



2017

THE ALMOND CONFERENCE

FOOD SAFETY OUTBREAKS: TOUGH LESSONS LEARNED

Room 314 | December 6 2017



CEUs – New Process

Certified Crop Advisor (CCA)

- Sign in and out of each session you attend.
- Pickup verification sheet at conclusion of each session.
- *Repeat this process for each session, and each day you wish to receive credits.*

Pest Control Advisor (PCA), Qualified Applicator (QA), Private Applicator (PA)

- Pickup scantron at the start of the day at first session you attend; complete form.
- Sign in and out of each session you attend.
- Pickup verification sheet at conclusion of each session.
- Turn in your scantron at the end of the day at the last session you attend.

Sign in sheets and verification sheets are located at the back of each session room.

AGENDA

- **Van Soetaert**, Baldwin Minkler Farms, moderator
- **Linda Harris**, UC Davis



Food Safety Outbreaks Case Studies - Tough Lessons Learned

Linda J. Harris, Ph.D. CFS

Specialist in Cooperative Extension, Chair

Department of Food Science and Technology, UC Davis



Take home messages

- Outbreaks often linked to exceptional situations
 - Multiple confounding factors
- Outbreaks can be linked to single event
- Robust recall plans are critical
- Preventing almond outbreaks - a systematic approach to risk reduction
 - Grower
 - Huller/sheller
 - Handler





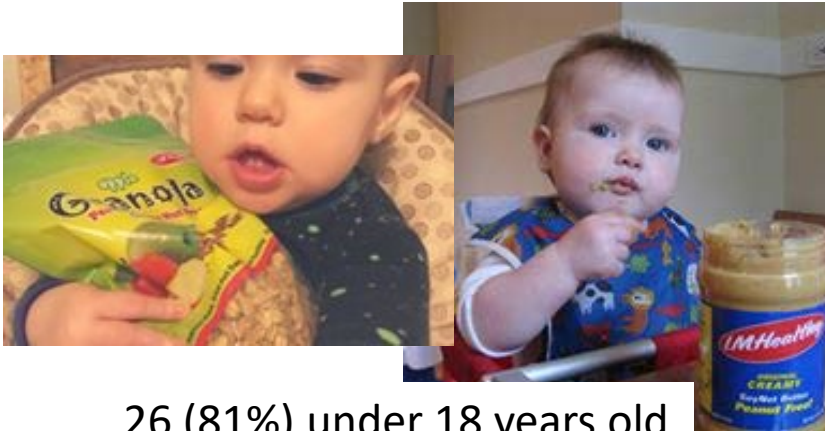
Outbreak #1

SOYNUT BUTTER- 2017

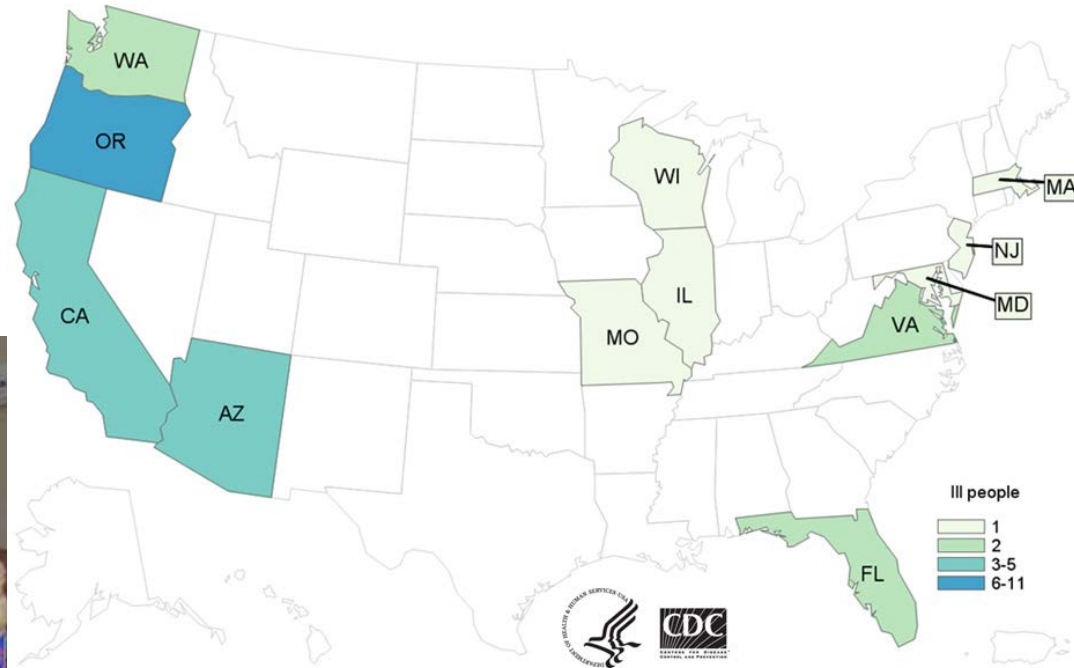


Soynut Butter 2017 – *E. coli* O157:H7

- January to April 2017
 - 32 cases 12 states
 - 12 people hospitalized, 9 HUS

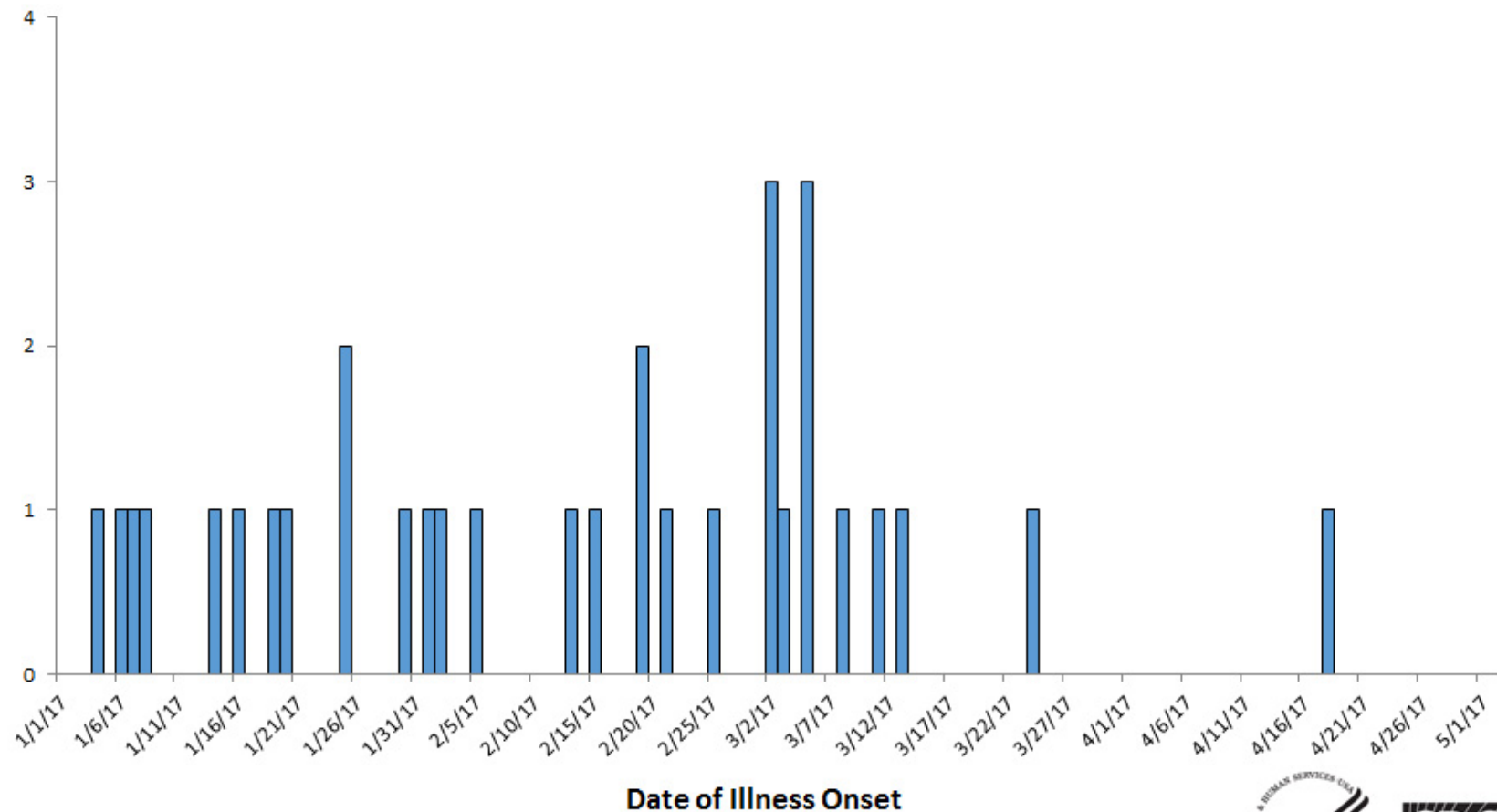


26 (81%) under 18 years old

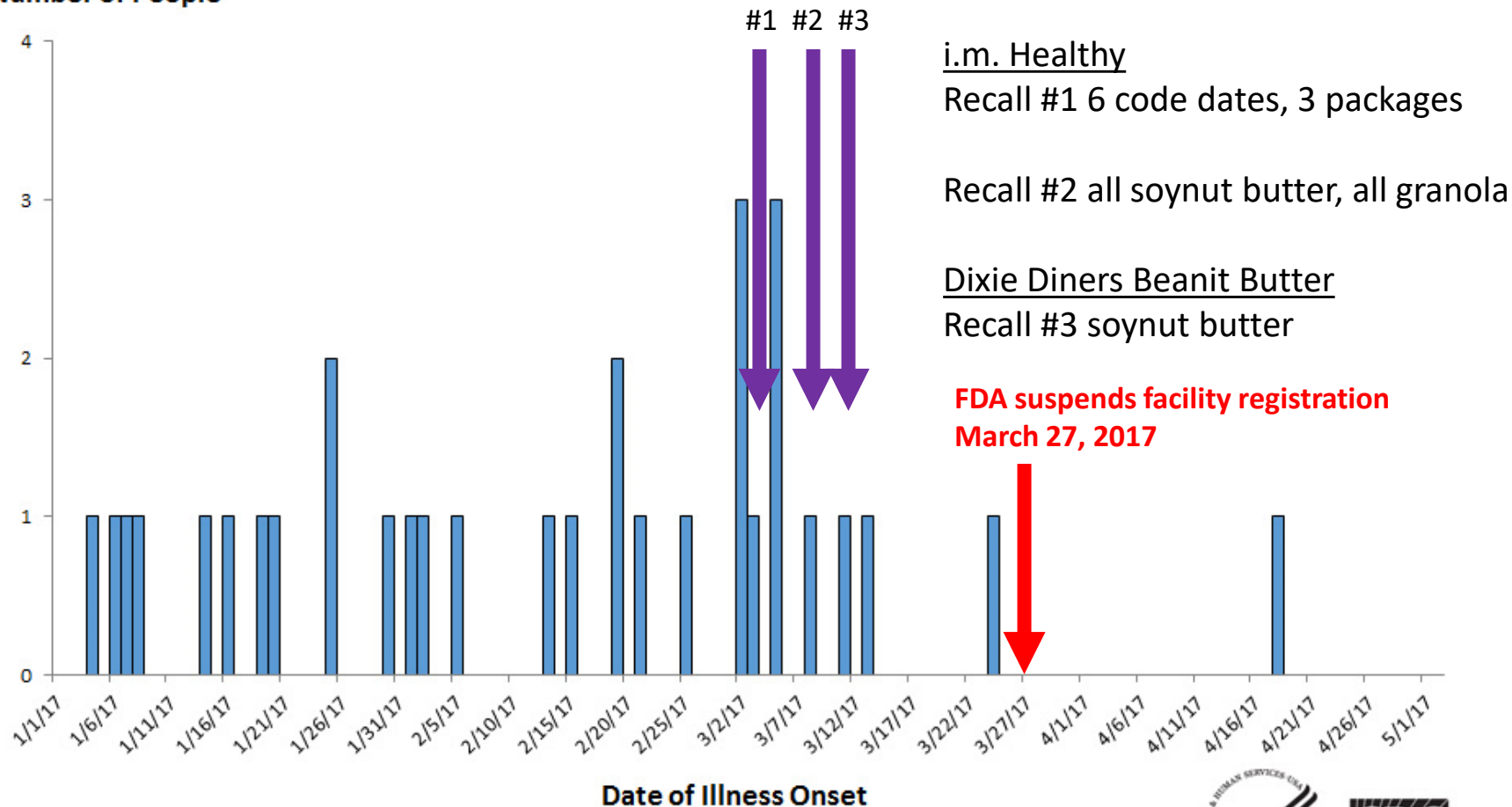




Number of People



Number of People



483 Inspection Report

- Water
 - Clear liquid dripping from ceiling
 - Standing water and brown and black filth on floor
- Dust
 - No employee or traffic controls
 - Dust coated equipment



483 Inspection Report

- Process Controls
 - Critical equipment daily malfunction
 - Thermometer not calibrated
 - No validated kill step
- Sanitation
 - Soy nut oil tote never cleaned
 - No hot water for handwashing
 - Floors walls and ceilings coated with old soynut butter buildup
 - Employee walking platforms also coated
 - Equipment not disassembled for cleaning and sanitizing for over 15 months
 - No environmental monitoring program
- No lot separation



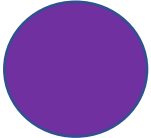
IMPORTANT BANKRUPTCY NOTICE

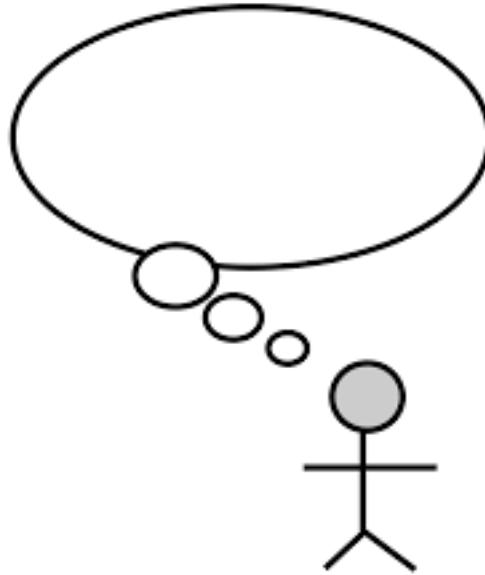


Soynut Butter Company (I.M. Healthy Brand) May 12, 2017

Lessons Learned

September 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3 	4 Labor Day			7	8	9
10	11			14		16
17	18			21		23
24	25			28	29	30





Guaranteed delivery date: **Sept 4, 2017 7** If you order in the next 21 hours and 40 minutes ([Details](#))

Items shipped from Amazon.com



I.M. Healthy SoyNut Butter, Peanut Free - Unsweetened Creamy - 15 oz (425g) - (Pack of 3)

\$47.90 ✓ **prime**

Qty: 1 ▾

Sold by: TheNewMall



Add a gift receipt

and see other gift options

Choose your Prime delivery option:

☒ **Monday, Sept 5**

FREE One-Day Shipping

☐ **Tuesday, Sept 6 6**

FREE Two-Day Shipping

☐ **Thursday, Sept 8**

FREE Standard Shipping

☐ **Monday, Sept 11**

FREE No-Rush Shipping

Get a \$5 reward for Prime Now. [Details](#)



Delivered today

Package was left inside the residence's mailbox

Sep 4

Shipped

5 pm Sunday September 4
Las Vegas, NV



NOT codes from initial recall

Sep 5

Delivered

12 pm Monday September 5 Labor Day
Davis, CA

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Amazon today removed nut butter recalled in March for E. coli

BY [CORAL BEACH](#) | SEPTEMBER 5, 2017

Earlier today, Amazon.com was still selling I.M. Healthy soy nut butter that was recalled in March when federal officials traced an E. coli outbreak to the product.

No one from Seattle-based Amazon immediately responded to mid-morning requests for comment from **Food Safety News**, but by 11 a.m. Pacific time, [the recalled peanut butter substitute](#) had been pulled from the retailer's website.

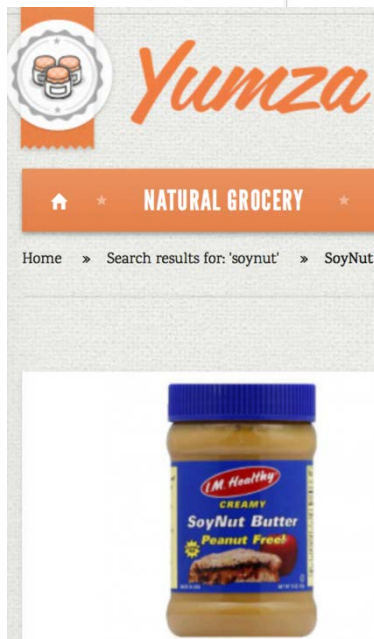
Officials with the Food and Drug Administration are investigating the situation but were not able to provide details as of mid-afternoon.



Although the [outbreak was declared over in May](#) by the Centers for Disease Control and Prevention, that agency's "final" report indicated additional illnesses were expected to be confirmed in relation to consumption of recalled

September 2017

FREE SHIPPING ON ORDERS OVER \$100



Clothes Shoes Beauty Home Electronics Health & Nutrition

SHOP.COM > soynut Save this search

Your search for **soynut** returned 8 results

All Stores

OneCart Stores

What's OneCart?

Sort: Best Match

soynut

☐ Sale Items (5)

☐ Shipping Offers (4)

Department

Food and Drink (8)

Snacks (6)

Fruits, Nuts & Vegetables (2)

Brand

SunRidge Farms (1)



IM Healthy Chocolate
SoyNut Butter, 15 OZ (Pack
of 6)

 Free Standard Shipping on orders from shopGourmet. [Learn More](#)

SHOP.COM > Food and Drink > Snacks > Seasoned Nuts & Mixes



IM Healthy Chocolate SoyNut Butter, 15 OZ (Pack of 6)

Sold by shopGourmet

[Write a Review](#)

\$37.91 + \$0.76  Cashback

1

Add To Cart

☐ Add to AutoShip and never run out again!

zip code

Calculate

Ordered September 5, 2017





September 26, 2017

Luckys Supermarket Redwood City, CA

October 12, 2017



IM Healthy SoyNut Butter,
Chunky, 15 OZ (Pack of 6)

\$40.99

\$35.21

Sold by SHOP.COM Marketplace

+ \$1.76 Cashback

More options available



IM Healthy SoyNut Butter,
Unsweetened, Creamy, 15
OZ (Pack of 6)

\$40.99

\$35.21

Sold by SHOP.COM Marketplace

+ \$1.76 Cashback

More options available



IM Healthy SoyNut Butter,
Creamy, 15 OZ (Pack of 6)

\$40.99

\$35.21

Sold by SHOP.COM Marketplace

+ \$1.76 Cashback

More options available



IM Healthy SoyNut Butter,
Chunky, Honey, 15 OZ
(Pack of 6)

\$40.99

\$35.21

Sold by SHOP.COM Marketplace

+ \$1.76 Cashback

More options available



IM Healthy SoyNut Butter,
Honey, Creamy, 15 OZ
(Pack of 6)

\$40.99

\$35.21

Sold by SHOP.COM Marketplace

+ \$1.76 Cashback

More options available



IM Healthy SoyNut Butter,
Chocolate, 15 OZ (Pack of
6)

\$40.99

\$35.21

Sold by SHOP.COM Marketplace

+ \$1.76 Cashback

More options available



IM Healthy Granola,
Blueberry, 12 OZ (Pack of
6)

\$36.99

\$30.87

Sold by SHOP.COM Marketplace

+ \$1.54 Cashback

More options available



IM Healthy Granola, Raisin
& Cranberry, 12 OZ (Pack
of 6)

\$36.99

\$30.87

Sold by SHOP.COM Marketplace

+ \$1.54 Cashback

More options available



IM Healthy Granola, Apple,
12 OZ (Pack of 6)

\$36.99

\$30.87

Sold by SHOP.COM Marketplace

+ \$1.54 Cashback

More options available



Lessons Learned



Outbreak #2

CEREAL 1998 AND 2008

Salmonella – Prolonged survival in the Processing Environment

Journal of Food Protection, Vol. 76, No. 2, 2013, Pages 227–230
doi:10.4315/0362-028X.JFP-12-209

A Recurrent, Multistate Outbreak of *Salmonella* Serotype Agona Infections Associated with Dry, Unsweetened Cereal Consumption, United States, 2008†

ELIZABETH T. RUSSO,^{1,2*} GWEN BIGGERSTAFF,² R. MICHAEL HOEKSTRA,² STEPHANIE MEYER,³ NEHAL PATEL,² BENJAMIN MILLER,⁴ AND ROB QUICK,² FOR THE *SALMONELLA* AGONA OUTBREAK INVESTIGATION TEAM⁵



Salmonella agona



Salmonella agona

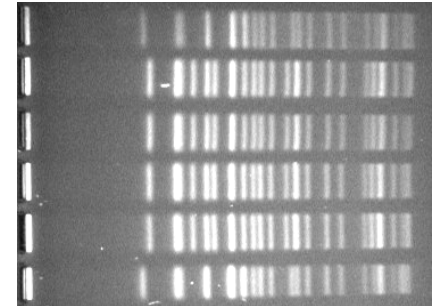
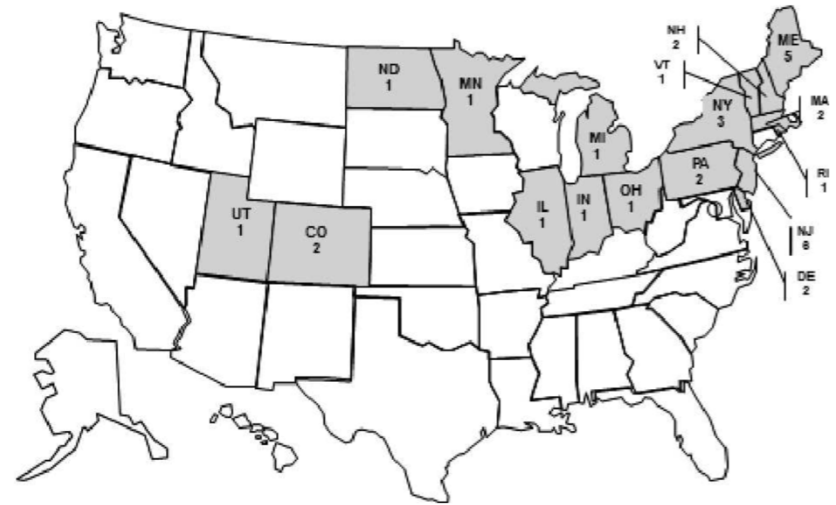
Case study: Cereal

- *Salmonella* Agona
 - April to June 1998
 - 209 cases/11 states
 - Toasted oat cereal
- Implicated production lines:
 - Sealed off
 - Equipment removed
 - Surfaces stripped to bare concrete, decontaminated, and refinished
 - New production lines were installed



April 2008

- *Salmonella* found in finished product produced at same facility
 - Recall
- Outbreak identified through PulseNet
 - January to July 2008
 - 33 cases/15 states
 - Puffed rice and wheat cereals
- *Salmonella* from 1998 PFGE match
 - Cases, cereals, environment



November 2007

- Maintenance work
 - One wall opened
 - Immediately adjacent to section of facility implicated in 1998 outbreak
 - Dust? Wet cleaning? Moist conditions?
 - Floor drains (moist conditions) near the air intake of vents on production line



Response 2008

- Ceased cereal production
 - puffed rice and puffed wheat
 - removed all equipment
 - permanently sealed section of the facility



Lessons Learned



Almond Contamination Source

- Evidence suggests under normal circumstances contamination is:
 - Environmental
 - Sporadic
 - Random
 - Low levels



GOOD AGRICULTURAL PRACTICES



GOOD HULLER/SHELLER PRACTICES



The *Salmonella* Control Equation

+ PATHOGEN ENVIRONMENTAL
MONITORING



TRAFFIC CONTROL
(PERSONNEL &
EQUIPMENT)

+

DUST CONTROL

+

WATER CONTROL

+

SEPARATION OF
RAW & PASTEURIZED
PRODUCT

+

EFFECTIVE
CLEANING &
SANITATION

**SALMONELLA
CONTROL**



Take home messages

- Outbreaks often linked to exceptional situations
 - Multiple confounding factors
- Outbreaks can be linked to single event
- Robust recall plans are critical
- Preventing almond outbreaks - a systematic approach to risk reduction
 - Grower
 - Huller/sheller
 - Handler



Almond Industry Leadership in Food Safety



Thank you!



What's Next

Wednesday, December 6 at 11:10 a.m.

- Sensory and Analytical: Where Science Meets Art – Room 314
- Going Nuts for Beauty: From California to China – Room 306-307
- Tools for Better Irrigation – Room 308-309
- Research Update: Growing and Harvesting – Room 312-313