MICHIGAN STATE UNIVERSITY EXTENSION

Agrifood Safety Minute

EPISODE 024
GUIDANCE DOCUMENT 1

Interpreting Water Test Results

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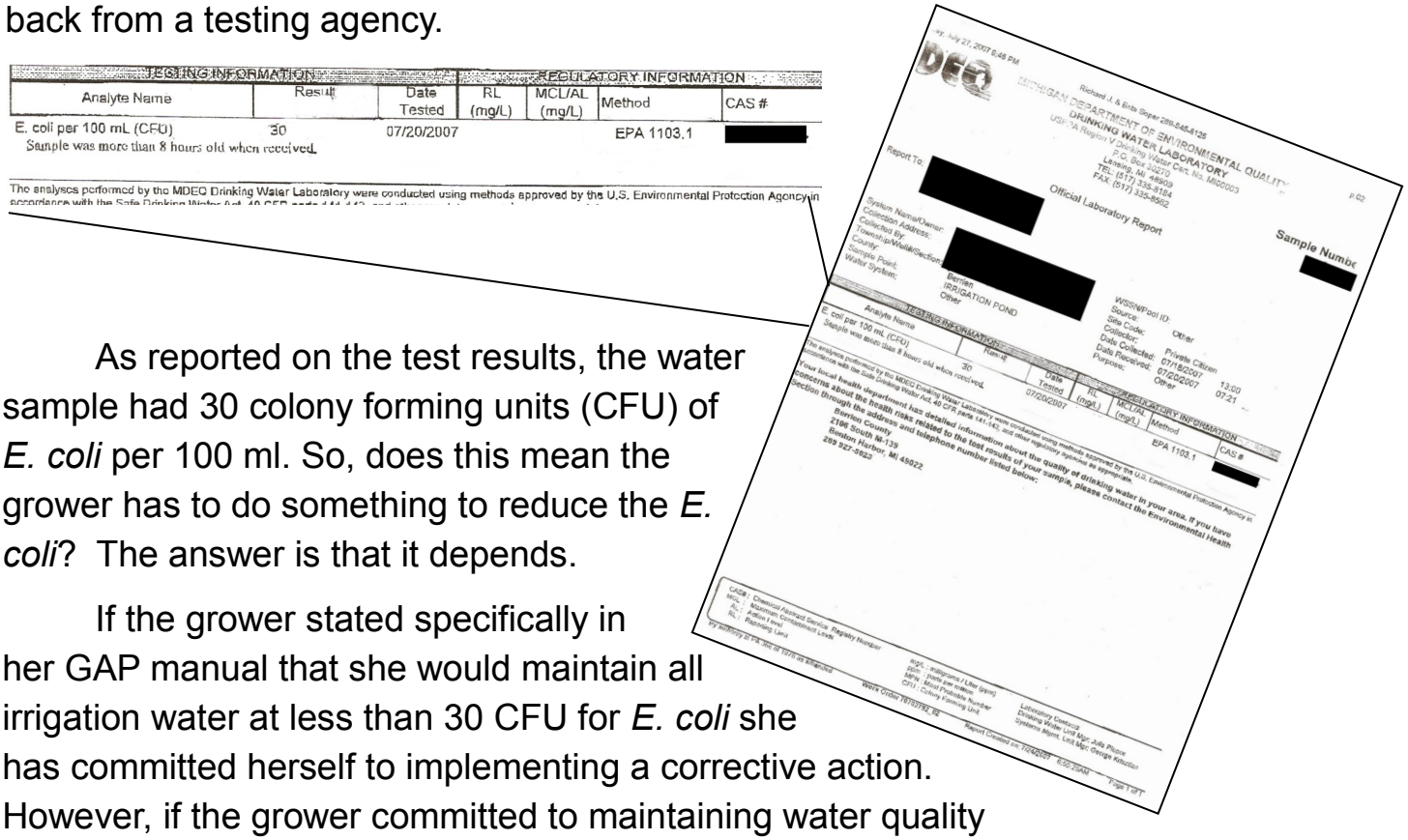
Water testing is an important part of ensuring food safety. The results from these water tests can be confusing. This guidance document addresses how to read and understand water testing results and what to do about them. Considering irrigation water sources, proper sample collection, and the writing of a "Water Usage and Quality Risks Policy" have been discussed in past episodes.

Water quality criteria for Good Agricultural Practices are, at best, an inexact science. In the language of the GAP manual, you define a water quality goal that you intend to meet, and you define specific control measures you intend to take if the water quality test results indicate that your irrigation water is not meeting your water quality goal. The water testing results below are an example of what you might get back from a testing agency.



TESTING INFORMATION | REGULATORY INFORMATION

Analyte Name	Result	Date Tested	RL (mg/L)	MCL/AL (mg/L)	Method	CAS #
E. coli per 100 mL (CFU)	30	07/20/2007			EPA 1103.1	[redacted]

Sample was more than 8 hours old when received.

The analyses performed by the MDEQ Drinking Water Laboratory were conducted using methods approved by the U.S. Environmental Protection Agency in

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DRINKING WATER LABORATORY
Official Laboratory Report
Sample Numbe

As reported on the test results, the water sample had 30 colony forming units (CFU) of *E. coli* per 100 ml. So, does this mean the grower has to do something to reduce the *E. coli*? The answer is that it depends.

If the grower stated specifically in her GAP manual that she would maintain all irrigation water at less than 30 CFU for *E. coli* she has committed herself to implementing a corrective action. However, if the grower committed to maintaining water quality similar to that of the State of Vermont's standard for irrigation water (70 CFU/100 ml), she would not have to perform a corrective action.

Corrective Measures

In the event of a test result that exceeds the grower's standard, the grower must implement some corrective measure. The measure must fit the type of water source the grower is using. Potential corrective measures can include chlorinating the water after withdrawal, chlorinating well water prior to withdrawal in the sense of a shock treatment, using an alternate water source, switching to a municipal water source, or using bottled water as a water source. The above list of corrective measures are not exhaustive and only deal with the water itself. Some reference to corrective measures must be written in your GAP manual. You can find boilerplate language to add to your Water Usage and Quality Risks Policy below:

> ***Corrective Measures***
>
> *In the event of a water test in excess of the standard outlined above, a corrective measure will be instituted. Corrective measures can include, but not be limited to, use of chlorine tablets to chlorinate irrigation water, shocking the well, use of drip irrigation under plastic, and using an alternate water source. Once corrective measures have been implemented, the water source will be retested to confirm that it meets the water quality standard set forth in the GAP Manual.*

Again, the auditor is looking for evidence of a system written in the GAP Manual to minimize incidence of foodborne illness, visual evidence that it is taking place and documentation that it has been taking place in the past. Writing the Water Usage and Quality Risks Policy is the first step. Regular testing is the next step. Taking corrective action if necessary, documenting these and subsequent water tests to confirm the water meets standards is the final step.

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