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Garden Map
Colorado State University
2008 Annual Flower Trial Garden
Performance Report
Dr. James E. Klett, David Staats and Brian Austin*

Introduction

The W. D. Holley Plant Environmental Research Center (PERC) on the Colorado State University campus has been in operation for 36 years. Dr. James E. Klett is the Director of PERC and the faculty Coordinator for the Annual Flower Trial Garden. In 2000, the garden was moved from its site at PERC to the park located on Remington and Lake Streets. The relocation of the garden to this more spacious and visible site furthered its mission by more effectively extending education, research and outreach to students, home gardeners, Master Gardeners, community members and Green Industry personnel.

The outdoor display and test areas were established to allow students, researchers, industry representatives, homeowners and extension personnel to learn, teach and evaluate horticultural research and demonstration projects in the Rocky Mountain/High Plains region. The Annual Flower Trial Garden is both an All-America Selections® display site and trial site. The garden is open to students, industry personnel and the public for viewing, gathering ideas about new varieties, studying the different growth habits, tolerances and visual characteristics of many annual flowering varieties.

The purpose of the trial garden is to evaluate the performance of annual flower cultivars under our unique Rocky Mountain environmental conditions. Our growing conditions are characterized by high altitude, intense solar radiation, drying winds, severe hailstorms, large fluctuations between day and night temperatures and a season-long need for irrigation. Plants are evaluated for plant vigor, uniformity, floriferousness and tolerance to environmental and biotic stresses. Performances of these cultivars are judged in early August, and again in early September, by selected students, faculty, industry representatives, public horticulturalists and advanced Master Gardeners.

The project is funded, in most part, by the entry fees collected from the plant breeding companies who have chosen to participate in the trials. Additional financial assistance and supplies for the trial operations are donated by a number of sources. These sources include various state horticulture industry associations, foundations, nurseries, greenhouse growers and plant and seed production companies from across the nation. The trial garden at Colorado State University receives no operating dollars directly allocated from state funds. Some operational and staff dollars have come from the Colorado State Agricultural Experiment Station, Extension, the College of Agricultural Sciences and the Department of Horticulture and Landscape Architecture.

* Professor and Extension Landscape Horticulture Specialist; Horticulture Research Associate; Landscape Horticulture undergraduate student and 2008 Garden Coordinator
Acknowledgements

The Department of Horticulture and Landscape Architecture at Colorado State University would first like to thank the many plant and seed companies who continue to participate in the trials year after year. Without their cooperation and support, the research done at the trial garden would not be possible. This year, the following 20 plant and seed companies participated in the trials, entering 1,117 varieties of annual bedding plants:

- American Takii Inc.
- Ball Horticultural Co.
- Ball FloraPlant
- Cohen Propagation Nurseries c/o Agrexco
- Danziger
- Dummen USA Inc.
- Eason Horticultural Resources Inc.
- Ernst Benary of America Inc.
- Fides North America
- Goldsmith Seeds
- Grimes Horticulture
- Grolink
- Hem Genetics
- Jackson & Perkins
- Kieft Seeds
- Oro Farms
- Pan American Seed Co.
- Proven Selections
- Proven Winners
- Sakata Seed America Inc.
- Selecta: First Class Plants
- Syngenta – S & G Flowers
- Syngenta – S & G Flowers

A very special thank you goes out to Welby Gardens of Denver, Colorado. Every year, Welby Gardens germinates and grows-on all of the seed propagated varieties for the trials. Their generosity is greatly appreciated, as they do this for us at a very reduced cost. In addition, they also donated slow release fertilizer used in the container plantings.

We would like to recognize the companies that have donated supplies to the program. Thanks are extended to Green Care Fertilizers, Inc. for donating the water soluble fertilizer used in both the greenhouses and the garden. We would like to thank Sun Gro Horticulture, Inc. for donating the potting media for all the vegetatively propagated plants grown in our greenhouses. Thank you to Organix Supply, Inc. for donating the Eko Grower’s Mix media used to amend the beds and also the quick release fertilizer that was applied to the ground beds. And thank you to Scotts, Inc. for donating the slow release fertilizer that was also used in the ground beds.

We would like to thank our Trial Garden Advisory Committee for their constant advice and feedback on the overall operation of the trials. We are fortunate to have such a diverse group of industry leaders that are willing to volunteer their time for the benefit of our program. Our committee is comprised of the following individuals:

- Celia Tannehill (Fort Collins Nursery), Charlotte Rose (Benary Seed), David Hartley (retired, CSU Department of Horticulture and L.A.), Diana Reavis (Eason Horticultural Resources Inc.), Duane Sinning (Benary Seed), Frank Yantorno (Center Greenhouse, Inc.), Dan Gerace (Welby Gardens), Al Gerace (Welby Gardens), Galen Dokter (Syngenta), Gary Douglas (Denver City Park Greenhouse), Gene Pielin (Gulley Greenhouse) Harvey Lang (Syngenta Flowers), John Williams (Tagawa Greenhouses), Karl Trellinger (Syngenta Flowers), Keith Stieduhar (City of Westminster), Mark Seguin (Syngenta Flowers), Merle Moore (retired, Denver Zoological Gardens), Paul Hammer (Dummen USA), Ron Brum (Ball Seed), Ross Shigley (Denver Botanic Gardens), Maria Bumgarner (Denver Botanic Gardens), Wayne Pianta (PanAmerican Seed), Mark Sanford (S & G Flowers), Eric
We also thank all the Larimer County Master Gardeners who volunteered their time and hard work this year. They were instrumental in completing the huge tasks of transplanting thousands of plugs in the greenhouses this spring and planting the thousands of plants in the garden in the early summer.

Perhaps most importantly, many thanks and appreciation goes to the PERC staff at the university that has worked diligently to prepare and maintain the garden. These people include:

Undergraduate Trial Garden Coordinator
Brian Austin

Undergraduate Trial Garden Staff
Chelsea Bidgood
Dayna Lewis
Scott Brunmeier
Rollin Smith
Karlie Sanders
Jenna Gonzalez

Undergraduate PERC Staff
Kevin Curry
Kyle Bainer

Horticulture Research Associate
David Staats

For further information on the Annual Flower Trial Garden at Colorado State University, feel free to write, call or e-mail:

Dr. James E. Klett
PERC Director and Annual Flower Trial Garden Coordinator
Colorado State University
Department of Horticulture and Landscape Architecture
Fort Collins, CO 80523
Office Phone: (970) 491-7179
Mobile Phone: (970) 218-0104
Fax: (970) 491-7745
E-mail: jim.klett@colostate.edu

This report is also available online at:

www.flowertrials.colostate.edu
2008 CULTURAL DATA

Growing

All seeds were sent to Welby Gardens in Denver, CO, for germination and growing-on in their greenhouses in pony cell-packs. Seed varieties were all received on June 6th and planted in the garden shortly thereafter. All vegetative varieties were received as plugs and transplanted into 4.5” pots shortly after arriving at Colorado State University.

Fertilization In Greenhouses

Dosatron® fertilizer injectors rated at 7 GPM were used in the greenhouses to fertilize plants each day they were watered, with the exception of being watered every weekend with clear water. Peter’s Professional 15-5-15-3CalMag water soluble fertilizer was used. New Guinea Impatiens, as well as all other plants grown under shade in the University Greenhouses, were fertilized at a rate of 200ppm for the first month, then the rate was dropped to 100ppm. Other plants in the shade greenhouse included Begonia hybrids, Coleus and Double Impatiens. All other plants were grown in the greenhouses at PERC and received fertilization at a rate of 200ppm.

Chemicals Used in Greenhouses

Banrot® was applied to all vegetative plugs immediately after arrival and prior to potting up. A drench of 6 oz/gallon was applied to each plug tray.

Other chemical treatments that were applied in the greenhouse are as follows:

- April 21st: Cycocel® was applied to geraniums at a rate of 1 oz/gallon
- April 24th: B-9® was applied to Petunias and Calibrachoas in greenhouse at a rate of 1.1 grams/gallon
- April 26th: A mixture of Marathon II® at 2.5ml/5 gal, Enstar II® at 2.5 tsp/5 gal, and Keyplex 350® at 5Tbs/5 gal was used to control leafminer on Phlox, Verbena, Scaevola, and Torenia.
- May 3rd: A mixture of Pyreth-It® at 1.5 tsp/gal, Azatin EC® at 1 tsp/gal, and Keyplex 350® at 5 tsp/gal was used to control leafminer on Phlox, Verbena, Scaevola, and Torenia.
- May 6th: Cycocel® was applied to geraniums specified by companies at 1 oz/gallon. B-9® was applied to Petunias and Calibrachoas at 1.1 grams/gallon.
- May 10th: A mixture of Conserve® at 6ml/gal and Citation® at .75g/gal was used to control leafminer on Phlox, Verbena, Scaevola, and Torenia.

Insecticidal soap was used periodically to control aphids.

PGR Application

Since 2007, participants entering Geraniums, Petunias and Calibrachoas were given the opportunity to choose the number of PGR treatments to be applied to their plants while in the greenhouse. They were given the choice of no treatments, one treatment or two treatments. The number of treatments applied

† No endorsement of products named is intended nor is criticism of products not mentioned.
to each variety in the trials is included in the information presented in the trial results section of this report.

**Soil Amendments and Preparation**

All beds were raked clean of old mulch, planting material and weeds. Where necessary, RoundUp® was sprayed on weeds. This year, 1-2” of new media with organic matter (Eko Grower’s Mix) was added to all of the beds. The beds were roto-tilled to a depth of 8”, which helped incorporate the new media. After tilling, the beds were crowned for better drainage and raked smooth. For containers, the top 5-6” of media was removed and Banrot® was sprinkled over the remaining soil and watered in. The containers were then re-filled with new media.

**Planting**

Plants are grown in either the sun or under our shade structure that provides approximately 70% shade. The plant companies are given the option to choose whether they want their varieties grown in a ground bed, a container or in both locations. Each trial entry in the ground is planted in 2 parallel rows of up to 12 plants per row for a maximum of 24 plants. Each 20” container is planted with 5 plants of the same variety. Holes were pre-dug for each row in the ground beds using a 4” auger. A string stretched from the front of the row to the back was used as a guide to keep the spacing uniform. The majority of plants were planted during organized planting sessions with Master Gardeners on May 23rd, 29th, June 4th, and June 6th. The remainder of plants were planted by the garden staff on June 9th, 11th, 13th, 14th, 17th, 20th, 24th, and 30th.

**Bed Spacing**

Because there weren’t as many entries in bed locations this year, Geraniums, Petunias and shade plants were allowed more space between the plantings than other cultivars. Geraniums (Ivy, Seed, Zonal and Compact Zonal) were spaced at 12” within the variety and 36” spacing between the varieties. Petunias were spaced at 12” within the variety and 46” between the varieties. All other varieties in sun beds were spaced at 12” within the variety and 12” between varieties. All varieties in shade beds had more space between varieties in order to use up all the bed space; they were spaced at 12” within the variety and 48” between varieties.

**Watering Schedule**

Plants were watered on an “as needed” basis while in the greenhouses. All plants were thoroughly hand watered after being planted in the garden or a container. Potted containers were irrigated twice a day, every day, until the last week of June, and then once a day after that. Each container has 2 drip emitters positioned towards the center that are rated at 1 GPH. All containers ran for three hours per cycle until the end of June when the plants became established. After June, the cycle was changed to two hours. Beds are zoned according to weekly water-use requirements of 0.5”, 1.0” and 1.5” of water per week, and were watered 2-3 times a week for varying amounts of time, depending on the bed’s water-use rating. During extreme heat in June and July watering was sometimes increased based on the needs of individual beds and containers.
<table>
<thead>
<tr>
<th>Water-use Rating</th>
<th>Ground Beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5” per week</td>
<td>F, G, H and I</td>
</tr>
<tr>
<td>1.0” per week</td>
<td>K, L, M, and N</td>
</tr>
<tr>
<td>1.5” per week</td>
<td>C, D, E, J, SA, SB, and SC</td>
</tr>
</tbody>
</table>

One full week of watering was skipped on the ground beds from August 10th to August 16th due to abundant precipitation. After September 15th, watering of the beds was reduced to one cycle every three to five days, depending on the weather, meaning the total amount of water being applied per week was variable and considerably less than during the summer.

**Fertilization in Garden**

All beds were top-dressed with Pro Rich® Fertilizer (14-5-5) at the rate of 1 pound N per 1000 square feet for all plantings.

After planting, Osmocote® (15-9-12) was applied to all sun beds—including the All America Selections display bed and the CSU “Best-Of” bed—at the rate of 25 grams/sq. ft. (suggested medium rate on label).

Osmocote® (14-14-14) was applied to all sun containers at a rate of 130 grams/pot. Osmocote® was not applied to the shade beds.

Greencare water soluble fertilizer was dispensed through a 100 GPM Dosatron® twice a week at a rate of 200 ppm. First, a 14-4-14 formulation was used to get the plants established. Once they were established, a 20-10-20 formulation was used. After July 21, Peter’s Professional 20-10-20 fertilizer formulation was used at the same rate of 200 ppm.

Chelated iron (FeATURE® 6-0-0, 10% Fe) was applied at the rate of 3 lbs/100 gallons to all Calibrachoas in the ground and in pots, and to mini-spreading Petunias in the ground on July 1st. Iron was also applied at the same rate to mini-spreading Petunias in pots on July 13th.

**Maintenance of Flowers**

Plants were pinched and deadheaded as needed in the greenhouse prior to outdoor planting.

**Dead-heading in the garden:**

<table>
<thead>
<tr>
<th>Plant</th>
<th>Location</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argyranthemum</td>
<td>all</td>
<td>July 11</td>
</tr>
<tr>
<td>Dahlia</td>
<td>in ground</td>
<td>June 10, 25; July 11, 28; August 22</td>
</tr>
<tr>
<td>Dianthus</td>
<td>in ground</td>
<td>July 28; August 20</td>
</tr>
<tr>
<td>Geranium</td>
<td>all</td>
<td>June 9, 26; July 11, 28; August 8, 31; September 4</td>
</tr>
</tbody>
</table>
**Weed Control**

RoundUp® was applied to all beds prior to tilling in the spring, and as a spot treatment around the edges of the beds and in the pathways on July 19. Additional wood chip mulch was applied to the pathways between the beds on July 7. Otherwise, all weeding was done by hand throughout the season.

**Pest Control in Garden**

Cleome and Gaillardia were sprayed for flea beetles on July 2 and July 14 with a mixture of Marathon II® at 0.5ml/gal and Conserve® at 6ml/gal.

**Disease Control in Garden**

Beds C, D and E were fumigated with Vapam® last fall as a preventative measure against Xanthomonas, which was a problem in the garden three years ago. Osteospermum in Bed J were drenched with Banrot® on July 24 at a rate of 0.5 tsp/gal to control Rhizoctonia. The garden has its own supplies and tools in order to reduce the potential spread of disease from other sites.

**Dates of Severe Weather**

The weather has been fairly typical for this region. There was about a three week period in July where temperatures broke a record for the most consecutive days over 90 degrees.

**Monthly Temperatures and Precipitation for Summer 2008**

<table>
<thead>
<tr>
<th>Month</th>
<th>Avg. Maximum Temperature</th>
<th>Avg. Minimum Temperature</th>
<th>Precipitation (Inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>May (23rd – 31st)</td>
<td>70.1°F</td>
<td>43.4°F</td>
<td>1.62</td>
</tr>
<tr>
<td>June</td>
<td>81.8°F</td>
<td>50.8°F</td>
<td>1.38</td>
</tr>
<tr>
<td>July</td>
<td>92.0°F</td>
<td>59.5°F</td>
<td>0.97</td>
</tr>
<tr>
<td>August</td>
<td>82.2°F</td>
<td>55.6°F</td>
<td>3.94</td>
</tr>
<tr>
<td>September</td>
<td>73.8°F</td>
<td>46.6°F</td>
<td>1.28</td>
</tr>
</tbody>
</table>

*Weather information for the Fort Collins area provided by the Colorado State University at: [http://ccc.atmos.colostate.edu/cgi-bin/summary.pl](http://ccc.atmos.colostate.edu/cgi-bin/summary.pl)*
Data Collection Methods

Plant Size
Height and width measurements were taken twice during the growing season. This was done to get a feel for the average size of the plants and each variety’s growth performance. For consistency, the fourth plant from the front of the left row was measured; however, if that plant was noticeably smaller or larger than average on July 30th, an alternate plant was selected for measurement and the location was noted so the same plant would be measured when the second measurements were taken. The first measurements were taken on July 30th and the second set on September 9th.

Flowering Performance
This is the second year that data on the bloom period for each variety has been taken. In presenting this data, we hope to give a feel for how long the plants were in bloom and how well they bloomed during that period of time. Data was collected on a weekly basis. Plants were evaluated by estimating the overall bloom quality based on four bloom stages. These stages were First Bloom, Few Flowers, Full Bloom, and No Bloom, with Full Bloom meaning the stage at which the average consumer sees the plant as being in perfect bloom. One should take into consideration the broad range between these ratings when interpreting these data. A rating of First Bloom means that the very first flower out of the entire plot has fully opened. A rating of Full Bloom means the plants were considered to be at peak bloom. If a variety started at Full Bloom, it means it was already in full bloom in the greenhouse before it was planted. Towards the end of the season, any dead plants in the planting were not considered in the evaluation; thus, the data given always reflects the percent of live plants in bloom. For consistency, four employees evaluated the same areas throughout the summer.

Soil Samples
Samples were taken from individual ground beds on June 20th, July 17th, and August 25th, and were combined into a single sample per category of bed. These bed categories were Sun Beds and Shade Beds. Samples from perennial beds were taken on June 20th and August 25th. Samples taken from various containers in both the sun and shade were combined into a single sample on June 20th. Separate samples were taken from containers in both the sun and shade on July 17th and August 25th.
## Soil Analysis

<table>
<thead>
<tr>
<th>Bed</th>
<th>pH</th>
<th>E.C. mmhos/cm</th>
<th>Lime Estimate</th>
<th>% O.M.</th>
<th>NO$_3^-$ N</th>
<th>P</th>
<th>K</th>
<th>Zn</th>
<th>Fe</th>
<th>Mn</th>
<th>Cu</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun Beds 6/20/08</td>
<td>6.7</td>
<td>1.2</td>
<td>Low</td>
<td>23.4</td>
<td>72.9</td>
<td>167</td>
<td>514</td>
<td>21.9</td>
<td>98.1</td>
<td>1.9</td>
<td>5.3</td>
<td>Loam</td>
</tr>
<tr>
<td>Sun Beds 7/17/08</td>
<td>6.6</td>
<td>1.6</td>
<td>Medium</td>
<td>21.7</td>
<td>73.4</td>
<td>168</td>
<td>836</td>
<td>17.8</td>
<td>80.9</td>
<td>3.3</td>
<td>3.9</td>
<td>Loam</td>
</tr>
<tr>
<td>Sun Beds 8/25/08</td>
<td>6.5</td>
<td>0.8</td>
<td>Low</td>
<td>34.2</td>
<td>82.6</td>
<td>222</td>
<td>759</td>
<td>25.2</td>
<td>118</td>
<td>3.7</td>
<td>4.8</td>
<td>Loam</td>
</tr>
<tr>
<td>Shade Beds 6/20/08</td>
<td>6.8</td>
<td>1.3</td>
<td>Low</td>
<td>16.2</td>
<td>66.2</td>
<td>131</td>
<td>435</td>
<td>18.6</td>
<td>108</td>
<td>2.7</td>
<td>3.3</td>
<td>Loam</td>
</tr>
<tr>
<td>Shade Beds 7/17/08</td>
<td>6.8</td>
<td>1.3</td>
<td>Low</td>
<td>40.6</td>
<td>46.9</td>
<td>122</td>
<td>609</td>
<td>16.6</td>
<td>98.9</td>
<td>3.1</td>
<td>3.5</td>
<td>Loam</td>
</tr>
<tr>
<td>Shade Beds 8/25/08</td>
<td>6.9</td>
<td>0.5</td>
<td>Low</td>
<td>49.8</td>
<td>73.7</td>
<td>137</td>
<td>548</td>
<td>17.6</td>
<td>103</td>
<td>3.1</td>
<td>3.3</td>
<td>Loam</td>
</tr>
<tr>
<td>Perennial Beds 6/20/08</td>
<td>7.2</td>
<td>0.7</td>
<td>Low</td>
<td>26.5</td>
<td>19.5</td>
<td>123</td>
<td>256</td>
<td>13.4</td>
<td>53.5</td>
<td>2.1</td>
<td>2.0</td>
<td>Loam</td>
</tr>
<tr>
<td>Perennial Beds 8/25/08</td>
<td>6.7</td>
<td>0.5</td>
<td>Low</td>
<td>39.0</td>
<td>43.4</td>
<td>184</td>
<td>425</td>
<td>23.5</td>
<td>94.1</td>
<td>13.3</td>
<td>5.1</td>
<td>Loam</td>
</tr>
<tr>
<td>Containers 6/20/08</td>
<td>6.9</td>
<td>0.5</td>
<td>Low</td>
<td>20.0</td>
<td>1.0</td>
<td>33.6</td>
<td>455</td>
<td>10.9</td>
<td>27.9</td>
<td>3.5</td>
<td>31.0</td>
<td>Loam</td>
</tr>
<tr>
<td>Sun Containers 7/17/08</td>
<td>6.8</td>
<td>0.7</td>
<td>Low</td>
<td>28.1</td>
<td>67.9</td>
<td>62.4</td>
<td>560</td>
<td>13.0</td>
<td>32.3</td>
<td>5.7</td>
<td>27.8</td>
<td>Loam</td>
</tr>
<tr>
<td>Sun Containers 8/25/08</td>
<td>5.9</td>
<td>0.5</td>
<td>Low</td>
<td>26.7</td>
<td>31.8</td>
<td>62.4</td>
<td>377</td>
<td>12.7</td>
<td>57.4</td>
<td>5.0</td>
<td>32.4</td>
<td>Loam</td>
</tr>
<tr>
<td>Shade Containers 7/17/08</td>
<td>6.9</td>
<td>0.6</td>
<td>Low</td>
<td>31.4</td>
<td>0.9</td>
<td>41.0</td>
<td>448</td>
<td>12.5</td>
<td>29.0</td>
<td>6.9</td>
<td>29.4</td>
<td>Loam</td>
</tr>
<tr>
<td>Shade Containers 8/25/08</td>
<td>7.0</td>
<td>0.2</td>
<td>Low</td>
<td>45.7</td>
<td>0.9</td>
<td>38.0</td>
<td>308</td>
<td>11.3</td>
<td>31.4</td>
<td>5.6</td>
<td>29.0</td>
<td>Loam</td>
</tr>
</tbody>
</table>
Evaluation

The trial evaluation day was held on August 5th. Approximately 100 judges consisting of industry representatives, master gardeners, university employees and trial garden advisory committee members evaluated the plant varieties for performance using a combination of these criteria:

Plant Quality:
- Uniformity of plant habit
- Bushy, well-branched shape versus open and leggy
- Healthy foliage (deep green versus chlorotic, yellow leaves)
- Foliage texture
- Disease resistance

Flower Quality:
- Flower power (number of flowers per plant, substance and holding power)
- Flower presentation (i.e. not hidden by the foliage)
- Color uniformity
- Stable color (resistance to fading) and stable pattern (for bicolor)
- Flower size and uniformity of flowers
- Balance of color in a mixture

Overall Presentation:
- Overall “clean” look, versus visible spent blooms
- Fragrant flowers and/or foliage
- Good vigorous growth
- Resistance to climatic stress
- Novelty value of unique features
- Overall consumer appeal

Plant varieties were rated on a scale of 1 to 5 (1 = very poor performance; 5 = excellent performance). These numerical evaluations were used to calculate the average ratings for each variety in the trials. Participants were encouraged to circle pre-generated comments on the evaluation form, if appropriate, as well as write in any other comments and observations they had. The pre-generated comments they could choose from included: Low vigor, Vigorous plant, Few flowers, Many flowers, Uniform, Non-uniform, Unique color and Some chlorosis.

Selection of “Best Of” Winners and other “Plants Rated As Superior”

Ratings from all evaluators on August 5th were averaged and the top five in each class were placed on a preliminary list. A class is determined to be any group of plants in the same genus that consisted of 10 or more trial entries. The “Best Of” award was given to classes whose top-five list had ratings of at least 3.0 and one of them could be considered superior. A sub-committee of university and industry representatives revisited the garden on September 5th to review the top-five list and verify the superiority of the top rated varieties over a period of time, and not just on the main evaluation day. A majority vote was taken for each class to determine the final selections for winners. “Plants Rated as Superior” was an award created to recognize other plants that deserved special recognition; especially for those plants that did not have ten varieties to make up a class.
Other Information for the 2008 Trials

Number of companies participating.................................................................22

Total number of trial entries........................................................................1,145

Varieties grown in the ground.................................................................511 45%
Varieties grown in a container.................................................................490 43%
Varieties grown in both locations...........................................................144 12%
Varieties propagated by seed.................................................................279 24%
Varieties propagated by cuttings.............................................................866 76%

Number of genera represented......................................................................115

Number of student employees dedicated to the project

Spring (part-time, 10-20 hrs/wk)..................................................................4
Summer (full-time, 40 hrs/wk)......................................................................5
Temporary (May 14 through June 13)..............................................................2
Fall (part-time, 10-15 hrs/wk).......................................................................4
**Display Garden Varieties**

Celosia ‘Fresh Look Gold’
Celosia ‘Fresh Look Red’
Dianthus ‘Supra Purple’
Diascia ‘Diamonte Coral Rose’
Gaillardia ‘Arizona Sun’
Gypsophila ‘Gypsy Deep Rose’
Hollyhock ‘Queeny Purple’
Nicotiana ‘Perfume Deep Purple’
Ornamental Pepper ‘Black Pearl’
Osteospermum ‘Asti White’
Petunia ‘Limbo Violet’
Petunia ‘Opera Supreme Pink Morn’
Salvia farinacea ‘Evolution’
Vinca ‘First Kiss Blueberry’
Vinca ‘Pacifica Burgundy Halo’
Viola ‘Rain Blue and Purple’
Viola ‘Skippy XL Plum-Gold’
Viola ‘Skippy XL Red-Gold’
Zinnia ‘Magellan Coral’
Zinnia ‘Zowie! Yellow Flame’

**Trial Ground Varieties**

Agastache ‘Bronze Foliage’
Agastache ‘Golden Jubilee’
Agastache ‘Purple Pygmy’
Cosmos ‘Sensation Purity’
Cosmos ‘White’
Echinacea ‘Deep Rose’
Echinacea ‘Magnus’
Echinacea ‘Prairie Splendor’
Echinacea ‘Primadonna Deep Rose’
Gaillardia ‘Apricot Shades’
Gaillardia ‘Arizona Sun’
Gaillardia ‘F1 Yellow’
Gaillardia ‘Golden Goblin’
Gaillardia ‘Granada’
Gazania ‘F1 Daybreak Red Stripe’
Gazania ‘F1 Daybreak Rose Stripe’
Gazania ‘F1 Kiss Rose’
Gazania ‘F1 Kiss Yellow Flame’
Gazania ‘F1 Kontiki Stars & Stripes Mix’
Gazania ‘F1 Kontiki Yellow’
Gazania ‘F1 White w Rose Stripe’
Gazania ‘F1 Yellow w Red Stripe’
Heuchera ‘Dale’s Strain’
Heuchera ‘Green with Veins’
Lavender ‘Long Flag’
Lavender ‘Purple Ribbon’
Lavender ‘Sancho Panza’
2008 “Best Of…” Winners

**Best of Show** – Geranium (Zonal) ‘Calliope’ from Syngenta Flowers
This variety captivated everyone with the prolific deep red flowers. Flowering was strong throughout the entire season. The robust flowering matched the impressive vigor of the plant which had larger leaves and a great uniform growth habit. ‘Calliope’ looked excellent in both container and in the ground.

**Best New Variety** – *Pennisetum* ‘Fireworks’ developed by Creek Hill Nursery and entered by Eason Horticultural Resources
This standout was unique due to the multi-colored foliage which was predominately a beautiful combination of dark red with stripes of pink, white and green. Coloring changed depending on hot or cold weather. ‘Fireworks’ captured attention early in the season even before the dark purple plumes emerged. This distinctive variety was vigorous both in the ground and container.

**Novelty** – *Ptilotus* ‘Joey’ from Benary Seed
‘Joey’ was the run-away favorite for this category due to the combination of unique flower form, delicate texture and attractive coloring. The flowers are a fuzzy “arrow-head” shape in shades of soft lavender and white. Blooms were very abundant and lasted throughout the season. The plant came from Australia and is a good plant for hot areas and minimal care.

**Best Angelonia** – ‘AngelMist Purple’ from Ball FloraPlant
This prolific bloomer had dark purple flowers and a very uniform overall appearance was a strong characteristic of this variety. The ability to stand up to cooler weather late in the season gave it a longer bloom time than other varieties. ‘AngelMist Purple’ did well both in the ground and in the container.

**Best Argyranthemum** – ‘Reflection Pink’ from Danziger
Flowers were very abundant and relatively large with attractive hues of pink and white. The numerous large flowers were very showy. An added bonus is that ‘Reflection Pink’ bloomed strong through the heat and outperformed all the other varieties even in September.

**Best Bacopa** – ‘Gulliver Blue Sensation’ from Danziger
Flowering was strong and very consistent throughout the growing season which included a recorded breaking heatwave in July. Flowers were relatively large with a good blue color. The overall growth habit was very uniform.

**Best Begonia (wax type)** – ‘Volumia Pink’ from S&G Flowers
The large plant and large, abundant flowers radiated a vigorous appearance that was very showy. The numerous pink flowers provide outstanding color and make a great mass display.

**Best Calibrachoa** – ‘Million Bells Cherry Pink Improved’ from Jackson & Perkins
Selected for consistent strong flowering all season - even into September. Relatively large flowers opened earlier in the day than many other varieties and the color was a stunning shade of pink. Plants were very uniform as well as being very showy.

**Best Coleus** – ‘Henna’ from Ball FloraPlant
This was a Coleus that “had it all” – unique coloring, fringed leaf edge, and impressive vigor. Foliage was an unusual color with an ochre/chartreuse coloring on the upper surface and a dark burnt sienna on the lower side and stems. The vigorous growth was controlled and created a very uniform look overall.

**Best Dahlia** – ‘Dark Angel Dragon Ball’ from Grolink
There was easy consensus by the evaluators for this selection. The blossoms had a very unique color and created a very dramatic look contrasted against the beautiful dark purple foliage. Flowers were a dark magenta/fuchsia and medium to large sized.
**Best Dianthus** – ‘Garden Spice Coral’ from Fides North America
Flowering was strong even in the midst of a record breaking hot streak in July. Flowers were a vibrant coral color which stood out well against the foliage color. Plants were vigorous and uniform. A very pleasing fragrance is another attractive feature of this flower that helped make it a standout.

**Best Diascia** – ‘Darla Appleblossom’ from Syngenta Flowers
This variety was another strong bloomer during the heat and kept going right into September. Abundant soft pink blooms create a delicate appearance and the growth habit was very uniform to create a very attractive presentation.

**Best Geranium (compact zonal)** – ‘Eclipse Velvet Red’ from Syngenta Flowers
The dark green foliage sets off the intense red color of the flower creating a dazzling combination. All plants had strong vigor and were very uniform.

**Best Geranium (ivy)** – ‘Acapulco Compact Cascade’ from Syngenta Flowers
A vigorous plant that looked great in a container. Both flowers and foliage create a delicate/dainty appearance with a finer texture than most ivy geraniums. The beautiful pink and white flowers were very profuse and showy. This variety has been a reliable performer in the past few trials.

**Best Geranium (zonal)** – Geranium (Zonal) ‘Calliope’ from Syngenta Flowers
This variety captivated everyone with the prolific deep red flowers. Flowering was strong throughout the entire season. The robust flowering matched the impressive vigor of the plant which had larger leaves and a great uniform growth habit. ‘Calliope’ looked excellent in both container and in the ground.

**Best Impatiens (seed)** – ‘Super Elfin Blue Pearl XP’ from PanAmerican Seed
The soft blue color and consistent bloom through the season made this a solid winner. The abundant flowers always covered the top of vigorous yet very uniform plants.

**Best Impatiens (double)** – ‘Silhouette Salmon 09’ from Syngenta Flowers
Vibrant salmon colored flowers were fully double and very stunning. Plants appeared to be more compact than other entries and also had an excellent overall growth habit.

**Best Impatiens (New Guinea)** – ‘Riviera White Eye’ from Dummen
Large white flowers had a hint of lavender around the edges and were very prolific. Looked good even in September. Overall appearance was one of strong plants with a very uniform growth habit.

**Best Lantana** – ‘Bandana Pink 09’ from Syngenta Flowers
Flowers had a nice balance of color between soft pink and yellow that gave a very calming look. Plants were very symmetrical and vigorous.

**Best Lobelia** – ‘Magadi Blue’ from Selecta First Class
Brilliant, clear blue blooms had a small white eye that made the flowers “pop” against the dark green foliage. Plants kept blooming strongly throughout the season and even stayed fresh looking into September.

**Best Osteospermum** – ‘Tradewinds Purple Bicolor’ from Syngenta Flowers
The winner of “Best Osteospermum” for two years in a row. This variety did well both in containers and ground with a nice compact growth habit and excellent flowering. Flowers were a beautiful combination of purple and white.

**Best Pentas** – ‘Northern Lights Lavender’ from Benary Seed
The light lavender color bounces nicely against the dark green leaves. Blooms look good even as it matures and color fades. Flowers are held in large clusters and are long lasting. This variety is the winner of “Best Pentas” for two years in a row.
**Best Petunia (double)** – ‘Double Wave Pink’ from Fides North America
A true double flower with more blooms over the season than any other variety. Flowers were held above the foliage and were an attractive shade of pink. Plants were vigorous and remained much healthier late in the season than many other varieties.

**Best Petunia (mini-spreading)** – ‘Littletunia Red Star’ from Danziger
The prolific flowering, vivid color contrast and unique flower pattern made it a dazzling standout in the beds. The blooms were a bright red and white and resembled little pinwheels. The growth habit was very tight and uniform.

**Best Petunia (spreading, seed propagated)** – ‘Tidal Wave Hot Pink’ from PanAmerican Seed
“Tidal Wave” is an appropriate description for these vigorous plants as they crested high above the surrounding varieties. Bright pink flowers were so vigorous that they almost blocked out all appearances of the plant.

**Best Petunia (spreading, vegetatively propagated)** – ‘Sanguna Lipstick’ from Syngenta Flowers
The huge mass of flowers had vivid color that shimmered in the sunlight. Large, full plants were very uniform but barely able to be seen under the canopy of intense blooms.

**Best Rudbeckia** – ‘Autumn Colors’ from Benary Seed
Large flowers were striking late in the summer when they covered the tops of the plants. The exceptionally large petals were a very attractive combination of brown, yellow and burnt sienna. Foliage was a healthy dark green color.

**Best Salvia splendens** – ‘Reddy White Surprise’ from Hem Genetics
This variety had a very unique color combination on flowers as well as excellent overall uniformity. Flowers were a very interesting white and red bicolor that were much different than any other entry. Plants were not as tall as most varieties and had good vigor.

**Best Scaevola** – ‘Surdiva Blue’ from Jackson & Perkins
Abundant small blue flowers made a strong show all through the season. Plants were full, compact and didn’t crash down in the middle.

**Best Torenia** – ‘Moon Golden Improved’ from Danziger
Unique flower color and abundant blooms contrasted nicely against the dark green foliage. Flowers were a striking combination of yellow and purple. Plants were uniform and kept blooming even into September.

**Best Verbena** – ‘Lanai Blue 09’ from Syngenta Flowers
The beautiful, robust plants grew well both in the ground and in containers. A stunning color of blue made a nice contrast against the dark green foliage. Flowering was strong throughout the summer.

**Best Vinca (vegetatively propagated)** – ‘Nirvana Rose’ from Syngenta Flowers
Evaluators loved the relatively large flowers and attractive rose color. Besides the abundant flowers, the plant was noted for having a compact growth habit, excellent vigor and healthy foliage.

**Best Vinca (seed propagated)** – ‘Cora Deep Lavender’ from Goldsmith Seeds
The deep lavender flowers were large and made a beautiful presentation. Plants were free of any disease and were very symmetrical overall. Flowering was excellent throughout the summer.

**Best Zinnia** – ‘Profusion Knee High Red’ from Sakata Seed America
Flower color was a very intense red with a hint of orange mixed in. The unique color was very rich and made a strong impact. Blooms were very abundant even into September.
Additional “Plants Rated as Superior” for 2008

*Begonia x benariensis ‘BIG Rose Bronze Leaf’* from Benary Seed
A terrific plant for sun or shade. Appears similar to a wax begonia but blooms and plant are both much larger and create an impressive display of color. The flowers are held above the foliage and the rose color contrasts nicely against the foliage.

*Salvia splendens ‘Dancing Flame’* from Grolink.
Variegated green and yellow foliage makes a great plant all by itself but it also has small red flowers scattered across the top which creates the impression of small tongues of fire. This salvia was very large as well as very unique.

*Verbena (upright) ‘Lanai Upright Bright Rose’* from Syngenta Flowers.
The flower was a standout for several reasons. The bloom color of this entry was a unique bicolor that captivated the evaluators. Flowers were very numerous and the plant was vigorous with a controlled growth habit for a great overall appearance.

*Zinnia ‘Zahara Yellow’* from PanAmerican Seed.
This variety created excitement due to the new color which was a beautiful crisp yellow. Plants were uniform and had many blooms over a long period.