

Colorado State University



Passing the Torch by Dr. Jim Klett



As many of you know already, I have fully retired from Colorado State University on January 1, 2023 after forty three years of employment at CSU. I want to take this opportunity to thank all of our cooperators at both the annual and perennial trials for their continual support of the trials for over the thirty plus years that I have been in charge of these trials. We have seen them moved from the Plant Environmental Research Center (PERC) to our current site along College Avenue and next to University Center for the Arts. Also the trials have grown from about two hundred and fifty entries to over eleven hundred entries and have seen the start of the three year perennial trials. All of this would not have happened without the moral and financial support of about twenty five worldwide horticulture companies over the years. Also the support of the Trial Garden Advisory Committee has helped to initiate the move and improvement of the gardens over the years. For this I am forever so grateful. Over the years I have established special friendships with many of you that I will cherish for the rest of my life. I hope that these friendships can continue to grow as I adjust to my retirement years.

I want all of you to know that the trials will continue to grow and flourish into the future with the Department of Horticulture and Landscape Architecture's recent hire of Dr. Chad Miller from Kansas State University who started in this position in January 2023. He has a great track record in the area of Floriculture and Plant Evaluation. I feel he will work hard to see these trials continue to grow and flourish in the years ahead. Again thanks to all of you for the support you have given to me for these flower trials and I am forever grateful to each of you for the confidence you have given to me over the years.

I plan to stay in Colorado for my retirement years but eventually hope to move permanently to my home in Denver and be able to home garden more, volunteer some and travel in the near future.

Dr. Chad Miller will introduce himself to all of you also in the newsletter.

Thanks again and best wishes for a great 2023 season and hope to see many of you again at Colorado Destination Week August 8 and 9, 2023.

Carrying on the Excellence by Dr. Chad Miller



The torch has been passed. I appreciate Dr. Klett's insight and wealth of institutional knowledge he has shared and continues to provide, as I begin carrying the torch. I am very excited for the opportunity to serve as the new director of the CSU Trial Garden Program. I thought it would be good to give a brief introduction and background of myself.

I grew up in Northwestern Wisconsin, not far from Minneapolis/St. Paul, Minnesota. My dad's family was involved in agriculture—primarily dairy farming. Although our immediate family never had a farm, I have always had a connection to agriculture. My interest in horticulture began when I was about 12 years old, when a neighbor lady gave me some flower bulbs—namely dahlias, gladiolus and cannas. From that summer on, my interest with flower bulbs and horticulture grew. I received my bachelor's degree from the University of Wisconsin—River Falls. There I had a great advisor and mentor, Dr. Terry

Ferriss (1975 CSU alumnus). In addition to spending time in the yard and the garden, I enjoy fishing, cooking, photography, and traveling. I love animals and I currently have two corgis, Frederik and Margaret, and a variety of chickens.

As noted, I was at Kansas State University (KSU) for about 12 years, immediately after graduate school. I completed my Ph.D. (2010) and M.S. (2004) degrees at Cornell University, researching specialty floriculture crops, *Oxalis* and *Achimenes*, respectively. If one were to ask students what kind of plants I really enjoy, they would undoubtedly say "bulbs." I am a bulb fanatic and *love* to grow bulbs. One could more broadly say I am a general plant fanatic! I love growing and experiencing new plants. At one point, I was going to do my graduate work in plant breeding but decided to do more plant physiology and greenhouse work. I did two undergraduate internships, centered around plant breeding and new cultivar development. One was with the Royal van Zanten in The Netherlands, in which I worked with cut flowers and potted plants. And the other internship was with Pan American Seed in California, working with Blair Winner and assisting with *Tagetes*, *lisianthus*, and *gazania* breeding programs. I also assisted with the annual and perennial trials at Cornell, as time permitted. No doubt, I appreciate the plant breeding process and new plants in general.

At KSU, I had a significant teaching appointment. I taught several core courses for the department, including plant propagation, two plant identification courses, a non-major course about plants and society, and an 'orientation' course for all the incoming and transfer students. I was also very active in providing international study opportunities for students. I really enjoy teaching and I work hard to provide a quality educational experience for the students. Here at CSU, I have a smaller teaching appointment and I am glad to have the opportunity to teach the plant identification courses here at CSU.

The balance of my KSU responsibilities were research focused, primarily in floriculture/greenhouse production and landscape plants. Previous research has included physiological crop disorders (intumescence) of various ornamental crops, including ornamental sweetpotato, cuphea, angelonia, and dahlia. Another project evaluated a couple different oak species and their use in high pH situations. I have also applied research experience involving various geophytic or bulb crops, such as amaryllis, calla lily, lily, and crocosmia. In between my graduate degrees., I spent a year conducting research in the Netherlands, at Wageningen University and the PPO-Lisse Applied Bulb Research lab. I worked on tulip and lily breeding projects—working to restore fertility, along with commercial storage and packaging procedures for different herbaceous perennials and bulbs.

Here at CSU, my research and extension program will continue the important collaboration with industry. As I continue to get settled in the position and meet more members of the Colorado Horticulture Industry, I plan to refine and implement research projects to enhance our industry. Potential interests include further evaluating and promoting species improvement that work towards increasing sustainable, environmentally conscious plant selections that are not only aesthetically pleasing, but also are more adapted (e.g., heat, drought, pest tolerances) for efficient and responsible production practices for the Colorado Green Industry and the horticulture industry. In addition, research centered around continued understanding of plant propagation are important.

Again, I am excited for this opportunity and look forward to continuing the successful plant trial program at CSU. The trials would not be successful without the industry support and interest, along with great students, and our research associate, David. I have already met several folks who have been highly involved with the gardens, and I appreciate the warm welcome! I also look forward to meeting many more who help to make the trials a success.

I hope to see you out in the trial gardens, at our evaluation days, or at one of the many summer industry events! Don't hesitate to reach out! My email is chad.miller@colostate.edu and cell phone is 607-351-0760.

Chad Miller

"Best Of" Winner *Spotlight*
SunPatiens® Vigorous Peach Candy
from Sakata® Seed Amerca
(*Impatiens* x *hybrida* 'SAKIMP067')



At CSU, SunPatiens® Vigorous Peach Candy won the "Bees of Show" award for the 2022 Annual Flower Trials. It was a easy choice as prolific peach colored flowers blanketed the attractive dark green foliage. Blooms kept a nice pattern and were a very nice bicolor with peach and white that maintained vibrant color even in the intense Colorado sun. Plants were noted for their great vigor and uniform shape. Plants

would be ideal for the landscape with its ability to provide massive color.

Sakata says that with the Vigorous SunPatiens, the name says it all! It is the perfect plant where fast growing color is essential. While most commonly produced in larger containers, these plants cover a lot of bare ground fast and can be offered as 60- 70mm “ready-to-plant” liners. This package provides quick turns for the grower and is ideal for the commercial landscaper and home gardener looking to save labor and simplify planting.

An aggressive root system allows growers the option to direct stick into finished containers up to 5-inch (12.5-cm) pots saving time, labor, and money. SunPatiens root extremely fast and produce finished liners in just 2 weeks. Also, the reduced crop time uses less energy and yields more turns in the same space. They also grow well over a wide temperature range providing flexibility with production scheduling and can be finished under cool conditions with petunias and geraniums, saving energy and eliminating the need for PGR's. SunPatiens flourish under the most extreme summer heat conditions and can extend the selling season. Customers benefit from their full-sun to shade versatility, strong vigor and continuous flower production.

Propagation

Rooting Material - Select a sterile, porous and well-aerated material for optimum rooting. Good aeration is important for preventing soft rots. Because SunPatiens develop strong root systems quickly, direct sticking into the final container is a common practice. Regardless of the rooting method, target the media pH between 5.8 and 6.2 and the EC at 0.26 mmhos/cm (1:2) / 0.76 (SME).

Stage One: Stick cuttings into a pre-moistened rooting medium. SunPatiens root easily and do not require a rooting hormone. SunPatiens root best at a media temperature between 68-75°F/20-24°C. Optimum light level for propagating SunPatiens is 1,500-2,000 foot candles/ 16,000-22,000 lux. Mist moderately the first three days and then apply mist only as needed to keep the cuttings turgid. By day 7 the cuttings should have formed callus

Stage 2: Root Emergence - Once roots start to emerge, raise the light level to 3,000-3,500 foot candles/32,000-38,000 lux to speed development and prevent stretching. When roots form, apply 75 ppm nitrogen from a well-balanced calcium nitrate-based formulation to strengthen the plants and enable them to tolerate higher light levels. EC target 0.26 mmhos/cm / 0.76 (SME) mmhos/cm.

Stage 3: Bulking - Once roots have formed, allow the plants to dry down somewhat between irrigations. Keeping the media too wet promotes a hydroponic root that is less able to supply the plant with water and nutrients once transplanted into containers.

Stage 4: Toning - SunPatiens root quickly and should be ready for transplanting in 2-3 weeks from sticking, for smaller cavity sized trays (144/128) and 3-4 weeks for large cavities (98/72). Reduce fertilizer and allow the plants to dry down between watering to tone and prepare them for transplanting. Do not delay transplanting as SunPatiens are strong growers and undesirable stretching will occur.

Transplanting Media SunPatiens do best in a media that is well-aerated. Optimum pH for SunPatiens is 5.8 to 6.2 with a starting EC less than 0.5 mmhos/cm (1:2) / 1.4 (SME). Avoid a pH below 5.8 which can induce iron and manganese toxicity.

Total Crop time from Direct Stick Method using 1 liner per pot:

4 inch/10 cm. 8-9 weeks

5-6 inch/12 cm. 8-10 weeks

Gallon / 8 inch / 15 cm. 10-12 weeks

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