

## OSU Cultivar Trials: 2015 Season Summary

By William Barnhill, Dr. Claudio Pasian, and Dr. Tim Rhodus

The 2015 summer trial was very successful, and showcased 543 plant entries representing 23 different commercial brands. Five different trial categories were offered, including field (or in-ground), field perennial, baskets, container, and shade-container categories. The field category remained the most popular, representing 42% of all trial entries. The baskets, container and shade categories represented 18%, 32%, and 8% of all trial entries, respectively.

A highlight to the trial season each year is the *Cultivate* Garden Reception. (*Cultivate Trade Show and Short Course*, sponsored by AmericanHort, and was formerly known as *OFA Short Course*.) This event takes place in July, during the *Cultivate Trade Show* when the trial plants are showcased to hundreds of industry professionals visiting from around the world. Another annual event in which the trials are the center of attention is the Ohio Industry Open House, which takes place in late July. Traditionally, this event is attended by local growers, but was expanded in 2012 to include landscape contractors. The trial plants are also promoted during the Chadwick Arboretum Open House, attended by hundreds of visitors, as well as through press releases, articles in trade publications, and presentations to interested groups.

### Trial Plants

Seeded entries were received in February and sown by Darby Creek Growers in Orient, Ohio and scheduled to finish on week 14 using 288- and 105-plug trays. Rooted cuttings were received between weeks 12 and 14. All young plants were transplanted into 4" diameter plastic pots, between week 14 and 16. Plants were grown in the greenhouse of the department of Horticulture and Crop Science at The Ohio State University. Young plants received a constant feed of a 17-5-17 fertilizer at a rate of 100 ppm N. Temperature set points were: 65 °F night and 72 °F day. All plants received fungicides Pageant (*Pyraclostrobin*) and Subdue MAXX (*Mefenoxam*) on week 18 and week 23.

*Field Trial Plantings.* Planting of cool-tolerant crops took place on week 19. All other field plants were planted between weeks 20 and 23. Nine plants per cultivar were planted with appropriate space for growth. Plants were watered as needed until establishment, and then provided with minimum 1" irrigation per week (if no rain occurred). Plants were fertilized every other week with a 20-10-20 or a 17-5-17 fertilizer at a rate of 200 ppm N. Beds were hand-weeded as needed and plants were pruned only to keep them within their boundaries. Geraniums, dahlias, marigolds, and gerberas were "deadheaded" (removal of dead flowers) once a week.

An infestation of two-spotted spider mites occurred on dahlias in early summer. The mites were controlled by spraying Tetrasan (*Etoxazole*). Ten days later, beneficial mites *Phytoseiulus persimilis* were released and kept the pest under control. A cutworm infestation (Tobacco budworm, *Heliothis virescens*)

became a struggle in early September consuming a majority of the petunia flowers. Preventively next year we will spray BT weekly on all petunias and geraniums starting in July.

*Basket trial plantings:* Planting took place between May 6 and June 3 (weeks 19-23) into 14" plastic baskets, with three plants per basket.

*Container trial plantings:* Planting took place between May 13 and May 27 (weeks 20-22) into 12" plastic pots, with two plants per container.

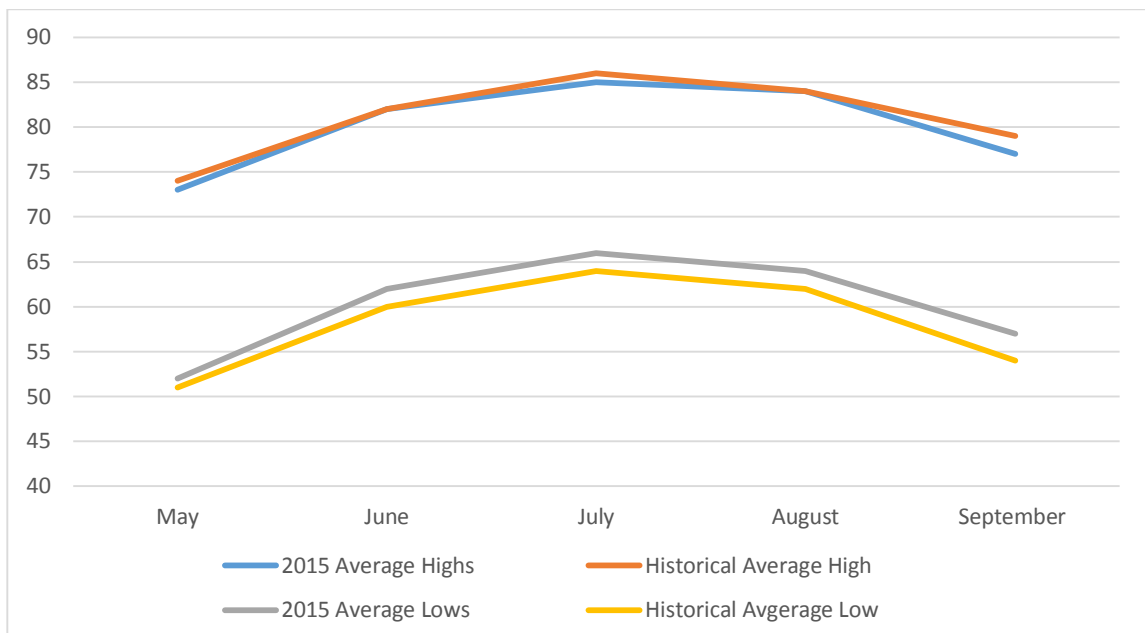
*Shade trial plantings:* Planting took place on May 27 (week 22) into 12" plastic pots, with two plants per container.

*Cultural practices for container plants (containers in the sun, containers in the shade, and basket containers):* Plants were grown in MetroMix 380 Mix with the exception of *Calibrachoa* and *Begonia*, which were grown in Sunshine #1/LC1 Mix. Plants were hand-watered until establishment, and then placed on automatic drip irrigation. Osmocote Plus 15-9-12 was incorporated at the time of planting. A combination of 1 tablespoon of 5-6 month and 2 tablespoons of 8-9 month longevity formulations were used in each container. Plants received a supplemental feeding with either a 20-10-20, or a 17-5-17, or a 21-7-7 water soluble fertilizer at a rate of 200 ppm N starting on week 24 depending upon crop type.

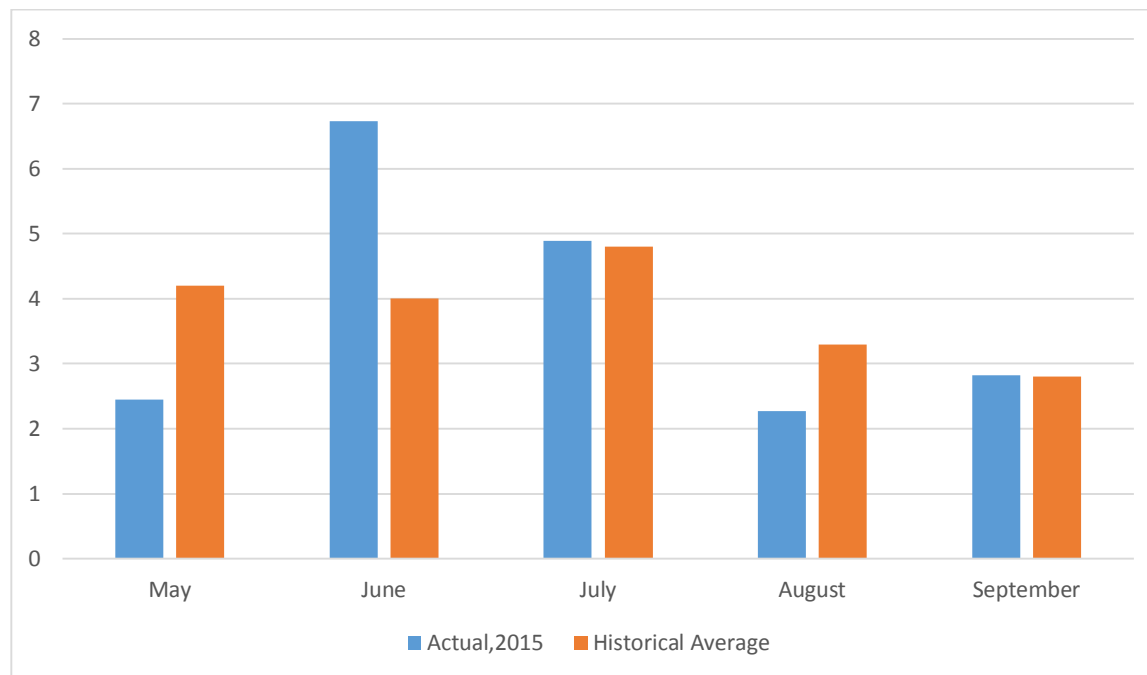
## Weather

This year, cool weather and frequent rains slowed the start of the season. From May 15<sup>th</sup> to June 30<sup>th</sup>, we only had 16 days with no measurable rain. Rainfall amounts were well above normal for June. No supplemental irrigation was used during this period.

## Monthly Averages: High & Low Temperatures (in Fahrenheit)



## Monthly Averages: Precipitation (in inches)



## Evaluations

All plants in the trial were evaluated four times throughout the summer. Evaluations took place at weeks 27, 31, 35, and 39. During each of the four evaluation periods, two different types of evaluations were conducted: the *Grower Performance Evaluation* and the *Consumer Preference Evaluation*. In each type of evaluation, the same rating system was utilized, consisting of a scale from 1 through 5, in which 1 is the lowest (or least desirable) score, and 5 is the highest (or most desirable) score.

*Grower Performance Evaluation:* The objective of this evaluation was to assess the performance of each cultivar regardless of the preferences by the evaluators (the Trials Director and the Trials Manager). Each entry received a rating in four different categories: 'flower quantity', 'flower quality', 'vegetative growth/vigor', and an 'overall' score. In lieu of a 1 – 5 rating, sometimes "n/a" (not applicable) was indicated. For example, a foliage crop such as a caladium would have been assigned an "n/a" in the flower quantity and flower quality categories.

*Consumer Preference Evaluation:* The objective of this evaluation was to assess the personal preference of each cultivar by consumers in the central Ohio area. Our pool of evaluators consisted of Chadwick Arboretum volunteers and staff, Franklin County Master Gardeners, and some graduate and undergraduate students. During each of the four evaluation periods, between 27 and 38 evaluators participated. Evaluators were instructed to give each entry a score of 1 through 5 to indicate their preference for the cultivar (a rating of 1 indicated they did not like the plant at all, while 5 indicated they

liked the plant a lot). Responses were averaged for each evaluation period. To view these results plus some photos, visit the Digital Evaluator website: <http://hvp.osu.edu/trials/index.html>.

### **Thank you**

Thank you to all who participated in the 2015 trials. We are very glad to have completed another successful season, full of strong performers, unusual crops, and all-around beautiful plants. Thank you to our donors who helped to make the trials possible. Thank you to our dedicated and hard-working volunteers, without whom we could not do this. Special thanks to Jim Vent (Greenhouse Manager) and Annie Fulton (Student Assistant) for their outstanding efforts.

### **Trial Garden Highlight**

Continue and update the digital evaluation app developed by Dr. Tim Rhodus, Professor at OSU Horticulture and Crop Science Department, to match the needs of our trial program. This app was utilized by both the trial director and trial manager in the Performance Evaluation, as well as the Consumer Preference Evaluation volunteers. The app increases efficiency in completing the evaluation, and increases accuracy as there is no need to manually enter data. The data is first examined for completeness and then uploaded to the cultivar trials website. In addition to driving the iOS app for evaluators, the 2015 database file was also used to design and print all plant labels used in the cultivar trials. The visual design of the labels was generated on each iOS device used by each evaluator, thus offering a visual confirmation as to which plant was being evaluated. The app database was also transferred to the cultivar trials web server in order to facilitate serving the evaluation results for the website and allowing visitors to create custom searches of the results. To learn more about this evaluation app, please go to: [hvp.osu.edu/trials](http://hvp.osu.edu/trials).

### **The Future**

- We hope to increase the size of our trial next year and continue to include common crops that are proven performers, as well as lesser-known, unusual crops, so that our trial can benefit a wide variety of users.
- Next year we will continue utilizing biological controls and make it our main source of pest control. This is a step in becoming more sustainable and environmentally friendly.
- We hope to increase the number of entries of perennial plants in our trials. We are currently inviting all companies to send us perennials to be evaluated during the 2016-2017 season. This is why we are changing our name from OSU Annuals Trial to **OSU Cultivar Trials**.
- Update the cultivar trials database for 2016 entries and adapt the mobile app to assist with the laying out and planting all cultivars according to aesthetic and environmental factors.

### **More Information**

For questions, contact Dr. Claudio Pasian, trial director ([pasian.1@osu.edu](mailto:pasian.1@osu.edu)) or Mr. William Barnhill, trial manager ([barnhill.24@osu.edu](mailto:barnhill.24@osu.edu)).

## **OSU Cultivar Trial: 2015 High Performers**

(Grower Performance Evaluation)

### **Perfect Average Overall Score of 5 (four evaluations)**

#### *Vegetables*

- Pepper Hot, Basket of Fire (Floranova)
- Pepper Hot, Loco (Floranova)
- Pepper, Sweet Mohawk (Floranova)
- Pepper, Sweet Redskin (Floranova)

#### *Annuals*

- Helichrysum Silverstar (Westhoff)
- Celosia Dragons Breath (Sakata)
- Begonia benariensis BIG Red Green Leaf (Benary)
- Begonia benariensis Big Rose Bronze Leaf (Benary)
- Coleus Stain Glassworks Burgundy Wedding Train (ORO)
- Caladium Red Glamour (Classic Caladiums)

### **Average Score of at least 4.9 (average of the four evaluations)**

#### *Annuals*

- Scaevola Scalora Crystal (Westhoff)
- Scaevola Scalora Topaz Pink (Westhoff)
- Scaevola Scalora Brilliant (Westhoff)
- Scaevola Scalora Amethyst (Westhoff)
- Coleus Maruee Effects (Burpee Home Gardens)
- Coleus Flame Thrower Spiced Curry (Ball FloraPlant)
- Celosia Intez Deep Purple (Ball Ingenuity)
- Biden Giant White (Westhoff)
- Caladium Puppy Love (Classic Caladiums)
- Caladium White Majesty (Classic Caladiums)
- Begonia benariensis BIG Rose Green Leaf (Benary)
- Mix Master Trixi Fairy (Selecta)
- Lobularia Sweetness Yellow (Westhoff)
- Vinca Valiant Lilac (PanAmerican Seed)

***For more results, please take a look at the attached Excel Spread Sheet.***