OSU Learning Gardens: Mixed Containers Cultivar Trial

With the popularity of mixed containers growing, The Ohio State University conducted container trials for the third year.

By Annette Duetz, Claudio Pasian and Peter Konjoian

Acknowledgements

The authors would like to acknowledge these companies for participating in the trial.

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The popularity of mixed containers continues to grow. Both wholesale and retail growers are producing a variety of designs and container sizes to satisfy consumer demand. As a result, mixed containers are described as refreshing profit centers for most operations. For the third year, we conducted container trials at The Ohio State University (OSU), Columbus Campus. Our objective is to evaluate the long-term performance of the mixed containers. They all look great when they leave the greenhouse or garden center, but how do they look two or three months after they have been in the hands of a consumer?

We evaluated mixed combinations and monocultures (single cultivars per pot). Combination designs were provided by the participating companies (see sidebar, below left). 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 geraniums to be used in the combinations. We also designed "OSU Custom Comb-inations," which utilized plant material from all participating companies. Individual cultivar components were grown in the monoculture containers as well.

The trial leader and trial manager evaluated plants on a monthly basis in July, August and September 2005. Consumer preference evaluations were also conducted monthly by our 16-member team of Master Gardeners.

Trial Details

Transplanting was done May 26 through June 3, 2005, in 12-inch plastic containers for monocultures or 16-inch plastic containers for combination plantings using MetroMix 360 with coconut coir as a substrate. Pots were located outdoors in full sun. A preventative drench of PlantShield (*Trichoderma harzanium*) was applied to plants before transplanting. There were two replications for the monocultures and three replications for most combination plantings.

Plants were watered using an irrigation system on a timer. The length of irrigation time was adjusted as needed. Containers were fertilized two weeks after transplanting and then at 1-week intervals for the first three weeks with a 20-10-20 water-soluble fertilizer at a rate of 200-ppm nitrogen. Fertilization was then reduced to once-a-month intervals for the remainder of the trial period.

Evaluations

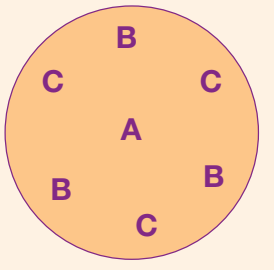
Two types of evaluation were conducted.

OSU evaluation. The trial leader and trial manager evaluated for balance and dominance and performance of each individual species/cultivar in the combination. These evaluations were performed on July 7, July 28 and Sept. 7, 2005.

Consumer preference evaluation. Our group of Master Gardener volunteers performed the evaluations on Aug. 9 and Sept. 8, 2005. Overall appearance and aesthetics of the containers were rated on a personal preference basis.

Ecke Ranch/ Flower Fields

Consumer preference: 4.2, 3.75
Balance/dominance: 3.75, 3.25, 3



Individual Plant Evaluations

Coleus 'Emerald and Snow': 3.75, 4.25, 4 **(A)**
Plectranthus 'Multi-Verde': 4.25, 4, 4.5 **(B)**
Sanvitalia 'Solaris': 4.75, 4, 3 **(C)**

Plants were evaluated on a monthly basis in July, August and September 2005 by the trial leader and trial manager. Consumer preference evaluations were also conducted monthly by our 16-member team of Master Gardeners. The ratings were based on a 1-5 scale: 1= poor/not acceptable; 2 = fair; 3 = good; 4 = very good; and 5 = excellent.

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For the mixed containers only, we used an index called "balance/dominance" of the combination. This index is a descriptor of the dominance of a particular component of the mix. In other words, is there one or more species "taking over" the mix? This index is not related to aesthetics; a very balanced combination may not look appealing and vice versa. This index was also measured on a 1-5 scale.

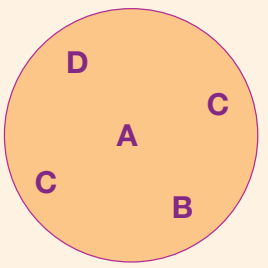
Results

In this article, we present only a sampling of the top combinations from the companies submitting "recipes" plus the OSU custom combinations. Results for all other combinations can be seen at our Web site, http://floriculture.osu.edu/archive/feb06/MixedContainerTrial05.html.

Like we have noticed in previous years, it was clear in 2005 that, for the ➧

Ohio State University Volunteers

Consumer preference: 4.65, 4.56
Balance/dominance: 3.5, 3.5, 3.75

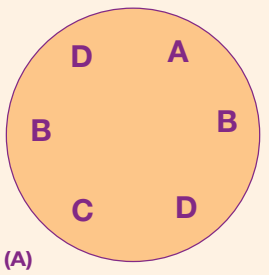


Individual Plant Evaluations

Angelonia: 4, 5, 4 **(A)**
Heliotrope: 3, 1.25, 1 **(B)**
Scaevola 'Fundance Purple': 4.5, 5, 5 **(C)**
Abutilon thompsonii 'Yellow': 3.75, 3.5, 3.75 **(D)**

Bodger Botanicals

Consumer preference: 3, 3.19
Balance/dominance: 4.25, 4, 3



Individual Plant Evaluations

Lantana 'Morning Glow Pink/Yellow': 3.75, 3.5, 2.75 **(A)**
Leucanthemum 'Angel Daisy White': 3.25, 3.25, 1.25 **(B)**
Petunia 'Tiny Tunia Rose': 4.75, 5, 4 **(C)**
Bacopa 'Nano White': 4.25, 3.75, 3.75 **(D)**

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most part, the ratings of combinations and individual plants in the combinations decrease as the season progresses. For the most part, the difference among recipes is the rate of decline.

It is extremely important for growers designing combinations to think what will happen "down the road" with their mixed containers. Some plants look really great when they are removed from their 4-inch containers and combined together, but if one plant is very vigorous and the other is not, most likely the customer will end up with what we call a monoculture, a container with basically one species.

Some plants look really great when they are in the greenhouse, but when subject to the customer's "real world," they do not perform ➧

Best Performers

The best-performing monocultures with an overall season average in the range of 4-4.8 (on a 5 point scale) were:

Agastache 'Acapulco Orange'
Angelonia 'Carita Purpla'
Argyranthemum 'Metro White'
Argyranthemum 'Sunlight'
Carex testacea
Cineraria serecio 'Silver Feather'
Coleus 'Big Blond'
Coleus 'Kiwi Herman'
Coleus 'Midnight Train'
Coleus 'Show & Tell'
Coleus 'Stained Glasswork Emerald & Snow'
Helicrysum 'Silver Spike'
Ipomea 'Sweet Caroline Bronze'
Ipomea 'Sweet Caroline Red'
Petunia 'Blanket Purple'
Petunia 'Trumpet White'
Petunia 'Tiny Tunia Double Blue Ice'
Petunia 'Tiny Tunia Rose'
Portulaca 'Yubi Summer Joy Deep Yellow'
Sanvitalia 'Solaris'
Scaevola 'Fancy'

The best performers among the geraniums were:

'Caliente Coral'
'Caliente Rose'
'Rocky Mountain Deep Rose'
'Schoene Helene 06'

Angelonia 'Carita Purple' Possum Run Greenhouses
Consumer preference: 5, 5, 4.25

Argyranthemum 'Sunlight' Ecke Ranch/ Flower Fields
Consumer preference: 4.5, 4.25, 4

***Carex testacea* Baker's Acres**
Consumer preference: 4.5, 5, 4.75

Coleus 'Big Blonde' Bodger Botanicals
Consumer preference: 4.75, 5, 4

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well or even die. Some mixed container designers may choose a plant knowing that it will only perform during certain periods and then decline. In this case, customers should be informed so they are not disappointed.

Some growers use the "grow and plant" method to create their containers: They grow individual plants in 4-inch containers and then transplant them into a large container to create the combination. Other growers prefer the "plant and grow" alternative: This involves planting rooted cuttings and/or liners in a large container to create the combination. Another alternative would be a mix of both methods, which entails planting rooted cuttings of vigorous plants and installing plants pre-grown in 4-inch containers for less vigorous ones works well. Based on some of our observations, the third method is probably the best (see Figure 1, above), although it requires more planning and work. GPN

Mixing Methods

Figure 1. Planting rooted cuttings of vigorous plants and installing plants pre-grown in 4-inch containers for less vigorous ones works well. All plants in these two mixed containers were planted on the same day as rooted cuttings or liners with the exception of the pennisetum plant in the lower image that was planted as a 4-inch container plant.

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