

## Evaluation of Assorted Cultivar Species as Bedding Plants – Fall 2000

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**Summary.** We evaluated 54 cultivars of assorted species in replicated class tests at the University of Florida Gulf Coast Research and Education Center at Bradenton, Fla. [lat. 27.4 N, long. 82.5 W; AHS Heat Zone 10; USDA (American Horticultural Society, 1999); USDA Cold Hardiness Zone 9b (U. S. National Arboretum, 1990)] in the fall of 2000. In this report we provided objective plant measurements of vegetative and flower characteristics (Table 1). Earliness of flowering, flower divergence, as well as 3 subjective ratings took place in early and mid Nov. and Dec. permit readers to evaluate foliage and flower characteristics (Table 2) at different times during the season, and to evaluate performance over time. Subjective ratings were on a scale from 1 to 7 with the highest rating of 7 for excellent. Vegetative and floral ratings  $\geq 5.0$  were considered outstanding, 4.0 – 4.9 as good performers, and  $\leq 3.9$  as fair to poor. Some cultivars were grouped into classes based on flower color hue alone, while many, because of the nature of their species and breeding, were also classed by plant type, plant size, flower form, color type. Outstanding cultivars (overall rating  $\geq 5.0$ ) were: **‘First Kiss Blush’** (*C. roseus* – pink class), **‘Victory Deep Apricot’** (*C. roseus* – peach class), **‘Victory Grape’** (*C. roseus* – purple class), **‘Victory Cranberry’** (*C. roseus* – red class), **‘Dwarf Victory Carmen Rose’** (*C. roseus* – rose class), **‘First Kiss Polka Dot’** (*C. roseus* – white class), **‘Diamond Mixed’** (*Dianthus* – dwarf mix class), **‘Crystal Mix’** (*P. cuspidata* – mix class), **‘Eagle White Improved’** (*Petunia x hybrida* – grandiflora single white class), **‘Symphony Pink’** (*P. x hybrida* – multiflora single pink class), **‘Symphony Rose’** and **‘Symphony Deep Rose’** (*P. x hybrida* – multiflora single rose class), **‘Symphony White’** (*P. x hybrida* – multiflora single white class), **‘Fantasy Ball Mix’** (*P. x hybrida* – milliflora single mix), **‘Tidal Wave Hot Pink’** (*P. x hybrida* – spreading single pink) and **‘Tidal Wave Cherry’** (*P. x hybrida* – spreading single red), **‘Empire Orange’** (*S. splendens* dwarf orange bicolor), **‘Garden Leader Rose’** (*S. splendens* tall rose class), **‘Luna Lemon Yellow’** (*Tagetes. tenuifolia* – yellow class), **‘Profusion Orange’** (*Z. hybrida* – orange class), **‘Profusion Cherry’** (*Z. hybrida* – red class), and **‘Profusion White’** (*Z. hybrida* – white class).

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## Introduction

The United States wholesale value of floricultural crops was \$4.6 billion in 2000, estimated from growers with sales  $\geq$  \$10,000. (United States Department of Agriculture, 2001). Bedding and garden plants comprise 50% of the floriculture value at \$2.12 billion. Florida (\$107.4 million) ranks fifth behind California, Michigan, Texas and Ohio, who together generate 42% of the bedding/garden plant wholesale value (United States Department of Agriculture, 1998).

The bedding plant industry by its nature requires timely evaluations of varieties for an extremely competitive market. Most of the bedding plant variety trials currently conducted in the United States are performed without multiple experimental units replicated in an appropriate experimental design that allows statistical analysis, thus these variety trials provide results that are of questionable scientific merit. This study was conducted to evaluate the performance of assorted species cultivars in a seasonal replicated trial, in order to provide evaluations that may be used by growers, landscapers, consumers and seed companies as well as the scientific community.

## Materials and methods

Seeds of 54 cultivars from 11 genera in 14 species classes were sown from 16 to 18 Aug. 2000 into a soil mix containing peat and vermiculite (1:1, volumetric) prepared and amended with dolomite 11.3 lbs./yd<sup>3</sup> (6.7 kg/m<sup>3</sup>), superphosphate 5.6 lbs./yd<sup>3</sup> (3.3 kg/m<sup>3</sup>) and hydrated lime 2.8 lbs./yd<sup>3</sup> (1.7 kg/m<sup>3</sup>) and used for seed germination at 72 to 75 °F (22 to 24 °C) in a growth room with a photosynthetic photon flux (PPF) of 30  $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$  for 12 h from cool-white fluorescent lamps. Immediately after germination, seedlings were transplanted into Todd<sup>®</sup> planter flats [model 128: 1.5 inches x 1.5 inches x 2.5 inches (3.1 cm x 3.1 cm x 6.4 cm) cells; Speedling Incorporated, P. O. Box 7220, Sun City, Florida] and placed into a screen sided, fiberglass covered greenhouse. Seedlings were fertilized weekly with a 20N-16.6P-8.7K water soluble fertilizer (20-20-20 Ca-Mg Excel; Scotts Co., Maryville, Ohio) solution containing 500 mg·L<sup>-1</sup>. Due to inclement weather delaying bed preparation, growth regulation was required using 1500 mg·L<sup>-1</sup> Cycocel + 2500 mg·L<sup>-1</sup> B-nine on 15 and 22 Sept. on dianthus, petunia, vinca and zinnias.

On 26-29 Sept. plugs were transplanted in full sun into raised ground beds with 6 plants per plot spaced 8 to 24 inches (20.3-61.0 cm) apart in a staggered or straight-line

layout, depending on species requirements. Beds were 32 inches wide x 8 inches high (81.3 cm x 20.3 cm). Nutricote<sup>®</sup> 13N-5.7P-10.8 K fertilizer (13-13-13 100-d slow release type; Florikan, Sarasota, Florida) was applied by hand to each plant on the soil surface approximately an inch from the plant stem under the plastic mulch at 261 lb /row acre (293 kg·ha<sup>-1</sup>) of nitrogen. Beds were fumigated at least 14 days before planting with a mixture of 66% methyl bromide and 33% chloropicrin at 392 kg·ha<sup>-1</sup> (350 lb/acre) and covered with white-on-black polyethylene film. Subsurface seepage irrigation water was supplied from lateral ditches spaced 12.8 m (42 ft) apart (Howe and Waters, 1997).

Integrated pest management was employed to determine when pesticide applications were needed to control arthropod pests and plant pathogens. Temperature @ 2 ft (61.0 cm) during the remainder of the experiment ranged from a low of 5.2 °C (41 °F) to a high of 34.3 °C (94 °F) for the ratings period in the sprayed lands, but reached lows of -2.14 (Dec. 21) and -1.2 °C (Dec. 22) before pest ratings were undertaken. Total rainfall of 4.5 cm (1.7 inches) occurred though 6 Dec.

From 20 to 22 Nov. three plants per plot were selected from the center and edge of each plot, and the plant height (from the stem base to the inflorescence tip) and plant width were recorded for each plot. Plants in each plot were selected from the same positions in that plot. Subjective ratings were made for each cultivar from early and mid Nov. to mid Dec. (Table 2). Each cultivar was rated on a 1 to 7 scale with the highest rating of 7 for excellent. Plant characteristics that merited a 7 were: (1) all plants in a plot had full and uniform foliage; (2) foliage and flowers were free of pest symptoms; (3) plants were free of abnormalities or weaknesses such as lodging; and (4) flowers were numerous and uniformly distributed over the plant.

In order to provide meaningful performance comparisons, cultivars were divided into the following classes: **species** [*Dianthus interspecific* and *D. hybrida*, flowering tobacco (*Nicotiana alata*), treasure flower (*Gazania rigens*), signet marigold (*Tagetes tenuifolia*), petunia (*Petunia x hybrida*), scarlet sage (*Salvia splendens*), snapdragon (*Antirrhinum majus*), vinca or Madagascar periwinkle (*Catheranthus roseus*), wallflower (*Cheiranthus cheiri*), and zinnia (*Zinnia hybrida*)]; **plant type** (examples: milliflora or grandiflora petunias; trailing habit or upright habit); **height** [dwarf at ≤10 inches (25.4 cm) to tall at > 10 inches for snapdragon and dianthus; dwarf at ≤ 12" inches (30.5 cm) to tall at > 12" for salvia; **flower form** (double or single), and **flower color type** (solid and bicolor; bicolored classes, were represented as x/y, with x = primary color and y = secondary or less predominant color), and **color** (as described by the seed company, and organized into class by name or color chart).

Each class was analyzed as a separate experiment. A randomized complete block experimental design was used with three blocks each containing six plants that represented the experimental unit. All data were analyzed by analysis of variance (ANOVA) methods, and means of dependent variables significant at the 0.05 level of probability were separated using Duncan's multiple range test (PROC ANOVA, SAS Institute, Cary, NC).

## Results and Discussion

### *Antirrhinum majus* (snapdragon) class.

**A. majus – dwarf mix class.** ‘Palette Mix’ had a plant height of 15 cm (5.9 inches) and a plant width of 22 cm (8.7 inches). The first flower opened in 41 d, and flower divergence was 4.5 d. The average foliage rating was 4.6, and the average flower rating was 4.7. The overall rating was 4.6.

**A. majus – tall orange bicolor class.** ‘Solstice Orange Tricolor’ had a plant height of 36 cm (15.3 inches), and a plant width of 37 cm (14.6 inches). The first flower opened in 66 d, and flower divergence was 6.8 d. The average foliage rating was 3.9 and the average flower rating was 3.8. The overall rating was 3.8.

**A. majus – tall pink class.** ‘Solstice Pink’ had a plant height of 37 cm (14.6 inches), and plant width of 30 cm (11.8 inches). The first flower opened in 48 d, and flower divergence was 21.0 d. The average foliage rating was 4.2 and the average flower rating was 3.8. The overall rating was 4.0.

**A. majus – tall purple class.** ‘Solstice Purple’ had a plant height of 36 cm (14.2 inches) and a plant width of 31 cm (12.2 inches). The first flower opened in 45 d, and flower divergence was 12.5 d. The average foliage rating was 4.4 and the average flower rating was 4.1. The overall rating was 4.2.

### *Cheiranthus cheiri* (wallflower) class.

**C. cheiri – red class.** ‘Charity Scarlet’ had a plant height of 21 cm (8.3 inches) and a plant width of 14 cm (5.5 inches). Flower diameter was 2.0 cm (0.8 inches). The first flower opened in 53 d, and flower divergence was 13.0 d. The average foliage rating was 3.1 and the average flower rating was 2.7. The overall rating was 2.9.

**C. cheiri – rose class.** ‘Charity Rose Red’ had a plant height of 22 cm (8.7 inches) and a plant width of 17 cm (6.7 inches). Flower diameter was 2.5 cm (1.0 inches). The first flower opened in 70 d, and flower divergence was 10.0 d. The average foliage rating was 4.5 and the average flower rating was 4.5. The overall rating was 4.5.

**C. cheiri – yellow class.** Plant height ranged from 22 cm (7.1 inches) for ‘Charity Cream Yellow’ to 24 cm (9.4 inches) for ‘Charity Yellow’ and plant width ranged from 18 cm (7.1 inches) for ‘Charity Yellow’ to 19 cm (7.5 inches) for ‘Charity Cream Yellow’. Flower diameter ranged from 1.9 cm (0.7 inches) for ‘Charity Cream Yellow’ to 2.1 cm (0.8 inches) for ‘Charity Yellow’. The first flower opening ranged from 59 d for ‘Charity Yellow’ to 78 d for ‘Charity Cream Yellow’. Flower divergence ranged from 7.3 d for ‘Charity Cream Yellow’ to 21.0 d for ‘Charity Yellow’. The average foliage rating ranged from 4.2 for ‘Charity Yellow’ to 4.7 for ‘Charity Cream Yellow’. The average flower rating ranged from 3.5 for ‘Charity Yellow’ to 3.9 for ‘Charity Cream Yellow’. The overall rating ranged from 3.8 for ‘Charity Yellow’ to 4.3 for ‘Charity Cream Yellow’.

*Catheranthus roseus* (Madagascar periwinkle or rose periwinkle, vinca) **class.**

***C. roseus* – pink class.** ‘First Kiss Blush’ had a plant height of 18 cm (7.1 inches) and plant width of 33 cm (13 inches). Flower diameter was 3.7 cm (1.5 inches). The first flower opened in 49 d, and flower divergence spanned 10.5 d. The average foliage and flower ratings were both 5.8\*, and therefore, the overall rating was also 5.8\*<sup>4</sup>.

***C. roseus* – peach class.** All plants of ‘First Kiss Peach’ were dead before plant measurements were taken. ‘Victory Deep Apricot’ had a plant height of 22 cm (8.7 inches) and plant width of 30 cm (11.8 inches). Flower diameter was 5.3 cm (2.1 inches). The first flower opening ranged from 49 d for ‘Victory Deep Apricot’ to 59 d for ‘First Kiss Peach’, and flower divergence ranged from 8.0 d for ‘Victory Deep Apricot’ and 10.5 d for ‘First Kiss Peach’. The average foliage rating was 6.3\* for ‘Victory Deep Apricot’, and its average flower rating was 3.9\*, while one plot of ‘First Kiss Peach’ survived in the first rating period to earn a 5.0\* and a 4.5\* for foliage and flower, respectively. The overall ratings ranged from 4.5\* for ‘First Kiss Peach’ to 5.1 for ‘Victory Deep Apricot’.

***C. roseus* – purple class.** Plant height ranged from 21 cm (8.3 inches) for ‘Victory Grape’ to 23\* cm (9.1 inches) for ‘Dwarf Victory Purple’, and plant width ranged from 26 cm (10.2 inches) for ‘Dwarf Victory Purple’\* and ‘Victory Grape’ to 29 cm (11.4 inches) for ‘First Kiss Orchid’. Flower diameter ranged from 4.7 cm (1.9 inches) for ‘Dwarf Victory Purple’\* and ‘First Kiss Orchid’ to 4.9 cm (1.9 inches) for ‘Victory Grape’. The first flower opening ranged from 47 d for ‘Victory Grape’ to 53 d for ‘Dwarf Victory Purple’. Flower divergence ranged from 5.0 d for ‘Victory Grape’ to 12.5 d for ‘Dwarf Victory Purple’. The average foliage ratings ranged from 5.3 for ‘Dwarf Victory Purple’\* and ‘Victory Grape’ to 5.4 for ‘First Kiss Orchid’. The average flower ratings ranged from 4.3 for ‘Dwarf Victory Purple’\* and ‘First Kiss Orchid’ to 4.9 for ‘Victory Grape’. The overall ratings ranged from 4.9 for ‘Dwarf Victory Purple’\* and ‘First Kiss Orchid’ to 5.1 for ‘Victory Grape’.

***C. roseus* – red class.** Plant height ranged from 15 cm (5.9 inches) for ‘First Kiss Ruby’ to 22 cm (8.7 inches) for ‘Victory Cranberry’, and plant width ranged from 19 cm (7.5 inches) for ‘First Kiss Ruby’ to 31 cm (12.2 inches) for ‘Victory Cranberry’. Flower diameter ranged from 4.4 cm (1.7 inches) for ‘First Kiss Ruby’ to 5.5 cm (2.2 inches) for ‘Victory Cranberry’. The first flower opening ranged from 49 d for ‘Victory Cranberry’ and ‘Victory Red’ to 50 d for ‘First Kiss Ruby’. Flower divergence ranged from 4.5 d for ‘Victory Cranberry’ to 10.0 d for ‘First Kiss Ruby’. The average foliage ratings ranged from 4.3 for ‘First Kiss Ruby’ and ‘Victory Red’ to 6.4 for ‘Victory Cranberry’. The average flower rating ranged from 3.9 for ‘First Kiss Ruby’ to 5.8 for ‘Victory Cranberry’. The overall ratings ranged from 4.1 for ‘First Kiss Ruby’ to 6.1 for ‘Victory Cranberry’.

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<sup>4</sup> Those cultivars that have data values marked with an asterisk (\*) have only one plot that survived in the last two ratings, due to infestation with *Fusarium* crown rot; therefore, the overall rating is considered observational, and not confirmed by statistical analysis.

***C. roseus* – rose class.** ‘Dwarf Victory Carmen Rose’ had a plant height of 25\* cm (9.8 inches), and the plant width of 31\* cm (12.2 inches). Flower diameter was 5.0\* cm (2.0 inches). The first flower opening was 51 d, and flower divergence was 6.5 d. The average foliage rating was 5.6\*, and the average flower rating was 4.9\*. The overall rating was 5.2\*.

***C. roseus* – white class.** All plants of ‘Dwarf Victory Pure White’ were dead before plant measurements were taken. Plant height ranged from 17 cm (6.7 inches) for ‘First Kiss Polka Dot’, and the plant width was 23 cm (9.1 inches). Flower diameter was 4.2 cm (1.7 inches). The first flower opening ranged from 48 d for ‘First Kiss Polka Dot’ to 51 d for ‘Dwarf Victory Pure White’. Flower divergence ranged from 8.3 d for ‘Dwarf Victory Pure White’ to 9.0 d for ‘First Kiss Polka Dot’. The average foliage rating was 5.4 for ‘First Kiss Polka Dot’, and its average flower rating was 4.6, while ‘Dwarf Victory Pure White’ survived in the first rating period to earn a 4.0 rating for foliage and 4.3 for flower similar to ‘First Kiss Polka Dot’. The overall ratings ranged from 4.2 for ‘Dwarf Victory Pure White’ to 5.0 for ‘First Kiss Polka Dot’.

***Dianthus* spp. – interspecific hybrids<sup>5</sup> class.**

***Dianthus* – dwarf mix class.** ‘Diamond Mixed’ had a plant height of 21 cm (8.3 inches), and plant width of 31 cm (12.2 inches). Flower diameter was 3.2 cm (1.3 inches). The first flower opened in 48 d, and flower divergence was 19.8 d. The average foliage rating was 4.9, and the average flower rating was 5.1, yielding an overall rating of 5.0.

***Dianthus* – dwarf salmon class.** ‘Floral Lace Salmon’ had a plant height of 20 cm (7.9 inches), and plant width of 24 cm (9.4 inches). Flower diameter was 3.4 cm (1.3 inches). The first flower opened in 48 d, and flower divergence was 5.3 d. The average foliage rating was 4.8, and the average flower rating was 4.3. The overall rating was 4.6.

***Dianthus* – dwarf white class.** All plants of ‘Floral Lace White’ were dead before plant measurements or ratings were taken. The first flower opened in 48 d, and flower divergence spanned 7.0 d.

***Dianthus* – tall pink class.** Plant height ranged from 34 cm (13.4 inches) for ‘Melody Pink’ to 40 cm (15.7 inches) for ‘Melody Blush Pink’, and plant width ranged from 38 cm (15.0 inches) for ‘Melody Blush Pink’ to 39 cm (15.4 inches) for ‘Melody Pink’. Flower diameter was 2.7 cm (1.1 inches) for both cultivars. The first flower opening ranged from 62 d for ‘Melody Pink’ to 63 d for ‘Melody Blush Pink’. Flower divergence ranged from 14 d for ‘Melody Blush Pink’ to 17 d for ‘Melody Pink’. The average foliage rating ranged from 4.7 for ‘Melody Pink’ to 4.9 for ‘Melody Blush Pink’. The average flower rating ranged from 4.4 for ‘Melody Pink’ to 4.5 for ‘Melody Blush Pink’. The overall rating ranged from 4.5 for ‘Melody Pink’ to 4.7 for ‘Melody Blush Pink’.

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<sup>5</sup> *Dianthus hybrida* (*D. chinensis* x *D. barbatus*) and *D. interspecific*

***Dianthus* – tall purple class.** ‘Bouquet Purple’ had a plant height of 37 cm (14.6 inches), and plant width of 32 cm (12.6 inches). Flower diameter was 3.0 cm (1.2 inches). The first flower opened in 80 d, and flower divergence was 8.3 d. The average foliage rating was 4.7, and the average flower rating was 4.4. The overall rating was 4.6.

***Dianthus* – tall white class.** ‘Melody White’ had a plant height of 35 cm (13.8 inches), and plant width of 34 cm (13.4 inches). Flower diameter was 2.4 cm (0.9 inches). The first flower opened in 49 d, and flower divergence was 11.5 d. The average foliage rating was 5.3, and the average flower rating was 4.4. The overall rating was 4.6.

***Dianthus* – tall mix class.** ‘Garden Leader Frosted Mix’ had a plant height of 23 cm (9.1 inches), and plant width of 29 cm (11.4 inches). Flower diameter was 3.6 cm (1.4 inches). The first flower opened in 43 d, and flower divergence was 10.0 d. The average foliage rating was 4.6, and the average flower rating was 4.4. The overall rating was 4.5.

***Gazania rigens* (treasure flower) class.**

***G. rigens* – orange class.** ‘Talent Orange w/Ring’ had a plant height of 14 cm (5.5 inches), and plant width of 30 cm (11.8 inches). The first flower opened in 62 d, and flower divergence was 12.5 d. The average foliage rating was 4.2, and the average flower rating was 3.4. The overall rating was 3.8.

***Nicotiana alata* (flowering or jasmine tobacco) class**

***N. alata* – mix class.** ‘Havana Mixture’ had a plant height of 21 cm (8.3 inches), and plant width of 31 cm (12.2 inches). Flower diameter was 4.2 cm (1.7 inches). The foliage rating was 4.0, the flower rating was 4.8, and the overall rating was 4.4 for the first rating date.

***Phlox cuspidata* (pointed phlox) class.**

***P. cuspidata* – mix class.** ‘Crystal Mix’ had a plant height of 14 cm (5.5 inches), and plant width of 25 cm (9.8 inches). Flower diameter was 2.2 cm (0.87 inches). The first flower opened in 48 d, and flower divergence was 24 d. The average foliage rating was 5.8, and the average flower rating was 5.0. The overall rating was 5.4.

***Phlox drummondii* (annual phlox) class.**

***P. drummondii* – mix class.** ‘21st Century Mix’ had a plant height of 19 cm (7.5 inches), and plant width of 35 cm (13.8 inches). Flower diameter was 2.5 cm (1.0 inches). The first flower opened in 43 d, and flower divergence was 39 d. The average foliage rating was 5.8, and the average flower rating was 5.0. The overall rating was 5.4.

***Petunia x hybrida* (petunia; garden petunia) class.**

***P. x hybrida* – floribunda double rose/white class.** ‘Double Madness Rose & White Improved’ had a plant height of 35 cm (13.8 inches), and plant width of 56 cm (22.0 inches). Flower diameter was 6.2 cm (2.4 inches). The first flower opened in 47 d, and

flower divergence was 13 d. The average foliage rating was 3.6, and the average flower rating was 3.9. The overall rating was 3.7.

***P. x hybrida* – grandiflora single blue class.** ‘Eagle Blue’ had a plant height of 34 cm (13.4 inches), and plant width of 58 cm (22.8 inches). Flower diameter was 7.8 cm (3.1 inches). The first flower opened in 48 d, and flower divergence was 11 d. The average foliage rating was 3.9, and the average flower rating was 5.1. The overall rating was 4.5.

***P. x hybrida* – grandiflora single pink class.** ‘Eagle Pastel Pink’ had a plant height of 29 cm (11.4 inches), and plant width of 46 cm (18.1 inches). Flower diameter was 6.6 cm (2.6 inches). The first flower opened in 37 d, and flower divergence was 14 d. The average foliage rating was 4.8, and the average flower rating was 5.8. The overall rating was 5.3.

***P. x hybrida* – grandiflora single red class.** ‘Eagle Pastel Red’ had a plant height of 21 cm (8.3 inches), and plant width of 40 cm (15.7 inches). Flower diameter was 6.8 cm (2.7 inches). The first flower opened in 38 d, and flower divergence was 27 d. The average foliage, flower and overall ratings were all 4.3.

***P. x hybrida* – grandiflora single red/white class.** ‘Eagle Red Star’ had a plant height of 30 cm (11.8 inches), and plant width of 51 cm (20.1 inches). Flower diameter was 6.8 cm (2.7 inches). The first flower opened in 43 d, and flower divergence was 39 d. The average foliage rating was 5.4, and the average flower rating was 4.3. The overall rating was 4.9.

***P. x hybrida* – grandiflora single salmon class.** ‘Eagle Salmon’ had a plant height of 32 cm (12.6 inches), and plant width of 49 cm (19.2 inches). Flower diameter was 6.9 cm (2.7 inches). The first flower opened in 38 d, and flower divergence was 11.0 d. The average foliage rating was 3.6, and the average flower rating was 4.7. The overall rating was 4.1.

***P. x hybrida* – grandiflora single white class.** ‘Eagle White Improved’ had a plant height of 26 cm (10.2 inches), and plant width of 55 cm (21.7 inches). Flower diameter was 6.6 cm (2.6 inches). The first flower opened in 36 d, and flower divergence was 12.0 d. The average foliage rating was 5.6, and the average flower rating was 4.8. The overall rating was 5.2.

***P. x hybrida* – multiflora single pink class.** ‘Symphony Pink’ had a plant height of 37 cm (14.6 inches), and plant width of 60 cm (23.6 inches). Flower diameter was 6.0 cm (2.4 inches). The first flower opened in 36 d, and flower divergence was 7.0 d. The average foliage rating was 4.2, and the average flower rating was 6.2. The overall rating was 5.2.

***P. x hybrida* – multiflora single purple class.** ‘Symphony Violet’ had a plant height of 28 cm (11.0 inches), and plant width of 63 cm (24.8 inches). Flower diameter was 5.3 cm (2.1 inches). The first flower opened in 36 d, and flower divergence was 11.0 d. The average foliage rating was 2.8, and the average flower rating was 5.9. The overall rating was 4.3.

***P. x hybrida* – multiflora single red class.** ‘Symphony Scarlet’ had a plant height of 21 cm (8.3 inches), and plant width of 41 cm (16.1 inches). Flower diameter was 5.7 cm (5.2 inches). The first flower opened in 36 d, and flower divergence was 5.0 d. The average foliage rating was 4.2, and the average flower rating was 4.9. The overall rating was 4.6.

***P. x hybrida* – multiflora single rose class.** Plant height ranged from 30 cm (11.8 inches) for ‘Symphony Rose’ to 35 cm (13.8 inches) for ‘Symphony Deep Rose’, and the plant width ranged from 42 cm (16.5 inches) for ‘Symphony Rose’ to 52 cm (20.4 inches) for ‘Symphony Deep Rose’. Flower diameter ranged from 5.5 cm (2.2 inches) for ‘’ to 5.7 cm (2.2 inches) for ‘Symphony Rose’. The first flower opening ranged from 36 d for ‘Symphony Deep Rose’ to 38 d for ‘Symphony Rose’. Flower divergence ranged from 5.0 d for ‘Symphony Rose’ to 8.0 d for ‘Symphony Deep Rose’. The average foliage rating ranged from 5.4 for ‘Symphony Rose’ to 5.6 for ‘Symphony Deep Rose’. The average flower rating ranged from 5.9 for ‘Symphony Rose’ to 6.2 for ‘Symphony Deep Rose’. The overall rating ranged from 5.6 for ‘Symphony Rose’ to 5.9 for ‘Symphony Deep Rose’.

***P. x hybrida* – multiflora single white class.** ‘Symphony White’ had a plant height of 38 cm (15.0 inches), and plant width of 62 cm (24.4 inches). Flower diameter was 6.7 cm (2.6 inches). The first flower opened in 37 d, and flower divergence was 6.0 d. The average foliage rating was 5.0, and the average flower rating was 6.0. The overall rating was 5.5.

***P. x hybrida* – milliflora single mix.** ‘Fantasy Ball Mix’ had a plant height of 19 cm (7.5 inches), and plant width of 33 cm (13.0 inches). Flower diameter was 3.7 cm (1.5 inches). The first flower opened in 35 d, and flower divergence was 8.0 d. The average foliage rating was 4.9, and the average flower rating was 5.1. The overall rating was 5.0.

***P. x hybrida* – spreading single pink.** ‘Tidal Wave Hot Pink’ had a plant height of 50 cm (19.7 inches), and plant width of 100 cm (39.4 inches). Flower diameter was 5.0 cm (2.0 inches). The first flower opened in 40 d, and flower divergence was 14 d. The average foliage rating was 6.2, and the average flower rating was 6.0. The overall rating was 6.1.

***P. x hybrida* – spreading single red.** ‘Tidal Wave Cherry’ had a plant height of 50 cm (19.7 inches), and plant width of 96 cm (37.8 inches). Flower diameter was 5.2 cm (2.0 inches). The first flower opened in 44 d, and flower divergence was 6.0 d. The average foliage rating was 6.7, and the average flower rating was 6.4. The overall rating was 6.6.

***Salvia splendens* (scarlet sage; annual salvia) class.**

***S. splendens* – dwarf orange bicolor.** ‘Empire Orange’ had a plant height of 24 cm (9.4 inches), and plant width of 30 cm (11.8 inches). The first flower opened in 52 d, and flower divergence was 13.0 d. The average foliage rating was 5.6, and the average flower rating was 4.9. The overall rating was 5.3.

***S. splendens* – tall rose class.** ‘Garden Leader Rose’ had a plant height of 31 cm (12.2 inches), and plant width of 36 cm (14.2 inches). The first flower opened in 49 d, and flower divergence was 23.8 d. The average foliage rating was 5.6, and the average flower rating was 4.9. The overall rating was 5.3.

***Tagetes tenuifolia* (signet marigold) class.**

***T. tenuifolia* – yellow class.** ‘Luna Lemon Yellow’ had a plant height of 22 cm (8.7 inches), and plant width of 33 cm (13.0 inches). Flower diameter was 2.1 cm (0.8 inches). The first flower opened in 56 d, and flower divergence was 7.0 d. The average foliage rating was 4.3, and the average flower rating was 6.3. The overall rating was 5.4.

***Zinnia hybrida* (garden zinnia) class.**

***Z. hybrida* – orange class.** ‘Profusion Orange’ had a plant height of 17 cm (6.7 inches), and plant width of 26 cm (10.2 inches). Flower diameter was 5.0 cm (2.0 inches). The first flower opened in 47 d, and flower divergence was 4.3 d. The average foliage rating was 4.6, and the average flower rating was 5.6. The overall rating was 5.1.

***Z. hybrida* – red class.** ‘Profusion Cherry’ had a plant height of 19 cm (7.5 inches), and plant width of 32 cm (12.6 inches). Flower diameter was 5.1 cm (2.0 inches). The first flower opened in 47 d, and flower divergence was 4.5 d. The average foliage rating was 4.8, and the average flower rating was 5.2. The overall rating was 5.0.

***Z. hybrida* – white class.** ‘Profusion White’ had a plant height of 20 cm (7.9 inches), and plant width of 28 cm (11.0 inches). Flower diameter was 5.1 cm (2.0 inches). The first flower opened in 47 d, and flower divergence was 5.0 d. The average foliage rating was 5.4, and the average flower rating was 5.9. The overall rating was 5.6.

**Conclusions.**

While early or late season performance, a particular plant height, or shade of the same color may be a selection criteria outweighing seasonal performance, the combined foliage and flower ratings represent an overall view of performance for each cultivar in its class over the entire season. We consider cultivars with a combined rating average  $\geq 5.0$  as outstanding, 4.0 to 4.9 as good performers, and  $\leq 3.9$  as fair to poor. Outstanding performers and their statistically significant attributes were: [**Vinca**] ‘**First Kiss Blush**’ (*C. roseus* – pink class), the only member of this class; ‘**Victory Deep Apricot**’ (*C. roseus* – peach class), with fewer days to first open flower than ‘First Kiss Peach’; ‘**Victory Grape**’ (*C. roseus* – purple class), with fewer days to first open flower and shorter flower divergence than ‘Dwarf Victory Purple’; ‘**Victory Cranberry**’ (*C. roseus* – red class), with shorter flower divergence than ‘First Kiss Ruby’, taller plants than ‘First Kiss Ruby’, and superior overall ratings over both cultivars; ‘**Dwarf Victory Carmen Rose**’ (*C. roseus* – rose class); ‘**First Kiss Polka Dot**’ (*C. roseus* – white class), with shorter days to first open flower than ‘Dwarf Victory Pure White’; [**Dianthus**] ‘**Diamond Mixed**’ (*Dianthus* – dwarf mix class); [**Phlox**] ‘**Crystal Mix**’ (*P. cuspidata* – mix class); [**Petunia**] ‘**Eagle White Improved**’ (*Petunia* x *hybrida* – grandiflora single

white class), **‘Symphony Pink’** (*P. x hybrida* – multiflora single pink class), **‘Symphony Rose’** and **‘Symphony Deep Rose’** (*P. x hybrida* – multiflora single rose class), **‘Symphony White’** (*P. x hybrida* – multiflora single white class), **‘Fantasy Ball Mix’** (*P. x hybrida* – milliflora single mix), **‘Tidal Wave Hot Pink’** (*P. x hybrida* – spreading single pink) and **‘Tidal Wave Cherry’** (*P. x hybrida* – spreading single red), **‘Empire Orange’** (*S. splendens* dwarf orange bicolor), **‘Garden Leader Rose’** (*S. splendens* tall rose class), **‘Luna Lemon Yellow’** (*Tagetes. tenuifolia* – yellow class), **‘Profusion Orange’** (*Z. hybrida* – orange class), **‘Profusion Cherry’** (*Z. hybrida* – red class), and **‘Profusion White’** (*Z. hybrida* – white class).

Most of the outstanding performers in this test were trialed alone in their class, and have no comparison. They were trialed at the request of the seed company. Future trials will be conducted on larger numbers of cultivars at our request in these and other classes not already trialed to determine best of class. After those trials are completed, if there are any remaining classes that are represented by only one cultivar, that cultivar will be chosen as the uncontested best of class. Cultivars will remain best of class until a new cultivar entered in the class outperforms them. This method of trialing is designed to limit the number of entries, and allow us to focus our efforts on the new and better cultivars entered by each company. It is also designed to provide Florida growers, landscapers and consumers with the best choices for each class.

### Note

The information in this report is a summary of experimental results and does not provide recommendations for crop production. Where trade names are used, no discrimination is intended or endorsement implied.

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