

Outbreak Investigation of E. coli: Salad Mix (December 2019)

Outbreak linked to Fresh Express brand Sunflower Crisp Chopped Salad Kits appears over

May 21, 2020

Today, the U.S. Food and Drug Administration published the [findings of an investigation](#) into the contamination of romaine lettuce implicated in three outbreaks of *E. coli* O157:H7 during the Fall of 2019.

The investigation was conducted at several farms identified in the outbreak tracebacks, as well as at other businesses and public access areas and resulted in several key findings:

- Each of these three outbreaks, identified in the report as Outbreaks A, B and C was caused by distinctly different strains of *E. coli* O157:H7 as determined by [whole genome sequencing \(WGS\)](#) analysis;
- Traceback investigations of multiple illness sub-clusters and supply chain information identified a common grower with multiple ranches/fields which supplied romaine lettuce during the timeframe of interest to multiple business entities associated with all three outbreaks.
- The same strain of *E. coli* O157:H7 that caused Outbreak A was found in two different brands of fresh-cut salads containing romaine lettuce in 2019;
- This same outbreak strain of *E. coli* O157:H7 in Outbreak A was detected in a fecal--soil composite sample taken from a cattle grate on public land less than two miles upslope from a produce farm with multiple fields tied to the outbreaks by the traceback investigations;
- Other strains of Shiga toxin-producing *E. coli* (STEC), while not linked to any of the outbreaks, were found in closer proximity to where romaine lettuce crops were grown, including two samples from a border area of a farm immediately next to cattle grazing land in the hills above leafy greens fields and two samples from on-farm water drainage basins.

These findings, together with the findings from earlier leafy greens outbreaks dating back to 2013, suggest that a potential contributing factor has been the proximity of cattle—a persistent source of *E. coli* O157:H7 and other STEC—to the produce fields identified in traceback investigations.

Because of the reoccurring nature of outbreaks associated with leafy greens, the FDA recently released a [2020 Leafy Greens STEC Action Plan](#), which outlines a three-pronged approach for tackling this problem. It describes the FDA's plans for working with industry, federal partners, state and local regulators, academia and others to address the safety of leafy greens by advancing work in three areas: prevention, response, and addressing knowledge gaps.

For More Information

- [Factors Potentially Contributing to the Contamination of Romaine Lettuce Implicated in the Three Outbreaks of *E. coli* O157:H7 During the Fall of 2019](#)
- [2020 Leafy Greens STEC Action Plan](#)
- [FDA Outlines 2020 Action Plan to Help Advance the Safety of Leafy Greens](#)

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Case Counts

Total Illnesses: 10

Hospitalizations: 4

Deaths: 0

Last illness onset: November 16, 2019

States with Cases: GA (1), IL (1), MN (4), ND (1), WI (3)

[CDC Outbreak Page](#)

What is *E. coli*?

E. coli are mostly harmless bacteria that live in the intestines of people and animals and contribute to intestinal health. However, eating or drinking food or water contaminated with certain types of *E. coli* can cause mild to severe gastrointestinal illness. Some types of pathogenic (illness-causing) *E. coli*, such as Shiga toxin-producing *E. coli* (STEC), can be life-threatening.

People infected with pathogenic *E. coli* can start to notice symptoms anywhere from a few days after consuming contaminated food or as much as nine days later. Generally, the symptoms include severe stomach cramps, diarrhea, fever, nausea, and/or vomiting.

The severity or presence of certain symptoms may depend on the type of pathogenic *E. coli* causing the infection. Some infections can cause severe bloody diarrhea and lead to life-threatening conditions, such as a type of kidney failure called hemolytic uremic syndrome (HUS), or the development of high blood pressure, chronic kidney disease, and neurologic problems. Other infections may have no symptoms or may resolve without medical treatment within five to seven days.

Due to the range in severity of illness, people should consult their health care provider if they suspect that they have developed symptoms that resemble an *E. coli* infection, including HUS, but even healthy older children and young adults can become seriously ill.

People of any age can become infected with pathogenic *E. coli*. Children under the age of 5 years, adults older than 65, and people with weakened immune systems are more likely to develop severe illness as a result of an *E. coli* infection. However, even healthy older children and young adults can become seriously ill.

Learn more:

- [FDA – *E. coli*](#)
- [FoodSafety.gov – *E. coli*](#)
- [CDC – *E. coli* \(STEC\)](#)

General Food Safety Tips for Retailers

In the event that retailers and/or other food service operators are found to have handled recalled or other potentially contaminated food in their facilities, they should:

- **Contact their local health department** and communicate to their customers regarding possible exposure to a pathogen.
- **Wash** the inside walls and shelves of the refrigerator, cutting boards and countertops, and utensils that may have contacted contaminated foods; then sanitize them with a solution of one tablespoon of chlorine bleach to one gallon of hot water; dry with a clean cloth or paper towel that has not been previously used.
- **Wash and sanitize display cases** and surfaces used to potentially store, serve, or prepare potentially contaminated foods.
- **Wash hands with warm water and soap** following the cleaning and sanitation process.
- **Conduct regular frequent cleaning and sanitizing** of cutting boards and utensils used in processing to help minimize the likelihood of cross-contamination.

General Food Safety Tips for Consumers

People should consult their healthcare provider if they suspect that they have developed symptoms that resemble an *E. coli* infection.

Consumers should follow these steps for preventing foodborne illness:

- **Wash** the inside walls and shelves of the refrigerator, cutting boards and countertops, and utensils that may have contacted contaminated foods; then **sanitize** them with a solution of one tablespoon of chlorine bleach to one gallon of hot water; **dry** with a clean cloth or paper towel that has not been previously used.
- **Wash and sanitize surfaces** used to serve or store potentially contaminated products.
- **Wash hands with warm water and soap** following the cleaning and sanitation process.

Consumers can also [submit a voluntarily report](#), a complaint, or adverse event (illness or serious allergic reaction) related to a food product.

Previous Updates

January 15, 2020

FDA will continue its investigation into the potential sources and contributing factors that led to the outbreak in order to inform future prevention efforts.

This outbreak, a [Washington state](#) outbreak potentially linked to leafy greens, and a [larger multi-state outbreak](#) linked to romaine lettuce from the Salinas, CA growing region with cases in the U.S. and [Canada](#)[External Link Disclaimer](#), all shared a common romaine lettuce supplier with ranches in Salinas, CA. Although this grower was determined to be a common supplier for all three outbreaks based on available supply chain information, the romaine lettuce from this grower does not explain all the illnesses seen in the three outbreaks.

FDA, CDC, and California partners investigated ranches used by the common grower in an attempt to identify the source of the contamination. When investigators arrived on the ranches there was no romaine lettuce in the ground and the fields had been plowed, as the growing season had already ended. Investigators collected water, soil, and compost samples and took them back to the lab for analysis. So far, sample results have come back negative for the three outbreak strains of *E. coli*. FDA did find a strain of *E. coli* that is unrelated to any illnesses in a soil sample. This strain of *E. coli* was determined to be of low risk to people.

As part of FDA's ongoing efforts to understand and prevent foodborne illnesses linked to leafy greens, the FDA will conduct a root cause investigation. The investigation will be conducted throughout this year's romaine lettuce planting, growing, and harvesting season. Results will be shared publicly when the investigation and analysis are concluded.

December 9, 2019

According to the CDC, as of December 9, 2019, eight people infected with this outbreak strain of *E. coli* O157:H7 have been reported from three states. The case patients report that illnesses started on dates ranging from November 5, 2019 to November 15, 2019.

This outbreak strain found in case patients is different from the outbreak strain of the larger *E. coli* O157:H7 [outbreak linked to romaine](#) from the Salinas, California growing region.

Preliminary information indicates that the romaine lettuce in the salad kits eaten by sick people may have contained romaine from the Salinas growing region, though the romaine and other ingredients in the kit may have come from another growing region as well.

Authorities are investigating the source of the ingredients in the kits and are trying to determine which ingredient may have been contaminated.

Further information will be provided as the investigation progresses.