

**Abstract.** Rooted cuttings of vegetatively propagated annuals from Proven Winners were planted on February 23, 2016. All cultivars were planted as 3 groups of 6 plants that were randomly placed in the garden. During the first week of each month, evaluations were conducted to measure and record plant height and width (size), flower number, and quality rating. Quality was rated on a scale of 1 to 5 with 5 = excellent and 1 = poor. A consumer preference survey was conducted on March 22, 2007, as well as an online survey through Typeform.

### **Materials and Methods**

*Transplant production.* Rooted liners of cultivars were transplanted into 400 ml round pots filled with Pro-mix 'BX' (Premier Horticulture Inc., Red Hill PA. After transplanting, plants were placed in an open-sided greenhouse exposed to ambient air temperatures of 30°C day/21°C night. Plants were placed in the greenhouse in January 2016. Plants were watered daily and fertilized at planting with 5 g of Osmocote 15N-4.05P-9.96K (The Scotts Company, Marysville, Ohio).

*Field evaluation.* The garden has a Margate fine sand soil with 1.6% organic matter, a pH of 6.74 pH, a soluble salt level of 0.30 mS/cm, a nitrate (NO<sub>3</sub>-N) concentration of 9.00 mg/kg, an ammonium (NH<sub>4</sub>-N) concentration of 5.00 mg/kg, a phosphorus (P) concentration of 27.00 mg/kg, and a potassium (K) concentration of 3.7 mg/kg (samples collected from top 6 inches of soil). Samples were analyzed by the University of Florida's soil testing laboratory. A 3-inch mulch layer was spread over the garden to help control weeds.

Plants were planted into the garden on February 23, 2016. Eighteen plants of each cultivar were planted in the garden as 3 randomly placed groups of 6 plants per cultivar. For the first month, plants were watered three times a week for 30 minutes applying 30 ml of water. Irrigation frequency was then reduced to twice a week for 30 minutes for the remainder of the trial.

*Data collection.* Monthly mean air and soil temperature, solar radiation, and rainfall were collected using the Florida Automated Weather Network (FAWN) system (Table 2). During the first week of every month of the trial plant height, plant width, flower number, and quality were recorded for each individual plant in the garden (Table 3).

A consumer preference survey also was conducted in which participants were asked to check all of the cultivars that they liked. This data was ranked using PROC RANK (SAS Systems, SAS Institute, Cary NC) with plants being chosen more often getting a higher rank than plants that were chosen less. The survey was conducted between March 24 and July 6, 2016 (Table 4). All data were then analyzed using analysis of variance (SAS Systems, SAS Institute, Cary, NC).

## **Results and Discussion**

The weather data collected shows temperature, Humidity and Solar radiation were close to the average south Florida weather, and, rainfall was above average.

All Cultivars planted in the 2016 garden did grow in size and flower number and peaked at 150 DAP. The highest quality plants are Argyranthemum Butterfly, Argyranthemum White Butterfly, Petunia Supertunia Daybreak Charm, Petunia Supertunia Pretty Much Picasso, and Petunia Supertunia Vista Fuchsia Imp. The cultivars that ranked high from the consumer survey include Lamium Pink Chablis, Pansiola Quartz Imp, Petunia Supertunia Vista Bubblegum, Verbena Superbena Royale Peachy Keen, and, Verbena Superbena Royale Red.

Table 1. List of cultivars planted in the Fort Lauderdale Trial garden on February 23, 1016.

Plant	Series	Variety
Argyranthemum		Butterfly, White Butterfly
Calibrachoa	Superbells	Cherry Star, Coralberry Punch, Coralina, Evening Star, Grape Punch Imp, Hollywood Star, Morning Star, Pomegranate Punch, Red Imp, Strawberry Punch, Tropical Sunrise, Yellow Imp
Cyperus	Graceful Grasses	King Tut
Ipomoea	Sweet Caroline	Light Green, Raven
Ipomoea	Sweet Caroline Sweetheart	Lime
Lamium		Pink Chablis
Osteospermum	Bright Lights	Yellow
Pansiola	Anytime	Iris, Plum Good, Quartz Imp, Sugarplum
Petunia	Supertunia	Daybreak Charm, Pretty Much Picasso, Vista Bubblegum, Vista Fuchsia Imp, Vista Silverberry
Sutera	Snowstorm	Blue Imp
Verbena	Superbena	Royale Peachy Keen Imp, Royale Red, Royale Romance, Royale Whitecap

Table 2. Average mean air temperature, solar radiation, and rainfall measured at the University of Florida Fort Lauderdale Research and Education Center during February and June of 2016. The Florida Automated Weather Network (FAWN) collected the weather data.

Month/Year	Avg. mean air temperature (°C)	Avg. Humidity	Avg. mean solar radiation ( $W \cdot m^{-2}$ )	Monthly rainfall (inches)
February, 2016	19.01	73	175.34	3.52
March, 2016	23.23	75	196.15	3.1
April, 2016	23.88	70	259.41	0.19
May, 2016	26.5	74	265.67	5.17
June, 2016	28.58	80	227.80	4.67

Table 3. Plant height, width and size. Data was collected at 60, 90,120 and 150 DAP

Cultivar	60 DAP Hght	60 DAP Wdth	60 DAP Size	90 DAP Hght	90 DAP Wdth	90 DAP Size	120 DAP Hght	120 DAP Wdth	120 DAP Size	150 DAP Hght	150 DAP Width	150 DAP Size
<b>Argyranthemum</b>												
Butterfly	11.23	7.12	1304.3	19.29	9.96	2074.4	24.75	9.79	2916.3	30.84	18.91	5349.4
White Butterfly	15.72	8.01	771.51	17.30	8.65	870.66	19.92	9.65	1035.1	21.16	9.41	1013.5
<b>Calibrachoa</b>												
Superbells Cherry Star	6.61	3.72	249.54	5.79	3.31	242.97	7.28	5.38	450.40	9.86	5.75	468.82
Superbells Coralberry Punch	5.25	3.33	167.31	6.27	4.32	223.89	8.68	5.47	332.75	18.99	12.88	710.69
Superbells Coralina	11.27	6.61	402.47	2.83	3.18	225.92	2.83	3.89	294.86	6.36	1.06	163.34
Superbells Evening Star	6.62	3.72	249.54	7.42	3.09	223.25	12.12	6.31	495.37	6.66	4.51	329.12
Superbells Grape Punch Imp	7.26	4.86	225.48	7.55	4.94	223.84	10.48	7.48	385.20	6.10	4.58	334.71
Superbells Hollywood Star	11.95	5.79	473.56	13.33	5.99	491.34	10.15	3.91	519.72	13.45	3.73	598.99
Superbells Morning Star	4.22	3.08	218.71	4.44	2.94	146.15	12.48	9.46	521.34	7.45	2.52	286.10
Superbells Pomegranate Punch	4.41	2.78	176.81	4.69	3.39	182.16	8.62	4.57	429.88	6.92	5.88	455.76
Superbells Red	7.06	4.06	257.61	8.66	5.57	368.62	11.48	7.21	535.52	10.94	1.88	349.71
Superbells Strawberry Punch	3.91	3.88	218.78	4.24	2.48	139.03	6.54	4.07	286.45	9.8	4.37	364.82
Superbells Tropical Sunrise	4.42	2.81	184.68	9.86	7.01	309.09	8.97	4.18	438.67	0.71	0.71	59.04
<b>Cyperus</b>												
Graceful Grasses King Tut	3.40	1.84	105.62	4.22	2.84	148.12	3.43	2.96	138.01	8.20	7.22	253.86
<b>Ipomoea</b>												
Sweet Caroline Light Green	4.60	3.90	114.65	3.87	3.17	87.90	4.12	3.44	100.24	3.93	2.81	107.69

Sweet Caroline Raven	0.71	0	8.13	0.71	1.06	17.32	0	0	0	0	0	0
Sweet Caroline Sweetheart Lime	0	0	0	0	0	0	0	0	0	0	0	0
<b>Lamium</b>												
Pink Chablis	7.24	5.09	217.51	4.88	3.52	185.02	8.40	6.31	202.00	0	0	0
<b>Osteospermum</b>												
Bright Lights Yellow	2.46	2.06	99.62	3.59	2.54	152.03	5.10	3.52	282.50	4.34	4.68	324.43
<b>Pansiola</b>												
Anytime Iris	8.03	5.66	152.73	8.93	6.10	216.20	10.29	7.47	283.24	0	0.35	10.61
Anytime Plum Good	9.85	6.57	424.02	17.58	11.04	617.70	13.41	5.62	595.35	21.04	11.82	972.08
Anytime Quartz Imp	6.14	2.75	193.72	4.98	4.25	195.60	8.91	4.76	337.57	24.46	13.27	862.89
Anytime Sugarplum	5.60	4.79	254.43	5.35	4.11	214.74	6.84	3.26	252.54	13.31	7.23	559.82
<b>Petunia</b>												
Supertunia Daybreak Charm	17.32	6.47	908.69	18.78	4.19	872.32	19.02	11.80	1605.8	17.31	7.80	1186.4
Supertunia Pretty Much Picasso	10.83	7.04	706.12	10.53	5.90	543.50	11.97	6.23	741.49	14.71	8.43	942.63
Supertunia Vista Bubblegum	6.75	2.72	196.10	5.90	3.85	230.22	8.17	5.13	437.91	10.36	6.22	609.80
Supertunia Vista Fuchsia Imp	20.73	11.92	1513.7	20.41	11.44	1931.1	8.13	4.39	522.78	2.14	1.52	152.56
Supertunia Vista Silverberry	7.79	5.15	319.57	8.58	7.07	466.26	15.55	8.65	870.30	20.52	9.31	809.64
<b>Sutera</b>												
Snowstorm Blue Imp	4.08	1.85	81.63	3.78	2.78	80.23	8.51	6.96	419.92	6.14	3.45	143.69
<b>Verbena</b>												
Superbena Royale Peachy Keen	7.05	4.19	282.02	5.76	3.47	226.83	59.2	3.50	247.58	8.52	3.90	343.42
Superbena Royale Red	11.48	7.34	346.34	10.89	7.57	342.06	7.70	5.67	407.76	7.56	3.57	299.74
Superbena Royale Romance	11.85	6.08	516.52	10.64	4.06	440.33	20.55	12.26	1488.2	8.12	4.74	348.82
Superbena Royale Whitecap	8.01	4.70	321.43	13.78	6.23	710.36	10.18	6.03	666.73	12.54	4.96	555.74

**Table 4. Consumer preference surveys taken between March 24 and July 6, 2016.**

Cultivar	Survey (%) Turf Field Day 61 Surveys	Survey (%) Typeform 15 surveys	Survey (%) Other 27 surveys	Survey (%) Total 103 surveys
<b>Argyranthemum</b>				
Butterfly	19	47	18	23
White Butterfly	22	13	11	18
<b>Calibrachoa</b>				
Superbells Cherry Star	27	40	33	31
Superbells Coralberry Punch	22	53	37	31
Superbells Coralina	25	33	37	29
Superbells Evening Star	25	53	33	31
Superbells Grape Punch Imp	46	27	26	38
Superbells Hollywood Star	30	60	41	37
Superbells Morning Star	21	33	30	25
Superbells Pomegranate Punch	35	20	22	29
Superbells Red Imp	41	7	26	32
Superbells Strawberry Punch	22	40	22	25
Superbells Tropical Sunrise	30	27	33	30
<b>Cyperus</b>				
Graceful Grasses King Tut	48	13	52	44
<b>Ipomoea</b>				
Sweet Caroline Light Green	28	7	30	25
Sweet Caroline Raven	56	33	41	48
Sweet Caroline Sweetheart Lime	9	0	17	10

<b>Lamium</b>				
Pink Chablis	59	33	56	54
<b>Osteospermum</b>				
Bright Lights Yellow	24	47	33	40
<b>Pansiola</b>				
Anytime Iris	35	33	44	37
Anytime Plum Good	44	7	54	42
Anytime Quartz Imp	60	0	52	50
Anytime Sugarplum	27	0	37	26
<b>Petunia</b>				
Supertunia Daybreak Charm	41	0	26	31
Supertunia Pretty Much Picasso	44	7	63	44
Supertunia Vista Bubblegum	54	0	63	48
Supertunia Vista Fuchsia Imp	48	0	56	43
Supertunia Vista Silverberry	30	7	41	29
<b>Sutera</b>				
Snowstorm Blue Imp	27	7	22	34
<b>Verbena</b>				
Superbena Royale Peachy Keen	62	7	67	55
Superbena Royale Red	68	0	59	55
Superbena Royale Romance	38	27	48	39
Superbena Royale Whitecap	32	7	41	31

Results are based on the percentage of respondents who chose that cultivar as one that they liked. A total of 103 surveys were completed.