DIRECTOR’S NOTE

I attended the American Society for Horticultural Sciences Annual Conference this past week in Chicago and enjoyed catching up with fellow postharvest scientists from both academia and industry. I was pleased to see an increase in the number of sessions related to postharvest and that each session was very well attended. The Scholars Ignite Competition included 45 graduate students making compelling presentations on their research in 3 minutes and using only one slide! I was very pleased that two of my students participated, both making great presentations! One of them won the second-place prize! A third student from my lab participated in the poster competition along with many other students. This gives me hope that a cadre of young, talented scientists will continue working to solve the challenges of the produce industry into the future. Great News!
The research presentations at the conference were of very high quality. Following are a few highlights. One interesting study from the University of Georgia (Nambeesan et al.) investigated the climacteric nature of blueberry fruit. They found that blueberries have a high respiration rate and produce a lot of CO₂, but a low amount of ethylene. Ethylene production varied considerably among varieties, and respiration followed a climacteric pattern. Further investigation revealed that blueberries have an atypical climacteric response, with ethylene production more developmentally regulated than autocatalytically (meaning exposure to ethylene gas increases fruit ethylene production) regulated. Two papers from Texas A&M University (DeFlorio et al.) highlighted research on development of antimicrobial and antifouling surfaces. Superhydrophobic (non-wetting) steel and stainless-steel surfaces were created with micro-scale roughness achieved through deposition of nanodiamonds and use of specialized surface layers to reduce water contact with the surface. These surfaces were shown to retard adherence of E. coli on steel and stainless-steel. There were a lot of presentations about the use of 1-MCP on fruits and vegetables. One interesting paper from the University of Hawaii (Wiseman et al.) looked at treatment of breadfruit which has a very short postharvest life due to rapid ripening and consumer preference for mature, unripe fruit. Treatment with 1-MCP was able to delay softening by 7 days (63% delay). While additional work is needed, the 1-MCP treatment showed promise. My students and I presented on our work related to chilling injury in basil (Rodeo), use of controlled atmospheres to extend the postharvest life and sensory quality of leafy greens (Lingga) and raspberries (Islam), and use of low oxygen atmospheres to extend storage quality of walnut kernels and mitigate potential negative impacts of high-temperature pasteurization treatments (Bustamante’s work, presented by Mitcham).

I was particularly interested in one session that included speakers from industry talking about their innovations that impact produce handling and shelf life. Verdant Technologies presented on their HarvestHold 1-MCP products and impacts on produce water loss. MirTech presented on their Peel-Reseal product. RipeLocker presented about their shippable hypobaric storage system. Storage Control Systems presented about the uses of their SafePod and LabPod Systems for dynamic controlled atmosphere storage. And Valent BioSciences challenged the postharvest researchers in attendance to think about chilling injury and produce flavor in a new way.

Please consider attending the ASHS Annual Conference in Orlando Florida next summer (July 31-Aug. 4). The research highlights and
networking opportunities are valuable for academics and industry alike.

Beth

Please return to our newsletter after watching this YouTube video featuring Dr. Marita Cantwell, Postharvest Extension Specialist Emeritus at UC Davis, explaining why you should consider registering for our fast-approaching Fresh-cut Workshop, Sept. 20-22!
September 20-22, 2022

Fresh-cut Products: Maintaining Quality & Safety Workshop

Today’s consumers demand safe, high-quality, fresh-cut products with extended shelf-life and good eating quality, requiring fresh-cut processors and handlers to meet rigorous standards. Fresh-cut products are fresh fruits and vegetables that have been prepared (cleaned, washed, sanitized, cut), packaged, and held under refrigeration until consumption.

Our workshop provides an intensive and substantive overview of fresh-cut production, processing, packaging, distribution, and quality assurance. Participants gain working knowledge of established and new procedures through topic-related sessions and demonstrations about fresh-cut marketing, new packaging, product physiology, microbial control, and sensory evaluation.

Join us if you are new to the fresh-cut industry, or if you want essential updates on many topics important to the success of the fresh-cut fruit and vegetable sector. The workshop is relevant to all levels of fresh-cut produce industry professionals—from small, local, and regional produce processors to large businesses with nationwide distribution. Food scientists, food engineers, quality assurance personnel and new product development staff should attend.

REGISTER NOW ›
March 7-9, 2023

Fruit Ripening & Ethylene Management Workshop

Mark your calendar for our next Fruit Ripening & Ethylene Management Workshop, where our seasoned instructors share their research and knowledge on how best to deliver delicious fruits and fruit-vegetables to consumers and increase profits by reducing losses at the receiving end.

This three-day hybrid workshop will be offered on the UC Davis campus and virtually and will feature lectures, demonstrations, and post-session Q&As. In-person participants will be served lunch and snacks. And you won’t want to miss the always-fun “Produce Jeopardy” game!

This workshop is designed for shippers, wholesale- and retail-fruit handlers, and produce managers who are involved in the handling and ripening of fruits and fruit-vegetables.

Stay tuned for registration details!

MORE EDUCATIONAL POSTHARVEST EVENTS

• October 27-29, 2022. IFPA’s Global Produce & Floral Show, Orlando, FL

• November 7-9, 2022. European Federation of Food Science and Technology (EFFoST) International Conference, Dublin, Ireland

• November 11-15, 2024. Postharvest 2024, Rotorua, New Zealand
What's with the box? Who's that guy? And what's he doing? Glad you asked! That box is called a Pallet Dryer, which uses a wooden pallet, solar panel, plywood, plastic and a fan to dry a variety of high-value commodities. That guy is UC Davis Professor Emeritus Dr. Michael Reid. And in this photo, taken by Dr. Irwin R. Donis-González, he's drying coffee beans! For more neat content like this, please follow the Postharvest Technology Center on social media!
Prof. Beth Mitcham, Director of the UC Postharvest Technology Center, recently taught a class on Postharvest Technology of Horticultural Crops at Universidad de Piura in Peru. As usual, she brought her professorial A game to the course, teaching students about water loss and commercial cooling methods for fruits and vegetables, in addition to leading several hands-on experiments. For more neat content like this, please follow the Postharvest Technology Center on social media!
Ron Wills was recognized internationally as a leader in the field of postharvest research. He began his career with the Commonwealth Scientific and Industrial Research Organization (CSIRO) as an Experimental Officer in the field of Food Science. During this time, he enrolled in a PhD program at Macquarie University, undertaking research into the volatile substances produced by apples during low-temperature storage.

After completing his PhD in 1970, he began a lifelong career in food science research, publishing more than 300 peer reviewed papers encompassing all facets of the discipline. Ron worked in both New Zealand and Australia, focusing his studies on treatments to delay ripening and preserve the quality of apples in cold storage. He also focused on the role of ethylene in regulating senescence in fresh produce. He was the first scientist to quantify background levels of ethylene in commercial storage environments and to establish the damaging impact the gas had on produce storage life.

Ron retired from the University of Newcastle in the early 2000s but continued as an active researcher in an emeritus role. His contributions to postharvest research are immeasurable and he will be greatly missed. A great life well lived.

Comments excerpted from Michael Bowyer, Interim Executive Dean of Central Coast Campus, Australia.
ASK THE PRODUCE DOGS

Q: Should tomatoes be on the counter or in the fridge for storage after purchase?

A: Tomatoes should not be stored in the refrigerator but on the counter to maintain best tomato flavor. They can be kept for at least one week on the counter inside a produce bag or clamshell.

-Beth

Visit our Produce Fact Sheets for more information about handling a range of produce types!
Information. For more information, please visit our website or email us.

Postharvest Questions. Please send your postharvest questions to postharvest@ucdavis.edu, and we'll see if one of our specialists can help! (Our answers to “Ask the Produce Docs” questions represent the best understanding of the current state of knowledge at the time of the latest update and does not represent an exhaustive review of all research results. Answers are for guidance only. Recommendations may vary from those listed because of, but not limited to, geographical differences, cultivar differences, maturity at harvest or ripeness, growing conditions, grade and quality at harvest, temperature management practices after harvest, and use of special treatments. The UC Postharvest Technology Center and individuals answering the questions are not responsible for any losses, injury to you, any other person, or any property. Further, users agree to release the UC Postharvest Technology Center and individuals answering the questions from all claims and liability related to use of any content.)

Archived Items. Please visit our datastore of all previous “Ask the Produce Docs” questions and answers, and peruse archived copies of our PDF e-newsletters.

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