

# Fort Lauderdale Trial Garden—Year 7

# Luci Fisher and Kimberly A. Moore\*

University of Florida, IFAS, Fort Lauderdale Research and Education Center, 3205 College Avenue, Fort Lauderdale, FL 33314

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The University of Florida Fort Lauderdale Research and Education Center trial garden was established 7 years ago to assess the growth of vegetatively propagated annual cultivars. Annuals from EuroAmerican Propagators (Proven Winners) were planted on 8 Dec. 2008 for the winter trial garden, and on 3 Mar. 2009 for the spring garden. All plants were planted as three groups of six plants, with the groups being randomly placed in the garden. The winter garden cultivars were planted under 30% shade, while the spring garden cultivars were planted under full sun. Periodic evaluations were conducted to record plant height, plant width, flower number, number of plants with flowers, insect and disease damage, and quality rating. Quality was rated on a scale of 0 to 5 with 5 = top performance, 3 = plants of interest, 1 = poor performance, and 0 = dead. Two consumer preference surveys were conducted in Mar. 2009. Plants ranked highly by consumers in the winter garden included Argyranthemum 'Butterfly' and 'Vanilla Butterfly', Chrysocephalum 'Flambe Yellow', Euphorbia 'Diamond Frost', and Osteospermum 'Soprano Compact Purple'. In the spring garden, the top ranked plants included Solenostemon 'Colorblaze Dipt in Wine', Petunia 'Pretty Much Picasso' and 'Supertunia Vista Silverberry', Isolepsis 'Graceful Grasses Fiber Optic', and Lobularia 'Snow Princess'.

The winter trial garden at the University of Florida's Fort Lauderdale Research and Education center is in its seventh year (Moore and Fisher, 2005, 2006, 2007; Moore et al., 2003, 2004). This year a second planting was added in the spring. Because of the unique weather in Fort Lauderdale (26.1°N, 80.2°W, American Horticultural Society Heat Zone 11, USDA Hardiness Zone 10a), the trial garden was developed to assist bedding plant companies who wish to trial vegetatively propagated cultivars before summer trials in the rest of the nation. Our objective is to develop unbiased evaluations of cultivar performance of vegetatively grown annuals. The spring trial garden also investigated the quality of annual plants grown in full sun and warmer temperatures.

#### **Materials and Methods**

Transplant Production. Rooted liners of cultivars from EuroAmerican Propagators (Proven Winners, Bonsall, CA) were transplanted into 400-mL round pots filled with Pro-mix 'BX' (Premier Horticulture Inc., Red Hill, PA) (Table 1). The winter cultivars were transplanted on 22 Oct. 2008, while the spring cultivars were transplanted on 27 Jan. 2009. All plants were placed in an open-sided greenhouse exposed to ambient air temperatures of 30 °C day/21 °C night in October, and 24 °C day/13 °C night in January. Plants were watered daily and fertilized with a top dressing application of 5 g of Osmocote 15N–4.05P–9.96K (The Scotts Company, Marysville, OH).

**FIELD EVALUATION.** The winter trial garden was planted into a  $10,000 \, \text{ft}^2$  ( $100 \, \text{ft} \times 100 \, \text{ft}$ ) garden with 3.4% organic matter, pH of 7.3, potassium (K) 45 ppm, magnesium (Mg) 74 ppm, and calcium (Ca) 1583 ppm. The spring trial garden was planted in

a 788-ft² with 3.7% organic matter, pH of 7.4, K 45 ppm, Mg 74 ppm, and Ca 1583 ppm. Five random soil samples were collected from each garden using a soil probe to collect a 6-inch-long soil sample. Samples were sent to A&L Southern Agricultural Laboratories, Inc. (Pompano Beach, FL) for chemical analysis. A 3-inch woody yard waste mulch layer was spread over both gardens to help control weeds.

The winter trial was planted on 8 Dec. 2008 while the spring trial was planted on 4 Mar. 2009. At each planting date, 18 plants of each cultivar were planted in the garden as three randomly placed groups of six plants per cultivar. All winter cultivars were planted in the 10,000-ft² area under 30% shade. All spring cultivars were planted in the 788-ft² area under full sun. At planting, each plant was top-dressed with 5g of Nutricote Total 18N–2.6P–6.6K type 70 (Florikan Corp., Sarasota, FL). Winter trial garden plants were watered using overhead irrigation delivered by Robert's manufacturer "436 sprinklers" irrigation heads twice a week for 20 min, which applied 40 mL of water per week. The spring trial garden plants were watered twice a week with Orbit Rain Bird Full Mini Rotor riser irrigation for 45 min applying 44 mL of water per week.

DATA COLLECTION. Monthly mean temperature and rainfall was collected on site from the Fawn Weather Station (<http://fawn. ifas.ufl.edu>). Plant height, width, flower number, and quality were recorded for each individual plant in the winter garden at initial planting, 68 d after planting (DAP), 96 DAP, and 123 DAP. In the spring garden data was collected at initial planting as well as 38 DAP, 66 DAP, and 94 DAP. Plant quality was based on the appearance of the group of six plants (three groups of six plants for each cultivar) and took into account the number of plants in flower in a group as well as uniformity in growth and appearance. Plant quality was based on a scale of 0 to 5 with 5 = excellent performance, 4 = very good performance, 3 = average performance, 2 = fair, 1 = poor performance, and 0 = dead.

Two consumer preference surveys were conducted in which participants were asked to check all of the cultivars that they liked. These data were ranked using PROC RANK (SAS Systems, SAS

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<sup>\*</sup>Corresponding author; e-mail: klock@ufl.edu; phone: (954) 577-6328

Table 1. List of cultivars planted in the Fort Lauderdale Trial garden in 2008 and 2009. Winter cultivars were planted in the garden on 8 Dec. 2008. Spring cultivars were planted in the garden on 4 Mar. 2009.

| Season | Plant          | Series           | Variety  |
|--------|----------------|------------------|--|
| Winter |                |                  | ·  |
|        | Angelonia      | Angelface        | Blue, Wedgewood Blue   |
|        | Argyranthemum  | C                | Butterfly, Vanilla Butterfly   |
|        | Bracteantha    | Sundaze          | Golden Beauty, Flame, Fiery Orange   |
|        | Browallia      | Endless          | Celebration, Flirtation, Illumination                                      |
|        | Calibrachoa    | Millionbells     | Terra Cotta, Sassy Pink, Yellow  |
|        | Calibrachoa    | Superbells       | Saffron, Scarlet, Yellow Chiffon   |
|        | Chrysocephalem | Flambe           | Orange, Yellow   |
|        | Diascia        | Flying Colors    | Coral, Orange, Red   |
|        | Euphorbia      | , 0              | Diamond Frost, Kalipso   |
|        | Fuchsia        |                  | Autumnale  |
|        | Fuchsia        | Angels Earrings  | Dainty, Cascading  |
|        | Gaura          | Strat            | Pink Picotee   |
|        | Gypsophila     | Festival Star    | Pink   |
|        | Heuchera       |                  | Crème Brulee, Key Lime Pie, Licorice, Peach Melba                          |
|        | Nemesia        |                  | Blue Bird  |
|        | Nemesia        | Compact          | Innocence, Pink Innocence, Opal Innocence, Refined Innocence               |
|        | Nemesia        | Juicy Fruits     | Kumquat, Papaya, Watermelon  |
|        | Nemesia        | Sunsatia         | Mango, Raspberry   |
|        | Osteospermum   | Soprano          | Compact Purple, Light Purple   |
|        | Osteospermum   | Symphony         | Lemon, Orange  |
|        | Osteospermum   | Sunny            | Dark Florence, Mary, Sheila  |
|        | Petunia        | Supertunia       | Bermuda Beach, Citrus, Cotton Candy  |
|        | Phlox          | Intensia         | Cabernet, Star Brite, White  |
|        | Senetti        |                  | Blue Bicolor, Mini Baby Blue, Lavender, True, Blue, Violet Bicolor         |
| Spring |                |                  | •                                    |
| 1 0    | Begonia        | Mandalay         | Mandarin, Pearl  |
|        | Calibrachoa    | Superbells       | Dreamsicle, Lavender, Saffron, Scarlet, Yellow, Yellow Chiffon             |
|        | Chrysocephalum | Flambe           | Orange, Yellow   |
|        | Cleome         |                  | Senorita Rosita  |
|        | Cuphea         |                  | Totally Tempted  |
|        | Euphorbia      |                  | Diamond Frost  |
|        | Isolepsis      | Graceful Grasses | Fiber Optic  |
|        | Lobelia        | Laguna           | Heavenly Lilac, Sky Blue   |
|        | Lobularia      | C                | Snow Princess  |
|        | Nierembergia   | Augusta          | Blue Skies   |
|        | Oenthera       | C                | Lemon Drop   |
|        | Pelargonium    | Daredevil        | Claret, Fire, Mulberry, Orchid Splash, Rosita, Salmon, Snow                |
|        | Pennisetum     | Graceful Grasses | Red Riding Hood, Rubrum  |
|        | Petunia        |                  | Pretty Much Picasso  |
|        | Petunia        | Supertunia       | Lavender Skies, Vista Bubblegum, Vista Silverberry                         |
|        | Phlox          | Intensia         | Orchid Blast, White Improved   |
|        | Solenostemon   | Colorblaze       | Dark Star, Dipt in Wine, Kingswood Torch, Lifelime, Royal Glissade, Sedona |
|        | Sutera         | Snowstorm        | Blue Skies, Pink Improved  |
|        | Verbena        | Superbena        | Coral Red, Pink Parfait  |

Institute, Cary, NC) with plants being chosen more often getting a higher rank than plants that were chosen less. The winter survey was conducted on 14 Mar. 2009 and the spring survey was conducted on 26 Mar. 2009. All data were analyzed separately for each collection date (DAP) using analysis of variance (SAS Systems) to explore differences between species.

### **Results and Discussion**

**WEATHER.** Temperatures during Winter 2008–09 were slightly lower than average (Table 2). According to the National Weather Service (Miami), rainfall was well below average with a 3-month

total rainfall for the months of Dec. 2008, and Jan. and Feb. 2009 being 8% below normal. This was the driest Fort Lauderdale winter on record. Spring 2009 had close-to-normal temperatures and, like Winter 2008–09, was one of the driest springs on record for the Fort Lauderdale area (National Weather Service-Miami).

PLANT GROWTH AND RATING. Unlike the 2006–07 and 2007–08 trial gardens in which the highest quality ratings occurred approximately 125 DAP and 89 DAP respectively, in the 2008–09 winter garden one-third of the plants had their highest rating at transplant and then quality declined (Table 3). However the remaining plants attained maximum quality in Mar. 2009, 96 DAP. Exceptions include *Angelonia* 'Angelface Blue' and 'Angelonia'

Table 2. Average mean air and soil temperature, solar radiation, and rainfall measured at the University of Florida's Fort Lauderdale Research and Education Center during Winter 2008–09. The Florida Automated Weather Network (FAWN) collected the weather data.

|            |          |          | Avg mean             |          |
|------------|----------|----------|----------------------|----------|
|            | Avg mean |          | solar                | Monthly  |
|            | air temp | Avg      | radiation            | rainfall |
| Month/year | (°C)     | humidity | (W·m <sup>-2</sup> ) | (inches) |
| Dec. 2008  | 20.81    | 80       | 129.51               | 0.42     |
| Jan. 2009  | 18.64    | 76       | 153.68               | 0.11     |
| Feb. 2009  | 19.06    | 70       | 187.38               | 0.27     |
| Mar. 2009  | 21.25    | 68       | 207.32               | 4.83     |
| Apr. 2009  | 23.90    | 66       | 252.25               | 1.12     |
|            |          |          |                      |          |

gelface Wedgewood Blue', *Bracteantha* 'Sundaze Fiery Orange' (Fig. 1), *Calibrachoa* 'Superbells Scarlet', *Gypsophila* 'Festival Star Pink', and *Heuchera* 'Crème Brule' which had the highest quality rating 35 DAP and *Argyranthemum* 'Vanilla Butterfly' at 123 DAP (Table 3). We suspect that cultivars reaching their peak performance early in the winter was due to higher than normal solar radiation levels, lower than normal temperatures, and record low rainfall (Table 2).

On average, cultivars in the spring garden reached the highest quality approximately 38 DAP with the exceptions of *Calibrachoa* 'Superbells Dreamsicle' and 'Superbells Yellow Chiffon', *Cleome* 'Rosalita', *Isolepsis* 'Graceful Grasses Fiber Optic', *Pelargonium* 'Daredevil Rosita' and 'Daredevil Orchid Splash',

Table 3. Consumer preference survey and plant quality rating of the winter trial garden cultivars planted on 8 Dec. 2009. Data were collected on the day of planting, 35, 68, 96, and 123 d after planting (DAP).

|                           |         | Quality <sup>y</sup> |           |               |             |  |  |
|---------------------------|---------|----------------------|-----------|---------------|-------------|--|--|
|                           | Surveyz | Dec. 2008            | Feb. 2009 | 009 Mar. 2009 | Apr. 2009   |  |  |
| Cultivar                  | (rank)  | Initial              | 68 DAP    | 96 DAP        | 123 DAP     |  |  |
| Angelonia                 |         |                      |           |               |             |  |  |
| Angelface Blue            | 38.0    | 3.0                  | 2.5       | 2.3           | 1.8         |  |  |
| Angelface Wedgewood Blue  | 53.0    | 2.8                  | 2.7       | 1.7           | 2.5         |  |  |
| Argyranthemum             |         |                      |           |               |             |  |  |
| Butterfly                 | 59.5    | 2.8                  | 3.7       | 4.3           | 4.0         |  |  |
| Vanilla Butterfly         | 59.5    | 3.0                  | 3.0       | 3.3           | 4.0         |  |  |
| Bracteantha               |         |                      |           |               |             |  |  |
| Sundaze Golden Beauty     | 45.5    | 3.0                  | 2.8       | 3.0           | 2.8         |  |  |
| Sundaze Flame             | 33.0    | 3.0                  | 2.7       | 2.0           | 2.2         |  |  |
| Sundaze Fiery Orange      | 24.0    | 2.8                  | 2.0       | 1.2           | 2.2         |  |  |
| Browallia                 |         |                      |           |               |             |  |  |
| Endless Celebration       | 10.5    | 2.5                  | 1.0       | 0.7           | 0.0         |  |  |
| Endless Flirtation        | 10.5    | 2.5                  | 0.7       | 0.0           | 0.0         |  |  |
| Endless Illumination      | 10.5    | 3.0                  | 1.2       | 0.2           | 0.0         |  |  |
| Calibrachoa               |         |                      |           |               |             |  |  |
| Millionbells Terra Cotta  | 29.0    | 3.0                  | 4.5       | 2.0           | 1.3         |  |  |
| Millionbells Sassy Pink   | 10.5    | 3.0                  | 2.0       | 3.0           | 2.0         |  |  |
| Millionbells Yellow       | 29.0    | 3.0                  | 4.2       | 1.5           | 0.0         |  |  |
| Superbells Saffron        | 53.0    | 3.0                  | 3.0       | 2.5           | 3.0         |  |  |
| Superbells Scarlet        | 38.0    | 2.8                  | 2.3       | 2.0           | 2.3         |  |  |
| Superbells Yellow Chiffon | 33.0    | 3.0                  | 1.7       | 2.3           | 1.0         |  |  |
| Chrysocephalum            |         |                      |           |               |             |  |  |
| Flambe Orange             | 10.5    | 2.5                  | 2.0       | 4.0           | 2.0         |  |  |
| Flambe Yellow             | 57.0    | 2.8                  | 2.5       | 3.0           | 3.0         |  |  |
| Diascia                   |         |                      |           |               |             |  |  |
| Flying Colors Coral       | 10.5    | 3.0                  | 1.5       | 0.8           | 0.3         |  |  |
| Flying Colors Orange      | 10.5    | 3.0                  | 1.5       | 0.0           | 0.0         |  |  |
| Flying Colors Red         | 10.5    | 2.8                  | 1.7       | 1.2           | 0.3         |  |  |
| Euphorbia                 |         |                      |           |               |             |  |  |
| Diamond Frost             | 57.0    | 3.0                  | 2.7       | 2.7           | 2.3         |  |  |
| Kalipso                   | 45.5    | 2.8                  | 3.8       | 4.3           | 4.3         |  |  |
| Fuchsia                   |         |                      |           |               |             |  |  |
| Autumnale                 | 53.0    | 3.0                  | 2.5       | 4.0           | 2.3         |  |  |
| Angels Earrings Dainty    | 38.0    | 3.0                  | 4.0       | 3.0           | 2.7         |  |  |
| Angels Earrings Cascading | 53.0    | 3.0                  | 3.2       | 5.0           | 3.5         |  |  |
| Gaura                     |         |                      |           |               |             |  |  |
| Strat Pink Picotee        | 33.0    | 2.5                  | 2.5       | 2.7           | 3.2         |  |  |
| Gypsophila                | -2.0    |                      |           |               |             |  |  |
| Festival Star Pink        | 45.5    | 2.8                  | 1.5       | 2.2           | 3.2         |  |  |
| Heuchera                  | .5.5    | 2.0                  |           | 2.2           | J. <u>=</u> |  |  |
| Crème Brule               | 33.0    | 3.0                  | 1.8       | 2.7           | 2.3         |  |  |
| Creme Bruie               | 55.0    | 5.0                  | 1.0       | 2.1           | 2.5         |  |  |

Table 3 continued on next page.

Table 3. Continued from previous page.

| Cultivar  Key Lime Pie Licorice Peach Melba  Nemesia Blue Bird Compact Innocence Compact Pink Innocence Compact Opal Innocence Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Mango Sunsatia Raspberry  Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila  Petunia Supertunia Bermuda Beach Supertunia Citrus | Survey <sup>2</sup> (rank)  24.0  45.5  29.0  10.5  10.5  10.5  45.5  10.5  24.0  10.5  10.5 | Dec. 2008 Initial  3.0 3.0 3.0 3.0 2.7 2.7 2.5 3.0 3.0 3.0 3.0 | Feb. 2009<br>68 DAP<br>2.8<br>4.5<br>2.7<br>1.8<br>2.5<br>2.3<br>2.7<br>1.3 | Mar. 2009<br>96 DAP<br>3.7<br>3.5<br>1.0<br>1.7<br>3.0<br>1.3<br>4.0 | Apr. 2009<br>123 DAP<br>2.8<br>4.0<br>2.3<br>2.5<br>2.0<br>2.3 |
|---|--|--|---|--|--|
| Key Lime Pie Licorice Peach Melba Nemesia Blue Bird Compact Innocence Compact Pink Innocence Compact Opal Innocence Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   | 24.0<br>45.5<br>29.0<br>10.5<br>10.5<br>10.5<br>45.5<br>10.5<br>24.0<br>10.5                 | 3.0<br>3.0<br>3.0<br>2.7<br>2.7<br>2.5<br>3.0<br>3.0           | 2.8<br>4.5<br>2.7<br>1.8<br>2.5<br>2.3<br>2.7                               | 3.7<br>3.5<br>1.0<br>1.7<br>3.0<br>1.3                               | 2.8<br>4.0<br>2.3<br>2.5<br>2.0<br>2.3                         |
| Licorice Peach Melba  Nemesia Blue Bird Compact Innocence Compact Pink Innocence Compact Opal Innocence Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry  Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila  Petunia Supertunia Bermuda Beach   | 45.5<br>29.0<br>10.5<br>10.5<br>10.5<br>45.5<br>10.5<br>24.0<br>10.5                         | 3.0<br>3.0<br>2.7<br>2.7<br>2.5<br>3.0<br>3.0                  | 4.5<br>2.7<br>1.8<br>2.5<br>2.3<br>2.7                                      | 3.5<br>1.0<br>1.7<br>3.0<br>1.3                                      | 4.0<br>2.3<br>2.5<br>2.0<br>2.3                                |
| Peach Melba  Nemesia  Blue Bird  Compact Innocence  Compact Pink Innocence  Compact Opal Innocence  Compact Refined Innocence  Juicy Fruits Kumquat  Juicy Fruits Papaya  Juicy Fruits Watermelon  Sunsatia Mango  Sunsatia Raspberry  Osteospermum  Soprano Compact Purple  Soprano Light Purple  Symphony Lemon  Symphony Orange  Sunny Dark Florence  Sunny Mary  Sunny Sheila  Petunia  Supertunia Bermuda Beach  | 29.0<br>10.5<br>10.5<br>10.5<br>45.5<br>10.5<br>24.0<br>10.5                                 | 3.0<br>2.7<br>2.7<br>2.5<br>3.0<br>3.0                         | 2.7  1.8  2.5  2.3  2.7   | 1.0<br>1.7<br>3.0<br>1.3   | 2.3<br>2.5<br>2.0<br>2.3                                       |
| Nemesia Blue Bird Compact Innocence Compact Pink Innocence Compact Opal Innocence Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   | 10.5<br>10.5<br>10.5<br>45.5<br>10.5<br>24.0<br>10.5   | 2.7<br>2.7<br>2.5<br>3.0<br>3.0                                | 1.8<br>2.5<br>2.3<br>2.7  | 1.7<br>3.0<br>1.3  | 2.5<br>2.0<br>2.3  |
| Blue Bird Compact Innocence Compact Pink Innocence Compact Opal Innocence Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   | 10.5<br>10.5<br>45.5<br>10.5<br>24.0<br>10.5   | 2.7<br>2.5<br>3.0<br>3.0                                       | 2.5<br>2.3<br>2.7   | 3.0<br>1.3   | 2.0<br>2.3   |
| Compact Innocence Compact Pink Innocence Compact Opal Innocence Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  | 10.5<br>10.5<br>45.5<br>10.5<br>24.0<br>10.5   | 2.7<br>2.5<br>3.0<br>3.0                                       | 2.5<br>2.3<br>2.7   | 3.0<br>1.3   | 2.0<br>2.3   |
| Compact Pink Innocence Compact Opal Innocence Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   | 10.5<br>45.5<br>10.5<br>24.0<br>10.5   | 2.5<br>3.0<br>3.0  | 2.3<br>2.7  | 1.3  | 2.3  |
| Compact Opal Innocence Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  | 45.5<br>10.5<br>24.0<br>10.5   | 3.0<br>3.0   | 2.7   |  |  |
| Compact Refined Innocence Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   | 10.5<br>24.0<br>10.5   | 3.0  |   | 4.0  |  |
| Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   | 24.0<br>10.5   |  | 1.3   |  | 2.5  |
| Juicy Fruits Kumquat Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   | 10.5   | 3.0  |   | 2.2  | 1.8  |
| Juicy Fruits Papaya Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  |  |  | 0.0   | 0.0  | 0.0  |
| Juicy Fruits Watermelon Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  | 10.5   | 3.0  | 3.0   | 1.0  | 3.0  |
| Sunsatia Mango Sunsatia Raspberry Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  |  | 3.0  | 0.7   | 0.0  | 0.0  |
| Sunsatia Raspberry  Osteospermum  Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila  Petunia Supertunia Bermuda Beach  | 45.5   | 2.7  | 3.0   | 1.5  | 2.3  |
| Osteospermum Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  | 10.5   | 2.5  | 2.3   | 1.3  | 1.0  |
| Soprano Compact Purple Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   |  |  |   |  |  |
| Soprano Light Purple Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  | 57.0   | 3.0  | 2.3   | 4.0  | 2.5  |
| Symphony Lemon Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach   | 53.0   | 3.0  | 3.0   | 4.2  | 2.8  |
| Symphony Orange Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  | 10.5   | 3.0  | 1.5   | 1.0  | 0.3  |
| Sunny Dark Florence Sunny Mary Sunny Sheila Petunia Supertunia Bermuda Beach  | 24.0   | 3.0  | 0.3   | 0.0  | 0.0  |
| Sunny Mary<br>Sunny Sheila<br><i>Petunia</i><br>Supertunia Bermuda Beach  | 24.0   | 3.0  | 2.2   | 5.0  | 2.2  |
| Sunny Sheila<br><b>Petunia</b><br>Supertunia Bermuda Beach  | 45.5   | 3.0  | 2.2   | 2.7  | 2.7  |
| <i>Petunia</i> Supertunia Bermuda Beach   | 10.5   | 3.0  | 2.5   | 3.8  | 2.2  |
| Supertunia Bermuda Beach  |  |  |   |  |  |
|   | 45.5   | 3.0  | 3.0   | 3.0  | 2.0  |
|   | 10.5   | 3.0  | 2.5   | 1.8  | 1.0  |
| Supertunia Cotton Candy   | 38.0   | 3.0  | 1.2   | 1.2  | 1.0  |
| Phlox   | 20.0   | 5.5  | <u>-</u>  | 1.2  | 1.0  |
| Intensia Cabernet   | 33.0   | 3.0  | 1.7   | 2.3  | 1.50   |
| Intensia Star Brite   | 45.5   | 3.0  | 1.7   | 2.0  | 2.8  |
| Intensia White  | 10.5   | 2.5  | 0.7   | 1.2  | 1.5  |
| Senetti   | 1015   |  | 017   | 1.2  |  |
| Blue Bicolor  | 24.0   | 2.2  | 1.2   | 0.7  | 0.33   |
| Mini Baby Blue  | 24.0   | 3.0  | 1.3   | 1.0  | 0.0  |
| Lavender  | 45.5   | 3.0  | 3.3   | 4.0  | 2.2  |
| True Blue   | 38.0   | 2.0  | 1.7   | 2.5  | 0.5  |
| Violet Bicolor  | 33.0   | 2.0  | 0.2   | 1.0  | 0.0  |
| P>F   | 22.0   | 2.0  | 0.2   | 1.0  | 0.0  |
|   | 0.1209   | 0.2365   | 0.1139  | 0.2371   | 0.3426   |
|   | 0.0012   | 0.0006   | 0.0003  | 0.0011   | 0.0114   |

<sup>2</sup>Consumer preference survey was conducted in Mar. 2009. Responses were ranked statistically with cultivars being selected by more people having a higher rank than cultivars selected by fewer people. A total of 10 surveys were completed.

<sup>3</sup>Quality scale.

Solenostemon 'Colorblaze Royal Kingswood Torch' (Fig. 2), and Verbena 'Superbena Coral Red' and 'Superbena Pink Parfait' which had higher quality ratings at planting in Mar. 2009, and Petunia 'Supertunia Silverberry' (Fig. 3) and Solenostemon 'Colorblaze Royal Glissade', which reached highest quality rating 66 DAP (Table 4). Typical spring weather in southern Florida consists of high solar radiation levels, temperatures, humidity and rainfall. Weather conditions in spring 2009, were fairly average except for rainfall in which we had normal rainfall in March. However, the majority of rain in Mar. 2009 occurred over 2 d. In April, rainfall was once again at a record low (Table 2). Because this is the first year a spring garden has been evaluated at Fort Lauderdale, no

comparisons of plant performance were made to previous seasons. However, observations and data show that all cultivars did grow and perform well.

Survey results. The *Argyranthemum* 'Vanilla' and 'Vanilla Butterfly' cultivars with a very nice compact growth and profuse daisy flowers were the most popular cultivars among survey participants in the winter garden. *Chrysosephalum* 'Flambé Yellow' with its small, round, golden flowers and low mounding habit, *Euphorbia* 'Diamond Frost' with its non-stop blooming, and *Osteospermum* 'Soprano Compact Purple' with its mass of deep purple flowers were also highly ranked in the winter consumer preference survey (Table 3).

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Fig. 1. Bracteantha spp. 'Sundaze Flame'.



Fig. 2. Solenostemon spp. 'Colorblaze Kingswood Torch'.

In the spring garden, cultivars survey participants ranked high included the *Solenostemon* 'Colorblaze Dipt in Wine' with its beautiful burgundy leaves, *Petunia* 'Pretty Much Picasso' with its unique purple and green trimmed flowers, *Isolepsis* 'Graceful Grasses Fiber Optic Grass' with its tiny blooms giving the appearance of numerous illuminating lights, *Lobularia* 'Snow Princess' with its very fragrant and abundant blooms, and *Petunia* 'Supertunia Vista Silverberry' with its vigorous and profuse silvery white blooms (Table 4).

#### Summary

Information about bedding plant field performance is important when making recommendations for landscape use. Because of the mild climate in south Florida, early trials are useful to evaluate plant growth, plant and flower uniformity, and floral display. Consumer surveys also help in marketing flower colors and plants that appeal to the general public.



Fig. 3. Petunia hybrid 'Supertunia Vista Bubblegum'.

Table 4. Consumer preference survey and plant quality ratings of the spring cultivars planted on 4 Mar. 2009. Data were collected 1, 38, and 66 days after planting (DAP).

|                           |         |          | Qualityy |          |
|---------------------------|---------|----------|----------|----------|
|                           | Surveyz | Mar 2009 | Apr 2009 | May 2009 |
| Cultivar                  | (rank)  | 1 DAP    | 38 DAP   | 66 DAP   |
| Begonia                   |         |          |          |          |
| Mandalay Mandarin         | 9.0     | 2.5      | 3.5      | 3.2      |
| Mandalay Pearl            | 1.0     | 2.5      | 3.5      | 3.2      |
| Calibrachoa               |         |          |          |          |
| Superbells Dreamsicle     | 14.5    | 3.2      | 3.0      | 2.2      |
| Superbells Lavender       | 4.0     | 2.7      | 3.5      | 2.0      |
| Superbells Saffron        | 8.0     | 3.0      | 3.0      | 1.8      |
| Superbells Scarlet        | 6.5     | 3.3      | 3.5      | 2.5      |
| Superbells Yellow         | 12.0    | 3.0      | 3.0      | 2.0      |
| Superbells Yellow Chiffon | 8.0     | 3.0      | 2.5      | 2.0      |
| Chrysocephalum            |         |          |          |          |
| Flambe Orange             | 4.0     | 2.8      | 2.8      | 2.0      |
| Flambe Yellow             | 8.0     | 2.7      | 3.5      | 2.5      |
| Cleome                    |         |          |          |          |
| Senorita Rosalita         | 22.0    | 3.5      | 2.2      | 3.2      |
| Cuphea                    |         |          |          |          |
| Totally Tempted           | 11.0    | 2.8      | 3.0      | 0.5      |
|                           |         |          |          |          |

Table 4 continued on next page.

Table 4. Continued from previous page.

|                                   |         | Quality <sup>y</sup> |          |          |  |
|-----------------------------------|---------|----------------------|----------|----------|--|
|                                   | Surveyz | Mar 2009             | Apr 2009 | May 2009 |  |
| Cultivar                          | (rank)  | 1 DAP                | 38 DAP   | 66 DAP   |  |
| Euphorbia                         |         |                      |          |          |  |
| Diamond Frost                     | 10.0    | 2.8                  | 3.3      | 2.7      |  |
| Isolepsis                         |         |                      |          |          |  |
| Graceful Grasses Fiber Optic      | 34.0    | 3.0                  | 2.7      | 2.2      |  |
| Lobelia                           |         |                      |          |          |  |
| Laguna Heavenly Lilac             | 1.0     | 2.7                  | 3.0      | 1.8      |  |
| Laguna Sky Blue                   | 12.0    | 2.8                  | 3.0      | 2.2      |  |
| Lobularia                         |         |                      |          |          |  |
| Snow Princess                     | 33.0    | 2.8                  | 3.3      | 2.3      |  |
| Nierembergia                      | 55.0    | 2.0                  |          | 2.0      |  |
| Augusta Blue Skies                | 17.0    | 2.3                  | 2.8      | 2.5      |  |
| Oenthera                          | 17.0    | 2.5                  | 2.0      | 2.5      |  |
| Lemon Drop                        | 6.5     | 2.4                  | 3.0      | 1.8      |  |
| Pelargonium                       | 0.5     | ۵.٦                  | 5.0      | 1.0      |  |
| Daredevil Claret                  | 19.0    | 2.7                  | 3.3      | 2.7      |  |
| Daredevil Fire                    | 30.5    | 3.0                  | 3.2      | 3.0      |  |
| Daredevil Mulberry                | 20.0    | 3.3                  | 3.3      | 2.8      |  |
| Daredevil Orchid Splash           | 13.0    | 3.0                  | 2.8      | 3.0      |  |
| Daredevil Rosita                  | 17.0    | 3.5                  | 3.3      | 2.7      |  |
| Daredevil Kosta  Daredevil Salmon | 14.5    | 2.5                  | 3.0      | 2.7      |  |
| Daredevil Saimon Daredevil Snow   |         |                      |          |          |  |
|                                   | 14.5    | 2.8                  | 3.3      | 2.8      |  |
| Pennisetum                        | 17.0    | 2.0                  | 4.0      | 4.2      |  |
| Graceful Grasses Red Riding Hood  | 17.0    | 2.8                  | 4.0      | 4.3      |  |
| Graceful Grasses Rubrum           | 24.0    | 3.0                  | 3.5      | 4.8      |  |
| Petunia Pi                        | 25.0    | 2.0                  | 4.0      | 2.2      |  |
| Pretty Much Picasso               | 35.0    | 3.0                  | 4.0      | 2.3      |  |
| Supertunia Lavender Skies         | 27.5    | 2.5                  | 3.8      | 3.5      |  |
| Supertunia Vista Bubblegum        | 30.5    | 3.0                  | 4.2      | 3.8      |  |
| Supertunia Vista Silverberry      | 32.0    | 3.0                  | 2.7      | 3.5      |  |
| Phlox                             |         |                      |          |          |  |
| Intensia Orchid Blast             | 4.0     | 2.5                  | 3.2      | 2.0      |  |
| Intensia White Improved           | 4.0     | 3.0                  | 3.2      | 2.5      |  |
| Solenostemon                      |         |                      |          |          |  |
| Colorblaze Dark Star              | 29.0    | 2.5                  | 3.8      | 3.0      |  |
| Colorblaze Dipt in Wine           | 36.0    | 3.0                  | 3.8      | 3.0      |  |
| Colorblaze Kingswood Torch        | 25.5    | 3.3                  | 2.8      | 3.0      |  |
| Colorblaze Lifelime               | 22.0    | 3.4                  | 3.8      | 2.7      |  |
| Colorblaze Royal Glissade         | 27.5    | 3.0                  | 3.3      | 4.0      |  |
| Colorblaze Sedona                 | 25.5    | 3.0                  | 3.2      | 3.0      |  |
| Sutera                            |         |                      |          |          |  |
| Snowstorm Blue Skies              | 9.0     | 2.5                  | 3.0      | 2.3      |  |
| Snowstorm Pink Improved           | 2.0     | 2.5                  | 3.0      | 1.8      |  |
| Verbena                           |         |                      |          |          |  |
| Superbena Coral Red               | 22.0    | 3.0                  | 2.7      | 2.8      |  |
| Superbena Pink Parfait            | 6.5     | 2.5                  | 2.5      | 2.5      |  |
| P > F                             |         |                      |          |          |  |
| Replicate                         | 0.1492  | 0.1801               | 0.2098   | 0.2367   |  |
| Species                           | 0.0039  | 0.0017               | 0.0008   | 0.0003   |  |

<sup>&</sup>lt;sup>2</sup>Consumer preference survey was conducted in Mar. 2009. Responses were ranked statistically with cultivars being selected by more people having a higher rank than cultivars selected by fewer people. A total of 102 surveys were completed. <sup>3</sup>Quality scale.

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