

Study on farmers' markets shows presence of *Salmonella* and *E. coli*

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Researchers in Chapman University's Food Science Program and their collaborators at University of Washington have just published a study on the presence of *Salmonella* and *E. coli* on certain herbs sold at farmers' markets. The study focused on farmers' markets in Los Angeles and Orange counties in California, as well as in the Seattle, Washington, area. Specifically tested were samples of the herbs cilantro, basil and parsley. Of the 133 samples tested from 13 farmers' markets, 24.1 percent tested positive for *E. coli* and one sample tested positive for *Salmonella*.

"While farmers' markets can become certified to ensure that each farmer is actually growing the commodities being sold, food safety is not addressed as part of the certification process," said Rosalee Hellberg, Ph.D., and co-author on the study. "Certain herbs such as parsley, basil and cilantro have been implicated in many food outbreaks over the past two decades so our study focused specifically on the safety and quality of these three herbs."

Hellberg and her research team visited 49 different vendors at 13 farmers' markets in Los Angeles and Orange Counties in California, and in the greater Seattle area collecting 133 samples of the three herbs between the period of July and October 2013. Each sample was equivalent to one pound and was tested that same day for both *Salmonella* and *E. coli* using methods from the United States Food and Drug Administration Bacteriological Analytical Manual.

A total of 16 samples had average *E. coli* counts considered to be unsatisfactory according to guidelines established by the Public Health Laboratory Service. When tested for *Salmonella*, 15 samples had suspicious growth but only one tested positive—a parsley [sample](#) from a Los Angeles County farmers' market.

Orange County farmers' markets had the highest percentage of samples with *E. coli* growth followed by farmers' markets in the greater Seattle area and Los Angeles County.

Salmonella symptoms include diarrhea, abdominal cramps and fever around 12 to 72 hours after consumption that can last four to seven days. Symptoms for pathogenic forms of *E. coli* include severe stomach cramps, diarrhea that often becomes bloody, and vomiting.

According to the United States Department of Agriculture (USDA) Economic Research Service, farmers' markets have been increasing since 2009 near urban areas, particularly along the East and West Coasts. In August 2013, there were more than 8,000 [farmers'](#) markets listed in the USDA's National Farmers' Market directory.

The study was published in the *Journal of the Science of Food and Agriculture*.

More information: [onlinelibrary.wiley.com/doi/10...
2/jsfa.6996/abstract](https://onlinelibrary.wiley.com/doi/10.1002/jsfa.6996/abstract)

Provided by Chapman University

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