SUMMARY OF PROPOSED CHANGES TO THE LGMA-APPROVEDGUIDELINES

Issues Addressed:
Issue 6: Agricultural Water

Prepared by:
Western Growers

To be submitted to the
Arizona Leafy Greens Technical Subcommittee &
California LGMA Technical Committee

July 2, 2020

BACKGROUND

Western Growers (WG) opened a comment period from April 6 to May 4, 2020, to gather proposed revisions to the leafy green guidance document. A total of 80 proposed revisions to the Agricultural Water section were submitted. WG hosted four web discussions to share those proposed revisions and get feedback from the leafy green industry. A total of 389 participants joined these four webinars. The list of the participants below is organized alphabetically and by webinar date.

May 14, 2020 - Part 1 discussion participants: 123 total participants

Last Name	First Name	Organization
Andrews	Daniel	DAN ANDREWS FARMS LLC
Adolph	Michael	K.W. Zellers & Son, Inc.
Ahumada	Aide	Channel Islands Farm, Inc.
Allan	Ariane	Fresh Kist Produce
Alvarez	Emily	Church Brothers Farms
Barnett	Norman	AZ Dept of Agriculture
Banegas	Tony	Bonduelle Fresh Americas
Byunn	Kiki	Produce Alliance
Calderon	Fiorella	Deardorff Family Farms
Camarena	Lupe	Nature Fresh Farms
Canchola	Ricardo	LaBrucherie Produce
Casas	Horacio	TLC Custom Farming Company LLC
Casillas	Frank	Frank Jr Farms
Castaneda	Gustavo	Ippolito International
Cavanaugh	Patrick	Vegetables West
Chavez	Armando	Taylor Farms/ Automated Harvesting
Contreras	Homero	Beachside Produce, LLC
Cordero	Albert	Durant Harvesting
Corona	Fatima	JV Farms
Corrigan	Greg	United Vegetable Growers Cooperative
Delgado	Daniel	Orange County Produce
Denne	Kristina	Bonipak Produce
Draper	Audrey	USDA
Eisenbeiser	Ashley	FMI
Esparza	Israel	Curation Foods

Estrada	Nancy	Taylor Farms
Fernandez-Fenaroli	Bonnie	Center for Produce Safety
Figueroa	Armando	Braga Fresh Family Farms
Foster	Ed	Arizona Department of Agriculture
Friedlander	Adam	FMI
Griep	Emily	United Fresh Produce Association
Griffin	Jonathan	Oxen Hill Farm
Guerrero	Daniel	Top Flavor Farms
Gumowski	Adrian	AZDA
Hamil	Jean	Jean Hamil
Harless	Jacy	Rio farms
Havins	Jeff	Pasquinelli produce
Hernandez	Teresa	Coastal Fresh Farms, Inc.
Hernandez	Emanuel	Sun Coast Farms
Horsfall	Scott	CA LGMA
Hughes	Sharlene	Borzini Farms
Jones	Matt	WGA
Kelly	Lianna	Markon
Kempf	Beverly	Castellini
Kidd	Joanne	Mellon Farms
Klug	Tim	Sunsation Farms Inc.
Kolpak	Erin	Santa Barbara FArms
Labastida	Ron	Babe Farms, Inc.
Lazzerini	Angela	Muzzi Family Farms
Lomeli-Anaya	Daniela	Dole Fresh Vegetables
Manley	Jessica	Fisher Ranch Corporation
Martin	Bob	Rio Farms
McDonald	Drew	Taylor Farms
McEntire	Jennifer	United Fresh
McWilliams	Janet	Beachside Produce, LLC
Melgoza	Vangie	Filice Farms
Mendez	Raul	LaBrucherie Produce
Mendoza	Cecilia	Mission Ranches
Mendoza	Juan Carlos	Sabor Farms
Miller	Kelly	Griffin Family Farms
Mirenda	Johanna	Organic Trade Association
Mosso	Joelle	Eurofins Microbiology
Mudahar	Gurmail	Tanimura & Antle gresh foods
Munoz	Jorge	Taylor Farms
Norton	Julie	Lee farms.
Nunes	Kristina	The Nunes Company
O'Donnell	Kathleen	Wegmans Food Markets, Inc.
Odello	Jake	The Nunes Co.
Okemiri	Amarachi	CA LGMA
Olivas	Stephanie	Gila valley farms
Oliveros	Ruben	TLC custom Farming Inc

Oreggia	Tina	Muzzi Family Farms LLC
Ortiz-Williams	Lorena	LJ Ag Works LLC
Pasquinelli	Mike	AquaPulse Chemicals
Pereira	Colby	Costa Farms Inc.
Perez	Isela	Muranaka Farm Inc.
Pina	Cosme	Taylor Farms California
Pontureri	Jodi	SWRCB
Pricola	Kay	Imperial Valley Vegetable Growers
Quinlan	Connie	LGMA
Ramirez	Angie	Triangle Farms/JV Farms Organic
Rando	Rosemary	Ratto Bros.
Ratto	Ron	Ratto Bros
Roach	Amanda	Coronation Peak Ranches, Inc.
Roberts	Martha	Roberts Associates
Rodriguez- Munoz	Nancy	Mann Packing Company
Rush	Stone	Tanimura and Antle Produce
Saleen	Jeff	Primus Auditing Operations
Sanchez	Joanna	GC Farming
Scarcella	Mike	Ippolito international
Shakespeare	Mark	Walmart Inc.
Sharkey	Jessica	Markon
Sheehy	Mark	True Blue Berry Management LLC
Sierra	Valentin	Amigo Farms, Inc.
Silva	Mason	Rancho Guadalupe, LLC
Smekens	Kelly	Bonduelle Fresh Americas
Smith	Kelly	Smith Farms
Spohn	George	NYS Dept of Ag & Mkts
Stearns	Ken	D'Arrigo Bros. Co., of California
Stergios	Christopher	Mainas Farms, LLC
Stover	Lauren	TopFlavor Farms
Sughroue	Jay	biosafe systems
Sutton	Dan	Pismo Oceano Vegetable Exchange
Tapia	Leonel	Rio Farms
Thelander	Janessa	Barkley Company of AZ
Treadway	Ralph	Coastline Family Farms
Valenzuela	Gerardo	TLC Custom Farming Company, LLC.
Vallejos	Jennifer	Coastal Fresh Farms, Inc.
Velasco	Leo	TopFlavor Farms Inc
Villa	Daisy	Harrison Farms Inc.
Villaneva	Mike	MVFood Safety Services
Weddle	Kami	Rousseau Farming
Wooldridge	Stephanie	AgLynx Supply
Woolfolk	Channah	University of Arizona
Zozaya	Stevi	University of Arizona
Batchelor	Kevin	CDFA
Bates	Barry	SUN TERRA PRODUCE TRADERS

Dominguez	Cynthia	Duda Farm Fresh Foods
Filice	Kay	FILICE FARMS
Ortiz	Jose	D'Arrigo Bros. Co., of California
Peeks	Cory	Vessey & Company, Inc.
Valdes	Chato	Sabor Farms
wWadyszewski	Alexander	USDA

May 22, 2020 - Part 2 discussion participants: 79 total participants

Last Name	First Name	Organization
Allan	Ariane	Fresh Kist Produce
Alvarez	Emily	Church Brothers Farms
Banegas	Tony	Bonduelle Fresh Americas
Barriga	Maria	Adam Bros. Farming, Inc.
Camarena	Lupe	Nature Fresh Farns
Casillas	Frank	Frank Jr Farms
De leon	Narda	Huntington Farms
Dominguez	Cynthia	Duda Farm Fresh Foods, Inc.
Estrada	Nancy	Taylor Farms
Falcon	Gonzalo	Dole
Fernandez-Fenaroli	Bonnie	Center for Produce Safety
Figueroa	Armando	Braga Fresh Family Farms
Guerrero	Daniel	Top Flavor Farms
Gumowski	Adrian	AZDA
Harless	Jacy	Rio Farms
Hernandez	Teresa	Coastal Fresh Farms, Inc.
Higareda Castaneda	Gustavo	Ippolito International
Horsfall	Scott	CA LGMA
Hughes	Sharlene	Borzini Farms
Kelly	Lianna	Markon
Kempf	Beverly	Castellini
Kidd	Joanne	Mellon Farms
Lefeau	Michelle	Western Growers Insurance Services
Lomeli-Anaya	Daniela	Dole Fresh Vegetables
Lopez	Antonio	Western Harvesting
Mann	Jenna	Duncan Family Farms
Marroquin	Sergio	RATTO BROS., INC.
Masson	Robert	University of Arizona
McDonald	Drew	Taylor Farms
McWilliams	Janet	Beachside Produce, LLC
Mendoza	Juan Carlos	Sabor Farms
Miller	Kelly	Griffin Family Farms
Morales	Jose	Dole
Mosqueda	George	Steinbeck Country Produce
Mudahar	Gurmail	Tanimura & Antle fresh foods

Munoz	Jorge	Taylor Farms
Nguyen	Lina	CDFA
Odello	Jake	The Nunes Co.
Olivas	Stephanie	Gila Valley Farms
Orrey	Jeffrey	GeoVisual Analytics
Pasquinelli	Mike	AquaPulse Chemicals
Peeks	Cory	Vessey & Company, Inc.
Pereira	Colby	Costa Farms, Inc.
Perez	Ashley	Markon
Pina	Cosme	Taylor Farms California
Pontureri	Jodi	SWRCB
Price	Robert	Dole Fresh Vegetable
Pricola	Kay	Imperial Valley Vegetable Growers
Puga	Rocky	Central Coast Cooling LLC
Quijano	Gabriela	EMPAQUE RIO COLORADO SPR DE RL DE CV
Quinlan	Connie	LGMA
Reardon	Sean	WG
Rush	Stone	Tanimura and Antle Produce
Saleen	Jeff	Primus Auditing Ops
Sanchez	Leo	WGIS
Scarcella	Mike	Ippolito International
Shakespeare	Mark	Walmart Inc.
Sierra	Valentin	AmigoFarms, Inc.
Silva	Mason	Rancho Guadalupe, LLC
Smith	Michelle	FDA
Smith	Kelly	Smith Farms
Stergios	Christopher	Mainas Farms, LLC
Stover	Lauren	TopFlavor Farms
Sughroue	Jay	BioSafe Systems
Thelander	Janessa	Barkley Company of AZ
Treadway	Ralph	Coastline Family Farms
Valdes	Kari	Taylor Farms
Valdes	Lidia	Duda Farm Fresh Foods
Valdes	Francisco	Sabor Farms
Valdez	Silvia	Dole Fresh Vegetables
Valenzuela	Gerardo	TLC Custom Farming Company, LLC.
Vallejos	Jennifer	Coastal Fresh Farms, Inc.
Vargas	Edgar	KleenTrans
Villa	Daisy	Harrison Farms Inc.
Villaneva	Mike	MLFood Safety Services
Weddle	Kami	Rousseau Farming
Wolfe	Shanna	RIESTER
Reyes	Leticia	Fresh Express Inc
Wladyszewski	Alexander	USDA

June 4, 2020 - Part 3 discussion participants: 107 total participants

Last Name	First Name	Organization
Acosta	Carlos	San Miguel Produce, Inc.
Adolph	Michael	K.W. Zellers & Son Inc.
Allan	Ariane	FRESH KIST PRODUCE
Alvarez	Emily	Church Brothers Farms
Auza	Chris	Barkley Company of Arizona
BARNETT	NORMAN	Arizona Dept.of Agriculture
Babu	Dinesh	Grimmway Farms
Banegas	Tony	Bonduelle Fresh Americas
Barriga	Maria	Bella Vista Produce, Inc
Bengard	Tom	Bengard Ranch, Inc.
Bestwick	Adam	Duncan Family Farms
Bourdages	Sandra	Delfland
Brassill	Natalie	University of Arizona
Camarena	Guadalupe	Nature Fresh Farms, LLC
Canchola	Ricardo	LaBrucherie Produce
Casillas	Frank	Frank Jr farms
Chedwick	Megan	Church Brothers
Chisum	Kaitlynn	Zada Fresh Farms
Crossgrove	Gregory (Greg)	Gregory P. Crossgrove, Inc.
Dana	Garett	Meras Water Solutions
Davila	Berthita	Costa Farms
Denne	Kristina	Bonipak Produce
Draper	Audrey	USDA
Estrada	Nancy	Taylor Farms
Falcon	Gonzalo	Dole
Fernandez-Fenaroli	Bonnie	Center for Produce Safety
Garcia	Jose Luis	Hitchcock Farms Inc.
Garcia	Blanca	Harbinger Group LLC, dba Misionero
Gonzalez	Francisco	Duncan Family Farms
Guerrero	Daniel	Top Flavor Farms
Gumowski	Adrian	AZDA
Harless	Jacy	Rio farms
Hernandez	Teresa	Coastal Fresh Farms, Inc.
Hernandez	Emanuel	Sun Coast Farms
Higareda Castaneda	Gustavo	Ippolito
Horsfall	Scott	CA LGMA
Hughes	Sharlene	Borzini Farms
Keaton	Cailin	Pasquinelli Produce
Kelly	Lianna	Markon
Kidd	Joanne	Mellon Farms
Klug	Tim	Sunsation Farms Inc
Manley	Jessica	Fisher Ranch Corporation

Mann	Jenna	Duncan Family Farms
Marquez	Maira	SMT Farms
Marroquin	Sergio	RATTO BROS., INC.
McEntire	Jennifer	United Fresh
McWilliams	Janet	Beachside Produce, LLC
Mendoza	Juan Carlos	Sabor Farms
Miller	Kelly	Griffin Family Farms
Mirenda	Johanna	Organic Trade Association
Mudahar	Gurmail	Tanimura & Antle Fresh foods
Muller	Alex	Pasquinelli Produce
O'Donnell	Kathleen	Wegmans
Odello	Jake	The Nunes Co.
Oleson	Beth	GA Fruit and Veg Growers Assoc
Olivas	Stephanie	Gila Valley Farms
Oreggia	Tina	Muzzi Family Farms
Orrey	Jeffrey	GeoVisual Analytics
Pasquinelli	Mike	AquaPulse Chemicals
Peeks	Cory	Vessey & Company, Inc.
Perez	Ashley	Markon
Pina	Cosme	Taylor Farms
Pontureri	Jodi	SWRCB
Price	Robert	Dole Fresh Vegetable
Puga	Rocky	Central Coast Cooling LLC
Quijano	Gabriela	ERC
Quinlan	Connie	CA LGMA
Rando	Rosemary	Ratto Bros.
Ratto	Ron	Ratto Bros
Ravaliya	Kruti	US FDA
Rios	German	Fresh Express
Roach	Amanda	Coronation Peak Ranches, Inc.
Rush	Stone	Tanimura and Antle Produce
Ruvalcaba	Nancy	AZDA
Saleen	Jeff	Primus Auditing Ops
Sarager	Jonathan	Western Growers
Scarcella	Mike	Ippolito International
Shakespeare	Mark	Walmart Inc.
Sherman	Marshall	Ratto Bros
Sierra	Valentin	Amigo Farms, Inc.
Smekens	Kelly	Bonduelle
Smith	Michelle	US FDA
Stearns	Ken	D'Arrigo Bros Co., of California
Stergios	Christopher	Mainas Farms, LLC
Stover	Lauren	TopFlavor Farms
Talari	Manjula	Grimmway Farms
Tapia	Leonel	Rio Farms
Thelander	Janessa	Barkley Company of Arizona

Tovar	Francisco	T & P Farms Inc
Vacas	Noemi	Lake Side Organic
Valdes	Francisco	Sabor Farms, LLC
Valdez	Silvia	Dole Fresh Vegetables
Valenzuela	Gerardo	TLC Custom Farming Company, LLC.
Vallejos	Jennifer	Coastal Fresh Farms, Inc.
Vassallo	Tami	The Nunes Company
Velasco	Leo	TopFlavor Farms
Villa	Daisy	Harrison Farms Inc.
Villaneva	Michael	Private Consultant
Watson	Kevin	AG Food Safety solutions
Weddle	Kami	Rousseau Farming
Amaral	Matt	D'Arrigo Bros CA
Batchelor	Kevin	CDFA
Brown	Michael	AZDA
Ortiz	Jose	D'Arrigo Bros. Co., of California
Reyes	Leticia	Fresh Express, inc
Sanchez	Leo	WGIS
Wladyszewski	Alexander	USDA

June 11, 2020 - Part 4 discussion participants: 80 total participants

Last Name	First Name	Organization
Aldaco	Darren	NAPCO Pipe and Fittings
Allan	Ariane	FRESH KIST PRODUCE
Alvarez	Emily	Church Brothers Farms
Amaral	Matt	D'Arrigo Bros CA
Arboisiere	Dole	Dole
Barnett	Norman	AZDA
Banegas	Tony	Bonduelle Fresh Americas
Bansal	Anika	Bonduelle Fresh Americas
Barriga	Maria	Bella Vista Produce,Inc
Bautista	James	Organicgirl, LLC
Bestwick	Adam	Duncan Family Farms
Bourdages	Sandra	Delfland
Calderon	Fiorella	Deardorff Family Farms
Camarena	Guadalupe	Nature Fresh Farms
Casillas	Frank	Frank jr Farms
Castaneda	Gustavo	Ippolito
Crossgrove	Gregory	Gregory P. Crossgrove, Inc.
Denne	Kristina	Bonipak Produce
Dominguez	Cynthia	Duda
Dougherty	Jennifer	USDA-AMS
Fernandez-Fenaroli	Bonnie	Center for Produce Safety
Figueroa	Armando	Braga Fresh Family Farms

Gamboa	Gustavo	Ocean Mist Farms
Gonzalez	Francisco	Duncan Family Farms
Gress	Chad	C&E Farms, Inc
Guerrero	Daniel	Top Flavor Farms
Gumowski	Adrian	AZDA
Haller	Anna	Grimmway Farms
Hernandez	Teresa	Coastal Fresh Farms, Inc.
Hernandez	Emanuel	Sun Coast Farms
Hinkle	Lawrence	Andrew Smith Company
Horsfall	Scott	CA LGMA
Huang	Diana	Growers Express
Keaton	Cailin	Pasquinelli Produce
Kelly	Lianna	Markon
Kempf	Beverly	Castellini
Kidd	Joanne	Mellon Farms
Labastida	Ron	Babe Farms Inc.
Lomeli	Ebelia	WG
Mann	Jenna	Duncan Family Farms
Marquez	Maira	SMT Farms
McEntire	Jennifer	United Fresh
McWilliams	Janet	Beachside Prouduce, LLC
Miller	Kelly	Griffin Family Farms
Mudahar	Gurmail	Tanimura & Antle Fresh foods
Muller	Alex	Pasquinelli Produce
Munoz	Jorge	Taylor Farms
Odello	Jake	The Nunes Co.
Olivas	Stephanie	Gila Valley Farms
Pasquinelli	Mike	AquaPulse Chemicals
Peeks	Cory	Vessey & Company, Inc.
Perez	Ashley	Markon
Pina	Cosme	Taylor Farms California
Pontureri	Jodi	SWRCB
Pricola	Kay	Imperial Valley Vegetable Growers
Quijano	Gabriela	ERC Trade LLC
Quinlan	Connie	CA LGMA
Reyes	Leticia	Fresh Express Inc
Runion	Danielle	AZDA
Rush	Stone	Tanimura and Antle Produce
Ruvalcaba	Nancy	AZDA
Saber	Ban	University if Arizona- Yuma Agricultural Center
Saleen	Jeff	Primus Auditing Ops
Sierra	Valentin	Amigo Farm, Inc.
Smekens	Kelly	BFA/Ready Pac
Smith	Michelle	US FDA
Stover	Lauren	TopFlavor

Talari	Manjula	Grimmway Farms
Tapia	Leonel	Rio Farms
Thorp	Chloe	Fresh Foods, Inc. / Rava Ranches, Inc. / South County Packing, Inc.
Urbina	Bibiana	Bonduelle Fresh Americas
Valdes	Francisco	Sabor farms
Valenzuela	Gerardo	TLC Custom Farming Company, LLC.
Villa	Daisy	Harrison Farms Inc.
Villaneva	Mike	MLVFood Safety Services
Weddle	Kami	Rousseau Farming
Wooldridge	Stephanie	AgLynx
Jackson	John	BSP
Velazquez	Arturo	Bonduelle Fresh Americas

Agricultural Water Proposed Changes and Web Discussions Synopsis

WG received six proposals outlining revisions to Issue 6: Water. These proposals were presented by the entities listed below (entity/spokesperson)

- Ag Partners SW – Paul Mondragon
- Arizona LGMA – Vicki Scott
- California LGMA – Sharan Lanini
- Duncan Family Farms – Jeremy Vanderzyl
- Innovative Produce, Faith Farming, Betteravia Farms, Bonipak Produce, Rancho Guadalupe, Point Sal Packing- Lacy Litten
- Yuma Safe Produce Council – Amanda Brooks

After each proposal was discussed, opinion polls were conducted to gauge the acceptability of these proposed revisions. The results of our polling process are not binding. Not everyone participated in these polls, but the total number of participant votes are listed in each proposed revision summary. We encourage the use of the attached working draft of the CA LGMA-approved guidelines to better follow and understand the summary below. All the proposed revisions summarized below were submitted for both the Arizona and California LGMAs for consideration.

For certain proposed revisions below, a blue font was used to highlight the proposal's modified language. A blue underline font indicates a language addition and a blue strikethrough font indicates a language deletion. This was done for more complex proposals to properly outline exactly what is being changed.

Proposed Revision #1: Revise definition: Agricultural Water System (see page 6)

Proponent: Innovative Produce, Rancho Guadalupe, Betteravia Farms

Proposed Revision: Revise "~~Each~~ A distinct water system for agricultural use; consisting ~~, separate combination~~ of a water source and a water distribution system~~, conveyance, storage used to carry water from its primary source to its point of use; includes wells, irrigation canals, pumps, valves, storage tanks, reservoirs, meters, pipes, fittings, and sprinklers~~."

Rationale: With changes to the metrics over the past year, there has been confusion as to whether a well is its own system. In the effort to minimize this confusion, we clarified differences between agricultural water systems, water distribution systems, and water sources.

Poll Results: 54% in favor (41 total votes)

Questions/Comments:

Comment: We shouldn't redefine the metrics just because someone doesn't understand what a well and water system are.

Comment: I think changing this definition weakens the definition.

Comment: Some of this language being deleted is actually mirrored in the body of the document so it's important to follow the thread throughout the whole document. The issue for me personally is that it's not really making an improvement.

Comment: I don't have a problem with Lacy's change because conveyance system is covered later in the glossary revisions from Lacy.

Comment: If people struggle with definitions and concept then maybe we should further define words.

Proposed Revision #2: New proposed definition: Agricultural Water Treatment Systems (see page 6)

Proponent: Yuma Safe Produce Council

Proposed Revision: Definition – "An add-on to an agricultural water system that improves the quality (safety) of the water to make it more acceptable for a specific end- use. The agricultural water treatment system may treat multiple ranches, water sources or batches of water as defined by the water system description."

Rationale: Need clearer language about what is a treatment system in the glossary. Moving treatment systems, material changes. Contiguous treatment window for a system- not blocks/lot numbers. Does this belong in the Appendix and/or in the body? That is the discussion needed by the greater industry body.

Poll Results: 88% in favor (41 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #3: New glossary term and definition: Breakpoint (see page 7)

Proponent: CA LGMA

Proposed Revision: Definition: The point at which the disinfection demand has been met.

Rationale: Previously not defined.

Poll Results: 87% in favor (39 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #5: New glossary term and definition: Sediment (see page 11)

Proponent: CA LGMA

Proposed Revision: Definition – “Undissolved organic and inorganic material transported or deposited by water.”

Rationale: Previously not defined.

Poll Results: 79% in favor (39 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #6: New glossary term and definition: Total coliforms (see page 12)

Proponent: CA LGMA

Proposed Revision: Definition: “Total coliforms are a group of related bacteria that are (with few exceptions) not harmful to humans. This family of bacteria are found in soil and water. The EPA considers total coliforms to be a useful indicator of the possible presence of other pathogens for drinking water. Total coliforms are used to determine the adequacy of water treatment and the integrity of a water distribution system.”

Rationale: Previously not defined.

Poll Results: 72% in favor (36 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #7: Revise definition: Water Distribution System (see page 12)

Proponent: Innovative Produce

Proposed Revision: Revise “~~Distribution~~ A conveyance system -- consisting of pipes, pumps, valves, storage tanks, reservoirs, meters, fittings, and other hydraulic appurtenances -– both above ground, underground, stationary, and mobile - to carry water from ~~its primary~~ a water source to a ~~lettuce and~~ leafy green crop.”

Rationale: With changes to the metrics over the past year, there has been confusion as to whether a well is its own system. In the effort to minimize this confusion, we clarified differences between agricultural water systems, water distribution systems, and water sources.

Poll Results: 78% in favor (36 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #8: Revise definition: Water Source (see page 12)

Proponent: Innovative Produce

Proposed Revision: Revise “The location from which water originates into the water distribution system; water sources can be municipal, well, or surface water (such as rivers, lakes, or streams).”

Rationale: With changes to the metrics over the past year, there has been confusion as to whether a well is its own system. In the effort to minimize this confusion, we clarified differences between agricultural water systems, water distribution systems, and water sources.

Poll Results: 91% in favor (34 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #9: Add root cause analysis language to section: Irrigation Water Sampling Plans and Remedial Actions (see page 27)

Proponent: Yuma Safe Produce Council

Proposed Revision: Add "Consider performing root cause analysis to determine if additional preventive measures can be incorporated into the agricultural water system operation."

Poll results: 68% in favor (11 total votes)

Questions/Comments: No comments or questions were raised with this proposal.

Proposed Revision #10: Add language to section: Best Practices for Managing Storage and Conveyance Systems (see page 27)

Proponent: Ag Partners SW

Proposed Revision: Add "or approach".

Rationale: Please consider using language/terminology to ensure growers/companies consider using and deploying all types of Antimicrobial Water Treatment

Poll results: 60% in favor (11 total votes)

Questions/Comments: No comments or questions were raised with this proposal.

Proposed Revision #11: Add new section - Best Practices for Furrow Irrigation Systems Management (see page 28)

Proponent: CA LGMA

Proposed Revision:

Add:

- Agricultural practices, such as irrigation methods, bed configuration, etc., should be implemented in a manner to avoid water from breaching the top of the bed.
- Agricultural practices, such as equipment movement, irrigation practices, etc., should be monitored at headland and tail ditch locations for damaged beds which may allow water to contact the edible portion of the crop.
- It is recommended to coordinate irrigation events with harvest, to avoid harvesting when soil is still saturated from an irrigation event and to prevent excessive dirt and mud from getting on the edible portion of the crop, harvest tools (e.g., knives, gloves, etc.), and harvest equipment (e.g., machines, belts, trailers, etc.).

Rationale: Furrow irrigation was not previously addressed in detail; recommendations to add clarity and to emphasize caution when using Type B water in furrow irrigation.

Poll results: 70% in favor (46 participants)

Questions/Comments:

Pre-webinar comment from Yuma Safe Produce Council: Support as a best practice but not an auditable checklist question.

Proposed Revision # 12a: Add language to new section: Best Practices for Furrow Irrigation Systems Management (see page 28)

Proponent: Yuma Safe Produce Council

Proposed Revision: Add language - "It is recommended to" (see proposed revision #11 language above)

Rationale: Focus language on coordination with harvesting. This is a language revision to CA-LGMA's proposed language by YSPC.

Poll results: 78% in favor (40 total votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision # 12B: Add language to new section: Best Practices for Furrow Irrigation Systems Management (see page 28)

Proponent: Yuma Safe Produce Council

Proposed Revision: Add language - "to avoid harvesting when soil is still saturated from an irrigation event and" to CA-LGMA's proposed language (see proposed revision #11 language above)

Rationale: Focus language on coordination with harvesting.

Poll results: 65% in favor (40 total votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision # 13: Add section: Best Practices for Drip Tape Irrigation Systems Management (see page 28)

Proponent: CA LGMA

Proposed Revision:

Add new section title "Best Practices for Drip Tape Irrigation Systems Management". New section language includes:

- Drip tape should be handled, stored, used, and re-used in a manner that prevents damage and contamination to the drip tape.
- While in use, repairs to drip tape should be completed in a timely manner to prevent water contact with the edible portion of the crop.

Rationale: Drip irrigation was not previously addressed in detail; recommendations to add clarity and to emphasize caution when using Type B water in drip irrigation.

Poll results: 57% in favor (47 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision #14: Add language to new proposed section: Best Practices for Drip Tape Irrigation Systems Management (see page 28)

Proponent: AZ LGMA

Proposed Revision: Add language - "Consider flushing drip tape with sanitizer prior to use after storage."

Rationale: Did not want to make flushing tape with sanitizer a requirement since it is not always possible to do so. Change wording to "consider" so it is recommended, not required.

Poll Results: 30% in favor (49 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision #15: Add new language and deleted existing language to section: Best Practices for Managing Irrigation Water Treatment Systems (see page 28)

Proponent: CA LGMA

Proposed Revision: Add language - "from 3 different sprinkler heads"

Deleted "samples no closer than 20 minutes apart"

Rationale: Previous language is too prescriptive for time interval; focus should be on sample collection to ensure treatment is within prescribed parameters and not fixated on a specific time interval.

Poll Results: 80% in favor (57 votes)

Questions/Comments:

Question: Was the 20-minute related to assess stability of the water treatment system?

- *Response:* Yes, but in the metrics you'll see language that you don't start taking samples until the system is equilibrated or running fully charged/pressurized. The intention of the 20 minutes was to start taking sample until after that point and so we don't give a specific amount of time of that charging because it's going to vary system to system.

Proposed Revision #16: Add language to section: Best Practices for Managing Irrigation Water Treatment Systems (see page 28)

Proponent: AZ LGMA

Proposed Revision: Add "with at least one sample from the farthest/last sprinkler head"

Rationale: Limiting sampling to the end of the system is not necessarily indicative of water treatment efficacy in each case.

Poll Results: 69% in favor (57 votes)

Questions/Comments:

Pre-webinar comment from Yuma Safe Produce Council: Support the idea of removing the 20-minute interval. At least one sample should be from the last sprinkler head.

Proposed Revision #17A: Add new section: "Best Practices for Treated Aerial Chemical Applications" (see page 29)

Proponent: CA LGMA

Proposed Revision: Proposed new section – "Best Practices for Treated Aerial Chemical Applications"

Section intro:

Type B water used for overhead applications within 21 days of scheduled harvest must be treated. With the start-up of any new treatment process it is important to evaluate all conditions that may affect water treatment efficacy and performance. Examples of parameters that provide valuable information about treatment efficacy in relationship to water quality are: Turbidity, pH, antimicrobial dose, water temperature, historical microbial monitoring data, etc. (Refer to Appendix A for additional guidance.)

Rationale: To clarify requirements and to address missing water-use practices such as aerial application (e.g., airplane) of ag chemicals.

Poll Results: 76% in favor (67 votes)

Questions/Comments:

Pre-webinar comment from Yuma Safe Produce Council: Aerial vs overhead - see the glossary. Work for consistency and/or understanding. Add language to include crop protection, crop nutrition.

Question: Will this only take into effect for spray applications? What about Chemigations?

- *Response*: We were worried about the overhead water and the food contact surfaces so chemigation would basically be through a drip or furrow system so that is really not part of this. We are concentration on aerial applications and the food contact surfaces close to harvest.

Question: What does 'regularly' mean?

- *Response*: Basically, these holding tanks, they're inspected and cleaned for pesticides, so we wanted to make sure there was schedule, so you don't get biofilms or buildup of algae or whatever in the system. So, it was kind of intentionally loose but also trying to add an element of making sure you're inspecting your systems and tanks. It's also keeping with other sections of the metrics where we ask for regular inspections of ag irrigation water treatment system. So, we are treating these tanks as if they are miniature treatment systems if you will, reinforcing the need for a regular monitoring or inspection. Throughout the whole document we try to keep consistency.

Question: Is it common to use Type B water in these applications?

- *Response*: That was the premise of FDA's argument that the outbreak in 2018 could have been caused by helicopter spray rigs pulling directly from the canal and that would be Type B water, we are trying to allay the concerns and build some safeguards in the system so that can't be used as a hammer by FDA.

Question: Why not restrict the use of type A water for all aerial applications?

- *Response*: Type B water as long as it meets the original metric standards, can be used outside of the 21 days to harvest window. We are saying we want Type A water within 21 days of scheduled harvest so Type B water within 21 days is in essence going to be restricted and cannot be

knowingly used within 21 days. As long as the water meets the original standard, that is allowed up until the 21-day window.

Proposed Revision #17B: Add bullet point to new proposed section: Best Practices for Treated Aerial Chemical Applications (see page 29)

Proponent: CA LGMA

Proposed Revision: New bullet point in new proposed section "Best Practices for Treated Aerial Chemical Applications".

New bullet point language:

- Develop a SOP for all of the parts of the ag water system used in overhead chemical application. The SOP must address items such as:
    - Water used in overhead applications (e.g., pesticide and fertilizer, etc.) within the 21-days-to-harvest window must meet Type A and/or B→A water quality requirements.
    - Holding tanks and equipment-mounted application tanks, manifold and boom lines, and nozzles MUST be regularly inspected and properly maintained and cleaned so they do not pose a contamination risk.
    - Water treatment chemistry shall be compatible with the agricultural chemicals being applied.
    - Procedures to control pest access to the equipment during storage and staging (examples may include avian deterrents, fencing, and rodent monitoring) must be in place (validation can include: PCA records, label requirements, letter of guarantee).
    - Establish corrective action procedures for non-compliance scenarios including: a) treatment failure; b) contaminated source water; c) pest concerns; d) chemical incompatibility; e) equipment sanitation concerns.
    - Document all corrective measures, cleaning activities, and maintenance.

Poll Results: 63% in favor (67 votes)

Questions/Comments: There were no questions or comments with this proposal.

Proposed Revision #18: Revise language to new proposed section: Best Practices for Treated Aerial Chemical Applications (see page 29)

Proponent: Innovative Produce, Faith Farming, Betteravia Farms, Bonipak Produce, Rancho Guadalupe, Point Sal Packing

Proposed Revision: Recommendation: Use the term "Treated Aerial Applications" in the title of the new proposed section; change from "Best Practices for Water Used for Aerial Chemical Applications" to "Best Practices for Water Used for Treated Aerial Applications".

Rationale: "Chemical" implies pesticide spray; applications involve products other than chemicals/pesticides.

Poll Results: 70% in favor (60 votes)

Questions/Comments:

Comment: We need more clarification with the intent of "chemical" and "treated aerial applications".

- *Response*: We are trying to get across the point that pesticide application via helicopter, aerial applications is what we were trying to do. We were just trying to plug that hole.

Comment: It should saw aerial pesticide applications.

- *Response*: That is getting more specific. Basically, what is being said is they want to change chemical to treated which is broader. Pesticide made is very specific.

Question: "Of the parts for the ag water system used" – does that mean wells, hoses, water trucks and such will be included? this is getting too much detail.

- *Response*: The water system is everything that encompasses, it's not ranch specific anymore. It's that particular system that is being used for ag water irrigation and in this case chemicals.

Comment: There is no fertilizer to my knowledge that is being used for aerial applications.

Comment: Instead of aerial it should be overhead applications.

Comment: Probably best to just drop "chemical" because don't you want to restrict water application to Type A 21 days before harvest

Comment: Aerial applications are pesticide applications and nothing else for leafy greens

Proposed Revision #19A: Remove language from new proposed section: Best Practices for Treated Aerial Chemical Applications (see page 29)

Proponent: Yuma Safe Produce Council

Proposed Revision: Remove "total suspended solids" from new proposed section "Best Practices for Overhead Chemical Applications" (see entire revised wording in revision #17A above).

Rationale: It is not likely to be used. The other examples provided here are visual observations or reading taken in the field so total suspended solids isn't needed here.

Poll Results: 79% in favor (60 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision #19B: Add language to new proposed section "Best Practices for Treated Aerial Chemical Applications" (see page 29)

Proponent: Ag Partners SW

Proposed Revision: Add "water temperature" to new proposed section "Best Practices for Treated Aerial Chemical Applications" (see entire revised wording in revision #17A above).

Rationale: To ensure these terms are available as encouragement for growers/companies to consider and deploy all types of Antimicrobial Water Treatment: e.g.: Wavelength, Wattage, Fluence, Turbidity, GPM, Water Temperature, Lamp Style (standard output, high output, amalgam)

Poll Results: 35% in favor (63 votes)

Questions/Comments:

Comment: pH isn't important for certain chemistries whereas turbidity might be appropriate.

Proposed Revision #19C: Add language to new proposed section "Best Practices for Treated Aerial Chemical Applications" (see page 29)

Proponent: AZ LGMA

Proposed Revision: Add "Reference Appendix A for additional guidance"

Rationale: Add more information and guidance on how to use flow rates in determining treatment efficacy in Appendix A. The nitty gritty details are put into the appendices as the they are more fluid and changing documents. Instead of including the details in the metrics here, we want to just refer to Appendix A.

Poll Results: 87% in favor (63 votes)

Comments:

Comment: parameters should match or be appropriate for the treatment method selected.

- *Response*: These are just example. If you get too detailed in the actual metrics, people are going to think they need to do all these detailed things.

Proposed Revision #20: Revise language to new proposed section: Best Practices for Treated Aerial Chemical Applications under the section bullet point #1 (see page 29)

Proponent: Yuma Safe Produce Council

Proposed Revision: Replace the word "components" with new language "of the parts of the ag water system used in overhead chemical application".

Rationale: "components" was too vague; added language to clarify what the SOP should cover.

Poll Results: 76% in favor (59 votes)

Questions/Comments:

Question: Will Ag water systems include airplanes and helicopters. If not, why?

- Response: That's an infinite number of checkpoints if we are going to start checking airplanes and helicopters. We are focused on the food safety systems and the areas of equipment that affect food safety. Checking airplanes and helicopters is just overwhelming. It is also not within the LGMA's purview to control those things. We have no regulatory authority over helicopters and planes

Comment: The helicopter isn't a food contact surface, so shouldn't be included

Proposed Revision #21: Add language and combined bullet point in new proposed section: Best Practices for Treated Aerial Chemical Applications under the section bullet point #1 (see page 29)

Proponent: Yuma Safe Produce Council

Proposed Revision: Combine 4th and 5th bullets into one bullet point

- Procedures to control pest access to the equipment during storage and staging (examples may include avian deterrents, fencing, and rodent monitoring) must be in place (validation can include: PCA records, label requirements, letter of guarantee).
- ~~Procedures to ensure storage of equipment does not pose a contamination risk must be in place.~~

Rationale: To condense and simplify requirements

Poll Results: 85% in favor (59 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision #22: Add bullet point #2 to new proposed section: Best Practices for Treated Aerial Chemical Applications (see page 29)

Proponent: CA LGMA

Proposed Revision: New bullet point.

Rationale: Clarify need for water treatment records for overhead applications within 21 days of harvest

Bullet point language:

- Develop a written water treatment SOP for each unique application process where water will be used in an overhead application within 21 days of a scheduled harvest. Prior to 21 days-to-scheduled harvest conduct an initial water treatment assessment to establish treatment process parameters that will be monitored to ensure consistent treatment delivery and to demonstrate effectiveness. Repeat this assessment if a material change to your system occurs and incorporate this assessment's findings into your water treatment SOP. A water treatment SOP should include:
    - Step-by-step instructions to ensure the water treatment is correctly implemented
    - Location of water sources
    - Name, and suggested supplies needed
    - Sanitizer used and quantity used
    - Critical limits and operational limits
    - Water sampling location
    - Corrective actions if critical limits are not met
    - Required records

Poll Results: 73% in favor (62 votes)

Questions/Comments:

Pre-webinar comment from Yuma Safe Produce Council: Not related to source water but related to different sanitizers that can be used.

Proposed Revision #23: Add bullet point #3 to new proposed section: Best Practices for Treated Aerial Chemical Applications (see pages 29 and 30)

Proponent: CA LGMA

Proposed Revision: New language:

- Develop a baseline for water treatment:
    - A minimum of three (3)-100 mL samples must be taken for each overhead application process (distinct water quality source, different sanitizer, different size water holding tank, etc.). The three (3) samples must be taken from different treated water batches.
    - All three (3) samples must be non-detect for generic *E. coli*.

Rationale: The intent is to show treatment is effective over multiple treatment events and all three (3) samples are not from the same treatment batch.

Poll Results: 59% in favor (56 votes)

Questions/Comments:

Question: Will sampling for each spray application take place?

- Response: There is a monitoring requirement similar to treated irrigation water later in the document, but micro verification is not required for every event.

Comment: Total coliform bacteria was used specifically to assess treatment efficacy. *E. coli* will not tell you that always because of low initial concentrations.

- *Response:* We all understand the challenges of *E. coli* as an indicator, however, this is a non-detect standard for this type of water so it's what we have today, and as things get better we will use those methods in the future, but for now this is what we have.

Question: In what event do we need to take the 3-100mL for each overhead application?

- *Response*: When a tank is used for chemical application is filled with water, you add your treatment based chlorine and adjust the pH, before you add your pesticide chemicals, you make sure that the water has time for the chemicals to distribute through the water and then you take the sample for in that tank where you can take 100 mL sample from the tank and send it to the lab. The operating term here is that this is for baseline. We are establishing a baseline and then offering routine testing parameters in the next section. There are 2 distinct forms of monitoring suggested here. We aren't suggesting taking samples when there are pesticides in the water.

Question: Shouldn't it match the same standard of irrigation water treatment?

- *Response*: No, because this is an enclosed tank as opposed to an open and active irrigation event. The irrigation event has a lot more potential for variability in that water quality due to the amount of water being moved around as opposed to when there is a set amount of water in a tank it's going to be easier to maintain a non-detect rate in that water. Because you need to rely on immediate water moving through sprinkler heads or pipes, it can be stored for a few minutes to have the sanitizer do what it's going to do as far as contact time and things of that nature. So having that generic *E. coli* non-detect was how we came up with the accessibility criteria, but we are not requiring total coliforms because, again, you have time to let the chemistry work in a tank as opposed to an irrigation system that's actively moving large volumes of water.

Audience member comment: Is this implying that we test and have the water analyzed we are using in the tanks prior to using them for their intended purposes or are we going to wait for the analysis to come back after we already used them.

- *Response*: There's a few examples of how you can do this. You can technically fill up a tank of water, sanitize that water, and dump that tank to get the baseline so you can qualify that your treatment works before you actually use that water. So that's a possibility. There's also corrective action process in this document that if you had to take a test, wait for the results but still use that water on the crop within 21 days of harvest without having the results, there are corrective action in there in case the water doesn't meet requirements.
- *Audience member (AM)*: Well is that the water you're going to be using that's going to meet the microbial standards prior to using it. Is this to try to make sure that the tank itself does not add a contamination event into your system.

- *Response*: It's really about the water and just like we are using a baseline setup for establishing performance for ag water treatment systems, it's the same idea. You're going to want to do this ahead of time. These commercial or on-farm applicators are going to want an understanding of what doses are needed, what the water quality is like and so this is again establishing the baseline ahead of time so you have achieved the right treatment parameters in order to provide consistency over time that if you make this size batch, it take this much chemical, the micro samples come back okay. It's all about learning these things ahead of time for this particular situation.
- *AM*: So, we are going to go to all these companies and mandate to them that they have to perform all these water quality tests prior to applying application to a field?
- *Response*: Yes within 21 days of scheduled harvest correct. I think a lot of them have already been through this this year.
- *AM*: Does this only apply to water that's not type A water?
- *Response*: Yes.
- *AM*: Okay, I understand that.

Comment: When one fills a tank for spraying pesticides that water is used up immediately for pesticide spray applications. you don't fill a tank with water then take a water sample and wait for 2-3 days on the results to determine if the water meets the thresholds.

- *Response*: Remember, type B water can't be used up to 21 days of scheduled harvest for a crop. So, if any type of plant protection chemicals are put on a crop before 21 of scheduled harvest, that water can be type B an could be applied to the crop as long as it meets the original LGMA standard. However, what we are saying is the closer your crop get to the 21 days of scheduled harvest, when you do want to leave applications, this a prime time when you can fill up a tank with the Type B water, establish what your treatment chemistry should be and all the SOP's to that and then you can test that water and even if it comes back non-detect, as long as it meets the other type B requirements you are still okay until you get within that 21 days of scheduled harvest time period. So there is no requirements necessary to dump water, I was just using an example of how folks could do testing if they were concerned about using the water on the crop, but as long as the water meets testing requirements, you are okay up to 21 days. You can establish this baseline at any time and determine what it take for treatment for 500-gallon tank, 300- or 1200-gallon tank. So, you can do this baseline at any time.

Question: You say it's about the water quality, but we aren't able to use monthly well tests as a start?

- *Response*: You can. If you have Type A water and you have a historical baseline that the water meets requirements, then no treatment is required, and this section doesn't apply to you.

Question: Shouldn't the baseline be developed just prior to the start of the season and not months ahead?

- *Response*: It's not really about time i.e., months ahead, it's about water quality. If you have these different variables that affect your treatment in a tank situation, then you should do this baseline at a time you think the risk is the greatest. So, in Yuma, when water temperatures get warm, the bacteria counts get higher, so I would test in the summer when you have a greater challenge. And I don't know what that would be in other areas.

Question: Can't we just refer to the metrics requirements for overhead water quality prior to 21 days and not have all of these additional standards?

- I guess that just depends. Under the LGMA metrics, the new requirement is Type B water needs to be treated to be become Type A if it's going to be used on the edible portion of a crop within 21 days of the scheduled harvest. This new section that was drafted, tries to put new language into the metrics document that was potentially missed; the old language was more about irrigation water and didn't address chemical application water. This new section is really addressing the hole that was there. If you look at the language that's being proposed in this section, it does mirror pretty closely what the irrigation water requirements that are now in place for overhead water within 21 days of scheduled harvest. And so there's very close similarities between those two sections, but regardless though the requirement in the metrics is Type A water needs to be used on the crop within 21 days of scheduled harvest and so this is trying to address those circumstances to allow folks to understand how they can achieve Type A water within the scope of the metrics.

Comment: Baseline should be established at the beginning of the season as water quality in the summer may not be representative of what we see during the season.

Comment: This is a baseline... So, is this more about validating that the treatment process you have established for tank water used in overhead applications works consistently? Not necessarily about testing each batch of water you use.

- *Response*: Yes, that's the idea.

Comment: What if you have Type B water that tests to non-detect? Can you still start with those type B tests?

- *Response*: There is a requirement that Type B water be treated regardless of that generic *E. coli* requirement so whether you just have to put 1 ppm of chlorine in your water to have some sort of a residual sanitizer in that water, because the idea behind that is the test is a moment in time, so one of the issues with Type B water sources is there could be an unforeseen or unknown contaminant in between when you're doing your micro sampling. That's one of the reasons we require monitoring, which will come up in a section shortly here. But the requirement for Type B water is there has to be some amount of sanitizer, some sort of treatment that takes place with that water before it's applied to the crop just in the event that there is a unforeseen or unknown contaminant in that water before it's used. We do require some sort of sanitizer treatment.

Comment: I can't see how this can be done.

Comment: We should use the language of "validation of treatment method prior to the season instead of develop a baseline for water treatment."

Comment: "We use 300 gallons chemical holding tanks in our treatment injection systems that can last for month, waiting to sample different chemical batches will take months specially if you are not using chemical since the treatment parameter are being conducted prior to the 21 day to harvest window. Do I need to purchase another two 300 chemical containers to complete requirement of different treated water batches?

- *Response*: That person is talking about injecting so this statement is about overhead sprays, so I think this is apples and oranges. If someone is pretreating Type B water and putting that into a storage tank for ongoing use, they are meeting the requirement here. Again, this question is about water for aerial application not anything else.

Question: If you must treat Type B water with disinfectant that you're mixing with the pesticide/input to apply overhead within 21 days, is there any concern about mixing those chemicals?

- *Response*: We do have a requirement to review compatibility, that is within the metrics. It's spelled out in multiple sections, so, yes, compatibility needs to be reviewed.

Proposed Revision #24: Add language to section: Best Practices for Treated Aerial Chemical Applications under new bullet point #3 (see page 30)

Proponent: Yuma Safe Produce Council

Proposed Revision: Add "quality" to "distinct water source".

Rationale: Water source designation relates to its quality (i.e., Type A and B)

Poll Results: 64% in favor (56 votes)

Questions/Comments:

Pre-webinar comment from Yuma Safe Produce Council: Water source like a canal. Not ranch but system. Can be confusing - how many water sources are you going to identify. Risks?

Comment: Quality is subjective. The explanation just given does not make sense as we already are being required to have distinct microbiological requirements.

Proposed Revision #25: Add bullet point #4 to section: Best Practices for Treated Aerial Chemical Applications (see page 30)

Proponent: CA LGMA

Proposed Revision: Add bullet point #4 – Routine Testing

- A minimum of one (1) microbiological sample must be taken each month from a representative agricultural water system or at the next application event if no applications occur within the monthly time period.
- This 100 mL sample should have no detectable generic *E. coli*.

Rationale: Set requirements for routine sampling & testing water used in chemical applications

Poll Results: 86% in favor (57 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision #26: Add language to section: Best Practices for Treated Aerial Chemical Applications under bullet point #4 (see page 30)

Proponent: Yuma Safe Produce Council

Proposed Revision: Add "from a representative agricultural water system" to bullet point #4 (see revision #25 for complete language).

Rationale: Clarity on where the sample is to be taken.

Poll Results: 80% in favor (57 votes)

Questions/Comments:

Comment: Growers are not part of the LGMA

Question: One sample collected out of compliance would push you to pathogen testing. The way that this is currently written, this is stricter than that current irrigation water treatment requirements.

- *Response*: That's correct. The reason is that foreseeably, there aren't going to be as many chemical applications as there will be irrigation events, but that is something that's understood. When you are dealing with the corrective action process, and trying to achieve the public health benefit, there aren't many tools in our toolshed. So, these are just ideas for how we can use the tools at our disposal to actually prevent potential issues.

Proposed Revision #27: Add bullet point #5 (Corrective Action) to section: Best Practices for Treated Aerial Chemical Applications under bullet point #4 (see page 30)

Proponent: CA LGMA

Proposed Revision: Add bullet point #5.

- If microbiological testing shows that the water did not meet generic *E. coli* acceptance criteria within 21 days of a scheduled harvest, perform a root cause analysis and correct the concern. Notify the grower/producer.
- The product must be tested for pathogens before harvest if this water was used in aerial chemical application. Follow the product testing requirements outlined in Table 2F.

Rationale: Corrective actions when chemical application water does not meet requirements.

Poll Results: 84% in favor (51 votes)

Questions/Comments:

Pre-webinar comment from AZ LGMA: Guidance language needs to be developed to assist applicators with meeting this requirement.

Proposed Revision #28: Add language to section: Best Practices for Treated Aerial Chemical Applications under bullet point #5 (see page 30)

Proponent: Yuma Safe Produce Council

Proposed Revision: Add "Notify grower/producer" at this stage to bullet point #5 (see revision #27 above for complete language).

Rationale: Because the applicator is working for them during this period of crop production.

Poll Results: 88% in favor (51 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision #29: Add new bullet point #6 (Ongoing monitoring) to new proposed section: Best Practices for Treated Aerial Chemical Applications (see page 30)

Proponent: CA LGMA

Proposed Revision: Add the following bullets to this section to address ongoing monitoring

- Between microbiological routine testing events, records must verify that each application event is conducted following the parameters established during the initial setup.
- If monitoring shows that the water treatment parameters are not being met, do not use the water.
    - Perform a corrective action to assure the water treatment is effective before using the water.
    - Take a microbiological sample to verify that the treatment was effective and have that result as part of the corrective action documentation.
    - If the verification microbiological sample does not meet acceptance criteria, perform a root cause analysis and correct the treatment process. Product must be tested for pathogens before harvesting. Follow Table 2F for product testing requirements.

Rationale: Set requirements for monitoring of treated water applied via aerial application

Poll Results: 69% in favor (39 votes)

Questions/Comments:

Pre-webinar comment from AZ LGMA: Guidance language needs to be developed to assist applicators with meeting this requirement.

Pre-webinar comment from Yuma Safe Produce Council: Guidance language needs to be developed to assist applicators with meeting this requirement. Add language to Appendix A if appropriate.

Proposed Revision #30: Add bullet point #7 (Maintain records) to new proposed section: Best Practices for Treated Aerial Chemical Applications (see page 30)

Proponent: CA LGMA

Proposed Revision: Add bullet point #7

- Maintain records that demonstrate the water used for chemical applications meets Type A source water requirements. See Tables 2B and 2C for historical and/or baseline water quality requirements for source water that will be used for overhead applications.

Rationale: Clarify and emphasize the need for records and documentation surrounding use of treated water in aerial applications.

Poll Results: 79% in favor (42 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision #31: New proposed section: Crop Nutrition and Crop Protection Applications within 21 Days of Scheduled Harvest (see pages 30 and 31)

Proponent: AZ LGMA

Proposed Revision: New section on Crop Nutrition and Crop Protection

- Crop nutrition and crop protection is necessary within the 21 days-to-scheduled-harvest (DTSH) window. These chemicals may be incompatible with water treatment chemicals and therefore may require nontreated water for their application. The timing of applications should be carefully

considered using historical data and risk assessments. When making decisions consider chemical compatibility, label restrictions, manufacturers recommendations, chemical concentration, timing of irrigation to harvest, etc. When it is necessary to apply crop nutrition/protection materials aerially within 21 DTSH, the following restrictions apply:
    - Application should not exceed 3-4 hours or 1/3 of the total irrigation time.
    - Should be applied at the beginning of the irrigation event.
- Should meet the following acceptance criteria for the DTSH timeframe or product testing is required. (see Table X)

Target Organism: Generic *E. coli*

Sampling procedure: Collect one sample pre- treatment from the source.

Sampling Frequency: Sampling is conducted during the irrigation event when crop nutrition/protection chemicals are being applied.

Table X. Microbial Water Quality Acceptance Criteria:

Days to scheduled harvest	**Pre-treatment water test result** (MPN/100 mL)	**Action**
0-7	0-10	No action required
	11-125	Raw product sampling required
	126+	Raw product sampling required
	235+	Raw product sampling required
8-14	0-10	No action required
	11-125	No action required
	126-234	Die-off must be met
	235+	Raw product sampling required
15-21	0-10	No action required
	11-125	No action required
	126-235	No action required
	235+	Raw product sampling required
>21	Follow metrics for B water	

Rationale: AZ LGMA Tech Subcommittee members note that issues with chemical compatibility have arisen. The water treatment approach selected by the LGMA relies heavily on residual and microbial monitoring rather than on probabilities of real risk related to the application of agronomic chemicals.

Poll Results: 43% in favor (53 votes)

Questions/Comments:

Question: What I want to understand is the impact that you are potentially seeing from the use of the antimicrobials in the water for the pathogen control. What sort of impact are the numbers you're seeing as it relates to crop yield production? We are talking about the nutrient applications, right? Is there a drastic decrease in the effectiveness of these fertilizers that you're referencing? I'm curious because I

would think that the primary focus of the water treatment is for the pathogen control. Yes, there might be some impact from this residual antimicrobial agent that's having an impact on the nutrient basis, but what is the effect that we are seeing out in the results?

- *Response*: Well, obviously we don't have any research information for you right now, but we have a lot of anecdotal questions that have come into the AZ LGMA from a technical standpoint and so this fertigation has to occur with the water treatment going on. What you have is difficulty in meeting the residual requirements of the AZ LGMA from those treatment parameters standpoints and at the same time there are indications that you have to use even more of the fertilizer in order to get what you need into the crop. This is what we are hearing and what we know, and we don't want people to forgo water treatment completely in order to get nutrient on the crop, so we are suggesting this meeting halfway. If you find yourself in position that you need to add a nutrient in the last 21 days, you still need to do water treatment, but you are able to have this small window in order to get your fertilizer on and then follow with water treatment.

Comment: So, we would have to sample every time a plot is being irrigated (water) by crop nutrients/pesticides within 21 days?

- *Response*: No, we are not suggesting that we change the regular expected monitoring. So, within that 21 days you are expected to get at least 2 sets of microbial samples to measure the effectiveness of the water treatment. Every time you run your irrigation you have to obtain your treatment parameters sample, so depending on what kind of crop you're growing and your soil quality and all of that, I don't know how many irrigation runs you'll have to do. So, it shouldn't be that far off and shouldn't require much any additional sampling unless you aren't making these water quality acceptance criteria.

Comment: One of my concerns is that if we do not allow for exceptions up-front and wait until farther down the road when more data is available, it will be invariably perceived as a "weakening" of the rules rather than a reasonable adjustment. Once a rule is in place, it becomes much harder to justify in a political and public relations sense.

Question: How did you come up with 3-4 hours and 1/3 the total irrigation time? seems arbitrary. I still agree with Sharan. It's an optics issue. It's also a consistency issue within the doc.

- *Response*: The application period that 3-4 hours in most large acreage runs is about 1/3 of the total irrigation time. If you have really small plots and are going to be running 2- or 3-hour irrigation runs, that's the reason for the 1/3 or that fraction rather than saying 3-4 hours.

Question: Once the nutrient is applied to the field, and then an antimicrobial treatment is immediately followed, are we concerned with neutralizing the nutrient content in the field post treatment or application?

- *Response*: Certainly, we don't know that, but it may happen as well. The one thing that you will be able to measure if you allow the nutrients to go in is you'll actually be able to get a better idea as to whether or not your water treatment is effective. Because when you run those 2 together they are cancelling each other out.

Comment: The hardest part of the fertilizer question is there are so many types of fertilizer that can be applied. The type of nitrogen in the fertilizer will affect the oxidizer differently.

- *Response*: That's true, but we also have some fertilizers that are biologically active for some of the organics that are grown. So, they are pretty much immediately neutralized and have no value

whatsoever in term of fertilizer or nutrient protection or addition to the crop. We are still trying to grow the crop of appropriate size, quality that's disease and pest free so I understand the desire to make sure that we've treated the water. However, we still don't have all the information that Sharan is alluding to with regards to real probability of risk.

Question: Aren't there ways to address the chemical incompatibility by neutralizing the water after it as been treated? This is not anything new to chemistry.

- *Response*: No, it's nothing new to chemistry but ignored chemistry when we wrote these rules.

Question: How do you know this? What's been the experience on crop yields from last season?

- *Response*: The LGMA doesn't go into collecting yield data. We've spoken with different grower and this is all anecdotal of their challenges with trying to fertilizer the crop and do water treatment at the same time.

Comment: Have we given thought to the burden this would put on an irrigator or applicator? i.e., keeping track of application and the treatment.

- *Response*: Well I think they are already burdened with water treatment. I think from an agronomic standpoint the grower wants to get appropriate nutrients on the crop and they'll figure out a way to do this just the same way that we figured out how to do water treatment.

Comment: Then why make the change? It seems without any science.

Comment: This is moving backwards. Treat the water first and then neutralize it. Isn't this common in many chemical applications?

Comment: Thank you, Vicki, for advocating for the grower. Treatment is a huge cost to the grower as it stands. If we have to potentially double our fertilizer costs just to get the crop nutrients, we need to meet market standards, then I hope that the shipper and consumer are ready to pay a lot more....

- *Response*: I think that probably the day to schedule harvest and pre-treatment water test results could be additionally debated but, I do think that in this revision there's got to be some option for growers to be able to conduct water treatment successfully and also use other crop products successfully. I'm frustrated because learning how industry operated this last season and the challenges that they faced related to this. It's basically that there are very few chemistries that allow you to do both of those at the same time. I want to remind people that our major concern is not necessarily the interaction of the crop product with the chemistry treatment that impacts nutrient uptake, our concern is the flip. Our concern is that you're going to be failing water treatments and putting an undue risk. By putting these additional values and risk related days to scheduled harvest into the equation, we are trying to maintain the same level of public health protection. If it's not this then it needs to be addressed someplace else either in guidance potentially. I worry if you go into another season without doing this you're going to have audit issues; you're going to have growers doing funny things just do be able to make it work and grow a crop.

Comment: Until science says different. Doing "something"; seems unsubstantiated

Question: Are you saying use untreated water for fertilizer than use sanitized water after?

- *Response*: Yes, you would use whatever the water that you have available and then as soon as your fertilizer is added then you would start your water treatment.

Comment: Good luck to the industry if this goes through. Treatment works. Post germination crop applications and their source is our next frontier. It's a black hole right now. For example, LGMA does not currently address water used in crop and soil applications delivered in liquid form from their source.

Comment: There are crops that are very small duration crops such as spring mix and spinach, in those crops they are hardly 30 days; that's the only way to apply new treatments to those crops. I think if we don't allow any way to address that then either we will not have spinach the next ___months or I would say it's going to affect those crops. I know in the last season that was the concern and needs to be addressed in the right way.

Comment: Using sanitized water as a sanitizer is not going to work.

Proposed Revision #32: New language added to the section: Best Practices for Irrigation Water from Type B Agricultural Water (see page 32)

Proponent: CA LGMA

Proposed Revision: New sentence: "Efforts should always be made, when using Type B water, to avoid contact with the edible portion of the crop within 21 days of a scheduled harvest."

Rationale: To add clarity and raise awareness surrounding use of Type B water; to emphasize caution with Type B water use.

Poll Results: 89% in favor (49 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Proposed Revision #33a: Add language to Table 2A: Irrigation Water from Type B Agricultural Water (see page 32)

Proponent: CA LGMA

Proposed Revision: Added language "or at the next irrigation event if longer than monthly".

Rationale: To create sampling language based on system approach and allow more flexibility in sampling.

Poll Results: 47% in favor (45 votes)

Questions/Comments:

Comment: Is this stating that samples should only be taken during use?

- *Response*: The intention for a lot of our water changes really go to the system approach of an irrigation system as opposed to just the source testing, so when folks were under the timeline of monthly sampling they would sometime go to the source instead of taking their test from the system, so we wanted to assure folks had the flexibility to do it during an irrigation event in the event they didn't have to take a test within a month to make sure they got it within the system because we want to make sure folks are testing their systems.

Question: Isn't the requirement that samples are taken from the sprinkler, field ditch etc. covering the water system not the water source?

- *Response*: Correct

Proposed Revision #33b: Add language to Table 2A: Irrigation Water from Type B Agricultural Water (see pages 32 and 33)

Proponent: CA LGMA

Proposed Revision: Add language to existing Sampling Frequency

- Additional samples shall be collected during use no less than 18 hrs. apart and at least monthly (or at the next irrigation event if longer than monthly) during use from points within the delivery system.

Rationale: To create sampling language based on system approach and allow more flexibility in sampling

Poll Results: 24% in favor (45 votes)

Questions/Comments:

Comment: Is this stating that samples should only be taken during use?

- *Response*: The intention for a lot of our water changes really go to the system approach of an irrigation system as opposed to just the source testing, so when folks were under the timeline of monthly sampling they would sometime go to the source instead of taking their test from the system, so we wanted to assure folks had the flexibility to do it during an irrigation event in the event they didn't have to take a test within a month to make sure they got it within the system because we want to make sure folks are testing their systems.

Question: Isn't the requirement that samples are taken from the sprinkler, field ditch etc. covering the water system not the water source?

- *Response*: Correct

Note: #34a through #35b below are based on the May 22 post-webinar working draft which was numbered differently than the June 11 final version. These proposals are still included in the June 11 working draft with their original numbering.

Revision #34a: Remove sampling requirement language to Table 2B: Irrigation Water from Type A Agricultural Water Systems Sourced from Public or Private Providers (see page 35)

Proponent: Duncan Family Farms

Proposed Revision: Remove end of system sampling requirement and allow grower to sample wherever feasible to assess total risk of source & conveyance. This is suggested for Tables 2B (Type A Water for Public & Private providers and 2C (Type A for Private Wells)

Rationale: Defeats purpose of assessing overall risk of source & conveyance. Follow up sampling procedure for failed system more acceptable (allows for consistent RCA)

Poll Results: 53% in favor (45 votes)

Questions/Comments:

Comment: Then they will go back to source only.

Comment: So, one could take 3 samples only at the outlet and completely ignore the potential impact of poorly managed distribution system? The logic flows both ways. The goal is to test the system, yes but what is coming out is the most important to understand.

Comment: Would it be possible to change the language consistent as purposed last week where there is at least 1 sample taken at the last sprinkler.

Revision #34b: Remove sampling requirement language to Table 2B: Irrigation Water from Type A Agricultural Water Systems Sourced from Public or Private Providers (see page 35)

Proponent: Duncan Family Farms

Proposed Revision: Remove end of system sampling requirement and allow grower to sample wherever feasible to assess total risk of source & conveyance.

Rationale: Defeats purpose of assessing overall risk of source & conveyance. Follow up sampling procedure for failed system more acceptable (allows for consistent RCA)

Poll Results: 64% in favor (33 votes)

Questions/Comments:

Comment: Then they will go back to source only.

Comment: So, one could take 3 samples only at the outlet and completely ignore the potential impact of poorly managed distribution system? The logic flows both ways. The goal is to test the system, yes but what is coming out is the most important to understand.

Comment: Would it be possible to change the language consistent as purposed last week where there is at least 1 sample taken at the last sprinkler.

Revision #34c: Change acceptance criteria language in Table 2B: Irrigation Water from Type A Agricultural Water Systems Sourced from Public or Private Providers (see page 36)

Proponent: Duncan Family Farms

Proposed Revision: Change acceptance criteria from non-detectable generic E coli to < 10 MPN/100 mL for all samples.

Rationale: Drinking water sampling criteria are not applicable to ag irrigation considering operational realities of chemigation, fertigation etc.

Poll Results: 67% in favor (33 votes)

Questions/Comments: No questions or comments were raised with this proposal.

Revision #35b: Change Routine Verification Acceptance Criterion in Table 2B: Irrigation Water from Type A Agricultural Water Systems Sourced from Public or Private Providers (see page 38)

Proponent: Duncan Family Farms

Proposed Revision: Change acceptance criteria

Rationale: 2 of 3 not designed nor verified for ag. Took potable water sampling methodology and tried to fit into ag system. Return to rolling geometric mean with tighter criteria <10 MPN/CFU at 7-days to harvest

Poll Results: 42% in favor (36 votes)

Questions/Comments: No questions or comments were raised with this proposal.

***Note*:** Proposed Revision #34 below resumes normal numbering based on the June 11 working draft.

Proposed Revision #34: Change 21 days to 7 days in TABLE 2D: Irrigation Water from Treated Type B→A Agricultural Water Systems (page 46)

Proponent: Duncan Family Farms

Proposed Revision: Change overhead application timeframe from 21 days to 7 days.

Rationale: The 21-day requirement is not necessary for all Type B waters. This time frame and microbial criteria is appropriate due to several corrective measures included in the FSMA Produce Safety Rule. One of these is detailed in § 112.45(b)(1)(i)(A) and allows calculation of microbial die-off between the last water application and harvest at a rate of 0.5 log per day, for up to four days. The metric should incentivize the grower to pull more samples and build a water quality profile and set treatment days to harvest, this is supported by FSMAs die off language. As mentioned in point 6 all Type B waters are unfairly categorized in a single "bucket".

Pep water: Often less than 21 days to harvest period is irrigation turned on for a brief moment where a stabilized system will never be achieved hence hindering treatment or rendering ineffective.

Poll Results: 49% in favor (67 total votes).

Questions/Comments:

Question: Perhaps irrigation and treatment requirements for organic crops should be separated from conventional crops.

- *Response*: I don't think it should be a two-class system because we are all in the same boat together, conventional and organic. Organic farming is different though than conventional. How you drive the change in the crop is vastly different. So, let's focus on what the risk is and look at those timeframes, ones that can be further dialed in for what the consensus document said.

Comment: The Delmarva region has been treating water for 8 years with no adverse effects.

Question: Will this be throughout the entire growing period?

- *Response*: It is within 7 days to harvest, a very focused and critical time and this is also factoring in FSMA die-off language.

Comment: My only concern is if an issue arises, how would you mitigate it in such a short window of time?

- *Response*: Well, one thing I wouldn't eliminate is the fact that we still have tissue sampling if it fails to meet the microbial criteria. We still have that in LGMA which is extremely important.

Question: Why wasn't this concern addressed when the 21 days was added to the metrics?

- *Response*: I wasn't part of that larger discussion; I can only assume that how irrigation systems work, how crop production works, might have not been considered in the discussion in the rush to understanding water treatment or water quality, which is extremely important in how you control the risk and reduce the risk. But certainly, these things are a reality. An ag irrigation system is a tool for the grower, just how they use a tractor. A grower uses an irrigation system to also apply nutrients. There's no time limit on that. Sometimes they turn the irrigation on just to get those inputs on.

Comment: Hazards need to be addressed first; then process improvements (fertilizers, other improvements) are a secondary concern.

Comment: Should we go back and redefine type B, it seems like maybe type A and B simplified things too much?

- *Response*: I think there should absolutely be further refinement, and those were some of the discussions I was asking in the last webinar. I think Type B should be further refined as well, encouraging growers to be sampling, more often than not, in building a good water quality profile to understand the risks of their water. That builds a good treatment process.

Comment: As a processor, with responsibilities to the customer and consumers, it is my opinion that this area needs more study. As I'm responsible for our raw FS program, while 21 days might need to be reviewed, we are not comfortable moving down to 7 days due to the lack of supporting data.

- *Response*: Again 21 days is open to further refinement, as mentioned in the consensus document. So that extremely conservative approach is open to further refinement. I'm hoping that we can have that discussion here for this process.

Comment: 7 days is not sufficient for mitigation

Comment: Another comment, it seems like growers want simple metrics but then say every region and process is different, which warrant complex metrics

Proposed Revision #35: Revise existing antimicrobial treatment language in Table 2D (see page 46)

Proponent: Duncan Family Farms

Proposed Revision: Revise sentence, "…i.e., ~~contain~~ utilize an approved or scientifically supported antimicrobial method to reduce ~~treatment at sufficient concentration or wavelength to prevent potential~~ contamination risk during overhead applications."

Rationale: The current standard is modeled for a strict chemical treatment and doesn't allow for other validated treatment options such as UV.

Poll Results: 52% in favor (67 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #36: Add treatment program language to Table 2D (see page 46)

Proponent: Duncan Family Farms

Proposed Revision: Added "Building a treatment program should be based off the collected data from Table 2E Establishing a Water Quality Profile."

Rationale: The metric should incentivize the grower to pull more samples and build a water quality profile and set treatment days to harvest

Poll Results: 57% in favor (62 total votes)

Questions/Comments:

Question: The farmers (in my region) have been sampling water for many years. Growers that grow within the same cluster of fields, often times, will be sampling the same water. Is it truly necessary to increase testing if we already have a thorough understanding?

- *Response*: It's a very broad question. The point here is to encourage additional sampling to better understand your water quality profile and throughout the system here. That's also in Table 2E.

Proposed Revision #37: Add application window language to Table 2D (see page 46)

Proponent: Yuma Safe Produce Council

Proposed Revision: Add "A window for application(s) of nutrients and/or crop protection chemicals is allowable within the 21 days-to-harvest window provided the application occurs at the beginning of the irrigation event and is followed by an antimicrobial water treatment of sufficient concentration and duration to prevent potential contamination risk during the remainder of the overhead irrigation event."

Rationale: Encourage research and FDA/EPA help. Are we addressing the spirit or the letter of the guidance? We did this for a season, and it is not realistic. Make sure the treatment end is the one with the timeframe in irrigation events to deliver fertilizer. Run fertilizer in the beginning and then run treatment. 4 hours or 1/3 of total irrigation time?

Poll Results: 62% in favor (62 total votes)

Questions/Comments:

Question: Is this assuming that treated water in the later irrigation washes off any contaminants in the untreated water?

- *Response*: In our experience over the last 6 years in treating water, there has certainly been the case before the metrics requirement where growers were choosing, from an economical standpoint, to make sure treatments were taking place during the last interval of irrigations. So that is already making the base assumption that if any water was applied to foliar to that crop that the application afterwards would indeed have the positive effect of sanitizing that water. Certainly, water treatment in the later phase does have a beneficial effect.

Question: Is that backed up by science?

- *Response*: I think we definitely need more science, but what we are basing this off of is what we've experienced this year and we need to address these issues now and science is going to take time. Science is also only done on a small scale and then plugged into what we do on a much larger scale. What we are basing this off of right now, no offence to any of the scientists, is almost better than science. This is what we know now by implementing the metrics that we had last season.

Comment: Sanitized water is not going to wash off contamination.

Question: If treatment is only required within last 7 days will a water sample have to go to the lab and results produced before the crop is harvested?

- *Response*: No, the sample would not have to within 7 days. The point is to establish a very effective treatment program so you would do that greater than the 7 days. Everything you are going to put in will make the log reduction to meet the new microbial criteria. What is imperative is that the system is running within those 7 days.

Comment: Although treated water may wash off contamination, it should not be taken for granted to use contaminated water prior to treatment as washing off may depend on the level of contamination.

Comment: I think it is a bad idea to stick to rules that growers are not going to be able to follow--it negates the purpose of having the rules in the first place. The objective of all of these metrics is to produce a crop in the end.

Question: Is there any other water treatment option that is not necessarily chemical treatment?

- *Response*: UV treated based off of UVT measurement.

Proposed Revision #38: Revise chemical language in Table 2D (see page 46)

Proponent: Duncan Family Farms

Proposed Revision: Remove “Physical/chemical” and replace with “Microbiological”.

Rationale: The metric should incentivize the grower to pull more samples and build a water quality profile and set treatment days to harvest.

Poll Results: 89% in favor (54 total votes)

Questions/Comments: There were no comments or questions regarding this proposal.

Proposed Revision #39: Add time frame language to Table 2D (see page 46)

Proponent: Duncan Family Farms

Proposed Revision: Add “This time frame and microbial criteria is appropriate due to several corrective measures included in the FSMA Produce Safety Rule. One of these is detailed in § 112.45(b)(1)(i)(A) and allows calculation of microbial die-off between the last water application and harvest at a rate of 0.5 log per day, for up to four days.”

Rationale: Encourage research and FDA/EPA help. Make sure the treatment end is the one with the timeframe in irrigation events to deliver fertilizer. Run fertilizer in the beginning and then run treatment.

Poll Results: 69% in favor (54 total votes)

Questions/Comments:

Comment: Since FDAs PSR subpart E is on pause, I am not sure that the "die-off" provision will be retained. There is a lot of research showing it is not protective/conservative.

Revision #40: Delete total coliforms metric from D1. Routine Verification of Microbial Water Quality in Table 2D (see page 47)

Proponent: Duncan Family Farms

Proposed Revision: Delete metric "total coliforms" from *D1. Routine Verification of Microbial Water Quality*.

Rationale: Total coliforms should be eliminated as an actionable trigger due to their environmental ubiquity.

Poll Results: 47% in favor (59 total votes)

Questions/Comments:

Comment: Total coliforms is used for potable water and should not be part of the LGMA metrics.

Question: How do folks know they are effectively treating water without total coliforms?

- *Response*: You would look at that as a reduction in generic *E. coli*

Comment: But that's meaningless. The reason we put the total coliforms in there originally was to get a starting here, ending here, a realistic number of – did I make a change? Was the treatment effective? So that's why total coliforms is in there.

Question: How do you monitor the efficacy of the treatment? Is it total coliforms that is necessary for that or generic *E. coli* by itself could do the job with the information we have at this point?

- *Response*: I'll just share from using calcium hydrochloride as the primary treatment method is our ranches. We use a contact-time calculation and it's based on the chemistry for sodium hydrochloride. Nevertheless, you have factors: flow, temperature, pressure, and residual ppm. You build a calculation out of that to treat to a 4-log reduction or 3-log reduction. Those are considered the two standards essentially in wastewater treatment for microbial reductions. So, total coliforms is not necessary. Just follow the calculation.

Comment: This is Channah. So, the reason that we originally had proposed total coliforms was because in some circumstances some source waters have variable generic *E. coli* concentrations depending upon the time of year and time of day. Other than residual and also some of the calculation that Jeremy was talking about, for those circumstances where you have generic *E. coli* numbers that are very low, it's challenging to be able to ensure that your treatment system is operating as intended. I do agree that folks who are monitoring all the variable inputs related to flow, and retention time, and residual concentration and pressure and all those parameters have a better ability to be able to ensure that their treatment system is working appropriately. But for folks who are simply relying on microbial tests and potentially residual, I still feel that total coliforms value is valuable. What we don't know and what we maybe have diverging opinions on is what that log reduction should be. But I do think that there is value in using total coliforms in areas where you have very low generic *E. coli* values as just one more parameter that helps you understand your water treatment system. Other things is that because surface water is a dynamic source. It's variable and can vary over time. And you can design the best treatment system you can, but if you can't anticipate blocks of something coming through your system if you haven't designed or overdesigned your system then it's harder to evaluate and measure.

Comment: Why would you get rid of an indicator?

Comment: It is impossible to show a reduction if your generic *E. coli* for the source starts at a non-detectable level

Comment: Total coliforms do not get people ill. Simply knowing the number has little value if there are not any requirements from county health departments, EPA or FDA to monitor these organisms.

- *Response*: I agree completely. Total coliforms are an indicator organism. They have very little if any public health significance. But the point is to not look at your resulting total coliforms in your irrigation system and make a decision based on if it's acceptable or not. They're simply used to tell you if you have designed and are operating your treatment system as intended.

Proposed Revision #41: Remove end of sampling requirement from Table 2D under section Routine Verification Sampling Procedure (see page 47)

Proponent: Duncan Family Farms

Proposed Revision: Revise "Collect at least three (3)-100 mL samples ~~at the end of~~ throughout the distribution system (e.g., source, first riser, last sprinkler head, etc.)."

Deleted "If the irrigation treatment system is being used within the 21-days-to-harvest-window, sample each distinct irrigation treatment system on at least two occasions separated by at least three (3) days."

Rationale: Defeats purpose of assessing overall risk of source & conveyance. Follow up sampling procedure for failed system more acceptable (allows for consistent RCA)

Poll Results: 59% in favor (59 total votes)

Questions/Comments:

Question: Shouldn't the location of the samples taken be determined by the type of treatment utilized?

- *Response*: Certainly, every treatment is different. When you think about a UV treatment system, you're at the source point essentially, and there's no type of residual chemical travelling through the mainline. In, essence, to answer your question, yes.

Comment: The problem with references to "the end" of a system is that a system is constantly in flux and different parts may be active at different times OR all together. Talking about an end tends to peg sampling in an unrealistic location and perhaps create artificial results.

- *Response*: An ag irrigation system is nothing like a drinking water system. I know we have the language in there, system stabilization, but rarely an ag irrigation system even is stabilized. I did send in some flow data off one of our boosters. You have peak and valleys and every time you have a peak or valley, that's going to impact your treatment process. Opening sets, closing sets, depending on when you're irrigating. It's the agronomic need of the crop is what dictates irrigation. So, looking for this very rigid end of system doesn't make any sense.

Proposed Revision #42: Revise language in Table 2D under section Routine Verification Sampling Frequency (see page 47)

Proponent: Duncan Family Farms

Proposed Revision: Revise "…, the grower is able to sample and test each distinct irrigation treatment system on at least one occasion per month to establish treatment efficacy.

Rationale: Revision affirms that the treatment method is effective.

Poll Results: 70% in favor (57 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #43: Modify language in Table 2D under section heading D1. Routine Verification of Microbial Water Quality (see page 47)

Proponent: Duncan Family Farms

Proposed Revision: Add and revise language to section *D1. Routine Verification of Microbial Water Quality*.

- ~~no detectable generic in at least two (2) of the three (3) samples with~~ a maximum level no greater than (<) 10 MPN per 100 mL ~~in the remaining~~ sample~~, and~~.
- ~~data monitoring for total coliforms at a level no greater than (<) 99 MPN in 100 mL *, and~~

~~* As an alternative to the threshold approach for total coliforms (< 99 MPN / 100 mL), operators can verify their irrigation treatment system by conducting paired pre- and post-treatment microbial testing of water distribution system (see Appendix A for additional guidance on conducting a log reduction assessment).~~

If ~~two (2) or more of~~ the three samples do not meet the acceptance criteria for generic *E. coli* ~~and at least one sample is~~ (greater than (>) 10 MPN) ~~and one (1) or more of the total coliforms results do not meet the monitoring criteria,~~ prior to the next irrigation event perform an Agricultural Water System Assessment (see Appendix A) ~~and take remedial actions outlined in~~ then repeat Table 2D~~F~~.

If microbial criteria are unable to be met, then conduct a pre-harvest tissue test after the last irrigation event and do not use water until treatment is adequate with target microbial criteria met.

Rationale: This is finding a criterion that fits an agricultural water system. The language is designed so no sample is greater than 10 MPN.

Poll Results: 68% in favor (57 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #44: Revise routine verification acceptance criteria language in Table 2D (see page 47)

Proponent: Duncan Family Farms

Proposed Revision: Revise "~~no detectable generic in at least two (2) of the three (3) samples with~~ a maximum level no greater than (<) 10 MPN per 100 mL in the remaining sample. ~~and~~

Also revised "Generic *E. coli:* ~~No detection in two (2) of the last three (3) water samples with a~~ A maximum level of (<) 10 MPN allowed ~~in one (1)~~per 100 mL sample [~~consecutive values~~]." This is under heading "Routine Verification Acceptance Criteria."

Rationale: 2 of 3 not designed nor verified for ag. Took potable water sampling methodology and tried to fit into ag system. Return to rolling geometric mean with tighter criteria <10 MPN/CFU at 7-days to harvest

Poll Results: 75% in favor (52 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #45: Delete Routine Verification Data Monitoring Criteria section. (see page 47)

Proponent: Duncan Family Farms

Proposed Revision: Delete Routine Verification Data Monitoring Criteria section: "Total coliforms: A maximum level of < 99 MPN in 100 mL in all water samples or an adequate log reduction based on the untreated water's baseline total coliforms levels*"

Rationale: This is just removing the total coliform criteria based on same rationale previously explained.

Poll Results: 61% in favor (52 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #46: Revise antimicrobial water treatment language in Table 2D (see page 48)

Proponent: Duncan Family Farms

Proposed Revision: Revise "USEPA-approved or scientifically supported, for use in ~~agricultural~~ water treatment."

Rationale: The current standard is modeled for a strict chemical treatment and doesn't allow for other validated treatment options such as UV.

Poll Results: 78% in favor (51 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #47: Adding testing methodology language to Table 2D (see page 48)

Proponent: Duncan Family Farms

Proposed Revision: Added "treatment methodology".

Rationale: The current standard is modeled for a strict chemical treatment and doesn't allow for other validated treatment options such as UV.

Poll Results: 73% in favor (51 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #48: Revise testing procedure language in Table 2D (see page 48)

Proponent: Duncan Family Farms

Proposed Revision: Revise "Other as-~~recommended by antimicrobial water treatment supplier or manufacturer's specifications~~ supported by treatment methodology.

Rationale: Clean up language to broaden metric. Current language is too narrow.

Poll Results: 78% in favor (50 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #49: Revise irrigation treatment language to Table 2D (see page 48)

Proponent: Duncan Family Farms

Proposed Revision: Revise "To ensure ~~demonstrate~~ the irrigation system is performing as intended ~~during each water treatment irrigation event, document~~ consider documenting treatment parameters such as:

- ~~Treatment related parameters such as~~ Flow rates, residual antimicrobial levels, pH, dose settings, UVT, etc.

If ~~water~~ quality falls outside the acceptable levels ~~monitoring parameters~~, then review treatment parameters and conduct a microbial testing per D1. Routine Verification of Microbial Water Quality

Rationale: Flow measurement is not required for all treatment. Continuous treatment calculations for NaHCl is necessary for adequate treatment but other chemicals, like PAA, are not addressed. UV treatment is dependent on UVT. Residual measurements shouldn't be mandatory if adequate log reduction took place; limited to 4 ppm for SAFE Drinking Water Act, even then a risk to crop inputs.

Poll Results: 76% in favor (50 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #50: Modify testing frequency language in Table 2D (see page 48)

Proponent: Duncan Family Farms

Proposed Revision: Revise "Monitoring must be conducted whenever the irrigation treatment system is in use which can be ~~C~~ continuous ~~monitoring with~~ or periodic ~~verification by titration OR routine monitoring if the system can be shown to have a low degree of variation.~~"

Rationale: Striking out language that was very treatment methodology specific; wanted to make the language broader.

Poll Results: 80% in favor (52 votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #51: Revise metric in Table 2E: Irrigation Water from Type B Agricultural Water Systems Intended for Overhead Irrigation prior to 21 days (see page 50)

Proponent: Duncan Family Farms

Proposed Revision: Change the limit for use in overhead irrigation from 21 to 7 days to the scheduled harvest date. Also add "The objective of the of this section is to guide the grower in establishing a water quality norm that will model treatment within (<) 7 days to scheduled harvest."

Rationale: The 21-day requirement is not necessary for all Type B waters. This time frame and microbial criteria is appropriate due to several corrective measures included in the FSMA Produce Safety Rule. One of these is detailed in § 112.45(b)(1)(i)(A) and allows calculation of microbial die-off between the last water application and harvest at a rate of 0.5 log per day, for up to four days. The metric should incentivize the grower to pull more samples and build a water quality profile and set treatment days to harvest, this is supported by FSMAs die off language. As mentioned in point 6 all Type B waters are unfairly categorized in a single "bucket".

Pep water: Often less than 21 days to harvest period is irrigation turned on for a brief moment where a stabilized system will never be achieved hence hindering treatment or rendering ineffective.

Poll Results: 68% in favor (49 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #52: Revise language to heading in Table 2E (see page 50)

Proponent: Duncan Family Farms

Proposed Revision: Change title of table section from "Routine Verification of Microbial Water Quality" to "Establishing Water Quality Profile"

Rationale: The metric should incentivize the grower to build a water quality profile by pulling more samples.

Poll Results: 64% in favor (49 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #53: Remove end of system sampling requirement in Table 2E (see page 50)

Proponent: Duncan Family Farms

Proposed Revision: Revise "…shall be taken throughout the system to assess both the water source and the water distribution system ~~as close as practicable to the point-of-use (i.e., to be determined by the sampler, to ensure the integrity of the sample, using sampling methods as prescribed in Table 2D) so as to test both the water source and the water distribution system. In a closed water distribution system (meaning no connection to the outside) water samples may be collected from any point within the system but are still preferred at the point-of-use."~~

Rationale: Current sampling location requirements defeat the purpose of assessing overall risk of source and conveyance. Prescribing sample location for follow-up sampling procedure for failed system is more acceptable (allows for consistent RCA).

Poll Results: 65% in favor (48 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #54: Revise sampling procedure in Table 2E (see page 50)

Proponent: Duncan Family Farms

Proposed Revision: Revise "Collect five (5)-100 mL samples ~~collected~~ aseptically throughout the untreated distribution system (e.g., source, first riser, last sprinkler head) ~~at the point-of-use; i.e., one sprinkler head per water source for irrigation, water tap for pesticides, etc. preseason irrigation water may be tested and utilized~~."

Rationale: The metric should incentivize the grower to pull more samples and build a water quality profile.

Poll Results: 52% in favor (48 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #55: Modify existing language in Table 2E (see page 50)

Proponent: CA LGMA

Proposed Revision: Revise existing language "No less than one (1) sample group per month (or at the next irrigation event) per water distribution system is required under these metrics. If there are multiple potential point-of-use sampling points in a water distribution system, then samples shall be taken from different point-of-use locations each subsequent sampling event ~~month~~ (randomize or rotate sample locations)."

Rationale: To create sampling language based on a system approach and allow more flexibility in sampling.

Poll Results: 72% in favor (36 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #56: Modify routine verification sampling frequency in Table 2E (see page 50)

Proponent: Duncan Family Farms

Proposed Revision: Revise "~~One sample per water source~~ Sample groups should be collected at least once per 30 days (when feasible) and shall be collected and tested prior to use if > 60 days since last test of the water source. Additional samples ~~shall~~ can be collected during use ~~no less than 18 hrs. apart and at least monthly~~…"

Rationale: The metric should incentivize the grower to pull more samples and build a water quality profile.

Poll Results: 58% in favor (36 total votes)

Questions/Comments:

Comment: 30 days may not be practical due to difference circumstances. There should be more flexibility.

Proposed Revision #57: Delete sampling language in Table 2E (see page 50)

Proponent: Duncan Family Farms

Proposed Revision: Delete the following language: "However, a rolling geometric mean of five samples is not necessarily required prior to irrigation or harvest. If less than five (5) samples are collected prior to irrigation, the acceptance criteria depend on the number of samples taken. For example:

- If only one (1) sample has been taken, it must be below (<) 126 MPN /100 mL.
- Once two (2) samples are taken, a geometric mean can be calculated, and the normal acceptance criteria apply."

Rationale: This is deleting language that would not apply to the newly proposed sampling groups.

Poll Results: 73% in favor (37 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #58: Add language to Routine Verification Sampling Frequency (see page 50)

Proponent: CA LGMA

Proposed Revision: Add language "or at the next irrigation event if greater than monthly".

Rationale: To create sampling language based on system approach and allow more flexibility in sampling.

Poll Results: 84% in favor (37 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revisions #59 and #60 were editorial changes.

Proposed Revision #61: Revis sampling number and location for remedial actions in Table 2E (see page 51)

Proponent: Duncan Family Farms

Proposed Revision: Under remedial actions – "Retest the water daily, take five ~~three~~ samples throughout the water distribution system ~~no less than 18 hours apart at the point closest to use~~."

Rationale: To create sampling language based on system approach and allow more flexibility in sampling.

Poll Results: 53% in favor (43 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #62a: Revise heading in Table 2G: Post Harvest Direct Product Contact or Food-Contact Surfaces (see page 55)

Proponent: AZ LGMA

Proposed Revision: Revise heading "~~Post~~ During Harvest Direct Product Contact or Food-Contact Surfaces"

Rationale: Post-harvest (i.e. at a plant/cooler) is outside the scope of the LGMA. Water used *during* harvest in within the scope of the LGMA.

Poll Results: 87% in favor (39 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #62b: Add language to heading in Table 2G (see page 55)

Proponent: CA LGMA

Proposed Revision: Add language to "Post-Harvest Direct Product Contact or Food-Contact Surfaces On Farm Practices Only

Rationale: Clarification that standard relates to on-farm water use.

Poll Results: 95% in favor (39 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #62c: Revise introductory paragraph and water type language in Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Revise introductory paragraph to this table in the right-hand column. "Water used during harvest operations that directly contacts edible portions of harvested crop or is used on food-contact surfaces, such as equipment or utensils, shall be sourced from wells or municipal water sources. Testing must be conducted to demonstrate that this water meets the Maximum Contaminant Level Goal for generic *E. coli* as…"

Also added "Water Type – Well or municipal water" to left column.

Rationale: This testing description [as currently written] is for irrigation water. Water used for harvest operations should not be the same water as that used for irrigation as it implies canal and reservoir water (treated) could be used. This should be clarified that only well water and municipal water is acceptable and must meet the acceptance criteria for generic *E. coli*.

Poll Results: 95% in favor (42 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #62d: Revise language describing disinfection methodologies in Table 2G (see page 55)

Proponent: Ag Partners SW and AZ LGMA

Proposed Revision: Revise "…approved disinfection ~~ant~~ method at sufficient concentration or of sufficient wavelength to prevent…"

Also applies to second bullet point under Single Pass vs. Multiple Pass Systems section.

Rationale: Please consider ensuring these terms are available as encouragement for growers/companies to consider and deploy all types of antimicrobial water treatment

Poll Results: 95% in favor (42 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #63: Revise sampling procedure in Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Revise "Prior to use in harvest equipment, a 100 mL sample collected aseptically at the water source ~~point-of-use~~.

Rationale: Additionally, testing tank water that was most likely filled the day of use, prior to use is not practical if you are to wait for results to be received before use. Recommend that water quality testing

be performed on source water to determine acceptability prior to use in the harvest operation's nurse tank.

Poll Results: 81% in favor (42 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #64: Add language to sampling procedure in Table 2G (see page 55)

Proponent: CA LGMA

Proposed Revision: Add "If historical water test data is not available, aseptically collect at least three (3)-100 mL sample at the source."

Rationale: Follow Type A Baseline Language and sampling requirements to create sampling language based on system approach and allow more flexibility in sampling.

Poll Results: 76% in favor (42 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #65: Add language to sampling frequency in Table 2G (see page 55)

Proponent: CA LGMA

Proposed Revision: Add "Sample and test the water two times (with sampling events separated by no less than 7 days).

Rationale: Follow Type A Baseline Language and sampling requirements to create sampling language based on system approach and allow more flexibility in sampling.

Poll Results: 67% in favor (45 total votes)

Questions/Comments:

Question: With this, we will not need to add chlorine to (municipal) water that is rinsing celery or lettuce right after cutting product and before packing, because it's a single pass?

- *Response*: Currently, if that water doesn't have generic *E. coli* and it's a single pass use, as it's written now you wouldn't have to use additional sanitizer. Unless, other objectives come into play that require you to do so.

Proposed Revision #66: Modify language to the Single Pass vs. Multiple Pass Systems section in Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Delete "entry" and added "use" under the first bullet point.

Rationale: We wanted greater clarification and consistent word use and believe changing the word makes the intent clearer.

Poll Results: 76% in favor (45 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

***Note*:** Proposed Revision #68 is an editorial change and was not presented or voted on in the web discussion.

Proposed Revision #68: Modify language to Single Pass vs. Multiple Pass Systems in Table 2G (see page 55)

Proponent: CA LGMA

Proposed Revision: Delete "(minimally 1 ppm chlorine)".

Rationale: To emphasize the requirement that the water is non-detect for generic *E. coli* or that disinfection levels are sufficient to ensure return water is also non-detect for generic *E. coli*. This requirement is independent of the sanitizer being used so if an operator isn't using a chlorine-based sanitizer they would likely have some other monitoring requirements to show that the sanitizer/disinfectant is present or performing as intended.

Poll Results: 80% in favor (41 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #69: Add language to Remedial Actions in Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Add "per company policy" (see complete language in revision #70 below).

Rationale: Once we get into a harvesting situation, there seems to be some blurred lines about who is supposed to develop the SOP. We thought this addition would add some clarification.

Poll Results: 83% in favor (41 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #70: New metric in Remedial Actions in Table 2G (see page 55)

Proponent: CA LGMA

Proposed Revision: Add "Develop an SOP per company policy that determines what corrective actions will be required when water used during harvest does not meet acceptance criteria."

Rationale: Provide language to cover out-of-compliance water.

Poll Results: 92% in favor (39 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #71: Revise language to Remedial Actions in Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Revise "If any one sample exceeds the acceptance criteria, then the water use shall ~~not~~ be ~~used for this purpose or~~ discontinued until remedial actions have been completed and generic *E. coli* or disinfectant levels are within acceptance criteria."

Rationale: If any one sample doesn't meet the acceptance criteria, then the water should not be used until remedial actions have been completed.

Poll Results: 87% in favor (39 total votes)

Questions/Comments:

Comment: What about the guidance for Post-harvest water? Like water used during cooling of field pack product (hydro showers or vacuum tubes).

- *Response*: That was purposely removed from the LGMA metrics in this revision because basically that's not on the farm. We really wanted folks that are going to looks at our regulations and requirement to understand that those are there on for farm use.

Proposed Revision #72: Revise Remedial Action language in Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Revise "Conduct an agricultural water system assessment of harvest equipment water tank(s) ~~water source~~ and distribution system to determine if ~~a~~ contamination ~~source~~ is evident and can be eliminated."

Rationale: We want people to monitor those tanks and make sure they aren't the source of contamination or cross-contamination.

Poll Results: 68% in favor (34 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #73: Delete language in the Remedial Action section of Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Delete bullet - "For wells, perform an agricultural water system assessment and/or treat as described in Appendix A."

Rationale: We are already working with Type A water, and because of that we didn't think wells needed to be specifically called out here.

Poll Results: 85% in favor (34 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #74: Revise Physical/Chemical Testing language in Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Modify physical/chemical testing language "Water disinfection method~~ant~~ (e.g., chlorine, UV treatment, or other disinfectant compound, ORP)."

Rationale: Does not have to be a chemical sanitizer.

Poll Results: 84% in favor (38 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #75: Revise remedial action language in Table 2G (see page 55)

Proponent: AZ LGMA

Proposed Revision: Retest the water at the same sampling point after conducting the harvest water system assessment and/or taking remedial actions to determine if it meets the outlined microbial acceptance criteria for this use.

Rationale: We wanted to avoid the confusion between an agricultural and harvest situation.

Poll Results: 89% in favor (38 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #76: Add language to Target Variable section in Table 2G (see page 56)

Proponent: CA LGMA

Proposed Revision: Add language - "Antimicrobial irrigation water treatment or manufacturer's operational specifications (e.g., per manufacturer's recommendations, chemical concentration, etc.) for any product approved by the U.S. EPA for use in agricultural water."

Rationale: Follow B to A irrigation water treatment monitoring requirements. Simplify and create consistency in language and procedures throughout the standards.

Poll Results: 78% in favor (36 total votes)

Questions/Comments:

Question: How are we going to test a tank filled with municipal water that will be used the same day during harvesting? The sampling procedure said to test it at the water source (like filling station) and not from the tank.

- *Response*: We will go ahead and respond to this offline.

Proposed Revision #77: Revise remedial action language in Table 2G (see page 56)

Proponent: AZ LGMA

Proposed Revision: Revise "After corrective actions have been implemented and verified, ~~C~~ continue testing throughout the harvest date ~~daily for five days~~ at the point(s) closest to use, to ensure ~~and do not use~~ the water system ~~until it~~ consistently delivers water that is safe, sanitary, and of appropriate microbial quality (i.e., negative result) for the intended use. ~~If any of the five samples taken during the intensive sampling period after corrective actions have been taken have detectable generic *E. coli*, repeat remedial actions and DO NOT use that system until the source of contamination can be corrected~~."

Rationale: We are trying to emphasize a corrective action needs to be taken. We removed the intensive sampling language and replaced with more broad monitoring language.

Poll Results: 81% in favor (36 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revisions #78a and 78b: Revise testing procedure language in Table 2G (see page 56)

Proponent: AZ LGMA

Proposed Revision: Remove ORP as a method to measure water treatment efficacy

Rationale: ORP no longer used by the industry because it has been proven to be unreliable as a treatment efficacy indicator.

Poll Results: 94% in favor (36 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Proposed Revision #79: Revise testing procedure language in Table 2G (see page 56)

Proponent: CA LGMA

Proposed Revision: Revise "Other as recommended by antimicrobial water treatment supplier or manufacturer's specifications."

Rationale: Follow B to A irrigation water treatment monitoring requirements. Simplify and create consistency in language and procedures throughout the standards.

Poll Results: 78% in favor (32 total votes)

Questions/Comments: There were no questions or comments regarding this proposal.

Note: #80 was initially submitted and then later withdrawn. This proposal was not presented nor voted on in any web discussion.