



November 2011

News from UC Davis Postharvest Technology Center

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Director's Update

Feeling Thankful

What an exciting year it has been for the Postharvest Technology Center! We hope 2011 has also been a great year for you. The produce industry is a fantastic industry to be associated with, given the many health benefits of consuming produce. However, the challenges of timely delivery of perishable commodities, increasing demands from suppliers and consumers, and enhanced regulation can be difficult to navigate.

The Postharvest Technology Center is known worldwide as the "go to" source for objective information that helps you navigate these business challenges. Our newly redesigned website (<http://postharvest.ucdavis.edu>) is a tremendous resource of free postharvest information at your fingertips 24/7.

We are in the process of developing a Produce Professional Certificate Program that will recognize individuals who have attained a standardized level of experience in postharvest handling of produce. We expect this will be beneficial to your career or your ability to identify qualified employees.

We are thankful for the opportunity to engage with the produce industry and assist them in navigating the challenges and opportunities of today's industry. With your support, we will continue to contribute reliable and unbiased information on maintaining the quality and safety of produce after harvest. Please consider making a year-end contribution which can be tailored to your area of philanthropic interest, or make it a part of your company's marketing program by sponsoring an activity. *-Beth Mitcham*

Highlights

Donate
to Support
Free
Postharvest
Information

Produce
Fact Sheets:
Maintaining
Postharvest
Quality



Postharvest Workshops @ UC Davis

18th Fruit Ripening & Retail Handling Workshop

We're very excited about how the agenda is shaping up for the March 27-28, 2012 Fruit Ripening & Retail Handling Workshop! Organized by Dr. Carlos Crisosto, this two day workshop is intended for shippers, fruit handlers (wholesale and retail), quality control personnel, and produce managers who are involved in handling and ripening fruits and fruit-vegetables. Lectures, group discussions, and hands-on demonstrations form the workshop, and topics include how to increase profits by developing ripening protocols, evaluating arrival condition, proper retail handling strategies to protect fruits and fruit-vegetables, and delivering ready-to-eat quality produce to the consumer. This workshop is an excellent value at \$750 which includes two days of lectures and labs, instructional materials, small group discussion, lunches, coffee breaks, and an evening networking reception. Click [here](#) to link to our online enrollment form.



Additional postharvest technology educational opportunities will be available in 2012:

- **June 18-22, 2012.** *Postharvest Technology Short Course*, coordinated by Dr. Beth Mitcham
- **June 25-29, 2012.** *Postharvest Technology Short Course optional Field Tour*
- **September 18-20, 2012.** *Fresh-cut Products: Maintaining Quality & Safety Workshop*, coordinated by Dr. Marita Cantwell
- **November 14 – 16, 2012.** *Measuring Produce Quality and Maturity*, sponsored by a USDA Specialty Crops Project Grant, and held on the UC Davis campus.

Mark your calendars now for these upcoming workshops, and plan to attend.

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Featured in the Postharvest Bookstore



Postharvest Technology Center T-Shirts!

By popular demand, we now offer Postharvest Technology Center T-Shirts. Available in 100% cotton in small – XX-Large, they're screen-printed on natural-colored t-shirts, with our logo on the front and a specially modified logo on the back. At the very reasonable cost of \$15 (\$19 for XXL) you might consider ordering more than one! Order up to two shirts, shipped to a U.S. address, using our [online order form](#). If you would like to order more than 2 shirts, or want them mailed outside the US, please contact us at postharvest@ucdavis.edu.

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 use our [Order Form](#), and be sure to note "NOV20" to receive your discount.

Postharvest Specialist's Activities

Beth Mitcham Invited Speaker at UC Davis Speaker Series

The College of Agriculture and Environmental Sciences' *Outlook Magazine* kicked off their new speaker series on November 5th. The topic of the program was "Feeding a Hungry Planet", and Dean Neal Van Alfen invited three faculty experts to speak about the challenges of feeding the planet, presenting their research and how it helps to feed people locally and globally.

The event was interactive, informal and well received. Beth Mitcham, Director of the Postharvest Technology Center was one of the three faculty members invited to share her research. One of Beth's key points was how malnutrition of children diminishes their ability to become productive members of society. She spoke about what Cooperative Extension Specialists are doing in the field of postharvest to help the rest of the world to reduce produce waste, which averages about 30% world-wide, and can be much higher in the developing world. Robin DeRieux, associate editor for the Outlook magazine said, "I was amazed to learn how much food is lost after harvesting, that's an important issue that's not very much publicized."

What's New on Our Website

New French Translation Added to Produce Fact Sheets

With thanks to translator Mohamed Ben Amor, we have recently added "[Anthurium: Recommandations pour maintenir la qualité après-recolté](#)" to the website. We also greatly appreciate the review of this article by Dr. Florence Negre-Zakharov's.

New Addition to Postharvest Publications Organized by Topic Library

This library currently contains more than 1,400 postharvest documents, organized by topic. It is searchable by title or author, and is one of the premiere sources of postharvest information.

Grape, Table

- [Effect of continuous 0.3 µL/L gaseous ozone exposure on fungicide residues on table grape berries.](#) Hakan Karaca, Spencer S. Walse, Joseph L. Smilanick. *Postharvest Biology and Technology* 64:154-159 (2012)
- [Recent advances on the use of natural and safe alternatives to conventional methods to control postharvest gray mold of table grapes.](#) Gianfranco Romanazzi, Amnon Lichter, Franka Mlikota Gabler, Joseph L. Smilanick. *Postharvest Biology and Technology* 63:141-147 (2012)

Citrus

- [Integrated approaches to postharvest disease management in California citrus packinghouses.](#) J.L. Smilanick. *Acta Hort* 905: 145-148 (2011)
- [Storage temperature and time influences sensory quality of mandarins by altering soluble solids, acidity and aroma volatile composition.](#) David Obenland, Sue Collin, Bruce Mackey, James Sievert, Mary Lu Arpaia. *Postharvest Biology and Technology* 59:187-193 (2011)
- [Relationship of soluble solids, acidity and aroma volatiles to flavor in late-season Navel oranges.](#) D. Obenland, S. Collin, J. Sievert, K. Fjeld, and M.L. Arpaia. *Acta Hort* 877:749-756 (2010)

Mango

- Methods to analyze physic-chemical changes during mango ripening: a multivariate approach. Malkeet S. Padda, Cassandro V.T. do Amarante, Raphael M. Garcia, David C. Slaughter, Elizabeth J. Mitcham. *Postharvest Biology and Technology* 62:267-274 (2011)

Jujube, Indian (ber)

- Postharvest physiology and storage of ber. Sunil Pareek, Lisa Kitinoja, Ram Avtar Kaushik, and Ravinder Paliwal. *Stewart Postharvest Review*. 10 pages (2009)

Packaging

- Evaluation of different types of packages for handling and transportation of vegetables. K.G.L.R. Jayathunge, W.M.C.B. Wasala, H.M.A.P. Rathnayake, C.R. Gunawardane, H.C. Samarakoon, M.D. Fernando, and K.B. Palipane. 47 pages (2011)

Small-scale Postharvest Technology

- On-farm storage technology can save energy and raise farm income, Susanta K. Roy. 30 slides (2009)

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Postharvest Positions

USDA ARS – Postdoctoral Research Associate

The US Agricultural Research Service is looking for a Postdoctoral Research Associate to supplement a lead scientist's research on controlling insect populations in recently harvested products as well as in stored product. Disinfestation methods will include chemical approaches, including fumigation, and physical approaches associated with standard procedures for storing, packaging and shipping crops grown in California. JOB LINK: <http://www.usajobs.gov/GetJob/ViewDetails/300561400>.

Monsanto's Emerging Leaders in Science Program

Monsanto is looking for top scientific talent who are PhD or Post-Doctoral graduates educated in one of the following or a closely related discipline: Advanced Engineering/Bioengineering, Biochemistry, Bioinformatics & Computational Biology, Chemistry, Crop Science/Seed Biology, Entomology, Environmental Sciences, Genetics, Plant Biology (physiology or molecular), Plant Breeding, Plant Pathology, Statistical Genetics, Toxicology/Pharmacology, and Weed Science. To learn more about their program link to this [webpage](#).

Postharvest Calendar: Upcoming Conferences, Courses and Workshops

- February 6-10, 2012. **Food + Health Entrepreneurship Academy.** UC Davis campus.
- February 21-24 2012. **International Conference on Quality Management in Supply Chains of Ornamentals.** Bangkok, Thailand. Contact Sirichai Kanlayanarat (66)2-470-7720 or gmsco@kmutt.ac.th.
- February 21-24 2012. **Southeast Asia Symposium on Quality Management in Postharvest Systems.** Bangkok, Thailand. Contact Sirichai Kanlayanarat (66)2-470-7720 or seasia@kmutt.ac.th
- February 21-24 2012. **Asia Pacific Symposium on Postharvest Quality Management of Root and Tuber Crops.** Bangkok, Thailand. Contact Sirichai Kanlayanarat (66)2-470-7720 or sirichai.kan@kmutt.ac.th.
- January 23-26. 2012. **Cold Chain Management.** Georgia Tech Cold Chain Management Series. Atlanta, Georgia
- February 6-8, 2012. **5th European Short Course on Quality & Safety of Fresh-cut Produce.** Messe Berlin Exhibition Grounds, Berlin, Germany.

- February 8-10, 2012. **Fruit Logistica**. Berlin, Germany.
- March 22-28, 2012. **VI Curso Internacional de Tecnologia Postcosecha y Procesado Minimo**. Cartagena, Spain.
- March 27-28, 2012. **18th Annual Fruit Ripening & Ethylene Management Workshop**. UC Davis campus.
- April 11-13, 2012. **Cold Chain Assessment and Audit**. Georgia Tech Cold Chain Management Series. Atlanta, Georgia.
- April 21-26, 2012. **IARW-WFLO Annual Convention & Expo**. Tucson, Arizona.
- May 1-3, 2012. **United Fresh Produce Association Convention**. Dallas, Texas.
- May 21-25, 2012. **Post-Harvest Management and Value-added Agriculture International Conference**. Jimma, Ethiopia
- May 22-24, 2012. **Strategies for Successful Postharvest Handling of Fresh-Produce**. Georgia Tech Cold Chain Management Series. Atlanta, Georgia.
- June 18-29, 2012. **34th Annual Postharvest Technology Short Course**. UC Davis Campus, plus optional field tour.
- June 25-29, 2012. **7th International Postharvest Symposium**. Kuala Lumpur, Malaysia.
- July 27-29, 2012. **PMA Food Service Conference and Exposition**. Monterey, California
- August 28-30, 2012. **Cold Chain Integration**. Georgia Tech Cold Chain Management Series. Atlanta, Georgia
- September 18-20, 2012. **17th Annual Fresh-cut Products: Maintaining Quality & Safety Workshop**. UC Davis campus.
- October 16-19, 2012. **X International Symposium on Postharvest Quality of Ornamental Plants**. Porto de Galinhas, Pernambuco, Brazil. Contact Prof. Fernando Luiz Finger (55) 3138991128 or ffinger@ufv.br.
- October 26-29, 2012. **PMA Fresh Summit International Conference and Exposition**. Anaheim, California.
- November 14-16, 2012. **Measuring Produce Quality & Maturity**. Sponsored by a USDA Specialty Crops Project Grant, and held on the UC Davis campus.
- December 3-5, 2012. **Postharvest Africa 2012**: The 7th Technical Symposium of CIGR Section VI and 2nd International Conference on Postharvest Technology & Innovation. Stellenbosch, South Africa.

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Ask the Produce Docs

Q. We want to improve our logistics and packaging material; Do you know where we can gather knowledge / research / data on packaging strength (cardboard material) that is required for packaging fruit and vegetables. Necessary strength of packaging material in relation to:

- Product Weight
- Transportation Distances
- Humidity

(A.B.)



A. Strength of a package is related to the strength of the packaging material and also the design of the package. In many situations a weaker material will produce acceptable strength in a package if the design incorporates more material in crucial weight bearing areas of the package. As you mention, humidity, product weight and time in the refrigerated handling chain are also factors affecting the strength of corrugated fiberboard. Because of all these interrelated factors it is not possible to specify a specific minimum material strength for produce packages. Packaging manufacturers often have experience with the performance of their packages in the cold chain and can develop an acceptable design for most situations. The best way to determine if a package design is adequate is to test it in a packaging laboratory. There are a number of accepted standard protocols for this type of testing.

-[Jim Thompson](#)

*If you have a perplexing postharvest question that you'd like answered, please send it to postharvest@ucdavis.edu.
Link to a data store of all our previous "[Ask the Produce Docs](#)" questions and answers,
or link to archived copies of our [monthly E-Newsletter](#) as PDF documents.
Link to our [Postharvest Yellow Pages](#), or email us with [additions or corrections](#).*

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