

Recent Foodborne Outbreaks and Investigations in Vegetable Crops

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Outbreak updates and important takeaways


- Look at the current and most recent outbreaks associated with fresh produce commodities
 - Commodity of concern or at-risk practices
 - Microorganisms of interest
 - Pathogenic *E. coli*
 - *Listeria monocytogenes*
 - *Salmonella*
 - *Cyclospora cayetanensis* ← Seasonal

Steps in an OUTBREAK INVESTIGATION


DETECT A possible outbreak 

FIND Cases in an outbreak 

GENERATE Hypotheses through interviews 

TEST Hypotheses through analytic studies and laboratory testing 

SOLVE Point of contamination and original source of outbreak vehicle 

CONTROL Outbreak through recalls, facility improvements, and industry collaboration 

DECIDE An outbreak is over 

If cases continue
Not finding associations

If cases stop

Contaminated food was ingested days ago
Average incubation period for
Salmonella is 12-72 hours (illness lasts ~4-7 days)
Pathogenic *E. coli* is 3-4 days (illness lasts ~5-7 days)
Listeria monocytogenes is 2-6 weeks (illness lasts ~3-7 days)

This Table is from the FDA CORE

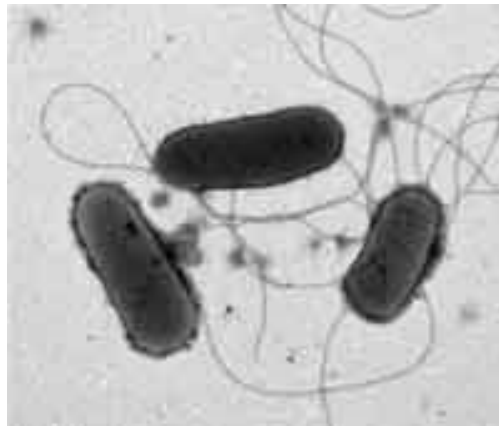


Date Posted	Reference #	Pathogen	Product(s) Linked to Illnesses (if any)	Total Case Count	Investigation Status	Outbreak Status	Recall Initiated	Traceback Initiated	On-Site Inspection Initiated	Sample Collection & Analysis Initiated
12/29/2021	1052	E. coli O157:H7	Packaged Salad	See Outbreak Advisory	Active	Ongoing See Outbreak Advisory		✓		
12/20/2021	1039	Listeria monocytogenes	Packaged Salad	See Outbreak Advisory	Active	Ongoing See Outbreak Advisory	See Outbreak Advisory	✓	✓	✓
12/15/2021	1048	Listeria monocytogenes	Packaged Salad	See Outbreak Advisory	Active	Ongoing See Outbreak Advisory	See Outbreak Advisory	✓	✓	✓
11/24/2021	1044	Salmonella Javiana	Not Yet Identified	64	Active	Ongoing See Advice		✓	✓	✓
11/17/2021	1043	E. coli O157:H7	Spinach	See Outbreak Advisory	Active	Ongoing See Outbreak Advisory		✓	✓	✓
9/15/2021	1031	Salmonella Oranienburg	Red, Yellow, and White Onions	See Outbreak Advisory	Active	Ongoing See Outbreak Advisory	See Outbreak Advisory	✓	✓	✓



Outbreak Investigation of E. coli O157:H7: Power Greens Packaged Salad (January 2022)

FDA's investigation is ongoing



Case Counts

Total Illnesses: 10

Hospitalizations: 4

Deaths: 0

Last Illness Onset: December 19, 2021

States with Cases: AK (2), OH (1), OR (1),

WA (6)

Case Count Map Provided by CDC



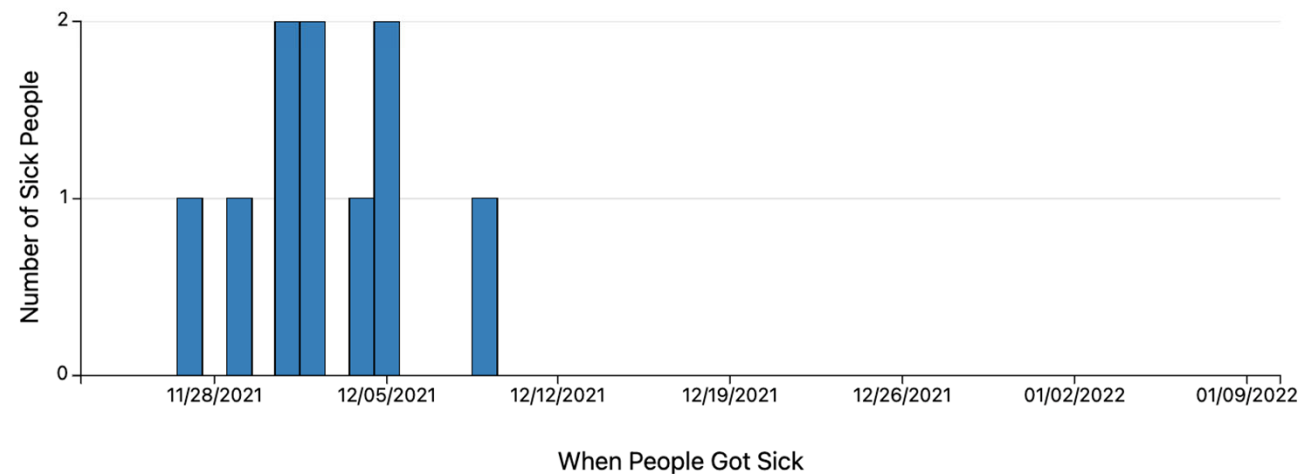
This is why
traceability
matters to
the grower

When People Got Sick

Posted January 6, 2022

This chart shows when the 10 people in this *E. coli* outbreak got sick.

Recent illnesses may not yet be reported as it usually takes [3 to 4 weeks](#) to determine if a sick person is part of an outbreak. The true number of sick people in this outbreak is also likely much higher than the number reported. This is because many people recover without medical care and are not tested for *E. coli*.



E. coli Outbreak Linked to Baby Spinach

 Food Safety Alert

Posted January 6, 2022

This outbreak is over. Stay up to date on food [recalls](#) and [outbreaks](#) to avoid getting sick from eating contaminated food.

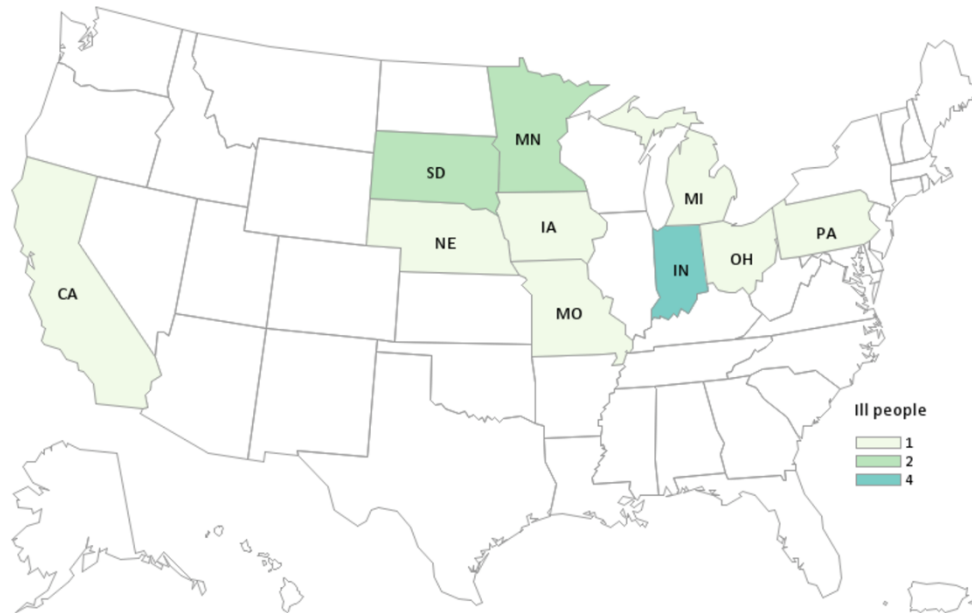
Fast Facts

- Illnesses: 15
- Hospitalizations: 4
- Deaths: 0
- [States](#): 10
- Recall: No
- Investigation status: Closed



Case Count Map Provided by CDC

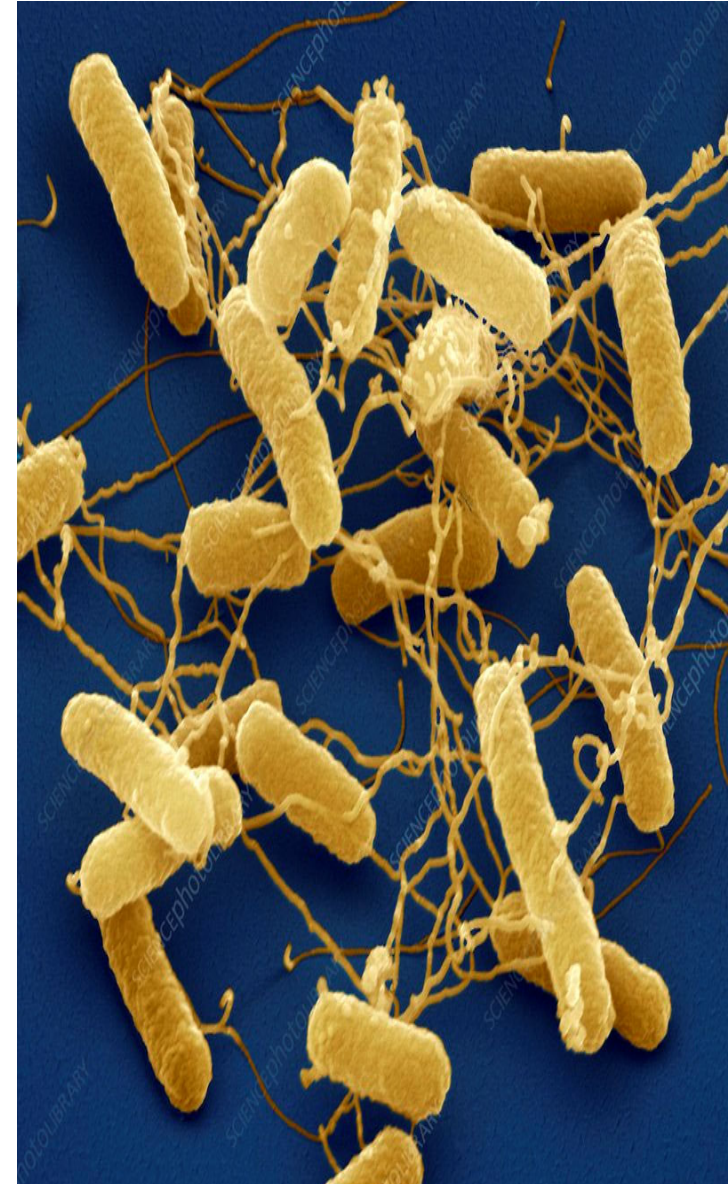
People infected with the outbreak strain of *E. coli* O157, by state of residence, as of January 6, 2022 (n=15)



- Whole genome sequence analysis of the sample is underway, FDA is tracing back the supply of the baby spinach in the positive product sample.
- FDA has traced supply chains for this product back to a small number of farms in two different geographic regions and is deploying investigators along the supply chains of interest.

Salmonella

- There are over 2,500 different serovars of *Salmonella* that can be infectious **to humans and animals**.
- 2020 Outbreaks - Novel commodities, largest salmonellosis outbreak in 10 years, no specific contamination event
 - *Salmonella* Newport in onions (1,127 reported cases in 48 states, 167 hospitalizations)
 - *Salmonella* Enteritidis in peaches (101 reported cases in 17 states, 28 hospitalizations)
- 2021 Outbreaks
 - *S. Javiana* ongoing, no known commodity
 - *may not be linked to produce*
 - *S. Orianenburg* in onions



Salmonella Outbreak Linked to Onions



Food Safety Alert

Posted November 16, 2021

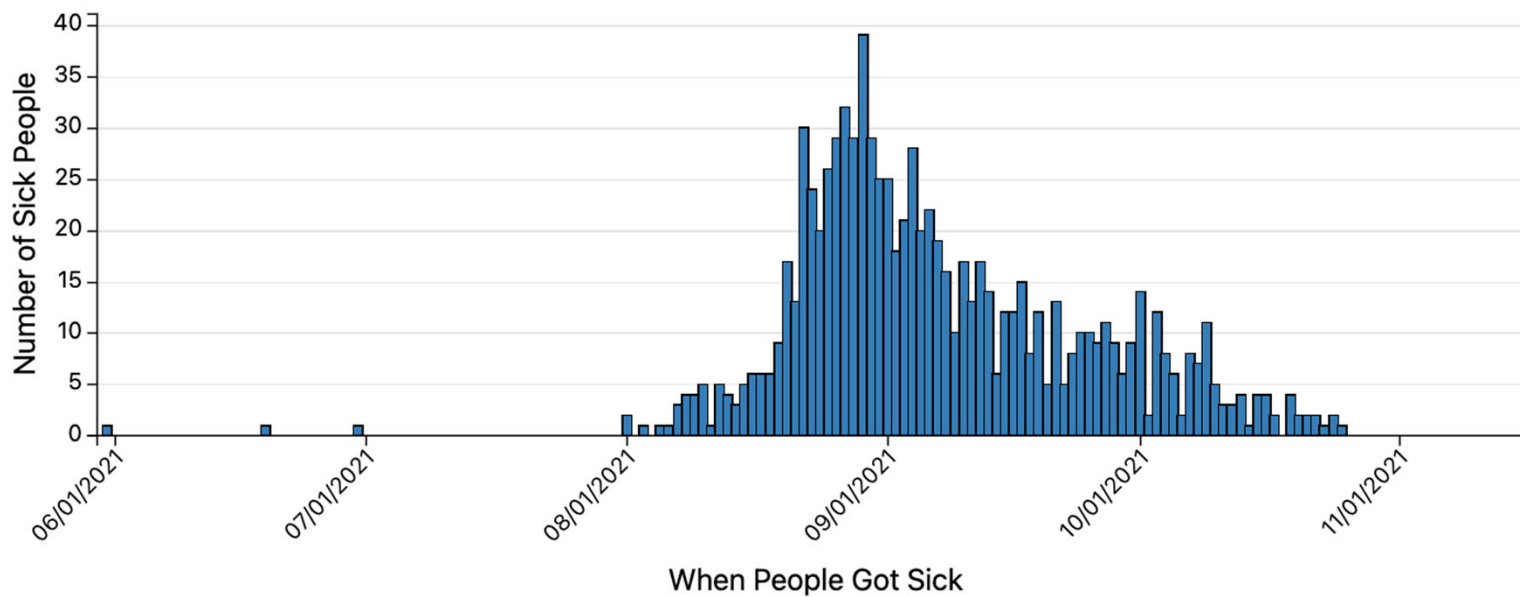
Fast Facts

- Illnesses: 892 (84 new)
- Hospitalizations: 183 (26 new)
- Deaths: 0
- [States](#): 38 and Puerto Rico (1 new)
- Recall: Yes
- Investigation status: Active



Recalled Food

Multiple companies have recalled onions. All recalled onions were supplied by ProSource Produce LLC and Keeler Family Farms and imported from the State of Chihuahua, Mexico, between July 1, 2021, and August 31, 2021.



The FDA, along with CDC and state and local partners, is investigating a multistate outbreak of *Salmonella* Oranienburg infections linked to whole, fresh onions. FDA’s traceback investigation is ongoing but has identified ProSource Produce, LLC (also known as ProSource Inc.) of Hailey, Idaho, and Keeler Family Farms of Deming, New Mexico, as suppliers of potentially contaminated whole, fresh onions imported from the State of Chihuahua, Mexico. As of November 12, 2021, CDC reports that there are 892 illnesses in 38 states and Puerto Rico. FDA’s investigation is ongoing to determine the source of contamination and if additional products or firms are linked to illness. Additional information will be provided as it becomes available.

July 2021 S. Typhimurium Outbreak Over

Salmonella Outbreak Linked to BrightFarms Packaged Salad Greens



Food Safety Alert

Posted October 6, 2021

This outbreak is over. Stay up to date on food [recalls](#) and [outbreaks](#) to avoid getting sick from eating contaminated food.

Fast Facts

- Illnesses: 31
- Hospitalizations: 4
- Deaths: 0
- [States](#): 4
- Recall: Yes
- Investigation status: Closed



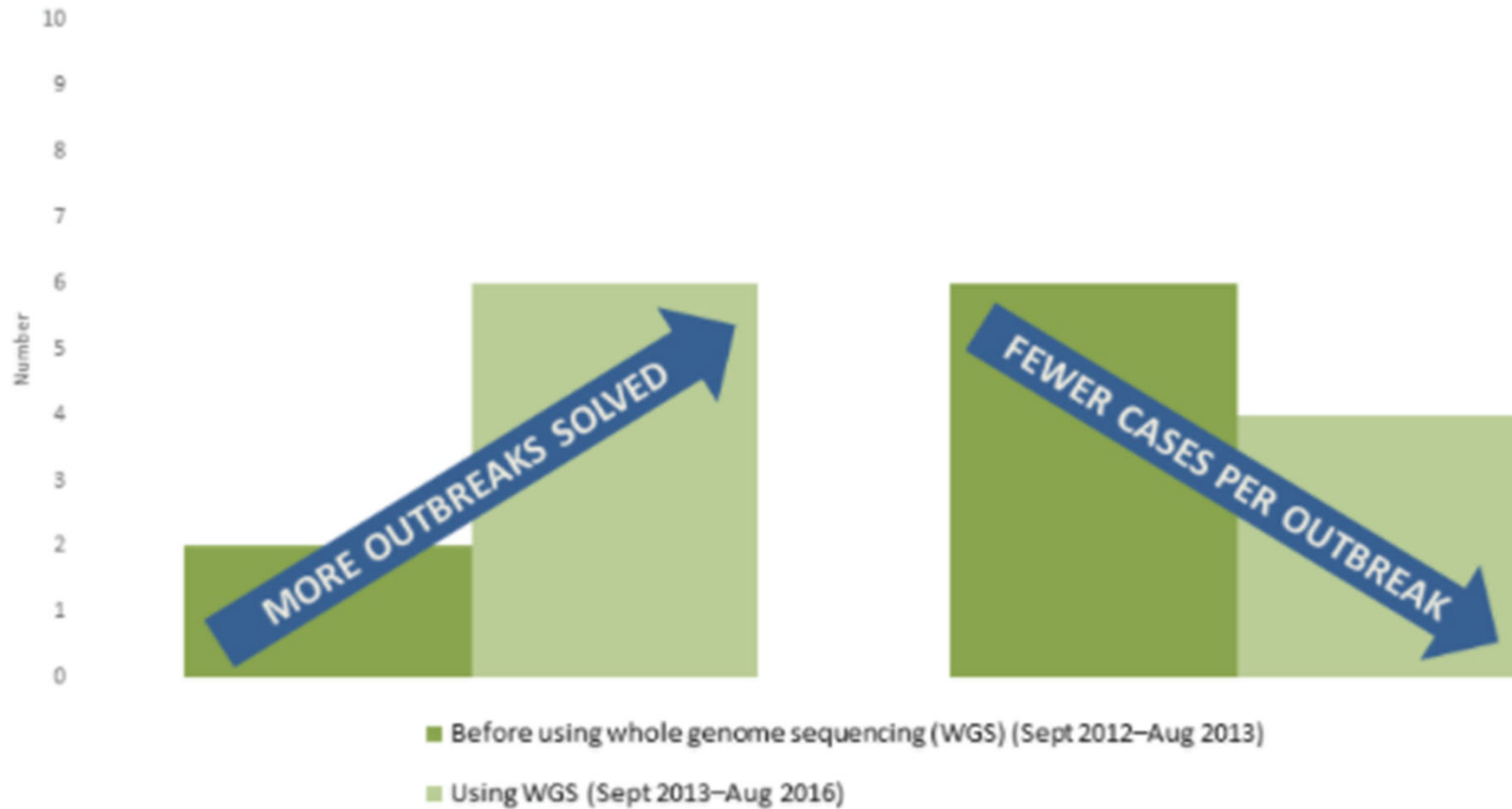
- Illnesses June-August 2021
- FDA visited the facility and collected samples. Some environmental samples taken inside the facility tested positive for *Salmonella* Liverpool, but were not a match to the outbreak strain
- A sample collected from an outdoor storm water drainage pond adjacent to the facility was a genetic match to the outbreak strain.
- Although no clear route of contamination was readily identified, the FDA is preparing a report to discuss findings and provide information to assist in future prevention efforts.

Listeria monocytogenes



- Dec 15, 2021 - Fresh Express Packaged Salad
 - The FDA and CDC, in collaboration with state and local partners, are investigating a multistate outbreak of *Listeria monocytogenes* infections. According to the CDC, as of December 21, 2021, 10 people infected with the outbreak strain of *Listeria monocytogenes* have been reported from eight states. Illnesses started on dates ranging from July 26, 2016 to October 19, 2021.
- Dec 20, 2021 - Dole Packaged Salad
 - One product containing lettuce from the Dole facility in Yuma, AZ, tested positive for *Listeria monocytogenes*. WGS analysis showed that the *Listeria monocytogenes* in the product sample is also a match to the outbreak strain.
- Jan 2022 Recall- Dole and other packaged salads
 - This recall is being issued after harvest equipment used in the harvesting of the raw iceberg lettuce material used in these finished products was tested by Dole and found to contain *Listeria monocytogenes*.

Outbreaks of listeriosis are being identified more quickly.
Whole genome sequencing prevents listeriosis.



What can I do? What should I do?

Rely and think back to your produce safety training – Sanitation!

Think “Risk assessment and Risk management”

Consider your water sources, fertilizer use, neighbors (adjacent land use)

Know your traceability (at least one step forward and back, if not more)

Friday, January 01

You eat a contaminated food

JANUARY 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



Thank You



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