

OSU Learning Gardens:

Mixed Container

And

Cultivar Trial

By Monica Kmetz-González,
Claudio Pasian and
Peter Konjoian

Last year was the second time we conducted container trials at The Ohio State University, Columbus, Ohio, campus. The main focus of the trial was to evaluate combinations and compare cultivars grown in combination plantings versus the same cultivars grown in “monoculture” containers.

When mixed containers leave the greenhouse or garden center they look, for the most part, gorgeous. The question is: What happens after they are in the hands of the consumer? How long do they last in “good condition?”

Combination recipes were provided by two of the three companies who sent us plant material: Bodger Botanicals and Ecke Ranch/Flower Fields. Fischer USA sent us geraniums to be used in the combinations. We also designed “OSU Custom Combinations,” which utilized plant material from all participating companies. Individual cultivar components were grown in monoculture containers as well.

Trial Information

Transplanting. Plugs were transplanted May 18-June 2, 2004, into pots containing MetroMix 360 with coconut coir (The Scotts Co.). Just prior to transplanting, plugs were treated with a preventative drench of Plantshield (Bioworks). For monoculture (single cultivar) pots 12-inch-diameter containers were used; for combination plantings 16-inch-diameter containers were used. Two containers per species/cultivar were trialed for monoculture pots, and three containers per combination planting were trialed. Containers were placed in full sun in a secured gravel area just west of the departmental greenhouses at The Ohio State University’s Columbus campus.

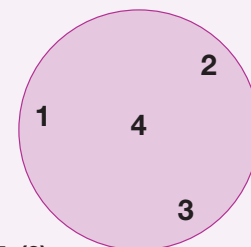
Cultural Practices. Containers were watered as needed via a drip irrigation system. Fertilizer at 200 ppm nitrogen from 20-10-20 (Scotts water-soluble fertilizer) was applied via a Dosatron injector. Applications began immediately after transplant and continued at 1-week intervals for the first six weeks. Fertilization was then reduced to 2-week intervals for the remainder of the trial period. Geraniums were fertilized with a 17-5-17 (Greencare water-soluble fertilizer) at a rate of 300 ppm nitrogen once a month.



Bodger Botanicals

Consumer preference:
3.9, 3.7, 3.2

Balance/dominance:
4.7, 4.0, 3.0



Individual Plant Evaluations

Petunia ‘Trumpet Burgundy’: 4.2, 3.3, 2.7 (1)

Petunia ‘Tiny Tunia White’: 3.0, 2.5, 1.7 (2)

Verbena ‘Rainbow Carpet Lavender’: 3.7, 3.5, 1.7 (3)

Begonia ‘Gum Drop White’: 4.5, 3.7, 2.2 (4)

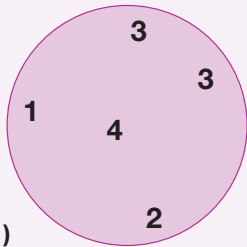
Mixed containers were evaluated on July 27, August 17 and September 28 by volunteer Master Gardeners, and a rating between 1 (poor) and 5 (excellent) was assigned for both plants and combinations. The numbers in each figure represent the average from each evaluation.



Bodger Botanicals

Consumer preference:
3.3, 3.3, 3.2

Balance/dominance:
3.7, 4.0, 2.5



Individual Plant Evaluations

Calibrachoa 'Spring Fling Salmon': 3.0, 4.0, 2.0 (1)

Petunia 'Tiny Tunia White': 4.7, 4.0, 2.0 (2)

Diascia 'Miracle Red': 4.0, 5.0, 3.7 (3)

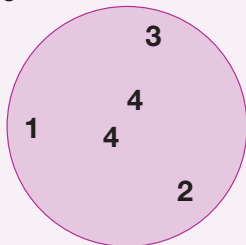
Begonia 'Gum Drop Mandarin': 3.5, 3.7, 2.7 (4)



Bodger Botanicals

Consumer preference:
3.7, 3.2, 2.9

Balance/dominance:
2.7, 2.7, 2.5



Individual Plant Evaluations

Ipomeea 'Sweet Caroline Bronze': 5.0, 4.7, 3.7 (1)

Lantana 'Morning Glow Vanilla': 3.5, 2.7, 2.7 (2)

Lantana 'Morning Glow Orange/Yellow': 3.2, 2.7, 2.5 (3)

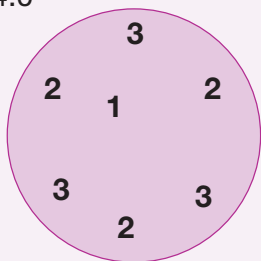
Leucanthemum 'Angel Daisy White': 4.0, 2.0, 1.75 (4)



Ecke Ranch-Flower Fields

Consumer preference:
4.6, 4.3, 4.0

Balance/dominance:
5.0, 4.7, 4.0



Individual Plant Evaluations

Argyranthemum 'Sunlight': 4.5, 3.7, 4.0 (1)

Scaevola 'Fan Dancer': 4.7, 4.7, 4.0 (2)

Portulaca 'Summer Joy Primrose': 4.7, 4.0, 4.0 (3)

Mixed containers were evaluated on July 27, August 17 and September 28 by volunteer Master Gardeners, and a rating between 1 (poor) and 5 (excellent) was assigned for both plants and combinations. The numbers in each figure represent the average from each evaluation.

Weather Conditions. The first weeks of the growing season were wet with lower-than-normal temperatures, so plants were slow to start. Intermittent periods of high heat and humidity kicked the plants into gear. Overall, it was a season of lower-than-normal temperatures and above-average rainfall.

Pest and Disease Problems. There were no pest outbreaks of note during the trial period. We did, however, notice some powdery mildew, mainly on the verbenas, and there was a noticeable iron deficiency on some of the calibrachos.

Evaluation Dates. The trial ended with the consumer preference evaluations described on page 94. Evaluations were performed on July 27, August 17 and September 28, and results are presented throughout this article along with a photo of the combination. For the evaluations, overall appearance and aesthetics of the containers were rated on a personal preference basis. ▶



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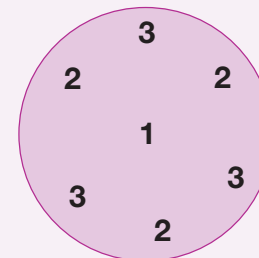
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Ecke Ranch-Flower Fields

Consumer preference: 3.4, 4.0, 4.3
Balance/dominance: 4.0, 4.0, 3.2



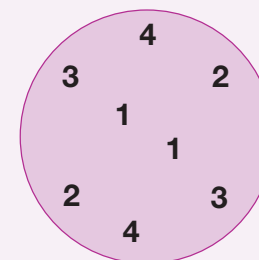
Individual Plant Evaluations

Thunbergia 'Smoothie Raspberry': 2.0, 2.2, 2.0 (1)
Verbena 'Lanai Lavender Star': 4.5, 4.0, 3.7 (2)
Lavender 'Serenity': 3.5, 3.7, 3.5 (3)



Ecke Ranch-Flower Fields

Consumer preference: 4.5, 4.2, 3.7
Balance/dominance: 4.7, 4.2, 3.7



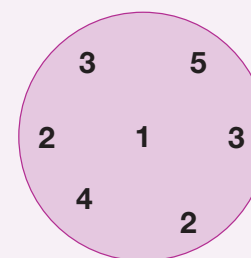
Individual Plant Evaluations

Angelonia 'Carita White': 3.7, 2.7, 2.2 (1)
Scaevola 'White Fan': 4.7, 4.0, 3.0 (2)
Lavender 'Serenity': 1.0, 3.0, 2.5 (3)
Coleus 'Trailing Plum': 4.7, 4.2, 3.7 (4)



Ohio State University

Consumer preference: 4.8, 4.3, 3.8
Balance/dominance: 5.0, 3.7, 3.0



Individual Plant Evaluations

Angelonia 'Carita White': 3.0, 2.7, 1.5 (1)
Verbena 'Lanai Lavender Star': 3.5, 3.2, 1.3 (2)
Tradescantia pallida: 3.4, 3.2, 2.7 (3)
Helichrysum licorice plant: 4.0, 3.5, 4.0 (4)
Hierenbergia 'Summer Splash Patio Blue': 4.0, 3.0, 2.5 (5)

Mixed containers were evaluated on July 27, August 17 and September 28 by volunteer Master Gardeners, and a rating between 1 (poor) and 5 (excellent) was assigned for both plants and combinations. The numbers in each figure represent the average from each evaluation.

Results

Containers (both combination plantings and individual plants within each combination) were evaluated on a monthly basis in July, August and September by the trial leader and trial coordinator. Consumer preference evaluations were also conducted monthly by a 7-member team of Master Gardener volunteers.

During evaluations, a rating was given to each combination and each plant within the combination. Ratings were based on a 1-5 scale: 1=poor/not acceptable, 2=fair, 3=good, 4=very good and 5=excellent.

In addition to the consumer preference evaluations, mixed containers were

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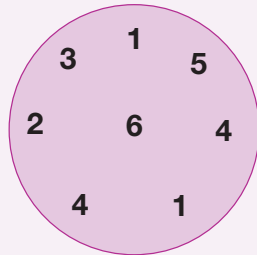
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Ohio State University

Consumer preference: 3.8, 4.0, 3.5
Balance/dominance: 4.2, 2.0, 2.7



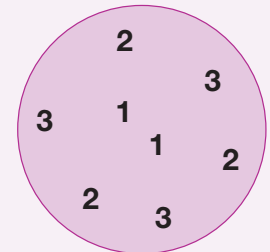
Individual Plant Evaluations

- Petunia 'Tiny Tunia Blue': 3.0, 2.7, 1.5 (1)
- Petunia 'Tiny Tunia Lilac': 3.5, 3.2, 1.3 (2)
- Vinca 'First Kiss Blush Pink': 3.4, 3.2, 2.7 (3)
- Geranium 'Dolce Vita 2004': 4.0, 3.5, 4.0 (4)
- Geranium 'Flair': 4.0, 3.0, 2.5 (5)
- Pennisetum purple fountain grass (6)



Ohio State University

Consumer preference: 4.3, 3.3, 3.1
Balance/dominance: 4.0, 2.7, 2.5



Individual Plant Evaluations

- Agastache 'Acapulco Orange': 3.7, 2.7, 2.5 (1)
- Coleus 'Trailing Plum': 4.0, 5.0, 4.0 (2)
- Bacopa 'Penny Candy Salmon': 4.0, 3.0, 1.2 (3)

Mixed containers were evaluated on July 27, August 17 and September 28 by volunteer Master Gardeners, and a rating between 1 (poor) and 5 (excellent) was assigned for both plants and combinations. The numbers in each figure represent the average from each evaluation.

also rated using a "balance/dominance" criterion. This parameter describes the dominance of a particular component of the mix. In other words, we asked ourselves the following question: Is one (or more) species "taking over" the combination? This characteristic is not related to aesthetics of the mixed container because an unbalanced combination can be just as visually pleasing as a balanced one.

In this article we present only the top three combinations from the two companies submitting "recipes" plus the three best OSU custom combina-

tions. Results for all of the combinations we trialed can be viewed at: <http://floriculture.osu.edu/archive/dec04/mixedcontainersconsumers.html>.

From our observations, it is clear that, for the most part, the ratings of both the combinations and the individual plants within the combinations decline as the season progresses. One difference in the performance of the recipes is the rate of decline; some plants decline faster than others and create a combination that declines faster.

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Top left: scaevola 'Fan Dancer'. Top right: lavender 'Serenity'. Bottom: pentas 'Bismarck Pink'

and science of designing mixed containers is to think beyond the appearance of the combinations while they are being created. Think also about how they will perform when in the hands of the consumers. We want our customers to come back!

Top Monoculture Containers

In addition to the mixed containers, we also evaluated monoculture containers that had been planted at the same time as the mixed containers. The best performing monocultures, with an overall season average in the range of 4.8-4.0 (on the 5-point scale described on page 94), were: scaevola 'Fan Dancer', lavender 'Serenity', pentas 'Bismarck Pink' and 'Lava Pink', ipomoea 'Sweet Caroline Bronze', lantana 'Morning Glow Vanilla' and scaevola 'White Fan'.

Also performing very well, with ratings in the 3.9-3.8 range, were: petunia 'Trumpet Burgundy', lantana 'Morning Glow Pink/Yellow', diascia 'Miracle Red', angelonia 'Carita White', pentas 'Lava Cerise', coleus 'Trailing Plum' and ivy geranium 'Holiday Purple'.

The best performers among the geraniums, with ratings in the 3.5-3.8 range, were: 'Holiday Purple', 'Graffiti Salmon Rose' and 'Rocky Mountain Dark Red'.

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