

E. coli (*Escherichia coli*)

Multistate Outbreak of Shiga toxin–producing *Escherichia coli* O121 Infections Linked to Raw Clover Sprouts (Final Update)

Posted August 1, 2014 2:15 PM ET

This particular outbreak appears to be over. However, *E. coli* is still an important cause of human illness in the United States. More information about *E. coli*, and steps people can take to reduce their risk of infection, can be found on the CDC *E. coli* [General Information](#) web page.

Highlights

- [Read the Advice to Consumers & Retailers »](#)
- This outbreak appears to be over.
- A total of 19 persons infected with the outbreak strain of Shiga toxin-producing *Escherichia coli* O121 (STEC O121) were reported from six states.
 - The number of ill persons identified in each state was as follows: California (1), Idaho (3), Michigan (1), Montana (2), Utah (1), and Washington (11).
 - 44% of ill persons were hospitalized. No ill persons developed hemolytic uremic syndrome (HUS), and no deaths were reported.
- Epidemiology and traceback investigations conducted by local, state, and federal officials indicated that contaminated raw clover sprouts produced by Evergreen Fresh Sprouts, LLC of Idaho was the likely source of this outbreak.
- Evergreen Fresh Sprouts is no longer using the seed lot linked to illnesses in this outbreak.
 - Sprouts produced by this firm from this seed lot are likely no longer available for consumption given the approximately 14-day shelf life of raw clover sprouts.
- Although this outbreak appears to be over, *E. coli* is still an important cause of human illness in the United States. More information about *E. coli* and steps people can take to reduce their risk of infection can be found on the [CDC *E. coli* Web Page](#).

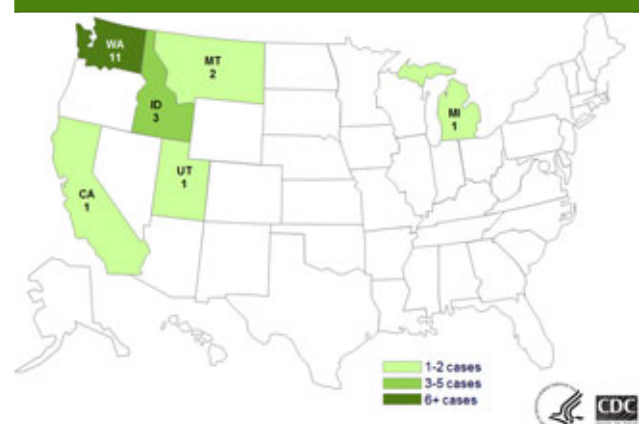
At A Glance

- Case Count: [19](#)
- States: [6](#)
- Deaths: 0
- Hospitalizations: 44%
- Recall: No

More Information

- [Advice to Consumers & Retailers](#)
- [Signs & Symptoms](#)
- [Key Resources](#)

CLICK TO VIEW CASE COUNT MAP



Outbreak Summary

Introduction

CDC collaborated with public health officials in several states and the U.S. Food and Drug Administration (FDA) to investigate a multistate outbreak of Shiga toxin-producing *Escherichia coli* O121 (STEC O121) infections. Public health investigators used the [PulseNet](#) system to identify cases of illness that were part of this outbreak. PulseNet, the national subtyping network of public

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health and food regulatory agency laboratories coordinated by CDC, obtains DNA “fingerprints” of *E. coli* bacteria through diagnostic testing with pulsed-field gel electrophoresis, or PFGE.


A total of 19 persons infected with the outbreak strain of STEC O121 were reported from six states. The total number of ill persons identified in each state was as follows: California (1), Idaho (3), Michigan (1), Montana (2), Utah (1), and Washington (11).




Among persons for whom information was available, dates that illnesses began ranged from May 1, 2014, to May 20, 2014. Ill persons ranged in age from 11 years to 52 years, with a median age of 27 years. Sixty-eight percent of ill persons were female. Among those persons with information, seven (44%) of 16 were hospitalized. No ill persons developed hemolytic uremic syndrome (HUS), and no deaths were reported.

Investigation of the Outbreak

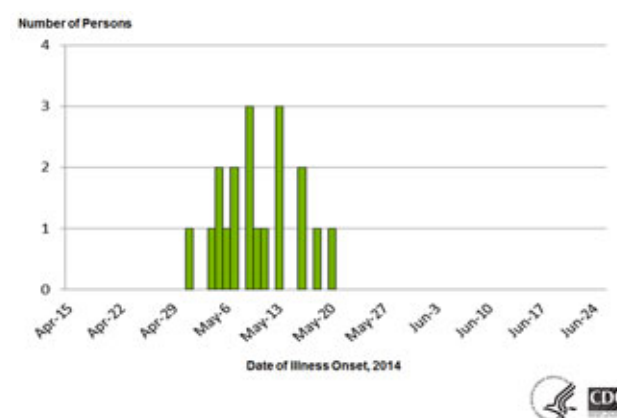
Epidemiologic and traceback investigations conducted by officials in local, state, and federal public health, agriculture, and regulatory agencies indicated that raw clover sprouts produced by Evergreen Fresh Sprouts, LLC of Idaho was the likely source of this outbreak.

In interviews, 13 (81%) of 16 ill persons reported eating raw clover sprouts in the week before becoming ill. This proportion is significantly higher than results from a [survey](#)  [PDF – 29 pages]  of healthy persons in which no more than 8% reported eating raw clover sprouts in the week before they were interviewed. According to the [Washington State Department of Health](#)  and the [Idaho Department of Health and Welfare](#) , ill persons reported eating sprouts in sandwiches at several local food establishments, including several Jimmy John’s Gourmet Sandwiches locations, the Pita Pit, and Daanen’s Deli.

As part of the investigation, [FDA](#)  performed a traceback analysis and determined that Evergreen Fresh Sprouts, in the timeframe prior to the outbreak, supplied sprouts to seven restaurants where 9 people who became ill during the outbreak reported eating before they became ill. Eight of the people who became ill recalled eating sprouts. This analysis used documents collected directly from the distributors and the grower, Evergreen Fresh Sprouts, as well as documents collected by the states from the points of service.

FDA also conducted an [inspection](#)  [PDF – 2 pages]   of Evergreen Fresh Sprouts’ facility on May 22-23, 2014; May 27-30, 2014; and June 6, 2014. During the inspection, FDA investigators observed a number of unsanitary conditions, including condensate and irrigation water dripping from rusty valves; a rusty and corroded watering system in the mung bean room; tennis rackets (used to scoop mung bean sprouts) that had scratches, chips, and frayed plastic; a pitchfork (used to transfer mung bean sprouts) that had corroded metal; and a squeegee (used to agitate mung bean sprouts inside a soak vat) that had visible corroded metal and non-treated wood.

On June 26, 2014, the FDA and CDC held a meeting with the owner of Evergreen Fresh Sprouts to advise the firm of FDA’s concerns that the seed lot used to grow clover sprouts linked to this



that the seed lot used to grow clover sprouts linked to this outbreak may be contaminated and to encourage Evergreen Fresh Sprouts to discontinue using that seed lot for producing clover sprouts for people to eat. At the end of the meeting, the owner of Evergreen Fresh Sprouts informed the FDA that the firm planned to discontinue using the sprout seed lot that was used to grow the sprouts linked to the outbreak.

FDA received independent confirmation that, as of July 1, 2014, Evergreen Fresh Sprouts no longer had the seed lot associated with the outbreak and had received a new clover seed lot for sprouting purposes. It normally takes approximately 1 week to sprout the clover seed. Sprouts produced by this firm from this seed lot are likely no longer available for consumption given the approximately 14-day shelf life of raw clover sprouts.

August 1, 2014	+
June 27, 2014	+
June 10, 2014	+
May 22, 2014	+