



November 2015

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Director's Update



Thankful for our Year

With the successful completion of our fully subscribed Produce Safety: A Science-based Framework Workshop in November, the Postharvest Technology Center has wrapped up its yearly workshops for 2015. Of course, we are setting the stage for a new set of workshops in 2016. First on the list is Methods of Measuring Fruit and Vegetable Flavor, Color and Texture in January 20, followed by Fruit Ripening and Ethylene Management in March. Sign up for both and save! See details below.

The Postharvest Technology Center is your go to resource for current, objective and valid information to navigate produce business challenges and opportunities. Our [website](#) is a tremendous resource of free postharvest information, and we are excited to report that we are currently converting our website into a more mobile-friendly format so you can more conveniently access our wealth of pages anywhere, and anytime, whether that's in the field, at home, or at the store.

Our website is offered free to the industry. If you find our information valuable, please consider making a tax-deductible end-of-year contribution! With your support, we will continue to contribute reliable and unbiased information on maintaining the quality and safety of produce after harvest. For your convenience, you may make your contribution [online](#), or contact us directly at 530-752-6941 or postharvest@ucdavis.edu to donate.

– Beth Mitcham

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Postharvest Education at UC Davis



January 20, 2016--Methods of Measuring Fruit and Vegetable Flavor, Color & Texture Workshop has Seats Available

Methods of Measuring Fruit and Vegetable Flavor, Color & Texture Workshop organized by Dr. Diane Barrett will be held as a one-day event, January 20, 2016 at the ARC Conference Center, UC Davis. This workshop features principles and applications of measuring produce color, flavor, and texture, and includes demonstrations of a variety of the latest equipment.

The attendee registration fee of \$395 includes course materials, lunch, and morning and afternoon coffee breaks. Click [here](#) to learn more or to enroll.

March 1 & 2, 2016—Fruit Ripening & Ethylene Management is Now Open for Enrollment!



This [Workshop](#), on the UC Davis Campus, focuses on how to increase profits by reducing losses at the receiving end, and deliver ready-to-eat, delicious fruits and fruit-vegetables to consumers.

Key topics include: importance of ripening programs; maturity and quality relationships; biology of ethylene production; tools to control ripening and senescence; designing/controlling a ripening program physiological disorders and commodity specific ripening protocols.

The enrollment fee of \$899 for this 2-day workshop includes all classroom instruction, lab activities, course materials, morning and afternoon coffee breaks, lunches, and an evening mixer. [Enroll now](#).

A Gift for you for the Holidays!

During the month of December, if you sign up for both the Methods of Measuring Fruit and Vegetable Flavor, Color & Texture Workshop, and the Fruit Ripening & Ethylene Management Workshop, you will receive 20% off each class. Please contact Registration Coordinator [Penny Stockdale](#) to take advantage of this limited time promotion.

UC Davis for Produce Safety Workshop Filled to Capacity!

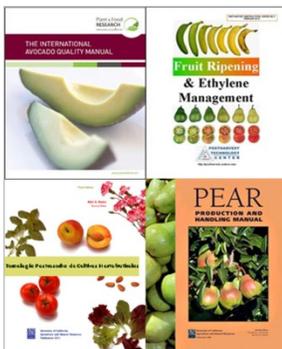
Earlier this month we wrapped up a very successful Produce Safety: A Science-based Framework Workshop, coordinated by Dr. Trevor Suslow, with additional presentations by academic and industry experts. This workshop featured an integrated approach to building a foundation of awareness and improved understanding of the current scientific basis for produce microbial safety systems and preventive controls. Instructors provided a strong emphasis in practical applications and "boots-on-the-ground" experience in dealing with programmatic and day to day produce safety challenges.

Attendees learned about key resources and tools for hazard awareness, risk identification, risk-based preventive controls, and verification of corrective actions.



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Featured Postharvest Bookstore Items



Fantastic December Sale!

This December, we are offering a 20% discount on ALL items in stock. Now, through December 31st, whether you're interested in Avocado Quality, Fruit Ripening & Ethylene Management, Pears, or Postharvest Technology of Horticultural Crops – it's all on sale! For a complete listing of all our publications see: <http://postharvest.ucdavis.edu/bookstore/>. To order a copy of any of our titles for your library, please [Click here](#) to order or use our [Order Form](#) for international orders, and be sure to note "DEC20" to receive your discount.

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Postharvest Specialists' Updates & Other News



Bruhn Presents at California Seed Association Meeting

On September 30, Dr. Christine Bruhn addressed "Consumer trends: Shaping the future" at the California Seed Association meeting in Monterey. Dr. Bruhn described consumer motivators and obstacles in selecting fruits and vegetables and their quest for new and novel flavors. She concluded with a discussion of consumer confidence in the food system and urged the industry to communicate more widely as to the safety, sustainability, and environmental impact of their production processes.



Presentations at UC Davis Workshops

Linda J. Harris, Department of Food Science and Technology, spoke at two UC Davis Workshops this month. At the November 3-5, 2015 Postharvest Technology Center's Produce Safety: A Science-Based Framework Workshop she presented "Demystifying validation, verification, monitoring, and process control", "FSMA Produce Rule – Ag water grower tools", and "Systems approach to qualitative and quantitative microbial risk assessments." And at the mid-November Advances in Walnut Production Short Course, she presented "Food safety, what do walnut growers need to know?"



Ag Seeds Award given to Dr. Diane M. Barrett

On Oct. 29 at their Fall Classic, Ag Seeds Unlimited, a retailer of tomato and other seeds, gave Dr. Diane Barrett their annual award for distinguished service to the industry.

Food for Thought

Dr. Elizabeth Mitcham spoke on a panel at the International Dinner at Rio Americano High School in Sacramento as a part of their Civitas program. Her talk focused on postharvest losses and food security.



Blueberries Anyone?

Dr. Elizabeth Mitcham was also the keynote speaker at a breakfast meeting sponsored by StePac/Johnson Matthey at the Produce Marketing Association's Fresh Summit in Atlanta on October 25, presenting "Everyone loves blueberries, most of the time".

The Second International Horticulture Research Conference



Beth Mitcham and Michael Reid presented at the Second International Horticulture Research Conference, held at UC Davis. The purpose of the conference was to bring together international researchers conducting basic research on horticultural crops, to showcase the latest research findings, to network with colleagues from around the world, and to meet the Editor-in-Chief and some of the Associate Editors of the new journal, Horticulture Research. The conference featured keynote speakers within as well as outside of the horticulture field, invited and general presentations and posters. Postdoc/Graduate poster awards were also given.



Innovation Lab Debuts Solar Coolroom

The Horticulture Innovation Lab, a USAID-funded project in the Department of Plant Sciences recently unveiled its Demonstration Garden, in the UCD arboretum, close to the Innovation Lab office. The garden demonstrates a range of innovations that the Lab has been testing, including solar pumping, simple drip irrigation, and the UC Davis Chimney Dryer. A centerpiece in the garden is a solar-powered cool room, which addresses a major issue for reducing postharvest losses in the developing world - lack of cooling facilities, and unavailability of reliable electricity to run them. Postharvest specialists Michael Reid and Jim Thompson constructed the room, with help from Innovation Lab staff, particularly Britta Hansen. The Innovation Lab solar coolroom demonstrates several innovations.

1. The room is a modular coolroom constructed from polyurethane-insulated panels.
2. The cooling system uses the CoolBot™ controller and a split-unit air conditioner to achieve storage temperatures.
3. The air conditioner is a DC-inverter unit that runs directly off the 48V DC power supplied by the solar panel/battery system.
4. The batteries are lithium ion batteries, which provide much longer life, higher charge capacity, and minimal maintenance in comparison with standard lead-acid batteries. With these batteries, the room can maintain cool temperatures 24/7, although extended cloudy periods will deplete the batteries.
5. A protection circuit disconnects the batteries from the refrigeration system when they get below a specified state of charge.

Although the total system was relatively costly, the prices of solar panels and lithium ion batteries continue to fall, and we expect that systems like this will be increasingly affordable in the future.

For more information on the technologies used in the coolroom, contact Michael Reid - msreid@ucdavis.edu.

Coolbot Installation in Tanzania

Early this month, specialist Angelos Deltsidis traveled to Arusha, Tanzania to assist in the installation of a low-cost cooling alternative, the CoolBot. He used an old coolroom that was not operational and installed a household split type AC which when coupled with a CoolBot controller can efficiently cool the room down to 32 F (0 C). The location of the installation was at the HORTI-Tengeru (Horticultural Research and Training Institute) where students from all over Tanzania are learning about Horticulture. In the near future, construction will begin on a charcoal cooler room (requires just water to cool, no electricity) and a grading facility so that the teachers and students of the Institute can familiarize themselves with the technologies and also pack and store the products that are produced on the farm.



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Postharvest Calendar

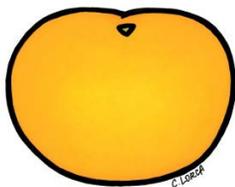
- January 20, 2016. [Methods of Measuring Fruit and Vegetable Color, Flavor & Texture Workshop](#). UC Davis campus
- March 15-16, 2016. [Fruit Ripening & Ethylene Management Workshop](#). UC Davis campus
- June 13-24, 2016. [38th Postharvest Technology of Horticultural Crops Short Course](#). UC Davis campus
- July 19-21, 2016. [IX Congreso Iberoamericano de Tecnología Postcosecha y Agroexportaciones](#). UC Davis campus
- September 13-15, 2016. [Fresh-cut Products: Maintaining Quality & Safety Workshop](#). UC Davis campus

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Special Thank You

We want to express our sincere thanks for the continued support from the Thai Student Fellows who recently donated \$1,000 to our Center.

Ask the Produce Docs



Q. I am a QA inspector at a distribution center for a large grocery chain. I was wondering what the difference is between a Clementine and a Mandarin or if there even is a difference. We received Mandarins in today instead of Clementines and I just was wondering if they are technically the same thing, just different names? Thanks for your help. (J.H.)

A. My name is Tracy Kahn, and [Dr. Mary Lu Arpaia](#) asked me to provide you with some information about this topic. I am the curator of one of the most diverse collections of Citrus and Citrus relatives here at the University of California – Riverside. I also conduct research on new cultivars of citrus that are imported into California and the US. In addition the Citrus Variety Collection has a website (<http://www.citrusvariety.ucr.edu>) that I thought you might like to know about since you are asking questions about Clementines and Mandarins.

Mandarins refer to a group of cultivars and includes Clementine and Satsuma and many other mandarins. There are actually many selections of Clementine mandarins and some are more commercial than others with Clementines being the most commercially grown of the Clementine mandarins. If you have heard of “Cuties” they are a marketing name used to pack Clementine mandarins before Christmas generally and W. Murcotts and Tango mandarins after the holidays. The word tangerine is often used interchangeably with the word mandarin but actually the term tangerine was coined for brightly colored sweet mandarins that were originally shipped out of the port of Tangiers Morocco to Florida in the late 1800s and the term stuck. Below this email note is the link and a section from the Citrus Industry Volume I Chapter 4 about mandarins. Another interesting thing about mandarins is that we now know that there were three basic citrus types (mandarin, citron and pummelo) and that others that we think of as basic types or species (sweet oranges, sour oranges, grapefruits) are actually ancient hybrids or backcrosses of these. Also, many of the cultivars that we think of as mandarins or tangerines may in fact not be true mandarins, but actually mandarin hybrids.

--Tracy L. Kahn, Ph.D.

<http://websites.lib.ucr.edu/agric/webber/Vol1/Chapter4.html> Citrus Industry Volume I Chapter 4

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End Notes and Disclaimers

Postharvest Questions. If you have a perplexing postharvest question you'd like answered, please send it to postharvest@ucdavis.edu, and we'll see if one of our specialists can help.

Archived Items. Link to a data store of all our previous “[Ask the Produce Docs](#)” questions, or link to [archived copies](#) of our monthly e-newsletter as PDF documents.

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