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## **Water Testing Important to Protect Fruit & Vegetable Consumers**

With 12 percent more rain than average over the last year, ponds and wells are full to overflowing with water to use as irrigation for fruit and vegetable gardens. However, it's important to ensure that the water you draw from your well or pond is not contaminated with bacteria before irrigating your crops. Irrigating with contaminated water has the potential to spread foodborne illness, particularly if selling produce to others. While testing is not required for small-scale producers, test results can help you determine the safest way to irrigate crops while protecting eventual consumers from disease.

Pathogenic bacteria are measured in colony forming units by using agar plates to artificially grow colonies and provide the energy needed for bacteria to multiply. These units are then counted and reported back to the grower. The Food Safety Modernization Act (FSMA) requires irrigation water to be at or below a threshold of colony forming unit (CFU) to comply with food safety standards. When irrigating vegetables, pathogenic bacteria spread through contact with the consumed parts of a plant. Overhead watering through a hose, watering can or sprinkler increases the chance of foodborne illness thanks to contact with potentially contaminated water.

The produce you grow also has an effect on the probability of foodborne illness. Leafy greens like lettuce, cabbage and spinach hold water in pockets and the increased length of contact with water increases potential contamination. However, soil-level irrigation methods such as drip tape or soaker hose drastically reduces the chance of contamination for leafy greens and fruiting vegetables. Never use overly contaminated water to irrigate root vegetables, and air on the side of caution, using FSMA thresholds as a foundation for whether or not you decide to irrigate with well or pond water.

Some producers have also voiced concerns about potential soil contamination that could cause foodborne illness, and have asked for soil e.coli tests. These tests are not useful, because bacteria populations in the soil are highly variable across a plot, and because bacteria break down in soil very quickly. As long as consumers adequately wash their produce before consumption, the risk of soil-borne bacteria illness is incredibly low.

Kansas State University currently has a USDA grant to provide free testing through 2022 to determine e.coli and colliform bacteria populations of irrigation sources for fruit and vegetable growers. Samples must be tested within 24 hours of collection, so sampling must be coordinated to ensure that samples make it to the lab in a timely manner.

To schedule a sample collection, please call Jesse Gilmore, K-State Research and Extension Wildcat District Horticulture Agent, at 620-724-8233 or email at [jr637@ksu.edu](mailto:jr637@ksu.edu).

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