



December 2011

## News from UC Davis Postharvest Technology Center

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### Director's Update



#### Best Wishes for 2012

We at the UC Davis Postharvest Technology Center would like to extend Season's Greetings and best wishes for the new year to all. The new year promises to bring new opportunities for our professional and personal growth.

The Postharvest Technology Center will be offering its annual courses, including Fruit Ripening and Retail Handling, Postharvest Technology of Horticultural Crops, and Fresh Cut Products: Maintaining Quality & Safety. In addition, we are planning a couple of new courses for 2012. Stay posted for further details and consider reserving some of your training funds for one of these informative courses this year.

All the best to you and yours for a peaceful and prosperous 2012.

-[Beth Mitcham](#)

### Highlights

Donate  
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Information

Produce  
Fact Sheets:  
Maintaining  
Postharvest  
Quality

### Postharvest Workshops at UC Davis

### Postharvest Technology of Horticultural Crops Short Course Registration Now Open



We are pleased to announce that registrations are now open for the 34th Annual Postharvest Technology of Horticultural Crops Short Course. The course is a two-week intensive study of the biology and current technologies used for handling fruits, nuts, vegetables and ornamentals. It is designed for research and extension workers, quality control personnel, and other professionals interested in current advances in postharvest technology of horticultural crops. The lecture plus field tour option (2-week) is \$2850, limited to 55 participants; and the lecture-only option (1-week) is \$1850, and open to 25 participants. This year we are also offering an all-inclusive package to include the course enrollment fee, airport transfers, hotel accommodations and a food allowance.

Course topics will include: maturity indices, measuring quality, handling systems, preparation for market, packinghouse facilities and equipment, packaging, containers, unitization, cooling, storage, managing ethylene, transport, sanitation and other procedures related to decay and insect control, food safety assurance, standardization and inspection, energy use, marketing, harvesting and postharvest handling systems for various commodity groups, and an overview of current postharvest research at UC Davis.

To learn more about the course, or to enroll, please link to the [webpage](#).

### 18th Fruit Ripening & Retail Handling Workshop

The agenda is nearly finalized 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 learn more about this workshop or link to our online enrollment form.



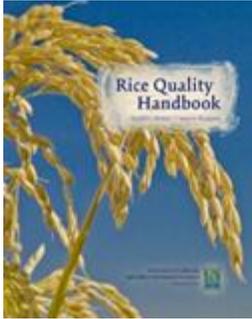
Enrollments will open in a few months for:

- Fresh-cut Products: Maintaining Quality & Safety Workshop, coordinated by Dr. Marita Cantwell, scheduled for September 18-20, 2012.

We are working on three additional courses that we anticipate will also be offered in 2012. As information becomes available about these courses we'll include it in future issues of our monthly e-newsletter.

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## Featured in the Postharvest Bookstore



### 20% Sale on Rice Quality Handbook!

We're offering a 20% discount on the useful [Rice Quality Handbook](#). Learn about producing high-quality rice, covering planting to postharvest handling in a methodical and step-by-step system. To order a copy for your library, please use our [Order Form](#) and be sure to note "RQH20" to receive your discount.

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](#).

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## Postharvest Specialist's Activities

### Interest Survey Participation Sought

We invite you to provide us with your feedback using our [interest survey](#) as we develop the 2012 Emerging Postharvest Technologies for California Agriculture. Dr. Carlos Crisosto, lead course organizer, is interested in hearing about topics of greatest interest the best time and place to hold the course. Thanks for taking a few minutes to complete the survey.

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## What's New on Our Website

### Postharvest Yellow Pages: Three Categories and 21 New Businesses Added

Twenty-one new companies were added to the [Postharvest Yellow Pages](#), and several new categories were also added: Produce Expositions, Produce Newsletters, and Postharvest Floral Products. While no endorsement is intended, the Postharvest Yellow Pages provides a very useful resource for those looking for postharvest supplies, consultants, labs, seeds and more.

### New Book Review

"Edible Coatings and Films to Improve Food Quality, Second Edition" was recently reviewed. In his conclusion, Dr. Adel Kader stated, "Overall, this book is a very useful reference for all those interested in the opportunities and challenges of using edible coatings and films for food preservation and for pharmaceutical products." Read the [entire review](#).

### French Translations Now Complete! Produce Fact Sheets

With thanks to translator Mohamed Ben Amor, we have recently added the final two translations, "[Jonquilles et Narcisses: Recommandations pour maintenir la qualité après-recolté](#)" and "[Palmier Nain: Recommandations pour maintenir la qualité après-recolté](#)" to the website. We also greatly appreciate the review of these two articles by Dr. Florence Negre-Zakharov.

### Updated Postharvest Resources

We have updated our list of Most Useful and Unrestricted Internet Sites for Postharvest Information: [http://postharvest.ucdavis.edu/relatedsites/Most\\_Useful\\_Postharvest\\_Websites/](http://postharvest.ucdavis.edu/relatedsites/Most_Useful_Postharvest_Websites/)

### New Addition to Postharvest Publications Organized by Topic Library

The [Postharvest Publications and Presentations Organized by Topic](#) 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.

### Insect Control

- Heat-controlled atmosphere postharvest treatments for *Macchiademus diplopterus* (Hemiptera: Lygaeidae) and *Phlyctinus callosus* (Coleoptera: Curculionidae). S.A. Johnson and L.G. Neven. *Journal of Economic Entomology* 104:398-404 (2011)
- Oxygen enhances Phosphine toxicity for postharvest pest control. Yong-Biao Liu. *Journal of Economic Entomology* 104:1455-1461 (2011)

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### We Appreciate our Supporters

We thank those who have recently supported the efforts of the Postharvest Technology Center. We appreciate generous gifts from the following companies or individuals who are sponsoring our workshops, or have contributed to the Postharvest Program Fund. For more information about gift giving opportunities to the Postharvest Technology Center see our [web page](#). We are actively seeking additional year-end gifts to the Postharvest Technology Center, to make your gift today please fax or mail our [printable form](#), or [donate online](#). Thank You!

- QA Supplies
- Catalytic Generators LLC
- Summeripe
- AgroFresh
- Adel Kader
- L. G. Wilson
- Joan Rosen
- Beth Mitcham & Steve West



### 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 [qmsco@kmutt.ac.th](mailto:qmsco@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](mailto: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](mailto: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 5-8, 2012. 2012 Florida Postharvest Horticulture Tour. Gainesville, FL.
- March 22-28, 2012. VI Curso Internacional de Tecnologia Postcosecha y Procesado Minimo. Cartagena, Spain.
- March 27-28, 2012. 18th Annual Fruit Ripening & Retail Handling 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, 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 15-19, 2012. [9th International Conference on Controlled Atmosphere and Fumigation in Stored Products](#). (CAF 2012). Antalya, Turkey.
- 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](mailto:ffinger@ufv.br).
- October 26-29, 2012. [PMA Fresh Summit International Conference and Exposition](#). Anaheim, California.
- 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.
- January 22-24, 2013. [Measuring Produce Quality & Maturity](#). Sponsored by a USDA Specialty Crops Project Grant, and held on the UC Davis campus.

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## Ask the Produce Docs

**Q.** Dr. Kader: I am facing a problem in using ethylene absorbers with Bananas. Here are the data:

- **Banana quantity:** 18 kgs.
- **Packing:** packed in 2 layers with foam cuttings and in a 25 micron polythene and in a perforated carton
- **Temperature:** 30-32 Deg. C during transportation in above packing
- **Quality:** 50-60% ripened
- **Color:** green to yellow



The media has an adsorption of 4-5 lts. ethylene. When we keep around 8 sachets of 10 gm in different orientations (all on top, at sides and spread out etc.) the ethylene levels shown by Drager Sensor reach up to 20-30 ppm in one minute. At the same time, the media itself is not fully consumed as indicated by its colour. Only 20-25% converts to brown granules.

At 15 uL ethylene /hr by Bananas, the total ethylene generated will be around 0.04 liters by 18 kg. Bananas in 5 days. This corresponds to just 10 gm of media for keeping ethylene levels zero.

However, in actual conditions, the levels of ethylene have not come down and Bananas lost their quality. Can you please assist me with determining what the error is? (V.)

**A.** Some of the changes associated with banana are controlled by ethylene action while other changes are not controlled by ethylene action. In contrast, all changes are controlled by temperature. Thus, you should focus on how to reduce the temperature of the bananas to 15 C to get the best quality and shelf-life. Ethylene absorption is a supplemental treatment to good temperature management and 30-32 C is almost double the recommended temperature. Another factor is that ethylene has to be in contact with the

absorber to be removed and that is why forced air through the cartons of the bananas, then through the absorber is critical to improving efficacy of the absorber. Again, TEMPERATURE IS THE MOST IMPORTANT FACTOR IN MAINTAINING QUALITY OF BANANAS AND MANAGEMENT OF THEIR RIPENING.

-Adel Kader

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- If you have a perplexing postharvest question that you'd like answered, please send it to [postharvest@ucdavis.edu](mailto: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.
- Browse through the [Postharvest Yellow Pages](#).

This publication is produced monthly by the UC Davis Postharvest Technology Center. For more information visit our [website](#) or [e-mail](#) us. If you, or a colleague, wish to receive this free monthly E-Newsletter, click [here](#) to subscribe. If you no longer wish to receive this publication, please click on "reply" to this e-mail and type "unsubscribe" in the subject line.

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