



December 2012

News from the UC Davis Postharvest Technology Center

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Director's Update



Preparing for 2013!

The new year will bring a wealth of new opportunities for those interested in the postharvest handling of fresh fruit, vegetables and ornamentals. With this newsletter, we are pleased to announce the opening of enrollments for both our [Fruit Ripening & Retail Handling](#) workshop in March, and also our [35th Postharvest Technology Short Course](#) which will be held the last two weeks of June.

Produce Professional Certificate Program

Our new program that I'm especially excited to be introducing is our new Produce Professional Certificate Program! This exciting, first-of-its-kind, 4-year certificate program has a enrollment fee of \$2,500, and guarantees priority registration in all on-site courses, access to a selection of distance learning modules, individual certificates of completion after successful completion of an online exam for each course or distance learning module, and a special "Produce Professional Certificate" plaque upon completion of the program.

Based on a point system, the program awards one point for each hour of instruction. A minimum of 120 points are needed, with required enrollment in several core, on-site courses, and the balance of the points may be met via a combination of additional on-site courses or distance learning modules selected on an a-la-carte basis. Additional registration fees are required for the on-site courses, but access to the distance learning modules are included in the enrollment fees for the Produce Professional Certificate Program.

We've received significant and enthusiastic feedback indicating that this new Produce Professional Certificate Program will offer credibility to employers, and marketability to individuals holding the certificate. Today's produce experts wear many hats - from harvest to consumption - and needs a diverse range of information at their fingertips. This certificate will equip individuals with a set of tools representing all aspects of postharvest handling. Enrollment for the certificate program will open early in 2013 at: http://postharvest.ucdavis.edu/Education/Produce_Professional_Certificate.

We appreciate everyone's help in spreading the word about this exciting new program, presented by the UC Davis Postharvest Technology Center.

We wish you all a joyous holiday season!

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Postharvest Workshops at UC Davis

NOW ACCEPTING REGISTRATIONS!

Fruit Ripening & Retail Handling Workshop Focuses on Quality

Dr. Carlos Crisosto will coordinate the March 18-19, 2013 “Fruit Ripening and Retail Handling” workshop to be held on the UC Davis campus. The course will focus on how to increase profits by reducing losses at the receiving end, and delivering ready-to-eat, delicious fruits and fruit-vegetables to the consumer.



The cost of the workshop is \$775, and registration includes all instruction, breakout sessions, demonstrations, course materials, coffee break, lunches, and an evening networking reception. Sensory, quality measurements and environmental equipment demonstrations will be held, and lectures will include topics such as maturity and quality relationships, retail temperature storage conditions, tools to control ripening and senescence, physiological disorders and other losses, and ripening facilities and equipment.

To learn more about this workshop, or to register, please see the web page: <http://postharvest.ucdavis.edu/Education/fruitripening/>

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Postharvest Technology Short Course to be held June 2013

The 35th Annual Postharvest Technology Short Course will be held June 17-21, 2013, with the optional field tour being held the week of June 24-28. The course is an intensive study of the biology and current technologies used for handling fruits, nuts, vegetables and ornamentals in California. It is designed for research and extension workers, quality control personnel and other professionals interested in current advances in the postharvest technology of horticultural crops.

Registration for the complete 2-week session (lecture-lab sessions plus the optional field tour) will cost \$2895 and is limited to 55 participants. Registration for the first week (lecture-labs only) session will cost \$1895. An additional lodging fee must be paid by all participants going on the field tour. The course often fills up early, and registrations are made on a first-come, first-paid basis. For complete information or to register for this world-renown course, please link to:

<http://postharvest.ucdavis.edu/Education/PTShortCourse/>

We hope you will plan to join us for both of these top notch educational opportunities!



Featured Postharvest Publication

25% Discount on “International Avocado Quality” Manual & Booklet

Through the month of December we are offering a 25% discount on our International Avocado Quality publications, available in both English and Spanish. The sale price for the manual is \$33.75, and the sale price for the booklet is \$11.25!

Edited by Anne White, Allan Woolf, Peter Hofman and Mary Lu Arpaia, these wonderful resources include numerous photographs and provide information on avocado quality, ripening, cultivars (manual only), disorders, damage scenarios, and more. Please link to [this web page](#) for the table of contents and additional information about these publications.



We invite you to order a copy for your library today. U.S. and Canadian addresses only please use our [online store](#), and international addresses please use our printed [order form](#).

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Postharvest Endowment Contribution

Year End Opportunity and a Heartfelt Thank You

We're pleased to announce the beginning of our 2012 year-end campaign. Contributions are sought in support of the Postharvest Endowment Fund, the interest from which is used to support ongoing maintenance and upgrades to our huge website, and also in support of scholarship opportunities provided to attend our workshops and courses. To facilitate your contribution, the Dean's office has made available an [online secure donation site](#).



We are very appreciative of the generous gift from the following endowment contributors:

Adel & Aileen Kader

All contributions to either the endowment fund, or in support of scholarships for deserving individuals to attend our workshops or courses, are warmly welcomed.

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What's New on Our Website



A Huge Free Resource: Postharvest Publications Organized by Topic Library

This month we are pleased to feature the [Postharvest Publications Organized by Topic](#) section of our website. This electronic library currently contains more than 1,500 postharvest articles and documents, organized by topic. It is searchable by title or author, and is one of the world's premiere sources of postharvest information. Items are authored by one of the Postharvest Specialists, or by USDA Researchers, and include topics such as almonds, carrots, decay control, flavor quality, handling at destination, health benefits, ornamental crops, postharvest IPM, postharvest pathology, postharvest losses, processed fruits and vegetables, transportation, and water disinfection. We know you'll find some interesting reading next time you check it out.

Lambertini, Elisabetta, Michelle D. Danyluk, Donald W. Schaffner, Carl K. Winter, Linda J. Harris, [Risk of salmonellosis from consumption of almonds in the North American market](#). Food Research International 45 (2012) 1166-1174

Lopez-Velasco, Gabriela, Adrian Sbodio, Alejandro Tomás-Callejas, Polly Wei, Kin Hup Tan, Trevor V. Suslow, [Assessment of root uptake and systemic vine-transport of *Salmonella enterica* sv. Typhimurium by melon \(*Cucumis melo*\) during field production](#), International Journal of Food Microbiology 158 (2012) 65-72

Rastogi, Gurdeep, Adrian Sbodio, Jan J. Tech, Trevor V. Suslow, Gitta L. Coaker, Johan HJ Leveau, [Leaf microbiota in an agroecosystem: spatiotemporal variation in bacterial community composition on field-grown lettuce](#). The International Society for Microbial Ecology Journal 6 (2012) 1812-1922

Fresh-cut Vegetables

Tomás-Callejas, Alejandro, Francisco López-Gálvez, Adrian Sbodio, Francisco Artés, Francisco Artés-Hernández, Trevor Suslow, [Chlorine dioxide and chlorine effectiveness to prevent *Escherichia coli* O157:H7 and *Salmonella* cross-contamination on fresh-cut Red Chard](#). Food Control 23 (2012) 325-332

Grape

Chervin, Christian, Julia Aked, Carlos H. Crisosto, [Grapes](#), Chapter 9. Crop Post-Harvest: Science and Technology. 2012, 25 pgs.

Nutritional Quality

Vicente, Ariel R., George A. Manganaris, Luis Cisneros-Zevallos, Carlos H. Crisosto, [Prunus](#), Chapter 13, Health Promoting Properties of Fruits and Vegetables. 2012, 27 pgs.

Peach

Dagar, Anurag, Clara Pons Puig, Cristina Marti Ibanez, Fiorenza Ziliotto, Claudio Bonghi, Carlos H. Crisosto, Haya Friedman, Susan Lurie, Antonio Granell, [Comparative transcript profiling of a peach and its nectarine mutant at harvest reveals differences in gene expression related to storability](#). Tree Genetics & Genomes August 2012, pgs. 1-13

Pomegranate, Fig, Bushberries

Hummer, Kim E., Kirk W. Pomper, Joseph Postman, Charles J. Graham, Ed Stover, Eric W. Mercure, Malli Aradhya, Carlos H. Crisosto, Louise Ferguson, Maxine M. Thompson, Patrick Byers, and Francis Zee, [Emerging Fruit Crops](#), Chapter 4, Fruit Breeding, 2012, 51 pgs.

Spinach

Gutiérrez-Rodríguez, Eduardo, Heiner J. Lieth, Judith A. Jernstedt, John M. Labavitch, Trevor V. Suslow, and Marita I. Cantwell, [Texture, composition and anatomy of spinach leaves in relation to nitrogen fertilization](#). Journal Science of Food and Agriculture 2012, 11 pgs.

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Postharvest Positions & Opportunities

Borlaug LEAP Program

The Norman E. Borlaug Leadership Enhancement in Agriculture Program (LEAP) is seeking applications for fellowship grant opportunities for students from Sub-Saharan Africa. The deadline is January 17, 2013. Applications are requested from Sub-Saharan African students conducting research on topics related to USAID's global hunger and food security initiative - FEED THE FUTURE. The focus region is Sub-Saharan Africa. All topics related to agriculture (as defined by Title XII) and the research strategies of the Feed the Future initiative are admissible. The Borlaug LEAP fellowship program supports engaging a mentor at a US university and at a CGIAR center to support and enhance the thesis research and mentoring experience. Awards are made on a competitive basis to students who show strong scientific and leadership potential. Funds are available for one-year and cannot exceed US\$20,000. For more information on eligibility criteria and to download the application, please visit our website at: <http://leap.ucdavis.edu>.

Postharvest Education Foundation 2013 Global Postharvest E-Learning Program

The PEF [2013 Global Postharvest E-learning Program](#) is now open for applications. This postharvest "training of trainers" program being launched in January 2013 by The Postharvest Education Foundation will be offered for up to 30 young horticultural professionals who are currently working in developing countries over a period of months during 2013-14. Contact Lisa Kitinoja (kitinoja@hotmail.com) for more information and the application form. Completed application forms must be returned no later than January 1, 2013.

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Postharvest Calendar

- February 6-8, 2013. [Fruit Logistica](#). Berlin, Germany
- March 18-19, 2013. [19th Annual Fruit Ripening & Retail Handling Workshop](#). UC Davis campus.
- April 23-24, 2013. [35th Annual Citrus Postharvest Pest Control meeting](#). Santa Barbara, California.
- April 28-May 2, 2013. [II International Symposium on Discovery and Development of Innovative Strategies for Postharvest Disease Management](#). Kusadasi, Turkey
- May 4, 2013. [IARW-WFLO Annual Convention and Expo](#). Hollywood, Florida
- June 3-7, 2013. [XI International Controlled and Modified Atmosphere Research Conference](#). Bari, Italy
- June 17-28, 2013. [35th Annual Postharvest Technology Short Course](#). UC Davis
- June 23-27, 2013. [VII International Cherry Symposium](#). Plasencia, Spain
- August 5-8, 2013. [International Symposium on Quality Management of Fruit and Vegetables for Human Health](#). Pattaya, Thailand
- August 19-21, 2013. [I International Symposium on Marketing and Consumer Research in Horticulture](#). Portland, Oregon
- September 2-5, 2013. [VI International Conference on Managing Quality in Chains MQIC 2013](#). Cranfield, United Kingdom
- September 17-19, 2013. [18th Annual Fresh-cut Products: Maintaining Quality & Safety Workshop](#). UC Davis campus
- June 10-13, 2014. [V International Conference Postharvest Unlimited](#). Lemesos, Cyprus
- June 16-27, 2014. [36th Postharvest Technology Short Course](#). UC Davis
- August 27-22, 2014. [XXIX International Horticultural Congress](#). Brisbane, Australia
- September 16-18, 2014. [19th Fresh-cut Products: Maintaining Quality & Safety](#). UC Davis

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Ask the Produce Docs

Q. I work for an organic produce distributor. Occasionally we receive citrus that has blue or green mold. If we attempt to sort it, what precautions do we need to take to try to not spread the mold? Does the good citrus need to be rinsed, packed in new boxes, etc.? (C.B.)



A. When sorting fruit that have green or blue mold you should do this activity AWAY from any other citrus, preferably downwind and outside (which I know is not very practical). At least avoid doing this activity by any air intake into your coolers. I would place the waste fruit in garbage bags, seal them and discard. I would not empty loose fruit into your waste container. The act of dumping the fruit will release millions of spores into the air. Also when you sort the fruit wear gloves to minimize wounding any of the fruit. These two pathogens are wound pathogens and therefore careful handling is essential.

Whether you need to wash the fruit or not depends on how you plan to utilize the sound fruit. See below for comments on how lemon storage facilities deal with sporulation.

In lemon houses which store fruit they can have problems with blue/green mold. The storage crates containing mold are dumped in a separate area, following the same general guidelines as mentioned above. When the fruit are dumped they are spray-rinsed with a chlorinated (you will have to find an organic substitute) spray. This spray makes it more difficult for the spores to become airborne and the chlorinated water will help to disinfest the fruit surface. They are washed and then rewaxed. And yes, pack back the fruit into clean cartons. Discard the soiled cartons.

If you have the space you could: 1) remove the decayed fruit; 2) ease the soiled fruit into a light detergent wash and rinse the fruit. At this point you can inspect the fruit to see if any lesions were missed when you sorted to remove the decayed fruit; 3) dry thoroughly. I assume you do not have the facilities to rewash the fruit so I would pack the fruit into clean cartons or bag them and market IMMEDIATELY.

-[Mary Lu Arpaia](#)

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- 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-Newsletters](#) as PDF documents.

This publication is produced monthly by the UC Davis Postharvest Technology Center. For more information visit our [website](#) or [email](#) us. If you, or a colleague, wish to receive a copy of 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" on the subject line.

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