

California Food Emergency Response Team (CalFERT)

Outbreak Investigations
and
Response to *Listeria monocytogenes*
Outbreak Associated with Caramel
Apples



Investigative Team

- California Food Emergency Response Team
- Partnership between CDPH and FDA
- Interdisciplinary group of experienced investigators and scientists.
- Conducts foodborne illness outbreak investigations.
- Top priority is to take the necessary steps to stop the outbreak.



Investigating an Outbreak

- Epi Identifies Suspect Food Vehicle(s)
 - Participation in the Epi discussion is critical
 - Identify Commonalities / Differences
- Refine the Information
 - Review of Shopper Card Information
 - Collection and Review of Distribution Records
 - Tracing the Distribution Path
 - Truth-Testing the Hypothesis



Investigating an Outbreak

- Identify Common Ingredients / Suppliers
 - Common Lot?
 - Specific Production Line?
 - What is the Exposure Period for the Outbreak?
 - What are the Demographics of the Outbreak?
 - How Easy is it For the Pathogen to Persist in the Environment?
 - Have we Seen this Pathogen Before?
Where?



Investigating an Outbreak

- Suspect Food Vehicle is Identified
- Evaluate Point of Infection
- Trace Suspect Product Through Distribution Channels
- Environmental Investigation at Each Point of Potential Contamination in the Continuum



Investigating an Outbreak

- Honing in on the Suspect Lot
 - Implicated Lot?
 - Bracket Distribution / Production by Dates Based on Exposure Dates
 - Link Production Lots Shipped that Could Have Been Available During the Exposure Period
 - Link Suspect Production Lots with Agricultural Inputs
 - Product Left in the Marketplace?



Investigating an Outbreak

- Environmental Investigation at All Potential Points of Contamination
 - Employees – Training, sick?
 - Processing Methods – Validated Processing Steps, Irregularities, Post or In-Process Testing, Cross-Contamination
 - Sanitation Procedures – Records, Validated Processes, Effective?



Investigating an Outbreak

- Environmental and Product Sampling
 - Food Contact and Non-Food Contact Surfaces
 - Sampling of Suspected Lots and Subsequent Production Lots
 - Retain Samples



Investigating an Outbreak

■ Farm Investigation

- Irrigation Water, Reservoirs, Source Quality
- Compost / Soil Amendments
- Pesticide Application
- Farm Workers
- Harvest / Cooling Operations
- Neighboring Operations (ie. CAFO's)
- Unusual Events





Listeria monocytogenes – Caramel Apples

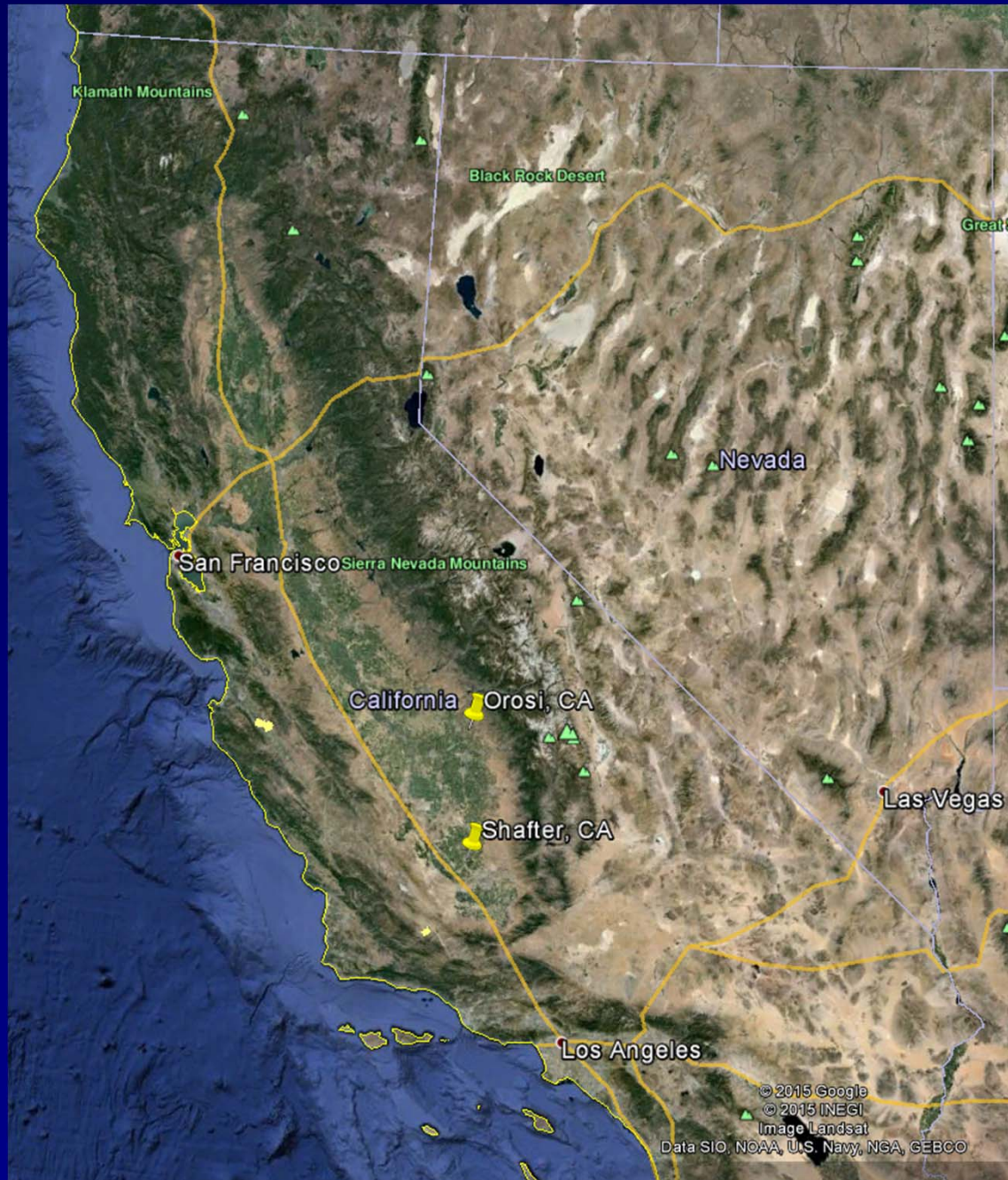
- CalFERT was monitoring the outbreak for weeks without a food item of interest
- Caramel apples identified as food item of interest in mid-December
- December 19, 2014 CalFERT activated under ICS



Listeria monocytogenes – Caramel Apples

- Caramel apple sample collected from California case patient in Felton, CA
- Environmental investigations at Happy Apples and Bidart Bros. initiated
- Joint investigative teams composed of both CDPH and FDA personnel were at both locations





Listeria monocytogenes – Caramel Apples

- Hundreds of samples collected:
 - Environmental swabs
 - Ingredients
 - Plastic clam shell packaging
 - Wooden sticks



Listeria monocytogenes – Caramel Apples

- Additional environmental investigation conducted at California Snack Foods in South El Monte, CA
- Manufactured caramel apples using apples from Bidart Bros.
- Samples of caramel apples collected



Environmental Investigations - Results

- Bidart Bros. – 7 environmental swabs matched one of the outbreak strains
- Happy Apples – 1 environmental swab matched one of the outbreak strains
- Caramel apple sample from case in Felton, CA tested negative for *Listeria monocytogenes*
- CA Snack Foods – 1 caramel apple tested positive for *Listeria monocytogenes* but did not match the outbreak strains



Recalls

- Bidart Bros.
- Happy Apples
- CA Snack Foods



News Release

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

FOR IMMEDIATE RELEASE

December 25, 2014
PH14-097

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**CDPH Warns Consumers Not to Eat Happy Apple Brand Caramel Apples
Due to Possible Contamination with *Listeria monocytogenes***

California Department of Public Health (CDPH) Director Dr. Ron Chapman warned consumers today not to eat all varieties of Happy Apple Brand Caramel Apples because they may be contaminated with *Listeria monocytogenes*. CDPH is coordinating with the U.S. Food and Drug Administration (FDA), the Centers for Disease Control and Prevention (CDC) and other state and local agencies in the investigation of 29 cases of Listeriosis in 10 states which appear to be linked to the consumption of multiple brands of caramel apples. All 29 cases have been hospitalized and five deaths have been reported. A single case-patient in California has died.

Conclusions

- 35 cases in 12 states (3 cases in CA)
- 34 cases hospitalized
- 7 deaths reported
- Infections associated with consumption of commercially produced, pre-packaged caramel apples



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