



April 2008 News from UC Davis

POSTHARVEST TECHNOLOGY

Research & Information Center

QUICK LINKS

- [News from the Center](#)
- [What's New on our Website](#)
- [Postharvest Workshops @ UC Davis](#)
- [Postharvest Specialists' Activities](#)
- [Featured Postharvest Publication](#)
- [Postharvest Positions](#)
- [Postharvest Calendar](#)
- [Ask the Produce Docs](#)

News from the Center

Maintaining the Quality & Safety in California Fresh Strawberries

The UC Davis Postharvest Technology Research & Information Center in collaboration with the California Strawberry Commission hosted on April 15, 2008 an interactive distance learning webinar entitled *Maintaining Quality & Safety in California Fresh Strawberries*. The webinar was attended by nearly 100 participants from the produce industry, academia and government.

The two hour webinar featured five speakers who provided insights and discussion among participants and speakers during question and answer sessions:

- **Current Industry Food Safety Best Practices** Chris Christian, CA Strawberry Commission
- **Role of Product Testing in Food Safety** Trevor Suslow, Ph.D., UC Davis
- **Transportation & DC Handling of Fresh Strawberries** Jim Thompson, UC Davis
- **New PACA Temperatures for Fresh Strawberries** Rick Tomlinson, CA Strawberry Commission
- **Retail & Foodservice Handling** Beth Mitcham, Ph.D., UC Davis

Additional materials about maintaining the quality, safety and marketability of California fresh strawberries are also available at these websites. Visit them to begin your distance education experience and make better informed produce business decisions today.

“Fruit & Vegetable Health Claims – What, Why & How”

On May 15th, 2008 the Robert Mondavi Institute (RMI) Center for Fruit & Vegetable Quality in collaboration with the U.C. Davis Postharvest Technology Research & Information Center are hosting a one day symposium entitled “Fruit & Vegetable Health Claims – What, Why & How”. The one day symposium on the UC Davis campus will focus on the various fruit and vegetable health and nutrition claims as well as clearly defining FDA's requirements for making specific claims. The symposium will also showcase the expertise available at UC Davis to carry out analysis of fruits and vegetables as well as the capabilities of USDA ARS facilities on campus to carry out human consumption studies to potentially substantiate health and nutrition claims.

The one-day Symposium will be held on Thursday, May 15, 2008 from 8:00 a.m. to 5:30 p.m. in the Walter A. Buehler Alumni and Visitors Center, Alpha Gamma Rho Room, University of California, Davis, campus. Dr. Barbara Schneeman, Director of the Office of Nutritional Products, Labeling, and Dietary Supplements at US FDA CFSAN will provide an overview of “Regulatory Framework for Labeling Related to Nutrition and Health”. Also speaking will be Leslie Krasny, Attorney-at- Law, Keller and Heckman, LLP regarding “Successfully Navigating Legal Requirements for Health Claims, and Other Options”. A full list of speakers and

details regarding registration may be found at: <http://fruitvegquality.ucdavis.edu/events.htm>

Class Registration Update

Our [Fruit Ripening & Ethylene Management Workshop](#) has been filled and a wait list has been started. There has been quite a bit of excitement about this freshly-updated workshop, and we have filled early this year. For those interested in the course but who have not had an opportunity to enroll, you'll be interested to know that we will be videotaping this course and will be offering it as a distance learning opportunity later this year.

Many of our special [30th Anniversary Celebration & Postharvest Technology Symposium](#) plans are falling into place, with the promise of an outstanding day that will be long remembered. We invite all alumni of the Postharvest Technology Short Course to join us, as well as industry and academia folks who are interested in taking a look at the future of postharvest technology via some of the most insightful professionals in North America.

We're pleased to announce that enrollments have been opened for the [Fresh-cut Products: Maintaining Quality and Safety Workshop](#) on September 16 – 18, 2008.

[\[Back to Top\]](#)

What's New on our Website this Month

Cantaloupe Agricultural & Consumer Food Safety Best Practices Available On-line

The UC Davis Postharvest Technology Research & Information Center recently posted in the video library portion of its website <http://postharvest.ucdavis.edu/Pubs/video-library.shtml#FoodSafety> two educational videos one for retail and food service buyers and the other for cantaloupe grower/shippers detailing food safety best practices for growing, handling and shipping California cantaloupe melons. The videos were developed by Dr. Trevor Suslow at UC Davis, with funding from USDA CSREES and the CA Cantaloupe Advisory Board, and in collaboration with the California Melon Research Board.

- *With Consumers in Mind: Growing, Handling & Shipping CA Cantaloupes* (Suslow, 2005) This video provides general background and aspects of interest to foodservice buyers and retailers regarding; cantaloupe shed and field packing, California environmental conditions where melons are grown, scientific studies on cantaloupe safety, worker hygiene best practices, equipment sanitation best practices and shed packing best practices.
- *Good Agricultural Practice (GAP) Guidelines for the California Cantaloupe Industry* (Suslow, 2005) Directed at growers and primary suppliers of cantaloupe this video provides details regarding Good Agricultural Practices during the production, handling and postharvest handling of California grown cantaloupe. Issues addressed in the video include safe water use, safe soil amendment application and how to reduce the potential for microbial contamination. The video also provides recommendations regarding food safety best practices for worker training, field and harvest sanitation, postharvest packing house operations, shed packing operations and transportation to markets.
- [Salmonella and Cantaloupe: What Can Consumers Really Do?](#) Also available is a short consumer educational piece that provides up-to-date, easy to understand information that consumers can use for safe in-home handling and preparation of fresh cantaloupe.

New Video Links Added to Postharvest Library

- [How to Tell If Your Fruits and Vegetables Have Gone Bad](#)
Dr. Christine Bruhn Director, Center for Consumer Research at UC Davis explains how to determine if the food in your refrigerator is safe to eat, or if it's time to send it to the trash.
- [How to Properly Wash Your Produce](#)
Dr. Christine Bruhn Director, Center for Consumer Research at UC Davis provides up-to-date, easy to understand information that consumers can use for safe in-home handling and preparation of fresh produce.
- [Onion Packing Shed Operations](#) (Fort Boise Produce)

Postharvest Library Update

Now featuring over 700 articles and other postharvest documents, the “[Postharvest Publications Organized by Topic](#)” data store is one of the best resources for postharvest information. The following new articles were added last month:

[Sorting Table Illumination on Stonefruit Packing Lines in California](#) by M.J. Delwiche, J.F. Thompson, and R.S. Johnson. *American Society of Agricultural Engineers* 9:539-543 (1993)

[Magnetic Resonance Imaging Investigation of the Rehydration of Cut Roses](#) by Rosa E. Valle, Richard Y. Evans, Serge Bobroff, and Michael S. Reid. *ActaHort* 553:495-496 (2001)

[Senescence-Associated Gene Expression in *Narcissus* ‘Dutch Master’](#) by Donald A. Hunter and Michael S. Reid. *ActaHort* 553:341-342 (2001)

[The Effect of Topical Application of 1-Aminocyclopropane-1-Carboxylic Acid on Olive Fruit Abscission](#) by A. Ferrante, D.A. Hunter, and M.S. Reid. *ActaHort* 553:125-126 (2001)

[Sucrose Enhances the Postharvest Quality of Cut Flowers of *Eustoma Grandiflorum* \(Raf.\) Shinn.](#) By Moon-Soo Cho, Fisun G. Celikel, Linda Dodge and Michael S. Reid. *Acta Hort* 453:305-315 (2001)

[Advances in Shipping and Handling of Ornamentals](#) by Michael Reid. *Acta Hort* 453-277-284 (2001)

[A Simple and Rapid Method for Isolating High Quality RNA from Flower Petals](#) by Donald A. Hunter and Michael S. Reid. *ActaHort* 453:147-152 (2001)

This month an additional 50 articles were posted that Michael Reid participated in authoring on topics primarily including ornamental crops and ethylene.

Publications by UC Postharvest Specialists Down-Loaded Frequently in Journals

The following 8 articles co-authored by UC Davis faculty members were included among the lists of top 25 most down-loaded articles from *Postharvest Biology and Technology* during a three-month period since 2004.

Preharvest and postharvest factors influencing vitamin C content of horticultural crops • Review article

Postharvest Biology and Technology, Volume 20, Issue 3, 1 November 2000, Pages 207 - 220

Lee, S.K.; Kader, A.A.

Effect of 1-methylcyclopropene on phenylpropanoid metabolism, the accumulation of phenolic compounds, and browning of whole and fresh-cut 'iceberg' lettuce

Postharvest Biology and Technology, Volume 34, Issue 1, 1 October 2004, Pages 75-80

M.E. Saltveit

Chilling injury in peach and nectarine • Review article

Postharvest Biology and Technology, Volume 37, Issue 3, 1 September 2005, Pages 195-208

Lurie, S.; Crisosto, C.H.

Effect of atmospheric modification, 1-MCP and chemicals on quality of fresh-cut banana

Postharvest Biology and Technology, Volume 39, Issue 2, 1 February 2006, Pages 155-162

Vilas-Boas, E.V.d.B.; Kader, A.A.

Optimal temperature and modified atmosphere for keeping quality of fresh-cut pineapples

Postharvest Biology and Technology, Volume 39, Issue 2, 1 February 2006, Pages 163-168

Marrero, A.; Kader, A.A.

Combined effects of 1-methylcyclopropene, calcium chloride dip, and/or atmospheric modification on quality changes in fresh-cut strawberries

Postharvest Biology and Technology, Volume 40, Issue 3, 1 June 2006, Pages 269-278

Aguayo, E.; Jansasithorn, R.; Kader, A.A.

Development and control of scald on wonderful pomegranates during long-term storage

Postharvest Biology and Technology, Volume 41, Issue 3, 1 September 2006, Pages 234-243

Defilippi, B.G.; Whitaker, B.D.; Hess-Pierce, B.M.; Kader, A.A.

Effect of 1-methylcyclopropene (1-MCP) on softening of fresh-cut kiwifruit, mango and persimmon slices

Postharvest Biology and Technology, Volume 43, Issue 2, February 2007, Pages 238-244.

Vilas-Boas, E.V.d.B.; Kader, A.A.

The following two articles, co-authored by Dr. Adel Kader, are listed among the most cited and accessed articles published in the *Journal of Agricultural and Food Chemistry*:

Antioxidant Activity of Pomegranate Juice and Its Relationship with Phenolic Composition and Processing by Gil, M. I.; Tomas-Barberan, F. A.; Hess-Pierce, B.; Holcroft, D. M.; Kader, A. A. *J. Agric. Food Chem.*; 2000; 48(10); 4581-4589

Quality Changes and Nutrient Retention in Fresh-Cut versus Whole Fruits during Storage by Gil, M. I.; Aguayo, E.; Kader, A. A. *J. Agric. Food Chem.*; 2006; 54(12); 4284-4296.

Postharvest Workshops @ UC Davis

Early registration is suggested to ensure a spot at these popular workshops.

- May 20, 2008. 14th [Annual Fruit Ripening & Ethylene Management Workshop](#). UC Davis campus. (Course **registration is full**, and a wait list has been started. This will be offered as a distance learning course later this year.)
- June 16-27, 2008. [Postharvest Technology Short Course](#) (30th Annual). UC Davis campus.
- June 21, 2008. [30th Anniversary Celebration & Postharvest Technology Symposium](#). UC Davis campus.
- September 16 – 18, 2008. [13th Annual Fresh-cut Products: Maintaining the Quality and Safety Workshop](#). UC Davis campus.

Postharvest Specialists' Activities

Kader Leads California Citrus Quality Council

Dr. Adel Kader recently assumed the position of Chairman of the Board of the California Citrus Quality Council. The CCQC provides a variety of technical guidance, advocacy and quality control elements to all California citrus growers and their shipping organizations. University of California researchers, extension specialists and farm advisors have and continue to work closely with the California citrus industry on issues related to alternative postharvest pest management strategies, food safety and disease prevention.

Ag Improvement in Vietnam

Dr. Diane Barrett was an invited speaker at the Mekong Food conference held March 20-22, 2008 in Can Tho, Vietnam. Dr. Barrett's presentation entitled "Nutritional Comparison of Fresh, Frozen and Canned Fruits and Vegetables" provided details regarding nutrient losses during the postharvest and processing chains. While in Vietnam, Dr. Barrett visited with Food Science faculty at Nong Lam University in Ho Chi Minh City and Can Tho University in Can Tho. The University of California, Davis, has collaborative projects with both universities and is assisting in capacity building and potentially research collaborations.

Postharvest Technology Center Members meet with Produce Industry Leaders

Dr's Roberta Cook, Jim Gorny and Adel Kader of the UC Postharvest Technology Center met with about 30 produce industry leaders at a United Fresh Produce Association Town hall meeting held on March 27, 2008 at the Raley's/BelAir Corporate headquarters in West Sacramento. Issues discussed included produce food safety, the farm bill, sustainability, immigration reform and the general competitiveness of the U.S. produce industry.

Rosaceae Genomics for Crop Improvement

Dr. Carlos Crisosto participated in a Rosaceae Genomics meeting in Chile where over 100 participants from every continent discussed recent scientific findings regarding the rosaceae genome and how these finding may be used to improve crop performance including enhanced postharvest handling.

Food Safety Research Progress and Future Research Outlined

Dr. Linda Harris recently provided a food safety research update to the California Carrot Research Board and the Lettuce Research Board regarding ongoing produce food safety research.

Risk Communications and Consumer Confidence in the Food Supply Addressed

Dr. Christine Bruhn Director of the UC Davis Center for Consumer Research in the Department of Food Science and Technology and active member of the Postharvest Center recently provided her perspectives on risk communications at the Seattle University School of Law's Conference, *The Current State of Food Safety and How It Can Be Improved*, the Experimental Biology Conference in San Diego, California, and the World Ag Expo in Tulare, California.

Annual Postharvest Citrus Meeting Convened in Santa Barbara

Dr. Mary Lu Arpaia convened the 30th Annual Citrus Postharvest Pest Control Conference in Santa Barbara, Calif. on April 7 & 8. The annual conference provides participants with up-to-date information on postharvest handling of California citrus. Also participating in this meeting were Linda Harris, Trevor Suslow, Jim Gorny, Jim Thompson and David Slaughter from UC Davis.

[\[Back to Top\]](#)

Featured Postharvest Publication

Tecnología Postcosecha de Cultivos Hortofrutícolas

This month we're continuing to offering a special 25% discount on our newest publication, [Tecnología Postcosecha de Cultivos Hortofrutícolas](#) (CD). This CD features the comprehensive postharvest content found in the English printed version, "Postharvest Technology of Horticultural Crops." Please use our [Order Form](#) and note "25% April Discount."

[\[Back to Top\]](#)

Postharvest Positions

President of the California Citrus Quality Council

To view the complete job description, visit www.citrusresearch.com/ccqc.

Email resume, letter of interest, 3 references and contact information to: ccqc1314@pacbell.net. Closing date is April 30, 2008.

[\[Back to Top\]](#)

Postharvest Calendar: Upcoming Conferences, Courses and Workshops

- April 23-29, 2008. 2nd International Course on Postharvest Technology and Fresh-cut Produce (II Curso Internacional de Tecnología Postcosecha y Procesado Mínimo Hortofrutícola) Cartagena, Spain. www.upct.es/gpostref/
- May 5-7, 2008. [United Fresh Marketplace & United FreshTech](#). Las Vegas, Nevada.
- May 15, 2008. [RMI Center for Fruit and Vegetable Quality Spring Symposium](#). UC Davis campus.
- May 20, 2008. [14th Annual Fruit Ripening and Ethylene Management Workshop](#). UC Davis campus.
- June 16-27, 2008. [Postharvest Technology Short Course - 30th Annual](#). UC Davis campus.
- June 21, 2008. [30th Anniversary Celebration & Postharvest Technology Symposium](#). UC Davis campus.
- June 21, 2008. [Retirement Dinner](#) for Dr. Adel Kader. UC Davis campus.
- August 11-14, 2008. [9th International Symposium on Postharvest of Ornamentals](#). Odense Conference Center.
- September 16-18, 2008. [13th Annual Fresh-cut Products: Maintaining the Quality and Safety Workshop](#). UC Davis campus.
- January 5-9, 2009. [Frutic Chile 2009](#). 8th Fruit, Nut, and Vegetable Production Engineering Symposium. Concepción, Chile
- April 4-7, 2009. [10th Controlled and Modified Atmosphere Research Conference](#). Antalya, Turkey.
- April 8-12, 2009. [6th International Postharvest Symposium](#). Antalya, Turkey.

[\[Back to Top\]](#)

Ask the Produce Docs

Q: Where can I find more information about required FDA labeling for fresh-cut produce? (JRG)

A: The US Food and Drug Administration (FDA) issued [updated guidance](#) on April 7th to the food industry regarding food labeling. This guidance is a summary (<http://postharvest.ucdavis.edu/datastorefiles/234-981.pdf>) of the required statements that must appear on food labels under these laws and their regulations. The guidance is intended to inform companies about the applicable labeling laws and regulations required of foods being offered for distribution in the United States.

The FDA is responsible for assuring that foods sold in the United States are safe, wholesome and properly

labeled. This applies to foods produced domestically, as well as foods from foreign countries.

The Federal Food, Drug, and Cosmetic Act (FD&C Act) and the Fair Packaging and Labeling Act are the Federal laws governing food products under FDA's jurisdiction. The Nutrition Labeling and Education Act (NLEA), which amended the FD&C Act requires most foods to bear nutrition labeling and requires food labels that bear nutrient content claims and certain health messages to comply with specific requirements. Under FDA's laws and regulations, FDA does not pre-approve labels for food products. --James R. Gorny, Ph.D.

[\[Back to Top\]](#)

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