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Food Safety.



Water Testing

COLLABORATIVE FOOD SAFETY FORUM
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Current State of Water Testing in Fields

Sampling H₂O for Pathogens Since 2007

- 19 different seasons from SJB, Huron, and Yuma
- 4 regions (Monterey County, San Benito County, Huron, Arizona, Imperial Valley)
- Aprox. 4000 samples
 - Sample size 500 ml but contract growers collect 200 ml
 - Collected at source and closest point of use



Types of Water Systems Tested

- Ground water well to storage/distribution Reservoir
- Colorado river water to municipal surface canals
- Municipal reservoir to closed municipal distribution system (Blue valve)
- Widest variability is surface water sources or distribution systems influenced by runoff.

Typical scenarios are PCR MC, <1 MPN -OR- MPN >235 PCR
NEG



Example A: Ground water to reservoir

- 16 routine 500ml samples collected <1 MPN generic, NEG PCR
- 17th sample <1 MPN generic, PCR MC EHEC
- 4 consecutive daily samples <1 MPN generic, NEG PCR
- 5th daily sample <1 MPN generic, PCR MC EHEC

Reset the clock.

- This played out 2 more times. 32 samples <1 MPN. 3 PCR MC EHEC.



Example B: Municipal reservoir to closed municipal distribution system

- 18 routine samples collected < 1 MPN PCR NEG
- 19th sample 430 MPN generic, PCR NEG
- 5 consecutive daily samples <1 MPN, PCR NEG
- 23 samples PCR NEG, 1 sample >235 MPN

Both examples did not detect pathogens on field tested product or soil.



Conclusions

- Sample size is not representative of irrigation event
- Generic E. coli is not a good indicator of pathogens
- Activity in public systems like dredging lead to elevated counts of generic numbers and should be discouraged
- Identification of contaminated water has not led to identification of contaminated crop or soil
 - Sample size, size of contamination, virulence of organism
- More research is needed to identify water quality parameters for specific crops
- Any metrics should be placed in guidance so that when science catches up, changes can be made quickly to guidance.

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Q & A



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