

Results of Annual Plant Trial Gardens at the Cincinnati Zoo and Botanical Garden and the Cincinnati Parks Department, Krohn Conservatory: 2003

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The Ohio State University Extension Horticulture Program in Hamilton County, the Cincinnati Zoo and Botanical Garden (CZABG), the Cincinnati Flower Growers Association (CFGGA), the Krohn Conservatory, and the OSU Master Gardener Program in Hamilton County collaborated to establish demonstration/trial gardens at the Cincinnati Zoo and Botanical Garden and Cincinnati Parks Department/Krohn Conservatory in the spring of 2003. This was the second year of these collaborative trials at the CZABG and the first at the Krohn Conservatory.

The gardens at the CZABG were designed by Steve Foltz, Horticultural Director, CZABG, and Dave Roberts, Horticulturist, CZABG.

Participating seed companies were Pan American Seed Co., Ball Floral, S&G Flowers, Sakata Seed, and Proven Winners. Those companies provided plugs or seeds and funds or chemicals/supplies to compensate members of the CFGGA for growing the plants. Ball Floral was the exception, providing finished

plants. Additional sponsors were Eason Horticultural Resources and Wetsel, Inc.

Members of the CFGGA donated a large number of plants in addition to those they grew for the seed companies specifically for the trials. More than 20,000 plants were planted for the project.

Three goals were set for the gardens at the CZABG.

- To evaluate annuals on the basis of quality and performance as seen in the late summer in order to determine which could be recommended for planting in area gardens.
- To provide the general public and commercial growers/landscapers an opportunity to observe many varieties of the latest, yet fairly well-proven, annuals available that were professionally grown in attractive garden settings (including in planters).
- To promote those annuals that performed well enough to be recommended for planting in area gardens.

Events and activities conducted to meet the second and third goals included:

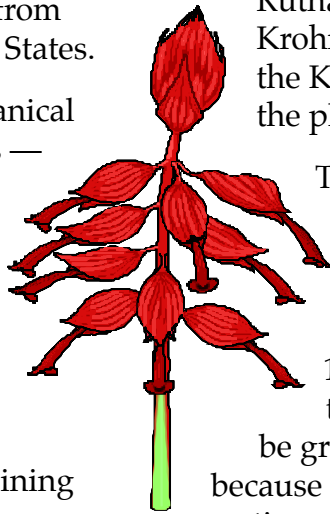
1. Tours of the gardens conducted by the CZABG staff for visitors to the Zoo:

- International Master Gardener's Conference — 1,200 people
- Cincinnati State Horticulture Classes
- University of Cincinnati Horticulture Classes
- Ohio Nursery and Landscape Association Plant Selection Committee
- Garden Clubs in the area, including the annual meeting of the Federated Garden Clubs, which includes 100 members from more than 50 garden clubs in the area.
- American Nursery and Landscape Association summer field tour with more than 100 attendees from across the eastern United States.
- Groups from visiting Botanical Gardens and Arboretums — Bernheim, Holden, Morton, Cox, Wegerzyn, Fairchild Tropical Gardens, and many others.
- OSU Master Gardener Program, Hamilton County, annual plants training was held at the Zoo.
- Ohio's First Lady Hope Taft toured the gardens.
- Cincinnati Flower Growers Association members held their monthly meeting, toured, and actively participated in the trial process.

2. Other media relations:

- 10,000 Annual Plants brochures were printed and distributed throughout the greater Cincinnati community at horticultural events, classes, and tours related to the gardens.
- Annual Plants brochures were included in Zoo press kits sent out to more than 500 media outlets during the Zoo Blooms event in April/May.
- Press releases were sent out to media about the Annual Trials Program in August.
- The CZABG participated in the Cincinnati Home and Garden Show to promote the program.

The gardens (Hinkle Gardens) at the Krohn Conservatory were developed in cooperation with Andrea Schepmann and Ruthanne Spears, management at the Krohn. Vicki Schumacker, florist at the Krohn, designed and supervised the planting of the gardens.



The goal of those gardens was to determine the amount of maintenance required for each of the plants being tested at the CZABG. Initially, 12 of each of the plants being tested at the CZABG were to be grown at the Krohn. However, because of space limitations, only a portion of those were actually grown.

Plants at the CZABG were planted in the ground in beds that were tilled with minimal compost added. All of the more than 102 varieties in the trials were labeled for easy identification for the 1.2 million visitors to the Zoo in 2003.

Plants were evaluated by members of the organizations involved in the trials — seed companies, the CFGA, the CZABG, and Ohio State University Extension, Hamilton County, on July 8 and August 20. Separate evaluations were conducted by horticulture volunteers, Master Gardeners, and members of local garden clubs on August 20, September 4, and September 11.



The Top Picks of 2003 are listed in Table 1. Other plants also recommended for area gardens are listed in Table 2. Some of the plants listed as Top Picks 2002 were also grown in 2003. However, once a plant has attained Top Pick status, it is no longer listed in the results of subsequent trials.

Both groups evaluated plants on a scale from 1 to 5 in which 1 = poor, 3 = fair, and 5 = excellent. Plants were rated on overall appearance. Factors that were considered included plant health (including insect and disease damage), color, and vigor. Plants that looked poor were taken off the evaluation list.

The results of the trials at the Krohn Conservatory are provided in Table 3. All plants in the gardens were maintained and evaluated by Mike Grawe, a volunteer at the CZABG. All plants were evaluated for deadheading and pinching/cutback on June 27 and August 13 using the scoring system shown here.

Several growing problems were encountered during these trials. The early summer was extremely wet and cool. The rest of the summer was extremely wet (on two occasions more than eight inches of rain was recorded in a 48-hour period).

| Score | Plant Maintenance Needed |
|-------|--------------------------|
| 1 | Low |
| 2 | Low to Medium |
| 3 | Medium |
| 4 | Medium to High |
| 5 | High |

Some of the beds were new and had poor soil and/or drainage. Some other quite unusual growing challenges were also encountered. These included peacocks, ducks, and rabbits walking through the beds and/or eating plants and 1.2 million people walking by!

Grawe assessed the maintenance requirements from the viewpoint of a backyard gardener. No plant was observed to have a significant problem with an insect infestation or disease.

Therefore, some plants in the trial that did not make the recommended list may be quite good for the area but were removed from the trials due to one or more of the problems listed previously.

New trial gardens of both annuals and grasses are planned for 2004. For more information, contact Steve Foltz at the Cincinnati Zoo and Botanical Garden, Horticulture Department, at 513-475-6106 or Dave Dyke at 513-505-1202.

2003 Annuals

| Table 1. Top Picks 2003 for Cincinnati Zoo Botanic Gardens | | | | |
|---|-------------------------|----------------------|---------------------|--------------------------------|
| Plant Name | Light Preference | Habit/ Size | Flower Color | Foliage Color |
| 'Artist' Blue Ageratum | sun | groundcover/5" | light blue | |
| 'Artist' Purple Ageratum | sun | groundcover/5" | dark purple | |
| 'Purple Knight' Joseph's Coat | sun/part shade | upright clump/ 30" | NA | glossy maroon |
| 'Angelface' Blue Angelonia | sun/part shade | erect/24" | blue/white | |
| 'Angelmiss' Lavender Angelonia | part shade | upright | lavender/white | |
| 'Bengal Tiger' Canna | sun | erect/5'-6' | orange | green/yellow striped |
| 'Tropicana' Canna | sun | erect | | |
| 'SunStorm' Bright Red Vinca | sun | mounding clump/12" | bright fushia | |
| 'Jet Black Wonder' Elephant Ear | sun/part shade | | NA | dark chocolate macroon |
| 'Patriot' Cherry Lantana | sun/part shade | mounding | red/yellow | |
| 'Lucky' Yellow Lantana | sun/part shade | mounding/15" | clear yellow | |
| 'Lemon Cream' Lantana | sun/part shade | mounding/15" | light yellow | |
| 'Patriot Desert Sunset' Lantana | sun | mounding | red | |
| 'Dark Star' Coleus | sun/part shade | upright mound | | dark maroon |
| 'Sedona' Coleus | sun/part shade | mounding/24" | | brick orange/rust |
| 'Life Lime' Coleus | sun/part shade | mounding | | lime |
| 'Dipt in Wine' Coleus | sun/part shade | mounding | | yellow edge/ bright red center |
| 'Chocolate Drop' Coleus | sun/part shade | mounding | | green edge/chocolate center |
| 'Strawberry Drop' Coleus | sun/part shade | mounding | | |
| 'Black Heart' Sweet Potato Vine | sun/part shade | trailing groundcover | dark chocolate | |
| 'Summer Wave Blue' Wishbone Flower | part shade/shade | groundcover/6" | blue/white throat | |
| 'Summer Wave Large' Violet Wishbone Flower | sun/shade | groundcover | purple | |
| 'Summer Wave Amethyst' Wishbone Flower | sun/shade | groundcover | | |
| 'Prairie Sun' Black-Eyed Susan | sun | upright clump | bright yellow | |
| 'Superbena' Burgundy Verbena | sun | groundcover | bright purple | |
| 'Crystal White' Zinnia | sun | mounding | white | |
| 'Explorer Coral' Petunia | sun | mounding groundcover | | |
| 'Profusion Orange' Zinna | sun | groundcover/10" | bright orange | |
| Best of 2002 | | | | |
| 'Dragon Wing Pink' Begonia | part shade | mounding/2' | pink-dark pink | glossy green |
| 'Dragon Wing' Begonia | part shade | mounding/2' | dark pink-red pink | glossy green |
| 'Australia' Canna | sun/part shade | upright/erect/4' | red burgundy | |
| 'Marguerite' Sweet Potato Vine | sun/part shade | trailing groundcover | lime | |
| 'Ingelsheim' Lantana | sun | | orange/yellow/pink | |
| 'New Gold' Lantana | sun | groundcover/4" | yellow | |

Table 1 (continued). Top Picks 2003 for Cincinnati Zoo Botanic Gardens

| Best of 2002 (continued) | | | | |
|---------------------------------|-------------------------|-----------------------|-------------------------|----------------------|
| Plant Name | Light Preference | Habit/ Size | Flower Color | Foliage Color |
| Purple Fountain Grass | sun | erect | purple | |
| 'Tidal Wave Silver' Petunia | sun | groundcover / 10" | | light lavender |
| 'Kingwood Torch' Coleus | part shade | upright mound 2'-2.5' | | red / burgundy |
| Persian Shield | sun / part shade | mounding / 24" -30" | purple, lavender, green | |
| 'Star Gold' Zinnia | | | | |



Table 2. Additional Annuals of Note in 2003 Trials at Cincinnati Zoo and Botanic Gardens.

| Plant Name | Light Preference | Habit/ Size | Flower Color | Foliage Color |
|---|-------------------------|--|---|------------------------------------|
| 'Redthreads' Joseph's Coat | part shade | mounding/8" | deep maroon/ burgundy | |
| 'Escargot' Begonia | part shade/shade | mounding clump (good container plant) | burgundy w/ silver snail-like swirl | |
| 'Superbells White' Million Bells | | | | |
| 'Black Knight' Canna | sun | erect/5' | | |
| 'Australia' Canna | sun | | | |
| 'Chilly' Chili Pepper | sun/part shade | clump | fruits red, yellow, orange | |
| 'Cajun Red' Impatiens | part shade/shade | | red | |
| 'Patriot' Parason Lantana | sun | mounding | | |
| 'Patriot' Dove Wings Lantana | sun | mounding | white | |
| 'Patriot' Weeper Sunbeam Lantana | sun | mounding | yellow | |
| 'Carlos' Lantana | sun | mounding | | |
| 'Lucky' Peach Sunrise Lantana | sun | mounding | | |
| 'Floever' Salmon Geranium | sun | upright clump | salmon-pink | |
| 'Floever' Red Geranium | sun | upright clump | red | |
| 'Floever' Deep Rose Geranium | sun | upright clump | deep rose | |
| 'Deep Orchid' Vinca | sun/part shade | mounding | | |
| Fountain Grass | sun | erect | | |
| 'Explorer Coral' Petunia | sun | mounding groundcover | | |
| 'New Wonder' Scaevola | sun | groundcover | purple | |
| Freckles Coleus | sun/part shade | mounding | | yellow edge/rust- orange center |
| 'Sky Fire' Coleus | sun/part shade | mounding | | yellow edge/strawberry center |
| 'Saturn' Coleus | sun/part shade | mounding | | |
| New Zealand Flax (Phormium tenax) | | great container plant | | |
| 'Chili' Chili Pepper | sun | mounding (did well in a wide variety of soil/moisture conditions) | | |
| 'Superbena' Blue Purple Verbena | sun | groundcover | | |
| 'Superbena' Large Lilac Blue Verbena | sun | groundcover | | |
| 'Butterfly Light' Lavender Starflower (Pentas) | sun | mounding | | |
| 'Miracle Mix' Impatiens | part shade/shade | | | |
| Purple Heart (Setcreasea pallida) | | | | |
| 'Blackie' Sweet Potato Vine | sun/part shade | trailing groundcover | | |
| Palm Grass (Setaria palmifolia) | | | | |
| 'Crystal White' Zinnia | sun | mounding | white | |

Table 3. Maintenance Requirements of Annuals Grown in the Krohn Conservatory Trials, 2003.

| Date: 6/27/03 | | | |
|---------------------------------------|---------------------|------------------------------|----------------------|
| Site: Hinkle Garden | | | |
| Plant | Dead-heading | Pinching/ Cutback | Comments |
| Caliabrachoa Superbells Blue | 1 | 1 | |
| Caliabrachoa Superbells Coral Pink | 2 | 1 | |
| Caliabrachoa Superbells Red | 2 | 1 | |
| Caliabrachoa Superbells Trailing Pink | 5 | 1 | Many Yellowed Leaves |
| Caliabrachoa Superbells White | 2 | 1 | |
| Coleus Chocolate Drop | 1 | 1 | |
| Coleus Dipt in Wine | 1 | 1 | |
| Diascia Flying Colors Coral | 1 | 1 | |
| Geranium Floreverb Deep Rose | 5 | 1 | |
| Geranium Floreverb Red | 5 | 1 | Some Yellowed Leaves |
| Lantana Patriot Cherry Classic | 1 | 2 | |
| Lantana Patriot Dove Wing | 1 | 1 | |
| Lantana Patriot Parasol Camara | 1 | 1 | |
| Lantana Patriot Weeper Sunstream | 1 | 1 | |
| Osteospermum Symphony Peach | 1 | 1 | |
| Osteospermum Symphony Vanilla | 3 | 1 | |
| Pentas Butterfly Blush | 1 | 1 | |
| Pentas Butterfly Light Lavendar | 1 | 1 | |
| Petunia Easy Wave Cherry | 4 | 1 | Some Yellowed Leaves |
| Petunia Easy Wave Shell | 2 | 1 | |
| Petunia Explorer Coral | 3 | 1 | |
| Petunia Explorer Magenta | 3 | 1 | |
| Petunia Explorer Pink | 3 | 1 | |
| Petunia Kahuna Violet | 5 | 1 | |
| Petunia Kahuna Whiite | 1 | 1 | |
| Petunia Magenta | 2 | 1 | |
| Petunia Misty Lilac | 1 | 1 | |
| Petunia Rose Pink | 2 | 1 | |
| Petunia Spreading Explorer Blue | 2 | 3 | |
| Petunia Supertunia White | 2 | 1 | |
| Petunia Supertunias Giant Pink | 2 | 2 | |
| Petunia Wave Pink | 2 | 1 | |
| Salvia Salvador Red | 3 | 2 | |
| Verbena Silver Magic | 1 | 1 | |
| Verbena Superbena Blue Purple | 1 | 1 | |
| Verbena Superbena Burgundy | 1 | 2 | |
| Verbena Superbena Pink Shades | 1 | 1 | |
| Verbena Tukana White | 1 | 1 | |
| Vinca Radiant Rose Mix | 1 | 1 | |

Table 3 (continued). Maintenance Requirements of Annuals Grown in the Krohn Conservatory Trials, 2003.

| Date: 8/13/03 | | Site: Hinkle Garden | |
|-------------------------------------|---------------------|------------------------------|----------------------|
| Plant | Dead-heading | Pinching/ Cutback | Comments |
| Ageratum Artist Blue | 1 | 3 | |
| Ageratum Artist Purple | 1 | 3 | |
| Caliabrhoa Superbells Blue | 1 | 1 | |
| Caliabrhoa Superbells Coral Pink | 3 | 2 | |
| Caliabrhoa Superbells Red | 2 | 2 | |
| Caliabrhoa Superbells Trailing Pink | 3 | 1 | Many Yellowed Leaves |
| Caliabrhoa Superbells White | 1 | 2 | |
| Coleus Aurora Sherbet | 1 | 4 | |
| Coleus Chocolate Drop | 1 | 4 | |
| Coleus Dark Star | 1 | 3 | |
| Coleus Dipt in Wine | 1 | 3 | |
| Coleus Lifeline | 1 | 2 | |
| Diascia Flying Colors Coral | 1 | 2 | |
| Geranium Florever Deep Rose | 3 | 1 | |
| Geranium Florever Red | 3 | 1 | Some Yellowed Leaves |
| Lantana Patriot Cherry Classic | 1 | 3 | |
| Lantana Patriot Dove Wing | 1 | 3 | |
| Lantana Patriot Parasol Camara | N/A | N/A | Dead |
| Lantana Patriot Weeper Sunstream | 1 | 2 | |
| Osteospermum Symphony Lemon | 2 | 1 | |
| Osteospermum Symphony Peach | N/A | N/A | Dead |
| Osteospermum Symphony Vanilla | N/A | N/A | Dead |
| Pentas Butterfly Blush | 1 | 1 | |
| Pentas Butterfly Light Lavendar | 1 | 1 | |
| Pepper Chilly Chili | 1 | 1 | |
| Petunia Easy Wave Cherry | 3 | 3 | Some Yellowed Leaves |
| Petunia Easy Wave Shell | 3 | 3 | |
| Petunia Explorer Coral | 2 | 2 | |
| Petunia Explorer Magenta | 2 | 1 | |
| Petunia Explorer Pink | 3 | 2 | |
| Petunia Kahuna Violet | 3 | 4 | |
| Petunia Kahuna White | 2 | 2 | |
| Petunia Magenta | 2 | 3 | |
| Petunia Misty Lilac | 1 | 1 | |
| Petunia Purple Wave | 2 | 1 | |
| Petunia Rose Pink | 2 | 1 | |
| Petunia Spreading Explorer Blue | 3 | 3 | |
| Petunia Supertunia White | 2 | 1 | |
| Petunia Supertunia Giant Pink | 1 | 1 | |
| Petunia Wave Pink | 3 | 3 | |

Table 3 (continued). Maintenance Requirements of Annuals Grown in the Krohn Conservatory Trials, 2003.

| Date: 8/13/03 | | Site: Hinkle Garden | |
|--------------------------------------|---------------------|------------------------------|-----------------|
| Plant | Dead-heading | Pinching/ Cutback | Comments |
| Purple Knights Joseph's Coat | 1 | 3 | |
| Salvia Salvador Red | 4 | 3 | |
| Summer Snapdragon Angelmist Lavendar | 1 | 2 | |
| Verbena Silver Magic | 1 | 3 | |
| Verbena Superbena Blue Purple | 1 | 1 | |
| Verbena Superbena Burgundy | 1 | 2 | |
| Verbena Superbena Pink Shades | 1 | 1 | |
| Verbena Tukana White | 1 | 3 | |
| Vinca Radiant Rose Mix | 1 | 1 | |

| Score | Plant Maintenance Needed |
|--------------|---------------------------------|
| 1 | Low |
| 2 | Low to Medium |
| 3 | Medium |
| 4 | Medium to High |
| 5 | High |