

FDA Publishes Findings from Investigation of Romaine Lettuce *E. coli* Outbreak

Friday, February 15, 2019

- As previously reported on this [blog](#), in November 2018 FDA, in conjunction with the CDC, state officials, and Canadian food and public health officials, investigated an outbreak of *E. coli* O157:H7 infections in multiple US states and Canadian provinces. The investigation determined the cause of the outbreak was the consumption of contaminated romaine lettuce. Indeed, thirty (83%) of 36 ill consumers interviewed reported eating romaine lettuce the week before illness onset. All *E. coli* O157:H7 isolates from ill consumers had a rare genetic fingerprint, as determined by whole genome sequencing (WGS), that was closely related to one previously seen in ill consumers in the fall of 2016 and the fall of 2017. The November 2018 outbreak was declared over in the US on January 9, 2019.
- On February 13, 2019, FDA [released](#) the findings from the Agency's investigation of the November 2018 outbreak. With the help of WGS, investigators were able to narrow down the growing location of the romaine lettuce to specific California counties. The traceback investigation further identified multiple farms that may have been the cause of the outbreak.
- In their report, FDA identified factors that most likely contributed to the contamination of romaine lettuce, specifically from one farm in Santa Maria in Santa Barbara County, California. Those factors include the following:
 - The outbreak strain of *E. coli* O157:H7 was found in the sediment of an on-farm water reservoir in Santa Maria.
 - The outbreak strain was not found anywhere else in sampling done during the investigation in various California leafy greens growing areas and counties.
 - The water from the on-farm water reservoir most likely led to contamination of some of the romaine lettuce. The water was likely not effectively sanitized. The water may have come in contact with the romaine through multiple avenues, including direct harvest/postharvest application and/or use of water on harvest equipment.
 - FDA is not sure how the water became contaminated.
 - Other ranches owned by the same farm, as well as other farms, may have sold contaminated lettuce.
 - Due to the fact that the same specific strain of *E. coli* O157:H7 occurred in 2016 and 2017, it may be likely that the strain remained in the environment or repeatedly introduced from an unknown source.
- Based on these findings, FDA provided recommendations for the prevention of future outbreaks. Such recommendations include adhering to the recommendations of the Environmental Assessment associated with the spring 2018 STEC outbreak, FSMA's Produce Safety Rule, and FSMA's Preventive Controls for Human Foods Rule. And specifically for growers of leafy greens, FDA recommends assessing the growing operations, assuring all agricultural water is safe and of adequate sanitary quality, and performing a root



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cause analysis when a foodborne pathogen is identified.

- The findings provide hope that growers and public health officials will be able to prevent or mitigate potential future outbreaks.

The full FDA report can be accessed [here](#).

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