

## Give E. Coli Its Own Scare

**Protect your romaine and other leafy greens from E. coli and salmonella.**

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By Stephanie Staton

Photo courtesy USDA/Peggy Greb With recent scares of salmonella and Escherichia coli in tomatoes and spinach, how can you be sure that the products you sell will be safe from these harmful organisms? You may not be able to scare them away, but scientists are working on safety guidelines for producing and harvesting leafy greens.

The guidelines are based on data compiled by ARS microbiologist Maria T. Brandl and University of California-Berkley colleague Ronald G. Amundson, who have been studying the ability to contaminate lettuce with E. coli and salmonella. Their research has shown that after 24 hours of exposure to E. coli, young leaves had populations 10 times higher than on older leaves.

Amundson and Brandl proposed one possible explanation: young leaves exude three times more nitrogen and 1.5 times more carbon, making them a richer food source for E. coli.

This study is the first to show that two age classes can make a difference in the levels released; it also shows that E. coli can not only bind to leaves, but also multiply.

Brandl and Amundson added nitrogen to middle leaves and found that it boosted the growth of E. coli. Bottom Line: Brandl determined that a decrease in nitrogen fertilizer in lettuce fields might be a worthwhile experiment.

For more information, visit [www.ars.usda.gov](http://www.ars.usda.gov)

About the Author: Stephanie Staton is managing editor for the Popular Farming Series and associate editor for Hobby Farms and Hobby Farm Home.

Top