



UC DAVIS

POSTHARVEST TECHNOLOGY

May 2011 News from UC Davis

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Director's Update

Carlos Crisosto to Serve as Associate Director



Center Director Beth Mitcham

The Postharvest Technology Center welcomes [Carlos Crisosto](#) as a new member of our management team. Carlos is well known by many of you for his strong program on postharvest biology and technology of stone fruit, kiwifruit and other fruit.



Associate Director Carlos Crisosto

Top Resource Pages

- [Postharvest Technology Short Course Information](#)
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THANKS FOR

He has been a member of the Postharvest Technology Center since he joined UC Davis in 1990. As Associate Director, Carlos will lead our efforts in developing a new course for retailers, assist with the development of a certificate program, and create new Center publications and web site content.

The Center Specialists and Staff have been busy preparing for a sold out edition of our Postharvest Technology of Horticultural Crops Short Course beginning June 13. We are also making the final changes to our new website which we will launch in the near future.

--Elizabeth Mitcham

News from the Center



Only Two Spaces Left for the 2011 Postharvest Technology Short Course

Registration specialist Ms. Penny Stockdale has had a busy month, and now the 33rd Annual Postharvest Technology Short Course, scheduled for June 13 – 24, 2011, has only two seats left. Participants from more than twenty-three countries will learn the latest information about the postharvest biology and handling of horticultural crops.

The course starts off with an intensive week long study of the biology and current technologies and best practices associated with the postharvest handling of fresh fruits, nuts, vegetables and ornamentals in California. The second week field tour will visit a wide variety of postharvest operations from harvest to retailing. For complete information or to enroll, contact the registration coordinator, Penny Stockdale at pastockdale@ucdavis.edu; or visit the web page: <http://postharvest.ucdavis.edu/Announce/shortcourse.shtml>

2011 Fresh-cut Products: Maintaining Quality & Safety Workshop

The September 13-15, 2011 Fresh-cut Products: Maintaining Quality & Safety Workshop will be held at the Buehler Alumni and Visitors Center. This workshop will provide an overview of many issues affecting the freshness, nutrition, and safety of fresh-cut products. Topics on the production, processing, packaging, sanitation, temperature, raw material quality, marketing trends and more are included. In 2011, more emphasis will be placed on sensory evaluation of fresh-cut fruit and vegetable products, with sessions on the principles of sensory testing and practical sensory demonstrations. The enrollment cost for this 3-day workshop remains at \$1,050, and includes instruction, course materials, lunches and break refreshments. For more information, or to enroll, link to the web page: <http://postharvest.ucdavis.edu/Announce/freshcut.shtml>





Fruit Ripening & Ethylene Management Workshop Well Received

Every seat was filled for the 17th Annual Fruit Ripening & Ethylene Management workshop, held April 26-27 at UC Davis. Course Organizer Dr. Carlos Crisosto was very enthusiastic about the positive response to the workshop and said, “Everyone was very excited about both the content and excellent interactive aspects of this workshop. I think next year we will add on another day to cover retail components as well as adding more hands on demonstrations to the agenda”.

Participants also offered favorable comments including, “Had a great time, speakers were informative and friendly”, and “The course provided very useful and practical ready-to-use information, I enjoyed it very much!”

Plans for the 2012 offering of this workshop are already well underway, and we anticipate opening up registration for this workshop within a few months.

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Postharvest Workshops

We hope you will join us for our 2011 UC Davis Postharvest Learning Opportunities:

- *June 13-24, 2011: **Postharvest Technology Short Course** – 33rd Annual will be held on the UC Davis campus, with an optional field tour covering the San Joaquin Valley and Coastal California. Registration is now open.*
- *September 13-15, 2011: **Fresh-cut Products: Maintaining Quality & Safety** – 16th Annual, at the UC Davis Buehler Alumni Center’s AGR Room. Registration is now open.*

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Featured Postharvest Publications



Special Spring Discount on “Produce Quality Rating Scales and Color Charts” – \$75 for both the binder and CD

We are pleased to offer, through June 10th, a special 25% discount when you purchase both the binder and CD of our excellent resource “Produce Quality Rating Scales and Color Charts.” For a description and complete table of contents about this publication please link to http://postharvest.ucdavis.edu/Pubs/Pub_Desc_23-A-B-CD-3-10.pdf.

To order a copy for your library, please use our [Order Form](#).

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What’s New on Our Website this Month

New Titles Added to Postharvest Publications Organized by Topic

Our *datastore* is currently comprised of more than 1,300 postharvest documents, organized by topic, and is searchable by title or author. It is one of the premiere sources of postharvest information.

- [Global Food Losses and Food Waste: Extent, Causes and Prevention](#), by Jenny Gustavsson, Christel Cederberg, Ulf Sonesson, Swedish Institute for Food and Biotechnology (SIK). Study conducted for the International Congress “Save Food” at Interpack2011. 38 pgs. (2011)
- [Appropriate Food Packaging Solutions for Developing Countries](#), by Nerlita M. Manalili, study conducted for the International Congress “Save Food!” at Interpack 2011. 37 pgs. (2011)
- [Effects of Low Concentrations of Ethylene on Sweetpotatoes \(*Ipo-Moea Batatas \(L.\) Lam*\) During Curing and Storage](#), Lisa Kitinoja. Acta Horticulturae 201:37-42 (1987)

Now Available as a Free Download:

- [Guide for Solar Fruit Drying in Totogalpa, Nicaragua](#), an initiative prepared by D-Lab, UC Davis for Grupo Fenix, UNI and the Solar Women of Totogalpa. 18 pgs. (2011)
- [La Guía de Secado Solar por las Frutas en Totogalpa, Nicaragua](#), una iniciativa de D-Lab, UC Davis. Preparado para el Grupo Fenix, UNI y las Mujeres Solares de Totogalpa. 19 pgs. (2011)

Note: UC Davis D-Lab is an initiative offering classes focused on the design and development of low cost renewable energy and agriculture solutions that help reduce poverty and generate income. The program emphasizes interdisciplinary analysis and a community-based approach, while offering practical hands-on learning for graduate students. Our partners are in Central America, Africa and Bangladesh.

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Postharvest Specialists' Activities

Suslow and Harris Participate in Advanced Topics in Microbial Safety of Fresh Produce Workshop in Wimauma, Florida

Drs. Trevor Suslow and Linda Harris helped organize and were instructors for the April 27-29, 2011 Florida offering of the USDA Specialty Crops Research Initiative grant supported workshop "Advanced Topics in Microbial Safety of Fresh Produce." The workshop was held at the Balm Campus, Gulf Research & Education Center, located in Wimauma, Florida. Participants offered numerous positive comments, including, "The workshop was highly interactive, which was nice. Always nice to hear others' opinions regarding testing, risk assessment, auditing, etc." and "I liked the diversity of topics. The presentation of actual studies and data was very helpful, as were the identification of numerous resources outside the classroom."

Mitcham and Crisosto Support Delivering More Flavorful Fruit Workshop in Gainesville, Florida

Joining a team of thirteen instructors, Drs. Beth Mitcham and Carlos Crisosto traveled to Gainesville, Florida May 4-5 for the second offering of the USDA Specialty Crops Research Initiative grant-supported workshop "Delivering More Flavorful Fruit". They were joined by Dr. Florence Zakharov, Dr. David Slaughter and Jim Thompson, P.E., also from UC Davis. Dr. Slaughter and Jim Thompson participated in the workshop remotely through video conferencing. The workshop was a great success. One participant said, "[This workshop has an] ideal theme, for it is unique and needed. The small notebook combined with information on the flash drive is an excellent way to present the talks. All talks were interesting and facility was very comfortable."

Barrett Coordinates Center for Advanced Processing and Packaging Meeting

Dr. Diane Barrett participated in the biannual meeting of the NSF Center for Advanced Processing and Packaging, held at North Carolina State University in Raleigh from May 3-6, 2011. There were discussions related to a USDA research project on Effects of Advanced Preservation Methods on Quality of Tomato Juice in addition to the CAPPs meeting.

Horticulture Collaborative Research Support Program (CRSP) call for proposals

Horticulture CRSP is pleased to announce its next call for proposals! Comprehensive Projects in four specific topic areas will be considered: Postharvest, Seed Systems, Sweetpotato, and African Indigenous Vegetables. Project proposals should address the entire system within the topic areas and should focus on bottlenecks within each system. Projects will be funded at \$500,000 to \$1 million for a period beginning October 1, 2011 and ending no later than July 31, 2014. A full description of the request for proposals can be found at <http://hortcrsp.ucdavis.edu/main/2011comprehensivecall.html>

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Postharvest Positions

Postharvest Physiology Research Scientist

Chiquita Brands International is seeking a Research Scientist to lead Postharvest Physiology research at its Salad and Fruit Research Center in Salinas in the development of the next generation of consumer products. Requirements include a Ph.D. or M.S. degree in Postharvest Physiology with 2 to 5 years experience in vegetable and fruit growing, processing and quality preservation, experience in connecting growing conditions to post harvest product performance, strong ability to develop experimental designs and statistical data

analyses and experience with sensory and nutritional analysis are desirable. For more information, or to apply online, click [here](#).

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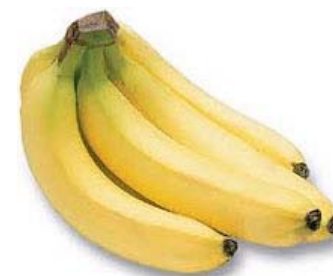
Postharvest Calendar: Upcoming Conferences, Courses and Workshops

- June 13-24, 2011. **Postharvest Technology Short Course**. 33rd Annual, UC Davis campus/field tour.
- June 28, 2011. **2nd Annual Produce Research Symposium**. Orlando, Florida.
- July 17-21, 2011. **Second International Conference on Quality Management of Fresh Cut Produce: Convenience Food for a Tasteful Life**. Torino, Italy.
- September 10-12, 2011. **International Symposium on Mycotoxins in Nuts and Dried Fruits**. Damghan, Iran.
- September 13-15, 2011. **Fresh-cut Products: Maintaining Quality & Safety**. 16th Annual. UC Davis campus.
- September 18-22, 2011. **Australasian Postharvest Horticulture Conference**. Lome, Victoria, Australia.
- October 14-17, 2011. **Fresh Summit International Convention & Expo**, Atlanta, GA, USA; Produce Marketing Association.
- December 3-6, 2011. **International Conference on Quality Management in Supply Chains of Ornamentals**. Radisson Hotel, Bangkok, Thailand. Contact Sirichai Kanlayanarat (66)2-470-7720 or gmsco@kmutt.ac.th.
- December 3-6, 2011. **Southeast Asia Symposium on Quality Management in Postharvest Systems** (SEAsia2011). Bangkok, Thailand. Contact Sirichai Kanlayanarat (66)2-470-7720 or seasia@kmutt.ac.th
- December 3-6, 2011. **Asia Pacific Symposium on Postharvest Quality Management of Root and Tuber Crops**. Radisson Hotel, Bangkok, Thailand. Contact Sirichai Kanlayanarat (66)2-470-7720 or sirichai.kan@kmutt.ac.th.
- 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.
- 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.

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Ask the Produce Docs

Q. I am a banana wholesaler and thought I'd seen it all. I have referred to your website many times in the past but I am currently stumped. I cannot find anything in your research that addresses "why bananas split". One of our customers is sporadically seeing the bananas we send him split. I have always assumed this was caused by the banana receiving too much heat (postharvest), upwards of 74 degrees somewhere during the ripening, delivery or storage stage. However, we have investigated all areas from Ripening to Retail and there is no interruption in the cold chain and pulp temperatures have not been above 64 degrees. Do you have any suggestions on why we are seeing this occasional splitting? Is the problem of bananas splitting only caused by heat or are there other factors to consider? (J.F.)



A. Banana skin splitting can result from high relative humidity (>90%) plus high temperature (>70 F), especially in bananas that are harvested fully mature-green (round in cross section). Also, skin splitting often occurs when bananas are left on the plant until ripe because of the high temperature and high relative humidity in the production areas.

–Adel Kader

Q. I appreciated your post harvest information for roses. Please help me with some information about packing for freight transport and control of bruises on soft petal varieties of rose. (B.M.)



A. Thanks for the request for information on controlling bruises during transport of roses. As you are aware, the petals of roses are very delicate, and subject to compression bruising. This bruising is more obvious in the light-colored cultivars (whites, pinks, pale yellows), because the browning that results is more clearly seen, but it certainly occurs in all cultivars. Our standard recommendations for packing roses (and other flowers) are to pack gently, but securely (to avoid vibration bruising) and to avoid over-packing. Unfortunately, over-packing is an inevitable result of the high cost of air freight, and the volumetric basis on which this cost is determined. I frequently see cartons of roses that are almost round from the extra flowers that have been forced into them to reduce the per-stem cost of air freight. Flowers in such boxes cannot be pre-cooled efficiently, and will inevitably show a high level of bruising. In one large production center I saw grown men using strapping equipment to squeeze roses into a box half the size that should have been used. Of course all the flowers will be bruised after such treatment, and no cushioning or wrapping materials will prevent it.

Experiments in which roses were harvested, cooled, and packed without ever being placed in water resulted in dramatic reduction in bruising, and (for some cultivars) even an extension in vase life. "Rehydration", particularly at temperatures above 0 C (32F), results in continued growth of the rose bud, so that there is more volume to be packed in a box for a given number of buds. So that's an option that's worth exploring.

Obviously these are general comments that may or may not relate to your operation - if you have specific questions I'd be glad to answer them.

--Michael Reid

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If you have a 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 Yellowpages](#), or email us with [additions or corrections](#).

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