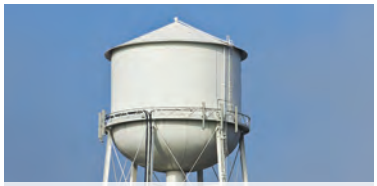
ARKANSAS PRODUCE SAFETY

Microbial Water Quality Profile (MWQP): How-to Guide

IMPORTANT DEFINITIONS

Geometric Mean (GM): GM is a measure of the central tendency of your water quality distribution.
Statistical Threshold Value (STV): STV is a measure of variability of your water quality distribution, derived as a model-based calculation approximating the 90th percentile using the lognormal distribution.
Colony-Forming Unit (CFU): CFU is a measure in microbiology to estimate the number of viable microbial cells present in a sample.
Most Probable Number (MPN): MPN is a statistical method in microbiology to estimate the viable numbers of bacteria present in a sample.

The table below presents the **number of water samples required to build your initial MWQP depending on** your **water source** (municipal, surface, or ground water) and **water use** (production water or harvest and postharvest water) for your initial year survey. **Threshold criteria that must be met for your water samples to be considered safe are indicated in red.**

INITIAL YEAR SURVEY	 MUNICIPAL WATER	 SURFACE WATER	 GROUND WATER
Production water[a] Water used during the growing season that may come in contact with the produce	Monitored and treated by the water utility. Request a copy of the public water system test results annually.	Years 1-4: At least **20 times**[b] GM: ≤ 126 CFU (MPN)/100 mL *and* STV: ≤ 410 CFU (MPN)/100 mL	Year 1: **4 times** GM: ≤ 126 CFU (MPN)/100 mL *and* STV: ≤ 410 CFU (MPN)/100 mL
Harvest and postharvest water[a] Water used during or after harvest	Monitored and treated by the water utility. Request a copy of the public water system test results annually.	**You CANNOT use untreated surface water for harvest and post-harvest activities under any circumstance.**	Year 1: **4 times**[c] No detectable generic *E. coli* in 100 mL

[a]*For the definitions of production water and harvest and postharvest water, please see Agricultural Water: Define Your Water Use.*
[b]*20 samples need to be collected and analyzed over a period of at least two years and less than four years.*
[c]*In the case that no generic E. coli was detected in any samples. If generic E. coli is detected in any sample, treat water and restest. You must start over building your MWQP (4 samples/growing season) until the 4 samples collected on the same year show the absence of generic E. coli.*

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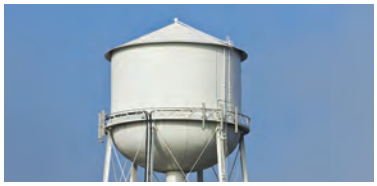
The table below presents the **number of water samples required to maintain your MWQP depending on** your **water source** (municipal, surface, or ground water) and **water use** (production water or harvest and postharvest water) for your subsequent years surveys. **Threshold criteria that must be met for your water samples to be considered safe are indicated in red.**

SUBSEQUENT YEARS SURVEYS	 MUNICIPAL WATER	 SURFACE WATER	 GROUND WATER
Production water[a] Water used during the growing season that may come in contact with the produce	Monitored and treated by the water utility. Request a copy of the public water system test results annually.	Subsequent years: **5 times**[b]**/year** GM: ≤ 126 CFU (MPN)/100 mL *and* STV: ≤ 410 CFU (MPN)/100 mL	Subsequent years: **1 time/year** GM: ≤ 126 CFU (MPN)/100 mL *and* STV: ≤ 410 CFU (MPN)/100 mL
Harvest and postharvest water[a] Water used during or after harvest	Monitored and treated by the water utility. Request a copy of the public water system test results annually.	**You CANNOT use untreated surface water for harvest and post-harvest activities under any circumstance.**	Subsequent years: **1 time**[c]**/year** No detectable generic *E. coli* in 100 mL

[a]*For the definitions of production water and harvest and postharvest water, please see Agricultural Water: Define Your Water Use.*

[b]*5 times per year could start with the third year if you collected all 20 initial samples in the first two years. Each year you update, you must recalculate the GM and STV using the most recent four years of data. You must also confirm that your water continues to be in compliance with the numerical requirements.*

[c]*In the case that no generic E. coli was detected in any samples. If generic E. coli is detected in any sample, treat water and retest. You must start over building your MWQP (4 samples/growing season) until the 4 samples collected on the same year show the absence of generic E. coli.*

For more information, see *Microbial Water Quality Profile (MWQP): How to Interpret Your Lab Results*.

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 Funding for this publication was made possible, in part, by the Food and Drug Administration through grant PAR-16-137. The views expressed in written materials or publications do not necessarily reflect the official policies of the Department of Health and Human Services; nor does any mention of trade names, commercial practices, or organization imply endorsement by the United States Government.

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