

California Legislature
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Unraveling the E. coli Outbreak

*Are State Emergency Response
Systems Prepared for Outbreaks of
Foodborne Illness?*

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Past Lettuce *E. coli* Outbreaks

Aug. 1993	Salad bar	<i>E. coli</i> O157:H7	53
July 1995	Lettuce (leafy green, red, romaine)	<i>E. coli</i> O157:H7	70
Sept. 1995	Lettuce (romaine)	<i>E. coli</i> O157:H7	20
Sept. 1995	Lettuce (iceberg)	<i>E. coli</i> O157:H7	30
Oct. 1995	Lettuce (iceberg; unconfirmed)	<i>E. coli</i> O157:H7	11
May-June 1996	Lettuce (mesclun; red leaf)	<i>E. coli</i> O157:H7	61
May 1998	Salad	<i>E. coli</i> O157:H7	2
Feb.-Mar. 1999	Lettuce (iceberg)	<i>E. coli</i> O157:H7	72
July-Aug. 2002	Lettuce (romaine)	<i>E. coli</i> O157:H7	29
Oct 2003-May 2004	Lettuce (mixed salad)	<i>E. coli</i> O157:H7	57
Apr. 2004	Spinach	<i>E. coli</i> O157:H7	16

Lettuce and Spinach



- 18 E. coli outbreaks since 1995
 - 409 reported illnesses
 - two deaths
- Fresh or fresh-cut lettuce or spinach implicated as outbreak vehicle
- 8 outbreaks traced back to produce from Salinas, California

Recent Lettuce Outbreaks

- July 2002 – WA Dance Camp
 - 50 dance campers sickened, several hospitalized, one with life-long kidney damage
 - “Pre-washed” lettuce
- September 2003 – CA Restaurant
 - 40 patrons ill
 - Salads prepared with bagged, “pre-washed” lettuce
- October 2003 – CA Retirement Center
 - 13 residents sickened, 2 died
 - “Pre-washed” spinach



Prior FDA Warnings



- 1998 – FDA “Guide to Minimize Microbial Food Safety Hazards for Fruits and Vegetables.”
 - **Specifically designed to assist growers and packers in the implementation of safer manufacturing practices.**
- 2004 – FDA letter to the lettuce and tomato industries
 - **To “make them aware of [FDA’s] concerns regarding continuing outbreaks associated with these two commodities and to encourage the industries to review their practices.”**

Dole Lettuce *E. coli* Outbreak – Fall 2005



- September 22-29, 2005
 - MN DOH lab receives 10 human *E. coli* O157:H7 isolates for subtyping
 - PFGE shows that all 10 share unique 2 restriction enzyme combination
- September 28, 2005
 - Illness linked epidemiologically to consumption of Dole pre-packaged lettuce

Dole Lettuce *E. coli* Outbreak

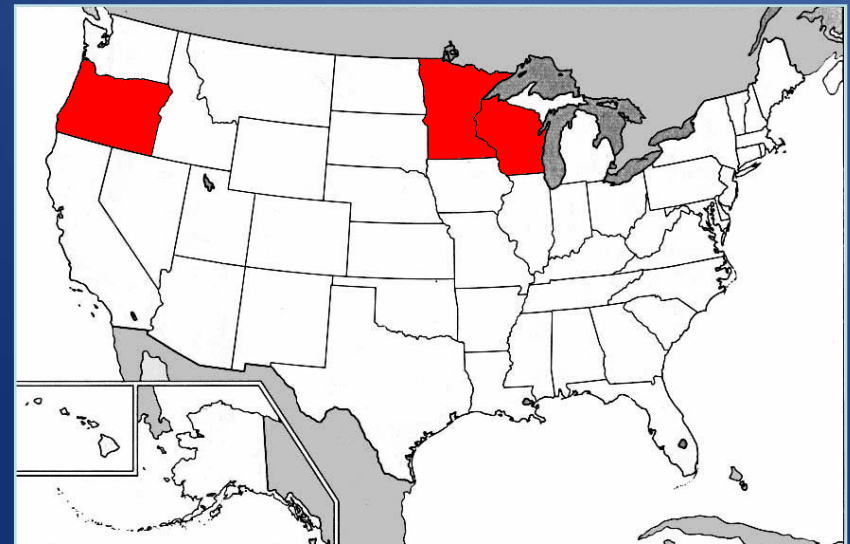
– Fall 2005

- October 3, 2005
 - MN Dept. of Ag isolates *E. coli* O157:H7 in Dole lettuce obtained from households of case-patients
- October 5, 2005
 - Oregon resident with O157, PFGE match to “outbreak” strain. Reports eating lettuce prior to symptom onset.



Dole Lettuce *E. coli* Outbreak Summary

- 23 laboratory-confirmed cases of *E. coli* O157:H7; 7 epi linked cases
- September 16 to September 30 onset
- 2 cases of HUS
- Cases in MN, OR, and WI
- Statistically associated with eating Dole pre-packaged lettuce
- “Smoking Gun” – found in bag



FDA – Adulterated – 2005

- FDA cited to research linking some or all of the outbreaks to sewage exposure, animal waste, and other contaminated water sources. The research further indicated that industry practices, including irrigation and field drainage methods, may have led directly to the contamination of the lettuce with *E. coli* O157:H7.
- FDA considers “adulterated” any ready to eat crops produced under unsanitary conditions §402(a)(4) of the Food, Drug, and Cosmetic Act



CADOHS to Western Growers - 2006

- A reassessment of current manure composting regulations...in light of recent scientific findings.
- An assessment of...septic tank systems that may leak/flow into agricultural ditches or creeks bordering fields used to grow ready-to-eat produce.
- An assessment of...farm worker access to portable toilets and hand washing facilities.



CADOHS to Western Growers – 2006, cont.



- An assessment of the locations of fields known to flood frequently.
- An assessment of the need for...mandatory GAPs and/or HACCP Plans.

Dole and Natural Selections – Fall 2006

- 199 persons infected with outbreak strain of E. coli O157:H7 from 26 states.
- 102 (51%) hospitalized
- 31 (16%) developed hemolytic-uremic syndrome (HUS)
- Three confirmed deaths
 - Maryland investigating possible fourth



Dole and Natural Selections



- E. coli O157:H7
 - Isolated from 13 packages of DOLE spinach
 - “DNA fingerprints” of all 13 match the outbreak strain
 - Supplied by patients living in 10 states
 - Eleven packages with lot codes consistent with a single manufacturing facility on a particular day

Will Industry Continue to Learn from Outbreaks?

- Good Reasons
 - Bad idea to poison customers
 - moral reasons
 - business reasons
 - Puts Trial Lawyers out of business
 - please!

