DIRECTOR’S NOTE

Despite the continued and historic rainy weather in California this winter and spring, the Postharvest Technology Center was pleased to welcome many cheerful and engaged participants on campus and on Zoom from across the globe for our Fruit Ripening and Ethylene Management Workshop this month.

A mix of academic and industry speakers shared their wealth of experience in ripening of fruit and fruit-vegetables (think: tomato, peppers) and ethylene management. We were excited to share our new video tours of ripening and de-greening facilities, and participants had the opportunity to see a range of quality and environmental measurement equipment that are important for monitoring ripening processes.

Our sponsor, QA Supplies & Catalytic Generators also displayed the range of new and older equipment they sell. We capped off the day with a friendly-yet-competitive game of Ripening Jeopardy, which was enjoyed by all.
So, what about all that rain in California? How does it affect the produce industry? This time of year, many of the fresh vegetables consumed in the United States come from California and Arizona. According to Produce News*, current production is coming from desert areas in southeastern California, as well as Arizona, but production is scheduled to shift to the Salinas Valley in the first few weeks of April. Two flooding events in the Salinas Valley this year have resulted in many fields needing to be replanted, and existing crop in flooded fields cannot be marketed due to food safety concerns. Crop losses are estimated at $500 million. Replanting could be significantly delayed, and this will impact the vegetable market in the coming months.

For crops from unflooded fields that can still be harvested, rain can have several negative effects. For most crops, rain close to harvest increases the incidence of disease in produce after harvest by enhancing the spread of disease in water droplets, and the growth of mold and fungi. Rain can also reduce the flavor quality of some crops by diluting sugars and flavor compounds. In addition, lack of sunlight often results in lower sugar content in produce. The yield and quality of crops can be affected by lack of sufficient pollination due to wet and cool conditions affecting honeybee activity. This leads to reduced yields and misshapen fruits. It can also be challenging to get into saturated fields to plant crops for future harvests, delaying the season for some crops. The extent of yield reduction from impacted areas is not yet known.

The bottom line is that production from areas in the West receiving much more than typical rainfall will be reduced for many crops for several months, and there may also be quality and shelf-life impacts. It will be important to utilize optimum postharvest handling conditions to maintain quality and extend shelf life to facilitate marketing logistics. Visit our website to register for the Postharvest Technology of Horticultural Crops Short Course for more information.

Beth

2023 
POSTHARVEST TECHNOLOGY OF HORTICULTURAL CROPS
Short Course

CLASSROOM LEARNING
June 19-23

FACILITY TOURS
June 26-30

Intensive Instruction
Taught by some of the world’s foremost experts in postharvest biology from industry and academia, optimized for both in-person and virtual participation.

California Facility Tours
Put your new knowledge into practice during a week’s worth of in-person tours, led by experts at well-known postharvest facilities.

Networking Opportunities
Meet and mingle with fellow postharvest professionals. Rub shoulders with instructors. Expand your professional network through invaluable face-to-face interactions.

Registrations are now open!
ADDITIONAL POSTHARVEST EDUCATION OPPORTUNITIES

May 7-12, 2023
**ISHS International Symposium on Almond and Pistachio**, UC Davis

May 14-17, 2023
**Postharvest Unlimited Conference & Postharvest Ornamentals Symposium**, Wageningen University, The Netherlands

September 19-21, 2024
**Fresh Cut Products: Maintaining Quality & Safety Workshop**, UC Davis

November 11-15, 2024
**Postharvest 2024**, Rotorua, New Zealand

We extend our thanks to Greg Aikens of Catalytic Generators for sponsoring our 2023 Fruit Ripening Workshop!

**SOCIAL MEDIA UPDATES**

[INSTAGRAM]([Instagram])  [FACEBOOK]([Facebook])  [TWITTER]([Twitter])  [YOUTUBE]([YouTube])  [LINKEDIN]([LinkedIn])
Our 2023 Fruit Ripening & Ethylene Management Workshop, held March 7-8, provided participants from around the world extensive scientific knowledge and research-backed information on how to ripen a variety of commodities, manage ethylene delivery and exposure, and deliver delicious produce to consumers. As always, an exciting round of Ripening Jeopardy with longtime host Dennis Kihlstadius, provided a fun overview of key takeaways.
Follow us on social media to see more great content like this!

RESEARCH CORNER

Precooling and Cold Storage Methods for Fruits and Vegetables in Sub-Saharan Africa

Publication: Horticulturae
This article reviews the importance of improved cooling and cold storage in food value chains in emerging economies, the range of technologies available for pre-cooling and cold storage, and considerations in selecting an appropriate technology. The authors state that implementation of cooling technologies offers environmental protection by reducing waste and carbon emissions, providing efficient use of natural resources, accelerating economic growth through energy and cost savings, and increased incomes to rural farmers.

A range of precooling and cold storage methods, their suitability, energy demands and the constraints on storage and distribution are discussed, and recommendations are made on how to improve their accessibility for small-scale farmers in rural communities. Precooling methods, such as refrigerated room cooling, passive evaporative cooling, forced-air cooling, water cooling and ice cooling, along with their impacts, are compared. Common cooling methods for bulk storage, vapor-compression systems, sorption systems and evaporative cooling systems, are also discussed. The authors discuss that the choice of cold storage system to be installed and site selection depends on many factors that include: the level of temperature and relative humidity required; access to and distance from produce collection points of the location; uninterrupted supplies of electricity and water, the availability of capital and skilled labor; and the economic value generated through cold storage to justify investment and running costs. Moreover, they propose that the selected technology should be sustainable and environmentally friendly, and where feasible, the use of off-grid electricity, and zero or renewable energy should be encouraged.

Their general recommendations for adopting and strengthening cold storage of fresh fruits and vegetables include: 1) improving the supply chain and investing in renewable energy sources, 2) train staff to safely and effectively operate and maintain cold chain equipment, 3) grade and sort produce before storing in cold; 4) reduce the number of middlepersons involved in the value chain, and 5) adhere to defined storage capacity of cold room to avoid over-filling and reduced efficiency.
QUESTION
Is there a standard size and color to export avocado, specific to that export variety?

ANSWER
For Hass, the peak sizes are between 6- to 8-ounce (170 to 227 g) fruit. But different markets prefer different size categories for the Hass. There are Hass-like varieties, such as Lamb Hass and Maluma Hass, which tend to produce larger size categories than this. Other varieties like Reed and some of the Antillean race fruit like Waldin and Booth can be 1 pound or greater in size. There is great diversity in avocado size, shape and ripe color.

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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Editorial Review. Beth Mitcham

Writing & Coordinating Publishers. Beth Mitcham, Angela J. Bass, Pam Devine

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The Postharvest Technology Center got its start more than 44 years ago, back when the internet seemed like science fiction.

Today, our 11-year-old website remains the go-to source for produce information for many, and is the primary way we share our latest research findings, produce-handling recommendations, and course information.

You may have recently tried to visit our website, only to be met with a blank screen or warning message. This means it's time for an upgrade and we need your support to complete the task.

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Visit us at postharvest.ucdavis.edu for more info.