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Western US Irrigation Water Conference

Complying with FDA's Produce Safety Rule

April 24th - 25th

Hosted By:

Western Center for Food Safety
University of California, Davis



Conference Program







Welcome!

Greetings from the Western Center for Food Safety:

Goals of this conference

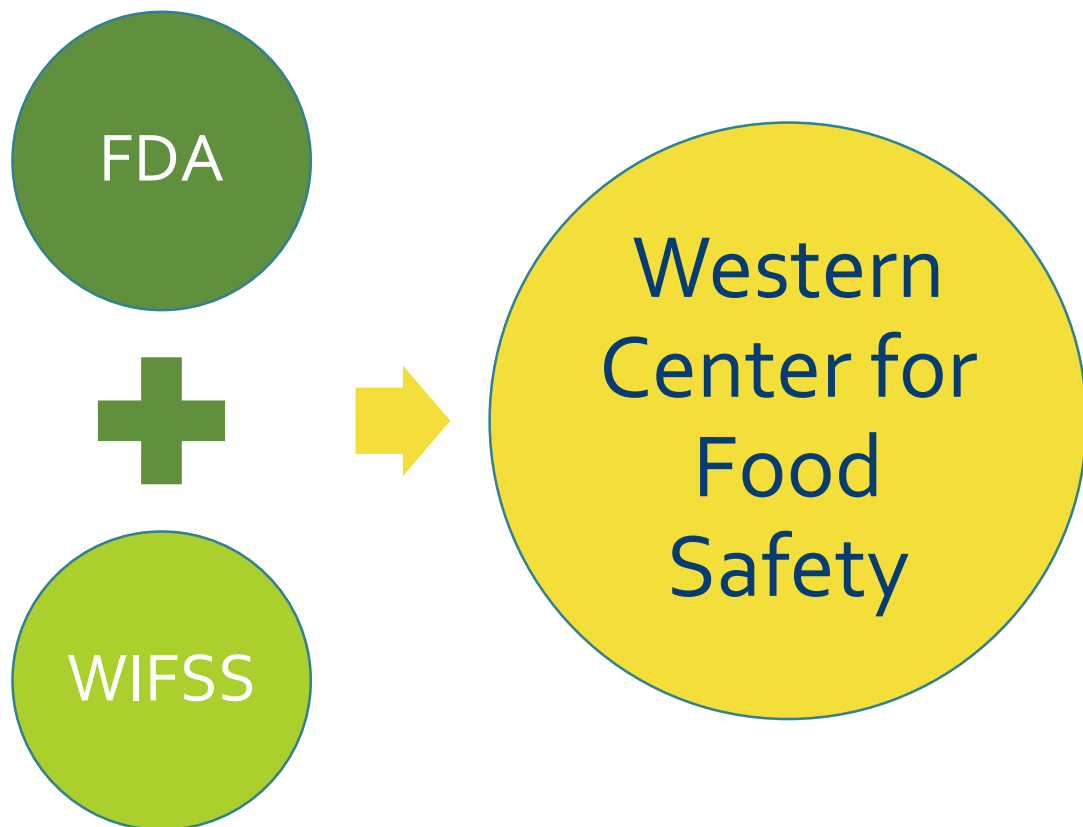
- Identify key impediments to widespread adoption of the agricultural water quality criteria in the proposed Produce Safety Rule (FSMA).
- Clarify the relationship between ownership of irrigation water and responsibility of meeting the microbiological criteria of agricultural water.
- Clarify natural resource and drinking water policies that are congruent with adoption of FSMA's agricultural water quality criteria.
- Identify actionable solutions to identified impediments and to facilitate these solutions under FSMA.

Housekeeping items:

- We're looking forward to lively audience discussions, please wait for a microphone before asking questions so that everyone can hear you
- UC Davis is a smoke-free campus, please be respectful of others during break periods
- We are happy to provide complementary Wifi Access
Network: Moobilenet
Login: WCFS2014@gmail.com/ Password: WCFS2014

Partners in Research...

The Food and Drug Administration (FDA) initiated a cooperative agreement in 2008 that established the Western Center for Food Safety (WCFS) in partnership with the Western Institute for Food Safety and Security (WIFSS) at the University of California, Davis. WCFS research, outreach, and education programs enhance FDA's implementation of the prevention oriented activities outlined in the Food Safety Modernization Act (FSMA).



Goals of WCFS

1. Conduct multidisciplinary applied research on pre-and post harvest food safety issues that will generate real-world solutions and enhance food protection for FDA-regulated products.
2. Provide technical assistance to the farming community in adopting and complying with components of FSMA through outreach materials, food safety workshops, and educational programs for food producers, harvesters, processors and key stakeholders across the continuum of FDA-regulated foods.
3. Build relationships with domestic and international partners to successfully leverage resources and maximize the ability to achieve research, education and outreach objectives.

Keynote Speakers

Michael R. Taylor, Deputy Commissioner for Foods and Veterinary Medicine



Michael Taylor is Deputy Commissioner for Foods and Veterinary Medicine at the U.S. Food and Drug Administration (FDA). In this position, Mr. Taylor provides leadership and direction to the Center for Food Safety and Applied Nutrition (CFSAN) and the Center for Veterinary Medicine (CVM). He also works closely with the foods-related programs of FDA's inspection and compliance arm, the Office of Regulatory Affairs (ORA).

He is responsible for establishing a modern, science-based and prevention-oriented food safety program for domestic and imported foods. He also leads critical areas such as food labeling, nutrition, animal drug safety and effectiveness and scientific capacity.

Mr. Taylor served previously in senior positions at FDA and the U.S. Department of Agriculture, as a research professor in academia, and on several National Academy of Sciences expert committees. He received his law degree from the University of Virginia and his B.A. degree in political science from Davidson College.

Karen Ross, Secretary of California Department of Food and Agriculture



Karen Ross was appointed Secretary of the California Department of Food and Agriculture (CDFA) on January 12, 2011 by Governor Edmund G. Brown Jr. Secretary Ross has deep leadership experience in agricultural issues nationally, internationally, and here in California. Prior to joining CDFA, Secretary Ross was chief of staff for U.S. Agriculture Secretary Tom Vilsack, a position she accepted in 2009. Before her time at the United States Department of Agriculture, Secretary Ross served more than thirteen years as President of the California Association of Winegrape Growers (CAWG), based in Sacramento. During that same period she served as the Executive Director of Winegrape Growers of America, a coalition of state winegrower organizations, and as Executive Director of the California Wine Grape Growers Foundation, which sponsors scholarships for the children of vineyard employees. Among Secretary Ross' many achievements at CAWG was the creation of the nationally-recognized Sustainable Winegrowing Program, which assists wine grape growers in maintaining the long-term viability of agricultural lands and encourages them to provide leadership in protecting the environment, conserving natural resources, and enhancing their local communities.

Conference Chairs

DR. E.R. Atwill, Principal Investigator, WCFS; Director, WIFSS UC Davis



Dr. Rob Atwill is Principal Investigator of the WCFS, director of the Western Institute for Food Safety and Security, and director of Veterinary Medicine Extension. He is a professor of epidemiology and medical ecology in the Department of Population Health and Reproduction, School of Veterinary Medicine, UC Davis. He received a D.V.M. in 1990 and a M.P.V.M. in 1991 from UC Davis. He received a Ph.D. in Epidemiology and Infectious Disease in 1994 from Cornell University, Ithaca, New York. Goals of his academic program are to identify management strategies for minimizing microbial contamination of food and water, characterizing key processes of environmental dissemination of microbial pathogens, and clarifying the epidemiology of zoonotic pathogens in livestock and wildlife populations. He has authored over 145 peer-reviewed journal articles and book chapters, over 220 proceedings and abstracts, and is a member of numerous scientific advisory committees for resource agencies, agricultural organizations, and governmental agencies involved in preventing water and foodborne zoonotic diseases.

Dr. Samir Assar, Director, Produce Safety Staff- FDA-CFSAN



In **Dr. Assar's** role as Director of the Produce Safety Staff, he is responsible for managing the development of policy, regulations, and guidance related to produce safety. He received his M.S. and Ph.D. in Food Science with an emphasis in microbiology from the University of Florida. Dr. Assar has worked collaboratively with state and local agencies in cooperation with private industry to conduct numerous assessments of produce farms and packing houses in Virginia, Florida, and California. He has also provided technical assistance during fresh-cut produce facility inspections and produce-related outbreak investigations. Dr. Assar currently serves as the FDA Project Officer for the Western Center for Food Safety at University of California, Davis that was formed to conduct research, education, and outreach addressing issues that interface production agriculture and food safety.

Conference Agenda

Day One

Registration and Breakfast beginning 7:45 am

8:30 – 8:40 am	Introductions & Goals of Day 1: Impediments	Rob Atwill, UC Davis, WCFS & ANR
8:40 – 8:55 am	Update on Produce Safety Rule and goals of the regulations for agricultural water criteria	Mike Taylor, USDA
8:55 – 9:10 am	California agriculture and FSMA's water quality regulations	Karen Ross, CDFA
9:10 – 9:30 am	Overview of potential impediments to widespread adoption of agricultural water criteria, focused on Western US	Rob Atwill, UC Davis, WCFS & ANR
9:30 – 10:00 am	Overview of state and federal water projects and adoption of FSMA agricultural water criteria at large scales	Jay Lund, UC Davis
10:00 – 10:20 am	Legal jurisdiction of Water Quality Control Boards, feasibility of large scale FSMA standards adoption	Johnny Gonzales, SWRCB
Coffee Break 30 min		
10:50– 11:10 am	Institutional history of regulating nonpoint-sources for water quality degradation in California	Thomas Harter, UC Davis-ANR
11:10 – 12:00 pm	Discussion of adoption of irrigation water quality criteria by irrigation districts: Moderator- Rob Atwill	Justin Harter, WSWRA Nathan Heeringa, Innovative Ag Ser. Laura Giudici Mills, LGM Consulting
Lunch 1 hr		
1:00 – 2:00 pm	Perspectives of Western Farm Bureaus on water ownership and responsibility for water quality compliance: Moderator- Melissa Partyka	April Mackie, AFBF-RAMCO Ent. Mike Freese, OFB Bruce Grim, WSHA
2:00 – 3:00 pm	Differences in perspectives about impediments from Upper Midwest, Eastern Seaboard and Southern Agricultural regions: Moderator- Michele Jay-Russell	George Vellidis, UGA-ANR Phill Tocco, MSU-CANR Elizabeth Bihn, PSA-CU
Coffee Break 30 min		
3:30 – 4:00 pm	Complying with irrigation water quality criteria in arid regions: lessons learned from Imperial Valley, CA and Yuma, Arizona: Moderator- Marianne Fatica	Khaled Bali, UC Davis-ANR Channah Rock, UA-CE
4:00 – 4:45 pm	Perspectives from natural resources agencies on adoption of irrigation water quality criteria, managing for multiple uses: Moderator- Rob Atwill	Luana Kiger, NRCS Andrew Gordus, CDFW Joseph Dillon, NOAA-NMFS
4:45 – 5:00 pm	Closing Comments	Rob Atwill, UC Davis, WCFS & ANR
5:00 – 6:30 pm	Wine Reception	UC Davis- Vet Med 3B Lobby

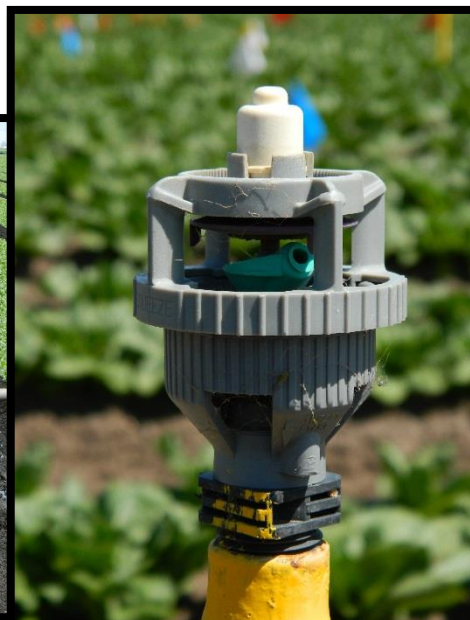
Conference Agenda

Day Two

Breakfast beginning 7:30 am

8:00 – 8:10 am	Introductions & Goal of Day 2: Solutions	Rob Atwill, UC Davis, WCFS & ANR
8:10 – 9:10 am	Review of technologies to reduce microbial contamination: Surface Water Disinfection and Groundwater Well Compliance Issues: Moderator-Melissa Partyka	Tim Hall, CDPH John Fawcett, LSCE Tom Elson, LSCE
9:10 – 9:50 am	How to utilize alternatives and variances in the proposed Produce Safety Rule to comply with irrigation water quality criteria: Moderator- Linda Harris	Linda Harris, UC Davis, WCFS & ANR Jim Gorny, PMA Samir Assar, FDA-CFSAN Mike Melzer, UH Honolulu
10:20 – 10:50 am	Lessons learned from the drinking water industry: Moderator- Rob Atwill	Paul Rochelle, MWD Tim Koopmann, SFPUC
10:50 – 11:30 am	Lessons learned from community engagement: pitfalls and success stories: Moderator- Karen Lowell	Sheila Barry, UC Davis-ANR Kurt Nolte, UA-CE Thomas Harter, UC Davis-ANR
11:30 – 12:30 pm	Adoptable technologies and GAPs for complying with irrigation water quality criteria: Moderator- Rob Atwill	Ariane Lotti, NSAC Johnny Gonzales, SWRCB Laura Giudici Mills, LGM Consulting April Mackie, CFBF-RAMCO Enterprises Karen Killinger, WSU Marianne Fatica, FDA
12:30 – 12:40 am	Closing Remarks	Rob Atwill, UC Davis, WCFS & ANR Samir Assar, FDA-CFSAN

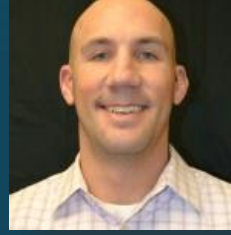
Lunch, boxed for easy travel



Speakers and Panelists



Dr. Khaled Bali- County Director of the University of California Cooperative Extension- Imperial County



Mike Freese- Oregon Farm Bureau's, Director of Regulatory Affairs



Sheila Barry- County Director of the University of California Cooperative Extension- Santa Clara County



Johnny Gonzales- Water Resources Control Engineer -CalEPA - SWRCB - DWQ - Regulatory Section Irrigated Lands Regulatory Program Coordinator



Dr. Elizabeth Bihn- Senior Extension Associate in the Department of Food Science at Cornell University



Dr. Andrew Gordus- Environmental Scientist with the California Department of Fish and Wildlife



Joseph Dillon- Water Quality Coordinator with NOAA-NMFS West Coast Region



Dr. Jim Gorny- Vice President, Food Safety & Technology for the Produce Marketing Association



Tom Elson- Professional Engineer at Luhdorff & Scalmanini Consulting Engineers in Woodland , Ca



Bruce Grim- Executive Director at the Washington State Horticultural Association



Dr. Marianne Fatica- Produce Safety Staff, Office of Food Safety USFDA-CFSAN



Tim Hall- Senior Environmental Health Scientist & Technical Specialist at the California Department of Public Health



John Fawcett- Professional Engineer at Luhdorff & Scalmanini Consulting Engineers in Woodland , Ca



Dr. Linda Harris- Co-Principal Investigator at WCFS; Cooperative Extension Specialist in Microbial Food Safety

Speakers and Panelists (cont.)



Justin Harter- District Manager Naches-Selah Irrigation District, Washington State Water Resources Association



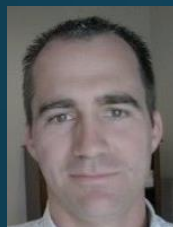
April Mackie- Committee member of the American Farm Bureau Federation/VP Fundraising at the Monterey Farm Bureau-Ramco Custom Harvesting Co.



Dr. Thomas Harter- Professor of Hydrology, Robert M. Hagan Endowed Chair in Water Management and Policy.



Dr. Mike Melzer- Assistant Researcher, Plant and Environmental Protection Sciences, University of Hawaii



Nathan Heeringa- Owner/Agronomist with Innovative Ag Services in Hanford, CA



Laura Giudici Mills- Owner/Consultant at LGM Consulting in California and Arizona



Luana Kiger- Special Assistant to the State Conservationist, USDA-Natural Resources Conservation Service (NRCS) California



Dr. Kurt Nolte- Resident Director, Area Extension Agent Yuma at the University of Arizona's Yuma Agricultural Center



Dr. Karen Killinger- Associate Professor and Extension Food Safety Specialist at Washington State University



Dr. Paul Rochelle- Source Water Microbiology Team Leader at the Metropolitan Water District of Southern California



Tim Koopmann- President of the California Cattlemen's Association and Watershed Resource Specialist for the SFPUC



Dr. Channah Rock- Associate Professor and Assistant Water Quality Specialist at the University of Arizona



Ariane Lotti- Assistant Policy Director at the National Sustainable Agriculture Coalition



Phil Tocco- Extension Educator at the Michigan State University Extension



Dr. Jay Lund- Professor of Civil and Environmental Engineering, Director of the UC Davis Center for Watershed Sciences



Dr. George Vellidis- Professor of Civil and Environmental Engineering, and currently the Ray B. Krone Chair of Environmental Engineering.

Panel Moderators



Karen Lowell - USDA
NRCS Central Coast
Team Agronomist



Melissa Partyka -
Staff Research Associate
with WCFS; PhD student
UCD Graduate Group in
Ecology



Dr. Michele Jay-Russell -
Program Manager/Research
Microbiologist at WCFS and
WIFSS

Event Staff



Ronald Bond -
WCFS/WIFSS Water
Quality Researcher



Claudia Bonilla -
WCFS Conference
Graphics and Design
Coordinator



Chris Brunner -
WIFSS Marketing and
Public Relations
Coordinator



Melissa Partyka -
WCFS Conference
Planning Supervisor

Additional Thanks to...

Peiman Aminabadi
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Jay Clark
Leigh Jacobsen

Fhon Jeamsripong
Jeff Li
Justin Mraz
Navreen Pandher
Reina Pisano

Guy Ragosta
Anyarat Thiptara
Jessica Wong
Ivy Wong
Anka Zwieniecka

Produce under the Rule: What's covered?



- Produce covered under the rule are generally eaten raw, or do not get exposed to a 'kill-step' during further processing.
- Proposed § 112.1(b)(1) lists specific examples of produce covered by this rule.

These include but are not limited to: almonds, apples, apricots, aprium, asian pear, avocados, babaco, bamboo shoots, bananas, Belgian endive, blackberries, blueberries, broccoli, cabbage, cantaloupe, carambola, carrots, cauliflower, celery, cherries, citrus (e.g. clementine, grapefruit, lemons, limes, mandarin, oranges, tangerines, tangors, and unqi fruit), cucumbers, curly endive, garlic, grapes, green beans, guava, herbs (e.g. basil, chives, cilantro, mint, oregano, and parsley), honeydew, kiwifruit, lettuce, mangos, other melons, mushrooms, nectarine, onions, papaya, passion fruit, peaches, pears, peas, peppers (bell and hot), pineapple, plums, plumcot, radish, raspberries, red currant, scallions, snow peas, spinach, sprouts (e.g. alfalfa and mung bean), strawberries, summer squash (e.g. patty pan, yellow and zucchini), tomatoes, walnuts, watercress and watermelon.



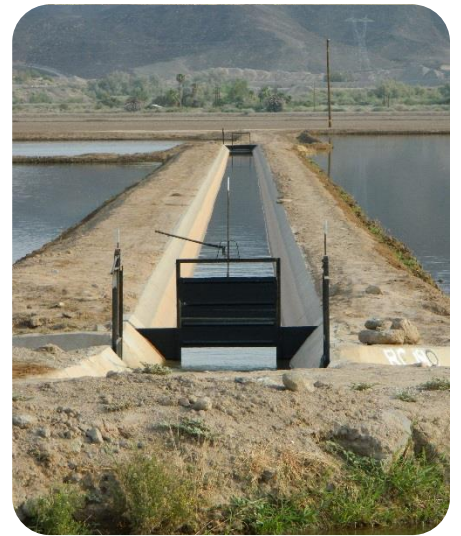
FSMA Water Facts

Under the proposed rule , “agricultural water” is

“water used in covered activities on covered produce where water is intended to, or is likely to, contact covered produce (i.e., the harvestable or harvested part of the crop) or food-contact surfaces, including water used in growing, harvesting, packing, and holding activities.

Agricultural water includes:

- Irrigation water applied using direct water application methods;
- Water used for preparing crop sprays;
- Water used for washing or cooling harvested produce; and
- Water used to prevent dehydration of produce.



Key requirements for agricultural water are:

- all agricultural water must be of safe and sanitary quality for its intended use
- requires inspection, maintenance, monitoring, and follow-up actions related to the agricultural water sources and water distribution systems under user control
- requires treatment of agricultural water used if it is known or users have reason to believe that the water is not safe and of adequate sanitary quality for its intended use
- requires documentation of inspection findings, scientific data or information relied on to support the adequacy of water treatment methods, treatment monitoring results, and water testing results
- establishment of specific requirements for the quality of agricultural water used for certain specified purposes, including provisions requiring periodic analytical testing.....

The Western Center for Food Safety would like to thank UC ANR for 100 years of service and for supporting this conference...

About UCCE and UC ANR Water

- UC ANR's California Institute for Water Resources (CIWR) integrates California's research, extension, and education programs to develop research-based solutions to water resource challenges.
- Through CIWR, in 2012 UCCE advisers and specialists and campus AES academics conducted 200 water research projects, completed 60 peer-reviewed publications, and presented 35 workshops and short courses that provided training opportunities for students, media coverage, and the adoption of best management practices by farmers and industry professionals.
- UCCE researchers are working with growers on fertilizer management, irrigation efficiency, and other farming practices to ensure that all Californians have access to safe drinking water and that farmers can grow enough food to help meet the world's increasing demand.
- Initial research conducted by UCCE specialists on conservation tillage has led to real-world water conservation by reducing the amount of water that evaporates from the soil during irrigation.
- The UC ANR strategic initiative on water is charged with defining, prioritizing, and implementing UC ANR actions that effectively and efficiently help Californians address water issues and challenges that face the State.







Research in Action...

Food Safety and Water Quality

