	194	77	253	100
	Mean		139	38	191	54	235	69	293	86	340	100
	LSD (5%)		73	13	73	10	80	17	93	9	118	-

Correlation (Marketable yield with yield in harvests 1-2) = 0.89**

Correlation (Marketable yield with % of yield in harvests 1-2) = 0.65*

Table 15. 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	Mongoose	Siegers	7.2	8	9	7	7
2	Dasher II	Mon-Seminis	6.8	7	8	6	7
3	Lisboa	Bejo Seeds	6.4	6	9	7	6
4	Intimidator	Mon-Seminis	5.8	6	9	5	6
5	Poinsett 76	ClemsonUniv	5.7	6	7	5	6
	Mean		6.4	7	8	6	7
	LSD (5%)		1.2	1	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) = 0.34^{ns}

Table 16. 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	Mongoose	Siegers	7.7	1.9	0.63	H	T	K	K	K	G
2	Dasher II	Mon-Seminis	7.5	1.9	0.61	T	T	K	K	G	T
3	Lisboa	Bejo Seeds	7.7	2.0	0.62	G	T	D	K	H	G
4	Intimidator	Mon-Seminis	7.7	1.9	0.61	H	T	K	T	H	T
5	Poinsett 76	ClemsonUniv	7.3	2.0	0.61	H	H	H	T	K	K
	Mean		7.6	2.0	0.62						
	LSD (5%)		0.8	0.2	0.14						

^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 17. 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	Lisboa	Bejo Seeds	9	295	73	7	6
2	Intimidator	Mon-Seminis	8	241	65	9	5
3	Dasher II	Mon-Seminis	7	197	55	8	7
4	Mongoose	Siegers	6	133	42	8	7
5	Poinsett 76	ClemsonUniv	4	91	36	8	6
	Mean		7	191	54	8	6
	LSD (5%)		2	73	10	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) = 0.46^{ns}

Table 18. Stage 3 spring slicer trial - disease ratings (cultigens ranked by average disease resistance).^z

Rank	Cultivar or line	Seed source	Downy mildew
1	Dasher II	Mon-Seminis	2.0
2	Poinsett 76	ClemsonUniv	2.3
3	Intimidator	Mon-Seminis	2.7
4	Mongoose	Siegers	3.0
5	Lisboa	Bejo Seeds	3.3
	Mean		2.7
	LSD (5%)		2.2

^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) = 0.12^{ns}

Table 19. 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	Lisboa	Bejo Seeds	5.7	6.5	2.8	2.6
2	Dasher II	Mon-Seminis	5.6	6.3	2.3	2.4
3	Intimidator	Mon-Seminis	5.4	6.1	3.3	3.0
4	Mongoose	Siegers	5.3	5.8	2.5	2.9
5	Poinsett 76	ClemsonUniv	4.5	5.0	4.1	4.1
	Mean		5.3	5.9	3.0	3.0
	LSD (5%)		0.8	0.7	0.9	0.9

^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) = 0.90**

Correlation (Marketable yield with ARI1) = -0.65**