

Agricultural Water Use and Regulation in the Produce Industry: Common Questions and Answers

What is the industry currently doing to ag water to keep water safe?

- The produce industry has been following food safety good agricultural practices (GAPs) in some fashion since the 1998 publication of the “Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables,” long before similar practices were regulated by the FDA Produce Safety Rule. These include considerations around agricultural water.
- Produce buyers generally require suppliers to pass annual third-party audits against these GAP programs, which require water system risk assessment and management plans for preharvest and postharvest use, both of which include water testing.
 - Water system assessments encompass an annual entire system walkthrough & review with a risk analysis of the entire water system. See the United Fresh [“Assessing Risk of Pre-Harvest Agricultural Water”](#) for more information and examples of what hazards should be considered in an assessment.
 - In addition to water management and monitoring, GAPs include topics such as employee health and hygiene, harvest and packing practices, soil amendments, animal activity, employee training, and sanitation of equipment, tools, and facilities, and recordkeeping.
- Food safety guidance documents and technical standards are available for a number of individual commodities or commodity groups where industry members recognized specific food safety risks and mitigation strategies associated with the commodity production practices. Some of these standards require additional agricultural water testing and treatment requirements, when deemed necessary for the commodity.
 - See the United Fresh [GAP Checklists and Guidance by Commodity](#) for more information.
- In the [2019 announcement](#) finalizing the extension of compliance date, FDA acknowledged the importance of industry GAPs by encouraging the produce industry “to ensure that water is suitable for its intended use and to continue using good agricultural practices to maintain and protect the quality of their water sources.”

Why is the ag water rule being changed?

- In the [2019 announcement](#) finalizing the extension of compliance date, FDA stated the reason for extending compliance date was to provide time for them to consider “*how best to protect public health while addressing widespread concerns about the complexity of the agricultural water requirements and the practicality of implementing them across a wide variety of farms, water sources and uses.*”
- The original rule was not risk-based and did not sufficiently take into account the characteristics of the crop, water source, water delivery system, application method, or conditions that can increase or reduce the prevalence of the hazard when establishing requirements. Instead, it employed a one-size-fits all approach that relied predominantly on water testing of generic *E. coli* with limited flexibility in testing methodology and confusing microbial water quality criteria with limited predictive value. It was based on recreational water standards with unknown applicability to produce agricultural water risk.

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- FDA did not provide situation-specific guidance on understanding or managing contamination risk, which would be necessary given the broad, one-size-fits all approach taken in the original rule.
- The original rule did not provide the flexibility necessary to evolve practices based on new information/research.
- For more information, see: [Fixing FSMA's Ag Water Requirements](#)

Does ag water contribute to produce outbreaks?

- While outbreak investigation reports published by FDA over the past couple of years have identified agricultural water as a potential route of pathogen transmission, it should be noted that the original route of contamination (e.g. dust, runoff, animal intrusion, etc.) is still unknown for these outbreaks. Without a clear root cause, growers are left without definitive corrective actions or changes in practices that should be implemented to prevent similar contamination events in the future.
- Despite widespread water testing by producers, and given the variability in agricultural water sources and distribution systems along with very large volumes of water in use, it is statistically very difficult to detect sporadic contamination events. A documented history of consistently 'negative' routine samples may sound ideal, but it does not provide actionable information for growers as to what, if any, food safety hazards or practices need to be reassessed.
- Neither industry, regulatory, nor academic scientists have all of the answers at this point on how to completely predict or prevent contamination events. Generic *E. coli*, commonly measured in water testing, is not an index organism; while it may provide information regarding overt fecal contamination, it does not have a strong correlation with the presence of pathogenic *E. coli* or other common pathogens such as *Listeria*, *Salmonella* or *Cyclospora*.

What is United Fresh doing to advocate for improved ag water standards?

- United Fresh maintains an active role in industry advocacy and leadership, guided by the United Fresh Food Safety Council, and in collaboration with allied associations, commodity groups, produce safety researchers and extension agents, and other state and regulatory partners.
- In February 2020, United Fresh provided recommendations to FDA articulating a risk-based approach for consideration in their development of a practical, science-based rule.
- Upon learning of its transfer from FDA to the Office of Management and Budget, United Fresh requested meetings with the OMB representatives in December 2020 to encourage their prioritization of the review for the proposed rule. Following the inauguration of President Biden, the rule was transferred back to FDA for further review under the new Administration, and a meeting was ultimately not able to be scheduled.
- United Fresh serves as the Secretariat for the Produce GAPs Harmonized Standard, a science- and risk-based set of standards and audit checklists applicable to all fresh produce commodities (including those not 'covered' under the Produce Safety Rule), all sizes of on-farm operations, and all regions in the U.S. and internationally.

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- United Fresh also supports produce safety researchers, providing letters of support for ag water research funding, participating on grant advisory councils, and serving on the Technical Committee of the Center for Produce Safety

The Leafy Greens Marketing Agreement requires all growers treat surface water used for foliar application within 21 days – why doesn't the whole produce industry treat their preharvest agricultural water?

- The food safety risk posed by preharvest ag water varies on many factors, such as the crop type, water source, water delivery system, and application method (e.g., does it contact the edible portion of the crop?). Different commodities have different risks and different conditions that can reduce or increase the prevalence of a hazard. It would not be appropriate to apply leafy greens standards to drastically different crop types and production methods, such as for those commodities that are rarely consumed raw.
- Ag water treatment is not a silver bullet. Practical and financial hurdles, as well as consideration of environmental impacts exist given the large volumes of water that must be treated, and scientific and knowledge gaps still persist related to treatment type, efficacy against a variety of pathogens (e.g. *E. coli* O157:H7, *Salmonella*, *Listeria*, and *Cyclospora*), as well as impacts on soil health and the associated microbiome.
- Although a joint FDA/EPA [Protocol for the Development and Registration of Treatments for Preharvest Agricultural Water](#) was released by FDA in April 2020, still no antimicrobial pesticides exist that are approved by EPA for the treatment of pathogens of public health concern in preharvest ag water.

Why doesn't the whole industry use safer water sources for preharvest ag water (e.g. wells, municipal)?

- Growers typically do not have a choice when it comes to which ag water source they use. Many growers simply do not have access to well water or municipal water (which can be cost prohibitive for preharvest use, if the option exists)
- In situations where surface water is used, through GAPs and other food safety programs, growers employ various prevention and mitigation steps to reduce the risk of surface water (e.g., avoiding foliar application, stopping its use within a certain time window from harvest, etc.),
- GAPs require annual risk assessments that takes into consideration not only historical testing results of the water source, but also the characteristics of the crop, the stage of the crop, and the method of application, at a minimum. As part of this assessment, growers consider a number of environmental hazards including, but not limited to, potential for surface run-off, history of flooding, proximity to animal operations, wildlife activity, and maintenance of nearby portable sanitation facilities.
- For more information, see Table 3 of in "[Assessing Risk of Pre-Harvest Agricultural Water](#)"