

Salmonella Chailey outbreak associated with coconut, British Columbia, Canada, 2017

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Salmonella Chailey

- *Salmonella* Chailey is a rare serotype of *Salmonella* in North America.
- In British Columbia (BC) Canada, *S. Chailey* has only been detected 3 times between 1998-2016.
- *S. Chailey* has been previously detected in beef, pork and tuna samples in the US.

Outbreak notification

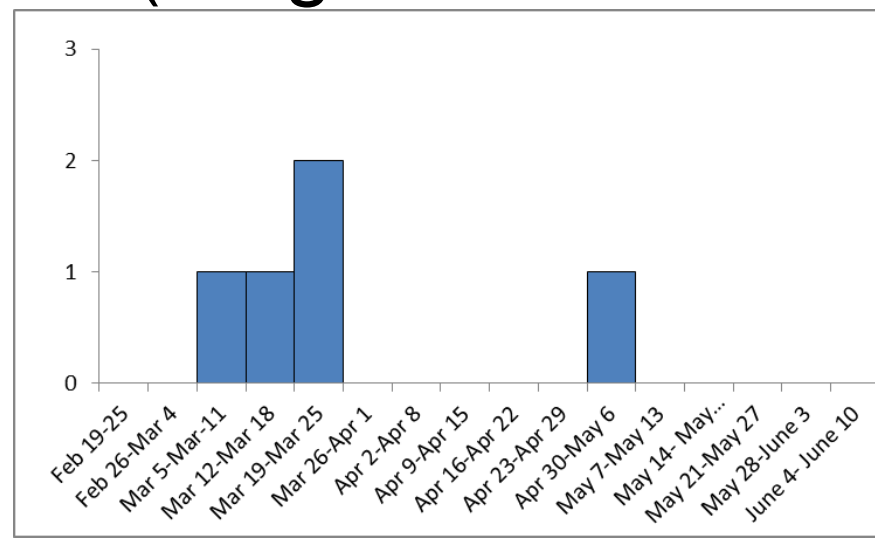
- Notified of US investigation on May 19
 - BC had reported 5 cases of *S. Chailey*
 - Confirmed as PFGE match to each other and match to US investigation
 - No other cases reported in Canada
- Outbreak investigation initiated in BC
- US outbreak investigation had identified a “healthy-eater” profile and common shopping at grocery store chain “A”. Leading hypothesis related to fish and seaweed consumption.

Investigation methods

- Human case investigation
 - Pulse-field Gel Electrophoresis (PFGE) and Whole genome Sequencing (WGS) of clinical isolates.
 - Focussed questionnaire (based on communication and information from US partners)
 - Only 2 interviewers used in BC
 - Credit card information for collection of shopping history at Grocery store "A"
- Food safety investigation and traceback
 - Grocery store chain "A" inspection and information gathering
 - Information shared with Canadian and US food safety colleagues to inform traceback activities

BC Investigation results

- 5 cases with matching PFGE and WGS.
 - Match to US outbreak strain.
- Onset dates between March 10 and May 7, 2017.
- Median age was 53 years (range 19-87 years)
- 80% female



BC Investigation results- Food exposures

- All cases reported shopping at Grocery store chain “A”.
- Initially 3 cases reported exposure to pre-cut coconut pieces purchased at Grocery store chain “A” based on re-interview.
- All cases reported exposure to sushi routinely.
 - Unclear if it was during exposure period
 - All different restaurants
 - Only 1 raw fish exposure
- A food source at grocery store chain “A” was identified as a more likely source.

BC Investigation results- Food exposures

- Purchase information for Grocery store chain “A” was available for 3 cases.
- Purchase confirmed cases purchased the coconut between March 7 and 15, 2017 at two store locations.
 - One additional case reported purchase dates in approximately early March, shopping history unavailable.
- No other common foods to all three cases.

BC Investigation results- Final food exposures

- All 5 cases (100%) reported exposure to pre-packaged coconut pieces purchased from Grocery store chain “A”.
 - 1 via interview
 - 1 via shopping history
 - 2 via interview and shopping history
 - 1 via follow-up with family member months later
- The US outbreak identified 14 cases in 7 States.
 - Isolation dates reported between March 17-May 4.
 - 9/12 (75%) of cases shopped at Grocery store chain “A”.
 - 6/10 (60%) reported exposure to pre-cut coconut pieces purchased from Grocery store chain “A”.



Food safety investigation



- Pre-cut coconut pieces came from a single supplier in Country X.
- Traceback identified a single implicated lot based on purchase dates that matched case distribution.
- Previous sample of *S. Chailey* in tuna from Country X with only 15 SNP difference.

Food safety investigation



- Other coconut containing products in store had different suppliers.
- 2 samples of pre-cut coconut purchased in June from BC store tested negative for *Salmonella*.
- Samples taken in July at packer were negative for *Salmonella*.

Public health actions

- Grocery Store chain “A” was informed of ongoing investigation.
- On June 30, Grocery Store chain “A” agreed to destroy all remaining product from implicated supplier in stores and in warehouse.
 - Product had already been removed from shelves at stores.
- No public communication done.

Conclusions

- First reported foodborne outbreak caused by coconut meat.
- Contamination likely occurred in country of origin and was limited to a single lot of coconut.
- Comprehensive epidemiological, environmental and traceback investigation assisted in identification of source.
- In-store investigation helped identification of food source.
- Collaborative investigation between Canadian and US partners was important for identification of the source.

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