



July 2014

## News from the UC Davis Postharvest Technology Center

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### Director's Update

#### First Produce Professional Certificate Issued

We are delighted to announce that Stefan Jan Michel Droogendijk from the Netherlands is the first person to complete the UC Davis Postharvest Technology Center's Produce Professional Certificate Program. He completed the entire program of 120 points (hours) in just ten months. Despite his speedy completion of the program, Stefan will continue to have access to the online site, including videos of lectures and updated course handouts for the full four years.

Stefan initially attended the 2013 Postharvest Technology Short Course and was inspired by what he learned. In October he enrolled in the Produce Professional Certificate program, and a month later attended the Produce Safety Workshop, one of the required components. In March 2014 he attended the Fruit Ripening & Retail Handling Workshop, and even though at that point he had completed all the required campus-based courses, Stefan really wanted to attend the Postharvest Technology Short Course Field Tour. So Stefan returned in June and participated in the week-long field tour. He told me that visiting such a wide variety of postharvest operations really drove home the lessons he learned during the workshops.

We congratulate Stefan on this achievement, and welcome him as the Postharvest Technology Center's first Certified Produce Professional #001!



#### Generous Support from Our Friends

We appreciate that you, our faithful readers, took some time to write quite a few of the comments that were written in support of the proposed new Postharvest Specialist positions. Now the decision is in the hands of the administrative team, and we hope to have good news to report back to you once the decision has been made about which of the 100+ positions will be filled.

We also appreciate a recent generous contribution from [ADM Cares](#) (Archer Daniels Midland). ADM Cares is a social investment program that directs funds to initiatives and organizations that drive meaningful social, economic and environmental progress worldwide. The program comprises three distinct focus areas: supporting the responsible development of agriculture, improving the quality of life in ADM communities and fostering employee giving and volunteer activities. This contribution will be used to begin developing a more robust consumer section of our website.

Many thanks as well to [PomWonderful](#) for their generous donation to the work of the Postharvest Technology Center, made in memory of Dr. Adel Kader.

#### UC Davis Students Selected for PMA Fresh Summit Scholarship

Congratulations to UC Davis students Evann Dufort, Christy Howe, Chelsea Kaminski, Genevieve Puccinelli, and Kenneth Lekashman who were selected to receive scholarships valued at \$1,100 each to attend the PMA Fresh Summit as well as the UC Davis reception that will be held in Anaheim this October. We thank our sponsors from the produce industry for providing funds for these scholarships, as well as participating in the selection process.

We hope you will also join us at the **UC Davis Reception** at the PMA Fresh Summit in Anaheim, October 18<sup>th</sup>. Not only will you have a chance to meet these top notch students, you'll also have a chance to meet the new UC Davis College of Agriculture & Environmental Sciences' Dean, Helene Dillard. The reception will be held from 5-8:30 pm, and we request your RSVP at this [webpage](#).

--*Beth Mitcham*

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## Postharvest Education at UC Davis



### Enrollments Limited! September 23<sup>rd</sup> – 25<sup>th</sup>

#### Fresh-cut Products: Maintaining Quality & Safety Workshop

To maximize the learning and interactive process, spaces are limited to 65 seats for the September 23-25, 2014 Fresh-cut Products: Maintaining Quality & Safety workshop. Organized by Dr. Marita Cantwell, it will include the most current information and some of academia's and industry's most cutting-edge speakers who will provide those from the fresh-cut industry with comprehensive and up-to-date content. The enrollment price remains at \$1150 for this 3-day workshop. To learn more or to enroll, visit the [webpage](#), or contact the Enrollment Coordinator, [Ms. Penny Stockdale](#).

#### Produce Safety: A Science-based Framework Workshop

We have just begun accepting enrollments for the November 4-6, 2014 Produce Safety: A Science-based Framework Workshop. The workshop will be an interactive two-and-a-half day workshop held on the UC Davis Campus, with a focus on Microbial Produce Safety Systems from Preharvest to Postharvest. Coordinated by Dr. Trevor Suslow, the workshop will provide an integrated approach to building a foundation of awareness and improved understanding of the current scientific basis for produce microbial safety systems and preventive controls. The enrollment fee remains at \$950 for this 2½ day workshop. To learn more, we invite you to visit the [web page](#) or contact our Enrollment Coordinator, [Ms. Penny Stockdale](#).

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## Featured Postharvest Bookstore Item

### Extended! A 25% Discount on 2013 Fresh-cut Products: Maintaining Quality & Safety Workshop Binder

It was such a big hit last month that we have extended this special offer. Through the end of August we are offering a 25% discount on the course materials from the 2013 Fresh-cut Products, Maintaining Quality & Safety Workshop binder. The regular price is \$175, now on sale for just \$131.25!



Compiled and edited by Dr. Marita Cantwell, this publication includes a 473 page binder, 3 separately-bound publications, and a flash drive containing PDF files of all the binder contents. Topics include fresh-cut industry marketing and regulations, quality factors, sensory & consumer evaluation, fresh-cut product biology, product preparation & equipment, fresh-cut products & temperature, modified atmospheres & packaging and much more.

We invite you to order a copy for your library today. U.S. addresses only, please use our [online store](#). International addresses, please use our printed [order form](#). Please use the code "FC25%" to receive the discount. Please order soon, since quantities are limited.

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## Postharvest Positions

### Quality Assurance Specialist with Primus Labs

Primus Labs is offering a Quality Assurance Specialist position at their Santa Maria, Calif. location. This support specialist position will work closely with several programs to assist auditors and auditees, including special projects

for the QA department, assisting with technical needs, and communicating QA protocols. See the [position description](#) for complete information.

### Scientific Investigator Opportunity

CORPOICA institution in Colombia is seeking an agricultural engineer (PhD) in the area of postharvest with an emphasis in physiology and technology. Please see [their website](#) for complete information.

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## Postharvest Specialists' Updates & Other News

### Bruhn Interviewed by Fresno Bee

Dr. Christine Bruhn was [interviewed by the Fresno Bee newspaper](#), where she provided information about a study of food handling practices when consumers prepared a meal of a green salad and chicken. Video recordings were made of 120 people, 84% of whom indicated they were knowledgeable about food safety, while they prepared the meal in their homes. The UC Davis study showed that consumers, while knowledgeable about some food safety topics, still have many areas where they could improve their food handling practices.

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## What's New on Our Website

### A Helpful Resource: Postharvest Yellow Pages

The [Postharvest Yellow Pages](#) can be a great reference tool when you're looking for specialty postharvest handling resources. It includes more than 330 businesses whose contact information is updated annually. Listings include categories for: consultants, business services, and labs; controlled and modified atmosphere supplies; chemicals and quarantine treatment systems; cooling and refrigeration; environmental measurements; ethylene scrubbers and action inhibitors; facilities design and construction; fresh-cut and food service equipment and supplies; gas sampling, mixing and analysis; harvesting fruits and vegetables; packinghouses; produce and seed sources; produce expositions and newsletters; publishers; quality evaluation; ripening facilities and supplies; and transportation.



No endorsements of listed sites, supplies, or products is intended, nor criticism implied of those not mentioned. Recommendations for additions or corrections to listings are always welcomed.

### New in July 2014 in the "Postharvest Publications Organized by Topic" Library

*This extensive [free postharvest resource library](#) currently offers more than 1,900 articles on a wide variety of topics.*

#### **Food Safety**

Palumbo, M., L.J. Harris, M.D. Danyluk, [Outbreaks of foodborne illness associated with common berries, 1983 through May 2013](#). IFAS Extension FSHN13-08, 9 pgs.

Vandamm, J.P., D. Li, L.J. Harris, D.W. Schaffner, M.D. Danyluk, [Fate of \*Escherichia coli\* O157:H7, \*Listeria monocytogenes\*, and \*Salmonella\* on fresh-cut celery](#). Food Microbiology 34 (2013) 151-157

Jensen, D.A., L.M. Friedrich, L.J. Harris, M.D. Danyluk, D.W. Schaffner, [Quantifying transfer rates of \*Salmonella\* and \*Escherichia coli\* O157:H7 between fresh-cut produce and common kitchen surfaces](#). Journal of Food Protection 76 (2013) 1530-1538

McKellar, R.C., F. Pérez-Rodríguez, L.J. Harris, A-L Moyne, B. Blais, E. Topp, G. Bezanson, S. Bach, P. Delaquis, [Evaluation of different approaches for modeling \*Escherichia coli\* O157:H7 survival on field lettuce](#). International Journal of Food Microbiology 184 (2014) 74-85

Williams, T.R., A-L Moyne, L.J. Harris, M.L. Marco, [Season, irrigation, leaf age, and \*Escherichia coli\* inoculation influence the bacterial diversity in the lettuce phyllosphere](#). PLOS ONE Vol. 8 (July 2013) 14 pgs.

## Peach

Scattino, C., A. Castagna, S. Neugart, H.M. Chan, M. Schreiner, C.H. Crisosto, P. Tonutti, A. Ranieri, [Post-harvest UV-B irradiation induces changes of phenol contents and corresponding biosynthetic gene expression in peaches and nectarines](#). Food Chemistry 163 (2014) 51-60

Martínez-García, P.J., D.E. Parfitt, R.M. Bostock, J. Fresnedo-Ramírez, A. Vázquez-Lobo, E.A. Ogundiwin, T.M. Gradziel, C.H. Crisosto. [Application of genomic and quantitative genetic tools to identify candidate resistance genes for brown rot resistance in peach](#). PLOS ONE Vol 8 (Nov. 2013) 12 pgs.

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## Postharvest Calendar

- August 17-22, 2014. [XXIX International Horticultural Congress](#). Brisbane, Australia
- August 25-29, 2014. [Small-Scale Postharvest Horticultural Technologies Short Course & Study Tour](#). Bali, Indonesia
- September 23-25, 2014. [19<sup>th</sup> Fresh-cut Products: Maintaining Quality & Safety](#). UC Davis campus
- October 14-17, 2014. [Postharvest Technology Course](#). Wageningen, The Netherlands
- October 18, 2014. [UC Davis Reception at PMA Fresh Summit](#). Anaheim, CA
- November 4-6, 2014. [2<sup>nd</sup> Annual Produce Safety Workshop](#). UC Davis campus
- November 12-14, 2014. [VII Congreso Iberoamericano de Tecnología Postcosecha y Agroexportaciones](#). Quito, Ecuador
- March 17-18, 2015. [21<sup>st</sup> Fruit Ripening & Retail Handling Workshop](#). UC Davis campus
- June 15-26, 2015. [37<sup>th</sup> Annual Postharvest Technology of Horticultural Crops Short Course](#). UC Davis
- September 13-18, 2015 [III International Conference on Fresh-cut Produce](#). ISHS. UC Davis campus.

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## Ask the Produce Docs

**Q.** Our team has been utilizing UC Davis' expertise in the cold storage of perishables and other commodities for the past several years and we have been very successful in implementing what we have learned in our own 50,000 SF (and growing) cold storage facility. We import fresh fruit and vegetables via the regional port and we pride ourselves on keeping the cold-chain of the product intact throughout the inbound / outbound process.

With the wide range of commodities that we are handling, ethylene outputs from the product have become an area of concern for us. We have recently purchased two high quality ethylene scrubbers, and have implemented them in the facility. However, we do not currently have a method of identifying the PPM of ethylene in the cold storage air.

Given your expertise, would you have any idea of a monitor or mobile monitoring device that exists to check ethylene levels? I have been searching for over a week now to no avail. Thanks for the assistance, and I truly appreciate the work you all do for the community. (C.G.)

**A.** Measuring ethylene contamination in storage areas remains a difficult task because the active levels of ethylene are so low (50 parts of ethylene in a billion parts of air, or even less). Several promising new developments for ultra-sensitive measurement using nano-technology have been reported in recent years, but none has yet come to the market place. Measurement at these low levels still requires expensive instrumentation, usually a gas chromatograph (\$20,000). Photoacoustic ethylene detection is extremely sensitive and reliable, but the equipment is even more expensive (\$40,000). Our recommendations for preventing the effects of ethylene in mixed storage are:

1. Maintain tight control of storage temperatures
2. Store ethylene-producing and ethylene sensitive products in different areas if at all possible
3. Ventilate each storage area with fresh air, drawn in from above the building, with a minimum flow of 1 air exchange per hour.

Cheers,



## End Notes and Disclaimers

**Postharvest Questions.** If you have a perplexing postharvest question you'd like answered, please send it to [postharvest@ucdavis.edu](mailto:postharvest@ucdavis.edu), and we'll see if one of our specialists can help.

**Archived Items.** Link to a data store of all our previous "[Ask the Produce Docs](#)" questions, or link to [archived copies](#) of our monthly e-newsletter as PDF documents.

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