## Ornamentals Section

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## FORT LAUDERDALE WINTER TRIAL GARDEN

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#### Abstract

On December 6, 2002, 18 plants of 53 cultivars of New Guinea impatiens and 18 cultivars of geraniums were transplanted into a trial garden located at the University of Florida Fort Lauderdale Research and Education Center. The plants were planted as three groups of six plants, with the groups being randomly placed in the garden. The New Guinea impatiens cultivars were planted under $30 \%$ shade while the geraniums were planted in full sun. Plants were watered three times per week for 30 minutes using overhead irrigation. Monthly evaluations were conducted to observe plant height and width (size), 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 $5=$ excellent, $1=$ poor, and $0=$ dead. Several of the geranium cultivars died during February and March due to Xanthomonas. Two consumer preference surveys also were conducted with the first survey in January and the second in March. Fifty percent or more survey respondents in January chose the following geranium cultivars Fantasia Coral, Fantasia Shocking Pink, Showcase Pink Parfait, and Showcase Purple and the following New Guinea impatiens cultivars Celebration Deep Red, Celebration Electric Rose, Celebrette Coral Light, and Super Sonic Cherry Cream as favorites.


In 2001, bedding and garden plant sales represented $52.7 \%$ of the total US floriculture production, which totaled $\$ 4.129$ billion (Miller, 2002). Of all states, Florida ranked second in floriculture production sales with $16.1 \%$ of the national total (Miller, 2002). Because of the ideal weather in Fort Lauderdale during the winter (26.1 N, 80.2 W, AHS Heat Zone 11, USDA Hardiness Zone 10a), the trial garden was developed to assist companies who wish to trial vegetatively propagated cultivars before summer trials in the rest of the nation. The winter trial garden in Fort Lauderdale is part of the Environmental Horticulture department's statewide ornamental trial program. The goal of the statewide program is to develop

[^0]unbiased evaluations of cultivar performance of both vegetative and seed grown annuals and perennials. The program includes vegetative plant trials in Gainesville, seed produced annual trials in Bradenton, native plant trails in Fort Pierce, native and perennial plant trials in Monticello, tropical plant trials in Homestead, and vegetative annual trials in Fort Lauderdale. All cultivars in the Fort Lauderdale trial garden were evaluated for flower and plant performance and uniformity.

## Materials and Methods

Transplant production. In Oct. 2003, rooted liners of 18 cultivars of geraniums and 53 cultivars of New Guinea impatiens were received from Ball FloraPlant (West Chicago, Ill.), Danziger Flower Farm (Israel), Paul Ecke Ranch (Encinitas, Calif.), EuroAmerican, Fides North America (Holland), and Fischer (Boulder, Colo.). Liners were transplanted into 400 mL round pots filled with Pro-mix 'BX' (Premier Horticulture, Inc., Red Hill, Pa.). Plants were placed in an open-sided greenhouse exposed to ambient air temperatures of $\approx 30^{\circ} \mathrm{C}$ day $/ 21^{\circ} \mathrm{C}$ night. Plants were watered daily and fertilized twice a week with $150 \mathrm{mg} \cdot \mathrm{kg}^{-1}$ of nitrogen from Peter's $21 \mathrm{~N}-5 \mathrm{P} 2 \mathrm{O} 5-$ 20K2O (The Scotts Company, Marysville, Ohio).

Field evaluation. The $100 \mathrm{ft} \times 100 \mathrm{ft}$ garden is a Margate fine sand soil with $1.6 \%$ organic matter, a pH of 6.74 , a soluble salt level of $0.30 \mathrm{mS} / \mathrm{cm}$, a $\mathrm{NO}_{3}-\mathrm{N}$ concentration of 9.00 $\mathrm{mg} \cdot \mathrm{kg}^{-1}$, a $\mathrm{NH}_{4}-\mathrm{N}$ concentration of $5.00 \mathrm{mg} \cdot \mathrm{kg}^{-1}$, a P concentration of $27.00 \mathrm{mg} \cdot \mathrm{kg}^{-1}$, and a K concentration of $3.7 \mathrm{mg} \cdot \mathrm{kg}^{-1}$ (samples collected from top 6 inches of soil). Samples were analyzed by the University of Florida's soil testing laboratory. The area was tilled and Corral ${ }^{\circledR}$ (The Scotts Company Marysville, Ohio) a pre-emergent herbicide, was applied at a rate of 57 lb /acre ( $1.31 \mathrm{lb} / 1000 \mathrm{ft}^{2}$ ). A 3-inch mulch layer also was spread over the garden to help control weeds. Approximately $3000 \mathrm{ft}^{2}$ of the area is exposed to full sun while the remaining $7000 \mathrm{ft}^{2}$ is in $30 \%$ shade.

On 6 Dec. 2002, 18 plants per cultivar were planted into the trial garden. Three groups of six plants per cultivar were randomly planted in the garden. At planting, each plant was top dressed with 5 g of Nutricote $18 \mathrm{~N}-6 \mathrm{P}_{2} \mathrm{O}_{5}-8 \mathrm{~K}_{2} \mathrm{O}$ type 70 (Florikan Corp., Sarasota, Fla.). Plants were watered overhead three times a week for 30 min .

Data collection. Monthly mean temperature and rainfall were collected. Once a month plant height, width, flower number, and quality were recorded for each individual plant in the garden. 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 $4=$ very good, $3=$ good, $2=$ fair, $1=$ poor, and $0=$ dead.

Three consumer preference surveys also were conducted in which participants were asked to check all cultivars that

Table 1. Temperature and rainfall at the University of Florida's Fort Lauderdale Research and Education Center during Winter 2002-2003.

|  | Avg. mean <br> temperature <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Minimum <br> temperature <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Maximum <br> temperature <br> $\left({ }^{\circ} \mathrm{C}\right)$ | Monthly <br> rainfall <br> $(\mathrm{cm})$ |
| :--- | :---: | :---: | :---: | :---: |
| Month/year | 19.89 | 7.60 | 30.17 | 6.79 |
| Dec. 2002 | 15.97 | 0.93 | 28.60 | 2.09 |
| Jan. 2003 | 21.51 | 8.67 | 33.14 | 3.75 |
| Feb. 2003 | 24.92 | 11.07 | 34.08 | 6.67 |
| Mar. 2003 | 23.42 | 10.35 | 33.75 | 6.44 |
| Apr. 2003 | 26.59 | 18.76 | 34.29 | 32.25 |
| May 2003 |  |  |  |  |

they liked. Percentages were calculated by dividing the number of individuals who selected a specific cultivar by the total number of respondents. The first survey was conducted in Jan. 2003 and the second survey was in Mar. 2003. A third survey was conducted with the students from Stranahan High School in May 2003. All data were analyzed using analysis of variance (SAS Systems, SAS Institute, Cary, N.C.).

## Results and Discussion

Weather. Temperatures dropped in January to a low of $0.93{ }^{\circ} \mathrm{C}$ (Table 1 ). To protect the plants from the cold, we ran the irrigation from 2 AM until 10 AM and the ice had melted on the plants. Rainfall was high during May (Table 1).

Geraniums. Geranium plant size increased from December to February-March (Table 2). Several geranium plants died, especially the Fireworks series, due to Xanthomonas in-

Table 3. Average quality of geranium cultivars measured 14, 46, 72, 99 and 129 d after planting (6 Dec. 2002) during Winter 2002-2003. Plant quality was based on a scale of 0 to 5 with $5=$ excellent $4=$ very good, $3=$ good, $2=$ fair, $1=$ poor, and $0=$ dead. The quality was based on the general appearance of the group of six plants. Values represent the average of the three groups of each cultivar (three groups of six plants for a total of 18 plants per cultivar).

|  |  |  | Avg. quality |  |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cultivar name | Source | 14 | 46 | 72 | 99 | 129 |  |
| Fantasia | Ball |  |  |  |  |  |  |
| Cardinal Red |  | 1.53 | 1.83 | 2.53 | 1.83 | 1.40 |  |
| Coral |  | 3.00 | 2.67 | 3.50 | 1.93 | 2.16 |  |
| Flame |  | 2.83 | 1.83 | 3.17 | 2.50 | 1.83 |  |
| Pink Shell |  | 3.00 | 2.50 | 3.07 | 2.00 | 1.25 |  |
| Shocking Pink |  | 2.60 | 2.67 | 3.23 | 2.33 | 1.67 |  |
| Violet | 3.00 | 2.00 | 1.93 | 1.67 | 1.17 |  |  |
| Fireworks | EuroAmerican |  |  |  |  |  |  |
| Cherry Bicolor |  | 2.70 | 2.00 | 2.50 | 1.83 | 1.17 |  |
| Pink Bicolor |  | 3.00 | 2.17 | 1.93 | 0 | 0 |  |
| Red-White |  | 3.00 | 2.33 | 3.10 | 1.67 | 0.83 |  |
| Scarlet |  | 2.77 | 2.17 | 2.50 | 1.67 | 1.33 |  |
| Showcase |  |  |  |  |  |  |  |
| Bright Cherry |  | 2.77 | 2.33 | 2.33 | 1.33 | 1.17 |  |
| Bright Coral |  | 2.60 | 2.17 | 2.83 | 1.97 | 1.33 |  |
| Pink Parfait |  | 2.93 | 2.33 | 2.83 | 1.77 | 1.00 |  |
| Purple |  | 2.93 | 2.50 | 2.57 | 1.33 | 1.17 |  |
| Red |  | 2.87 | 2.00 | 2.40 | 1.67 | 1.67 |  |
| Salmon |  | 2.83 | 2.17 | 2.43 | 2.50 | 1.17 |  |
| Scarlet |  | 2.60 | 3.00 | 3.40 | 2.00 | 1.17 |  |
| White |  | 2.67 | 2.17 | 2.67 | 2.17 | 1.33 |  |

Table 2. Growth and customer preference of geranium cultivars 14, 46, 72, 99, and 129 d after planting (6 Dec. 2002) during Winter 2002-2003.

| Cultivar name | Source | Avg. size (cm) ${ }^{\text {z }}$ |  |  |  |  | Avg. flower number ${ }^{\text {y }}$ |  |  |  |  | Consumer preference ${ }^{\mathrm{x}}$ <br> (\%) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 14 | 46 | 72 | 99 | 129 | 14 | 46 | 72 | 99 | 129 | 1/03 | 3/03 |
| Fantasia | Ball |  |  |  |  |  |  |  |  |  |  |  |  |
| Cardinal Red |  | 15.7 | 19.7 | 20.2 | 23.9 | 16.7 | 2.50 | 1.67 | 3.00 | 0 | 2.00 | 20 | X |
| Coral |  | 19.8 | 21.5 | 20.0 | 27.6 | 20.5 | 0 | 1.33 | 1.67 | 2.33 | 0.67 | 50 | X |
| Flame |  | 15.9 | 18.0 | 19.8 | 25.7 | 19.3 | 0 | 0.67 | 1.33 | 2.33 | 1.33 | 15 | X |
| Pink Shell |  | 19.0 | 20.0 | 21.2 | 21.3 | 15.8 | 0 | 1.50 | 2.00 | 1.00 | 0.50 | 13 | X |
| Shocking Pink |  | 19.5 | 19.6 | 21.9 | 29.4 | 20.2 | 0 | 2.00 | 1.33 | 2.00 | 1.33 | 65 | X |
| Violet |  | 16.4 | 16.2 | 20.0 | 17.3 | 13.9 | 0 | 0.33 | 2.67 | 1.33 | 0.33 | 13 | X |
| Fireworks | EuroAmerican |  |  |  |  |  |  |  |  |  |  |  |  |
| Cherry Bicolor |  | 26.1 | 24.2 | 26.3 | 23.1 | 19.2 | 0 | 1.00 | 3.00 | 0 | 1.33 | 24 | X |
| Pink Bicolor |  | 24.0 | 23.7 | 23.3 | - | - | 0 | 1.00 | 2.00 | - | - | 37 | X |
| Red-White |  | 26.9 | 20.8 | 18.8 | 19.8 | 15.8 | 0 | 2.33 | 3.33 | 0 | $0$ | 31 | X |
| Scarlet |  | 21.7 | 17.2 | 21.7 | 18.7 | 13.5 | 0 | 2.67 | 2.33 | 0 | 0.33 | 28 | X |
| Showcase | Ball |  |  |  |  |  |  |  |  |  |  |  |  |
| Bright Cherry |  | 18.1 | 15.2 | 16.8 | 17.4 | 10.5 | 0 | 1.00 | 1.67 | 1.00 | 0 | 24 | X |
| Bright Coral |  | 20.0 | 17.5 | 20.6 | 21.8 | 14.0 | 0 | 1.67 | 2.33 | 1.33 | 0.67 | 48 | X |
| Pink Parfait |  | 19.5 | 21.5 | 21.9 | 22.9 | 15.0 | 0 | 1.67 | 2.67 | 2.00 | 0 | 70 | X |
| Purple |  | 20.0 | 17.1 | 20.3 | 20.2 | 12.1 | 0 | 1.00 | 1.33 | 0.67 | 0.33 | 53 | X |
| Red |  | 21.0 | 16.7 | 17.8 | 23.8 | 13.8 | 0 | 1.33 | 1.67 | 0.67 | 0 | 30 | X |
| Salmon |  | 18.3 | 18.8 | 19.5 | 25.4 | 16.8 | 0 | 1.67 | 2.00 | 1.67 | 0.67 | 26 | X |
| Scarlet |  | 18.0 | 20.8 | 24.0 | 25.3 | 13.8 | 0 | 1.67 | 2.67 | 1.00 | 0 | 31 | X |
| White |  | 20.8 | 20.7 | 21.7 | 26.2 | 17.7 | 0 | 1.67 | 2.00 | 3.00 | 1.67 | 7 | X |

${ }^{\mathrm{z}}$ Size is the average of plant height and plant width ( $\mathrm{N}=18$ ).
${ }^{\mathrm{y}}$ Flower number is the average of 18 plants per cultivar.
${ }^{x}$ The consumer preference survey asked individuals to select all of the cultivars that they liked in the garden. The percentage was calculated by dividing the number of individuals who selected a specific cultivar by the total number of respondents. The survey conducted in Jan. 2003 had 54 respondents.

Table 4. Growth and customer preference of New Guinea impatiens cultivars 14, 46, 72, 99, and 129 d after planting (6 Dec. 2002) during Winter 2002-2003.

|  |  | Avg. size ( cm$)^{2}$ |  |  |  |  | Avg. flower number ${ }^{\text {y }}$ |  |  |  |  | Consumer preference ${ }^{\text {x }}$ (\%) |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cultivar name | Source | 14 | 46 | 72 | 99 | 129 | 14 | 46 | 72 | 99 | 129 | SHS | 1/03 | 3/03 |
| Celebration | Ball |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Deep Red |  | 17.4 | 23.8 | 26.5 | 35.2 | 40.2 | 0 | 6.7 | 17.7 | 11.7 | 13.3 | 17 | 56 | 23 |
| Electric Rose |  | 18.7 | 23.8 | 24.0 | 35.3 | 40.4 | 0 | 4.7 | 8.3 | 17.0 | 14.0 | 56 | 54 | 26 |
| Lavender Glow |  | 19.1 | 23.2 | 25.3 | 37.9 | 42.9 | 0 | 3.3 | 7.3 | 13.3 | 4.3 | 17 | 28 | 14 |
| Orange |  | 18.3 | 23.2 | 26.2 | 40.5 | 47.9 | 0 | 1.7 | 11.7 | 19.3 | 13.7 | 22 | 33 | 33 |
| Pink |  | 15.5 | 20.1 | 22.3 | 35.0 | 38.3 | 0 | 3.7 | 4.0 | 8.0 | 7.7 | 22 | 17 | 15 |
| Pink Blush |  | 17.3 | 21.5 | 23.8 | 35.6 | 44.3 | 0 | 1.3 | 13.0 | 11.0 | 8.3 | 11 | 4 | 11 |
| Purple |  | 17.0 | 22.8 | 23.8 | 38.7 | 42.7 | 0 | 2.0 | 12.0 | 26.0 | 17.7 | 69 | 11 | 15 |
| Raspberry Rose |  | 17.7 | 23.7 | 25.0 | 35.9 | 41.6 | 0 | 2.0 | 14.0 | 26.7 | 16.3 | 6 | 31 | 21 |
| White |  | 16.5 | 19.7 | 22.7 | 37.7 | 42.6 | 0 | 3.3 | 7.7 | 28.7 | 14.0 | 17 | 13 | 17 |
| Celebrette | Ball |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Appleblosom |  | 15.9 | 18.5 | 17.5 | 29.6 | 33.9 | 0 | 1.7 | 6.0 | 8.3 | 20.0 | 6 | 5 | 11 |
| Apricot Star |  | 16.8 | 19.8 | 19.3 | 29.3 | 34.2 | 0 | 1.3 | 3.0 | 11.0 | 8.7 | 50 | 31 | 31 |
| Coral Light |  | 18.3 | 24.4 | 28.1 | 34.8 | 39.9 | 0 | 1.7 | 3.0 | 5.3 | 8.0 | 33 | 63 | 36 |
| Frost |  | 16.2 | 20.5 | 21.4 | 32.5 | 39.0 | 0 | 1.3 | 5.3 | 10.7 | 11.0 | 6 | 13 | 9 |
| Grape Crush |  | 16.8 | 18.7 | 16.0 | 28.1 | 32.7 | 0 | 1.7 | 2.3 | 11.0 | 20.3 | 6 | 22 | 16 |
| Hot Rose |  | 18.3 | 22.1 | 21.9 | 31.8 | 36.5 | 0 | 1.7 | 6.0 | 16.3 | 20.3 | 11 | 24 | 7 |
| Lavender |  | 15.0 | 17.8 | 21.0 | 32.8 | 41.1 | 0 | 2.7 | 6.0 | 10.3 | 13.0 | 17 | 11 | 21 |
| Orange Crush |  | 16.5 | 19.3 | 20.6 | 35.5 | 37.1 | 0 | 3.0 | 6.7 | 22.0 | 26.0 | 39 | 30 | 41 |
| Orchid |  | 14.8 | 19.6 | 21.3 | 27.7 | 33.8 | 0 | 3.0 | 10.7 | 17.3 | 19.0 | 6 | 31 | 20 |
| Pink Jewel |  | 16.8 | 18.7 | 20.3 | 32.0 | 38.3 | 0 | 4.0 | 13.0 | 15.7 | 14.0 | 11 | 19 | 11 |
| Red |  | 16.8 | 22.7 | 23.4 | 32.3 | 40.0 | 0 | 4.7 | 11.0 | 26.3 | 21.3 | 22 | 30 | 31 |
| Scarlet |  | 16.4 | 21.2 | 22.2 | 33.0 | 38.4 | 0 | 4.0 | 6.7 | 14.3 | 16.3 | 11 | 41 | 31 |
| Strawberry Star |  | 16.6 | 18.4 | 18.8 | 32.9 | 36.5 | 0 | 1.7 | 2.3 | 16.3 | 19.7 | 44 | 13 | 52 |
| Wild Plum |  | 15.8 | 19.1 | 19.5 | 29.8 | 36.8 | 0 | 2.7 | 8.0 | 14.7 | 28.0 | 11 | 44 | 27 |
| Fanfare | Ball |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fushia |  | 27.0 | 30.2 | 27.1 | 46.7 | 51.8 | 0 | 5.3 | 14.0 | 50.0 | 51.7 | 44 | 44 | 28 |
| Lavender |  | 25.8 | 25.8 | 22.4 | 45.1 | 50.2 | 0 | 5.0 | 13.0 | 48.3 | 46.0 | 11 | 24 | 26 |
| Orange |  | 30.8 | 31.0 | 32.7 | 50.3 | 58.8 | 0 | 2.7 | 14.7 | 58.3 | 63.0 | 44 | 22 | 28 |
| Harmony | Danziger |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bordeaux |  | 18.3 | 18.3 | 21.2 | 33.2 | 33.8 | 0 | 1.3 | 10.0 | 13.7 | 11.0 | 6 | 13 | 15 |
| Corallina |  | 17.7 | 22.5 | 23 | 34.2 | 41.8 | 0 | 2.7 | 6.7 | 8.7 | 12.0 | 11 | 17 | 7 |
| Magenta |  | 18.4 | 21.9 | 20.9 | 33.3 | 33.3 | 0 | 3.0 | 11.7 | 6.6 | 3.7 | 22 | 19 | 12 |
| Magnolia |  | 18.4 | 22.8 | 25.3 | 31.7 | 38.8 | 0 | 1.3 | 9.3 | 17.7 | 15.0 | 17 | 22 | 28 |
| Red |  | 17.3 | 17.4 | 18.2 | 26.8 | 29.9 | 0 | 2.3 | 2.7 | 8.0 | 14.3 | 17 | 28 | 16 |
| Ecke | Ecke |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NGI 00/31 |  | 14.0 | 19.3 | 21.8 | 30.8 | 37.4 | 0 | 3.7 | 13.0 | 20.7 | 15.7 | 6 | 15 | 17 |
| NGI 01/001 |  | 15.6 | 19.0 | 22.5 | 31.2 | 32.8 | 0 | 0.7 | 12.7 | 14.7 | 6.3 | 11 | 15 | 26 |
| NGI 01/005 |  | 13.7 | 15.9 | 19.8 | 31.0 | 36.4 | 0 | 0.7 | 4.0 | 6.7 | 12.0 | 6 | 15 | 21 |
| NGI 01/019 |  | 16.6 | 19.5 | 22.3 | 32.8 | 37.2 | 0 | 2.3 | 11.7 | 16.0 | 15.3 | 11 | 44 | 33 |
| NGI 01/007 |  | 15.9 | 18.4 | 22.0 | 33.9 | 38.2 | 0 | 0.3 | 7.0 | 20.3 | 9.0 | 11 | 5 | 26 |
| Moorea White |  | 14.0 | 20.5 | 23.2 | 33.5 | 39.8 | 0 | 1.3 | 2.0 | 20.3 | 17.0 | 17 | 13 | 16 |
| Painted Paradise Red |  | 13.1 | 17.3 | 21.0 | 32.1 | 40.2 | 0 | 1.0 | 4.3 | 14.7 | 22.7 | 33 | 20 | 53 |
| Sonic | Fischer |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Light Lavender |  | 19.4 | 23.8 | 24.3 | 37.7 | 38.5 | 0 | 1.7 | 7.3 | 15.7 | 14.3 | 11 | 26 | 15 |
| Light Pink |  | 18.3 | 22.4 | 21.9 | 31.5 | 36.6 | 0 | 8.7 | 11.0 | 17.3 | 5.3 | 6 | 30 | 14 |
| Scarlet Blush |  | 18.9 | 22.5 | 24.1 | 32.9 | 38.6 | 0 | 5.0 | 10.0 | 12.0 | 15.0 | 6 | 35 | 9 |
| Sweet Cherry |  | 19.1 | 22.0 | 22.4 | 31.9 | 36.9 | 0 | 3.0 | 10.0 | 10.7 | 13.3 | 39 | 41 | 41 |
| Super Sonic | Fischer |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Cherry Cream |  | 23.1 | 27.0 | 28.0 | 45.4 | 48.9 | 0 | 3.7 | 10.7 | 15.7 | 13.3 | 56 | 50 | 28 |
| Coral Ice |  | 26.8 | 30.0 | 28.3 | 46.8 | 49.0 | 0 | 1.3 | 2.3 | 3.3 | 7.3 | 6 | 24 | 15 |
| Lavender |  | 22.5 | 26.3 | 25.0 | 38.5 | 44.8 | 0 | 3.3 | 5.0 | 15.7 | 14.3 | 17 | 33 | 35 |
| Magenta |  | 18.8 | 24.0 | 26.8 | 38.3 | 42.6 | 0 | 1.3 | 11.7 | 9.7 | 10.0 | 33 | 44 | 36 |
| White |  | 22.8 | 29.6 | 28.5 | 38.8 | 43.8 | 0 | 1.7 | 5.0 | 18.0 | 13.0 | 6 | 19 | 15 |
| Tamarinda | Fides |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Bicolor Purple |  | 15.6 | 22.0 | 24.3 | 35.2 | 36.3 | 0 | 3.7 | 16.0 | 11.3 | 6.0 | 11 | 43 | 44 |
| Blush |  | 16.9 | 21.3 | 21.0 | 34.2 | 36.2 | 0 | 4.7 | 13.0 | 13.7 | 11.7 | 11 | 9 | 9 |
| Cerise Pink |  | 22.3 | 25.1 | 24.3 | 35.2 | 42.4 | 0 | 2.3 | 9.7 | 14.0 | 18.7 | 6 | 26 | 14 |
| Cherry Red |  | 16.9 | 23.9 | 21.3 | 32.6 | 38.0 | 0 | 3.0 | 2.0 | 8.3 | 14.3 | 6 | 28 | 15 |
| Light Pink |  | 18.3 | 22.3 | 22.6 | 35.1 | 37.3 | 0 | 4.0 | 10.7 | 19.0 | 12.0 | 6 | 13 | 11 |
| Violet |  | 20.2 | 24.3 | 21.6 | 31.5 | 35.7 | 0 | 3.0 | 4.3 | 4.0 | 12.0 | 28 | 41 | 22 |

${ }^{2}$ Size is the average of plant height and plant width $(\mathrm{N}=18)$.
${ }^{y}$ Flower number is an average of 18 plants per cultivar.
xThe consumer preference survey asked individuals to select all of the cultivars that they liked in the garden. The percentage was calculated by dividing the number of individuals who selected a specific cultivar by the total number of respondents. The survey conducted in Jan. 2003 had 54 respondents and the survey in March had 81 respondents. SHS stands for Stranahan High School, which had 18 student respondents.

Table 5. Average quality of New Guinea impatiens cultivars measured 14, 46, 72, 99 and 129 d after planting ( 6 Dec .2002 ) during winter 2002-2003. Plant quality was based on a scale of 0 to 5 with $5=$ excellent $4=$ very good, 3 = good, $2=$ fair, $1=$ poor, and $0=$ dead. The quality was based on the general appearance of the group of six plants. Values represent the average of the three groups of each cultivar (three groups of six plants for a total of 18 plants per cultivar).

| Cultivar name | Source | Avg. quality |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 14 | 46 | 72 | 99 | 129 |
| Celebration | Ball |  |  |  |  |  |
| Deep Red |  | 2.6 | 2.2 | 3.5 | 4.2 | 4.4 |
| Electric Rose |  | 2.7 | 2.7 | 3.2 | 4.2 | 4.3 |
| Lavender Glow |  | 2.6 | 2.0 | 3.0 | 4.0 | 3.2 |
| Orange |  | 2.6 | 2.3 | 3.8 | 4.3 | 4.5 |
| Pink |  | 2.7 | 2.2 | 2.8 | 4.1 | 4.2 |
| Pink Blush |  | 2.6 | 2.0 | 3.1 | 3.5 | 3.5 |
| Purple |  | 2.6 | 2.0 | 3.1 | 4.4 | 4.3 |
| Raspberry Rose |  | 2.6 | 2.0 | 3.7 | 4.3 | 4.6 |
| White |  | 2.5 | 2.3 | 3.2 | 4.4 | 4.3 |
| Celebrette | Ball |  |  |  |  |  |
| Appleblosom |  | 2.5 | 2.0 | 2.8 | 3.0 | 4.3 |
| Apricot Star |  | 2.8 | 2.3 | 2.5 | 4.1 | 3.8 |
| Coral Light |  | 2.6 | 2.5 | 3.2 | 3.7 | 4.5 |
| Frost |  | 2.8 | 2.0 | 3.3 | 4.2 | 3.8 |
| Grape Crush |  | 2.5 | 2.0 | 2.7 | 3.9 | 4.3 |
| Hot Rose |  | 2.7 | 2.3 | 3.1 | 4.2 | 4.2 |
| Lavender |  | 2.9 | 2.2 | 2.5 | 3.8 | 4.4 |
| Orange Crush |  | 2.8 | 2.2 | 3.2 | 4.0 | 4.7 |
| Orchid |  | 2.9 | 2.5 | 3.3 | 4.2 | 4.7 |
| Pink Jewel |  | 2.5 | 2.5 | 3.1 | 4.2 | 4.7 |
| Red |  | 2.5 | 2.0 | 3.3 | 3.8 | 4.4 |
| Scarlet |  | 2.7 | 2.0 | 3.3 | 4.0 | 4.5 |
| Strawberry Star |  | 2.7 | 2.0 | 3.2 | 4.3 | 4.9 |
| Wild Plum |  | 2.6 | 2.3 | 3.3 | 4.4 | 4.6 |
| Fanfare | Ball |  |  |  |  |  |
| Fushia |  | 2.7 | 2.8 | 3.7 | 4.7 | 4.6 |
| Lavender |  | 2.8 | 2.8 | 3.3 | 4.4 | 4.7 |
| Orange |  | 2.5 | 2.7 | 3.7 | 4.5 | 4.6 |
| Harmony | Danziger |  |  |  |  |  |
| Bordeaux |  | 2.5 | 2.3 | 2.5 | 3.7 | 3.8 |
| Corallina |  | 2.7 | 2.3 | 3.1 | 3.9 | 3.7 |
| Magenta |  | 2.6 | 2.0 | 3.0 | 3.3 | 3.1 |
| Magnolia |  | 2.8 | 2.7 | 3.7 | 4.0 | 4.3 |
| Red |  | 2.5 | 2.0 | 2.6 | 3.5 | 3.6 |
| Ecke | Ecke |  |  |  |  |  |
| NGI 00/31 |  | 2.4 | 2.0 | 3.0 | 3.9 | 4.3 |
| NGI 01/001 |  | 2.3 | 2.0 | 2.8 | 3.3 | 2.9 |
| NGI 01/005 |  | 2.4 | 2.0 | 2.7 | 3.9 | 3.8 |
| NGI 01/019 |  | 2.7 | 2.2 | 3.0 | 3.9 | 4.1 |
| NGI 01/007 |  | 2.6 | 2.0 | 3.0 | 3.6 | 4.2 |
| Moorea White |  | 2.5 | 2.0 | 2.8 | 4.1 | 3.8 |
| Painted Paradise Red |  | 2.4 | 2.0 | 2.7 | 3.8 | 3.8 |
| Sonic | Fischer |  |  |  |  |  |
| Light Lavender |  | 2.9 | 3.0 | 3.6 | 4.5 | 4.3 |
| Light Pink |  | 2.6 | 2.5 | 3.5 | 4.0 | 3.7 |
| Scarlet Blush |  | 2.7 | 2.3 | 2.7 | 3.8 | 4.3 |
| Sweet Cherry |  | 2.7 | 2.3 | 3.2 | 4.0 | 4.0 |
| Super Sonic | Fischer |  |  |  |  |  |
| Cherry Cream |  | 2.8 | 2.8 | 3.8 | 4.4 | 4.2 |
| Coral Ice |  | 2.7 | 2.2 | 2.8 | 3.3 | 3.7 |

Table 5. (Continued) Average quality of New Guinea impatiens cultivars measured 14, 46, 72, 99 and 129 d after planting ( 6 Dec. 2002) during winter 2002-2003. Plant quality was based on a scale of 0 to 5 with $5=$ excellent $4=$ very good, 3 = good, $2=$ fair, $1=$ poor, and $0=$ dead. The quality was based on the general appearance of the group of six plants. Values represent the average of the three groups of each cultivar (three groups of six plants for a total of 18 plants per cultivar).

|  |  | Avg. quality |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Cultivar name | Source | 14 | 46 | 72 | 99 | 129 |
| Lavender |  | 2.7 | 2.0 | 2.7 | 3.5 | 4.2 |
| Magenta | 2.6 | 1.8 | 4.0 | 3.8 | 4.3 |  |
| White | 2.5 | 2.7 | 3.3 | 4.2 | 4.0 |  |
| Tamarinda | Fides |  |  |  |  |  |
| Bicolor Purple |  | 2.5 | 2.5 | 3.3 | 3.5 | 4.2 |
| Blush | 2.5 | 2.0 | 2.8 | 3.3 | 3.3 |  |
| Cerise Pink |  | 2.9 | 2.0 | 2.8 | 4.2 | 3.9 |
| Cherry Red | 2.6 | 2.0 | 2.8 | 3.3 | 3.3 |  |
| Light Pink |  | 2.4 | 2.0 | 2.6 | 3.8 | 3.6 |
| Violet |  | 2.7 | 2.2 | 2.7 | 3.5 | 3.3 |

festation. Plant quality increased from December to February and then declined after February for most cultivars (Table 3).

In January, the cultivars that were chosen by $50 \%$ or more of survey participants were Fantasia Coral, Fantasia Shocking Pink, Showcase Pink Parfait, and Showcase Purple (Table 2). People taking the survey preferred the Fantasia and Showcase series probably because the plants were a little larger and had more flowers. Plants in these series also looked more like typical bedding geraniums than plants in the Fireworks series. Because of plant loss due to Xanthomonas, the geraniums were not included in the consumer preference survey in March.

New Guinea Impatiens. Size of New Guinea impatiens in the garden increased from December to April/May (Table 4). Plant quality also increased with highest quality ratings in April and May (Table 5).

Flower number in the Celebration series ranged from 8 to 28.7 flowers per plant during peak flowering in March/April (Table 4). Flower number in the Celebrette series ranged from 8 to 28 flowers per plant during peak flowering in April/ May while flower number in the Fanfare series ranged from 48.3 to 63 flowers per plant. Flower number in the Harmony series ranged from 11.7 to 17.7 flowers per plant from March to May. Flower number in the Ecke series ranged from 12 to 22.7 flowers per plant. From April to May, in the Sonic and Super Sonic Series, flower number ranged from 13.3 to 17.3 and 7.3 to 18 flowers per plant, respectively. In the Tamarinda series, flower number ranged from 12 to 19 flowers per plant from March to May.

The New Guinea impatiens cultivars that were chosen by $50 \%$ or more respondents from the January survey were Celebration Deep Red, Celebration Electric Rose, Celebrette Coral Light, and Super Sonic Cherry Cream (Table 4). The cultivars chosen with $50 \%$ or more respondents from the March survey include Celebrette Strawberry Star and Ecke Painted Paradise Red. Fifty percent or more of the students from Stranahan High School selected Celebration Electric Rose, Celebration Purple, Celebrette Apricot Star and Super Sonic Cherry Cream as their favorites.

## Summary

Information about bedding plant field performance is important when making recommendations for landscape use. Be-
cause 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 producers in marketing flower colors and plants that appeal to the general public. A follow-up winter trial is planned for winter 2003-2004.

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