

Outbreak of *Salmonella* Rissen
associated with
Ground White Pepper:
Environmental Investigation

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Union International Food Co. (UIFC)

- ◆ UFC manufactured and repackaged a variety of foods - shelf-stable sauces, edible oils, spices, nuts, dried foods, and teas.
- ◆ Primary focus of the investigation - white pepper operations and overall sanitation of the facility.
- ◆ Investigation > five months

Anatomy of Investigation

- ◆ *S. Rissen* – white and black pepper positive samples
 - 03/26/09
 - previously opened containers at a restaurant
- ◆ CalFERT was activated
- ◆ GMP inspections AND environmental investigation
 - Initiated 03/27/09
- ◆ Continued epi work (IDB, other states, CDC)
- ◆ Ongoing traceback
- ◆ 1st public notification – press release
 - 03/28/09

CaIFERT Activities

California Food Emergency Response Team

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graph TD; A[California Food Emergency Response Team] --> B[Traceback]; A --> C[Inspection/GMPs]; A --> D[Environmental];
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Traceback

Inspection/GMPs

Environmental

Traceback

- ◆ Traceback: Identify the source and the distribution of a product.
- ◆ Epi data and lab results reviewed.
- ◆ Supporting documentation for the movement of suspect product is collected and analyzed.
- ◆ Create flow diagram and timeline to place suspect food at point of service.

Traceback

- ◆ Inspections and further investigations?
- ◆ Is a recall is needed?
- ◆ Has product been distributed, re-packaged, co-packed, and/or further processed?

Inspection(s) & Findings

- ◆ Good Manufacturing Practices (GMPs)
- ◆ Sanitation
- ◆ Production operations (flow, lots, etc)

Inspection(s) – Findings

- ◆ FDB Regulatory Action
 - Notice of Violations
 - Embargoes
 - Voluntary Condemnation and Destruction
 - Preliminary Injunction
 - ◆ Firm ordered to submit plans and protocols requested by CDPH.

Environmental Investigation

Activities

```
graph TD; A[Activities] --> B[Document collection]; A --> C[Recalls/ Press releases]; A --> D[Sample collection];
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**Document
collection**

**Recalls/
Press releases**

**Sample
collection**

Document Review

- ◆ Co-packing
- ◆ Traceforward
- ◆ Customer list
- ◆ Invoices
- ◆ Seed suppliers
- ◆ Distinction between Southern and Northern CA firms' operations

Document Review – *Findings*

- ◆ UIFC co-packed for other companies
 - Sub recalls by companies
- ◆ Invoices and customer lists connected UIFC to retail and restaurants where Lian How and Uncle Chen white pepper samples, matching the outbreak strain, were collected.
- ◆ Suspect white pepper seed originated from Vietnam.
- ◆ Southern and Northern CA facilities were operated as separate businesses and did not share raw ingredient, suppliers, or customers.

Recalls/Press Releases - Findings

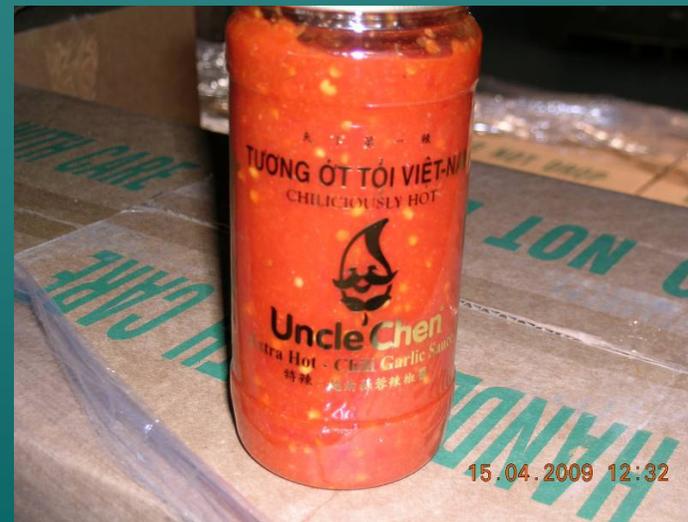
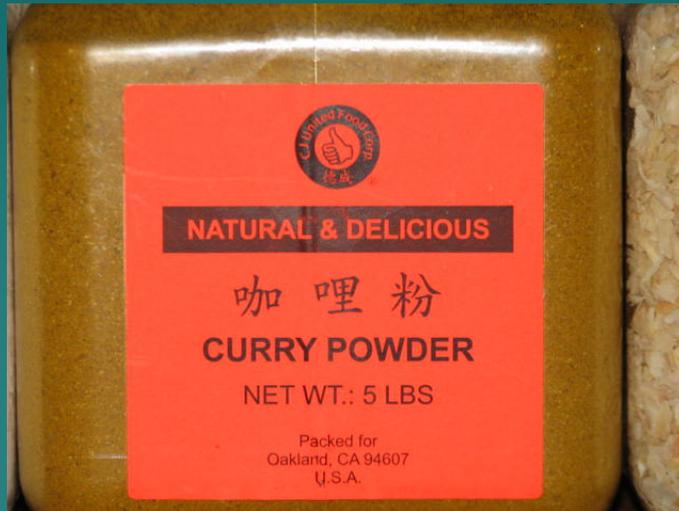
- ◆ 3/28/09: CDPH PR – Lian How Brand, 12 spices including white and black pepper
- ◆ 3/30/09: UIFC PR – included Uncle Chen retail 5 oz whole and ground pepper and 3 other spices
- ◆ 4/2/09: UIFC recall included all spices, all peppers in any package size (22 spices)
- ◆ 4/14/09: UIFC recall included all Lian How and Uncle Chen retail and institutional products including oils, oil blends, and sauces

Recalls/Press Releases - Findings

Recalls – Companies UIFC co-packed for

- ◆ 4/17/09 CJ United Spices "Natural and Delicious" Black and white pepper curry powder
 - 4/23/09 Expanded recall included 4 more spices
- ◆ Lucky International Trading, Cloud Nine, and Fortune Food

Samples of Recalled Products



Sample Collection – Environmental & Product

Facility – 65,000 sq ft:

- Sauce/oil bottling room
- White pepper grinding room
- Sauce mixing room
- Sauce fermenting and warehouse
- Repack area – spices
- Main warehouse – raw spices, teas, nuts, seeds

White Pepper Grinding Room



White Pepper Grinding Room



White Pepper Grinding Room



White Pepper Grinding Room



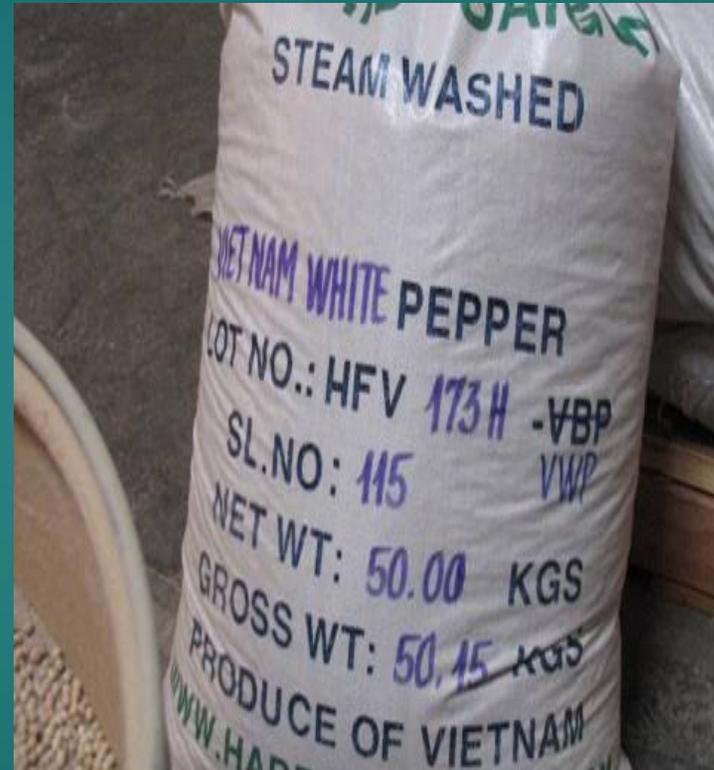
White Pepper Grinding Room



White Pepper Grinding Room



White Pepper Grinding Room



Repackaging Area



Repackaging Area



Repackaging Area



Product Samples - Findings

White Pepper Seed

104 – 1lb samples collected from Lot HFV 173H-VWP: 1 = positive *S. Rissen* and matched the outbreak strain

Sauces and Oil

A variety of finished Uncle Chen and Lian How oil and sauce product samples were collected: All samples were negative for *Salmonella*

Finished Product Samples - Findings

- 1 container of Lian How ground black pepper (5 lb) collected = negative *Salmonella*
- 1 bag of Uncle Chen ground white pepper (5 lb) collected = positive *S. Rissen*, matched outbreak strain
- 1 container of Lian How ground white pepper (5lb) collected = positive *S. Rissen*, matched outbreak strain

Finished Product Samples - Findings



CalFERT Environmental Sampling

April 2009

- ◆ After UIFC had sanitized rooms and equipment 50 swabs were collected.
 - 30 from sauce/oil bottling room and warehouse area; all negative
 - 20 from sauce mixing room
 - ◆ 7 positive *Salmonella*
 - ◆ 1 matched the outbreak strain
 - No swabs from pepper grinding room

Findings – UIFC 1st Cleaning



Positive *S. Rissen* from a roll up door (sampler was on a 10' ladder door)



Reinstalled same cabinet with pepper dust: Positive *Salmonella* from walls behind cabinet

UIFC Clean Up

May – June 2009

- ◆ Professional company cleaned and sanitized facility
- ◆ Design changes: installation of 72” stainless steel sheets in production rooms, removal of ceiling insulation, floors sealed with epoxy, and stainless steel kickboards installed
- ◆ Removal of all pepper grinding and bulk handling equipment from pepper grinding room
- ◆ All production equipment disassembled and cleaned and sanitized

UIFC Clean Up

May – June 2009

- ◆ Production rooms: installation of new doors and plastic strips
- ◆ Replaced wood pallets with plastic ones
- ◆ Installation of filtered air system
- ◆ June: Firm conducted environmental testing for *Salmonella* and resanitized areas yielding positive results

New Installations and Equipment



CalFERT Environmental Sampling

October 2009

Sauce/oil bottling, white pepper grinding, and sauce mixing rooms:

- 50 swabs collected: 1 = positive *S. Rissen* that matched the outbreak strain
- sample collected (swabbed underneath and inside scale frame and under stainless steel lip), from same scale that was used in production during case exposure dates
- firm stated they had cleaned and sanitized scale, however scale was not appropriate for use

Scale yielding positive S. Rissen 10/27/09



Conclusions

- ◆ Of the 391 environmental samples collected at UIFC 63 tested positive for *Salmonella*.
- ◆ *S. Rissen* outbreak strain was found in or on equipment, walls, floors, raw ingredients (including white ground pepper and whole white pepper seed), finished white ground pepper, and in-process white ground pepper.

Conclusions

- ◆ Firm lacked proper SOPs and SSOPs to ensure that the cleaning and sanitizing of equipment and facility structures was completed between specific lots and batches of product.
- ◆ The lack of adequate sanitation and an appropriate air handling system most likely led to contaminated white pepper dust being dispersed throughout adjacent rooms. UIFC then packaged and distributed adulterated white pepper to a variety of customers.

Acknowledgements

- CDPH:
 - Emergency Response Unit
 - Food and Drug Laboratory Branch
 - Food Safety Inspection Unit
 - Infectious Diseases Branch
 - Industry and Education Unit
- Food and Drug Administration
 - San Francisco District Office (SANDO)
 - SANDO laboratory
- CDC and other states
 - Oregon Department of Health

Thank You