

# Diverse bacteria on fresh fruits, vegetables vary with produce type, farming practices

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Fresh fruit and vegetables carry an abundance of bacteria on their surfaces, not all of which cause disease. In the first study to assess the variety of these non-pathogenic bacteria, scientists report that these surface bacteria vary depending on the type of produce and cultivation practices. The results are published March 27 in the open access journal *PLOS ONE* by Jonathan Leff and Noah Fierer at the University of Colorado, Boulder.

The study focused on eleven produce types that are often consumed raw, and found that certain species like spinach, tomatoes and strawberries have similar surface bacteria, with the majority of these [microbes](#) belonging to one family. Fruit like apples, peaches and grapes have more variable surface [bacterial communities](#) from three or four different groups. The authors also found differences in surface bacteria between produce grown using different farming practices.

The authors suggest several factors that may contribute to the differences they observed, including farm locations, storage temperature or time, and transport conditions. These surface bacteria on produce can impact the rate at which food spoils, and may be the source of typical microbes on kitchen surfaces. Previous studies have shown that although such microbes don't necessarily cause disease, they may still interact with, and perhaps inhibit the growth of disease-causing microbes. The results of this new research suggest that people may be exposed to substantially different bacteria depending on the types of produce they consume.

**More information:** Leff JW, Fierer N (2013) Bacterial Communities Associated with the Surfaces of Fresh Fruits and Vegetables. PLoS ONE 8(3): e59310. [doi:10.1371/journal.pone.0059310](https://doi.org/10.1371/journal.pone.0059310)

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