CENTER for PRODUCE SAFETY

UCDAVIS

Tree nut food safety

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Foodborne outbreaks and “nuts”

- **Salmonellosis**
  - Almond (2000-01, 2003-04, 2006)
  - Peanut (1994-95, 2001, 2005)
  - Peanut butter (1996, 2006-07, 2009, 2012)
  - Pine nuts (2011)
  - Sesame seed
    - Halva (2001), Tahini (2002, 2003)

- ***E. coli* O157:H7 gastroenteritis**
  - Hazelnut (2011)
  - Walnut (2011) (linked)

March 31, 2009

The New York Times

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Salmonella in Pistachios Spurs Recall

By ANDREW MARTIN and MICHAEL MOSS
Published: March 30, 2009

Barely two months after a huge recall of peanut-related products, federal officials said late Monday that a California processor would recall about one million pounds of pistachio products because of concerns about salmonella contamination.

March 31, 2009

Food safety on NBCNEWS.com

FDA: Avoid pistachios amid salmonella scare

California company supplied nuts sold in 31 states, officials say

http://www.msnbc.msn.com/id/29963639/ns/health-food_safety/t/fda-avoid-pistachios-amid-salmonella-scare/#.UGpYtkKE4dI

Assessing postharvest risks for *Salmonella* in pistachios 2009-2012

Funding:

- Center for Produce Safety, Specialty Crop Block Grant Program, California Pistachio Research Board

Collaborators:

- Drs. Michelle D. Danyluk, UFL, Don Schaffner, Rutgers, Carl Winters, UCD

Staff/Students/Postdoctoral Scholars:

- Tyann Blessington, Ph.D., Harbir Kaur, M.S., Martha Kimber, M.S., Elisabetta Lambertini, Ph.D. Vanessa Morales, B.S., Chris Theofel, M.S.
- Many undergraduate students

Industry Partners:

- Nichols Farms, Paramount Farms, Horizon Nut Co.
- Bob Klein, Administrative Committee for Pistachios

Assessing postharvest risks for *Salmonella* in pistachios

- Project Goal
  - To develop a risk assessment model for postharvest pistachio processing that could be used to inform food safety risk-reduction strategies for the pistachio industry.

Pistachio Processing Flow Chart

Receiving

Pre-cleaner

Huller (peeler)

Float Tank

Dryer

Sinkers

Silo

Dryer

Floaters

Silo

How were goals accomplished?

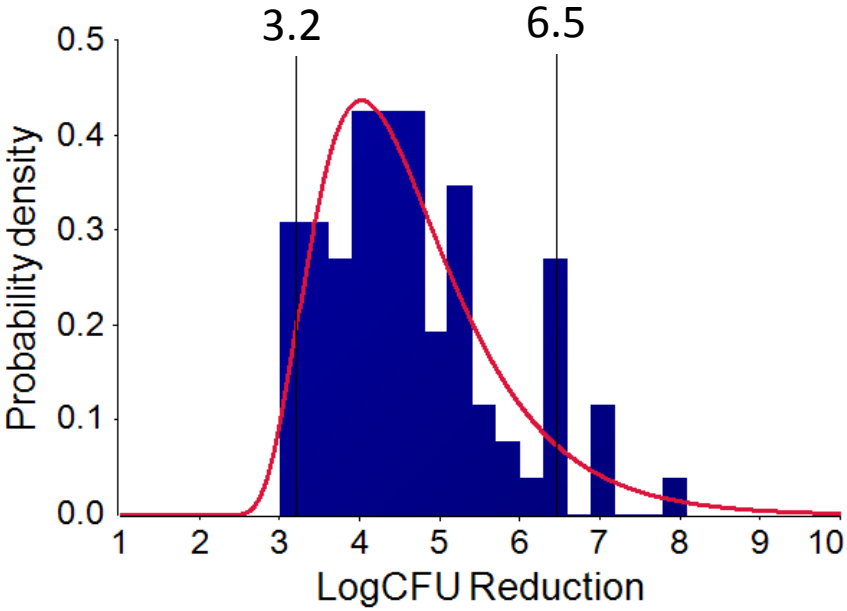
Access

Pistachio Industry

Advice

Assistance

Industry Data
Pooled Blinded
Modeled

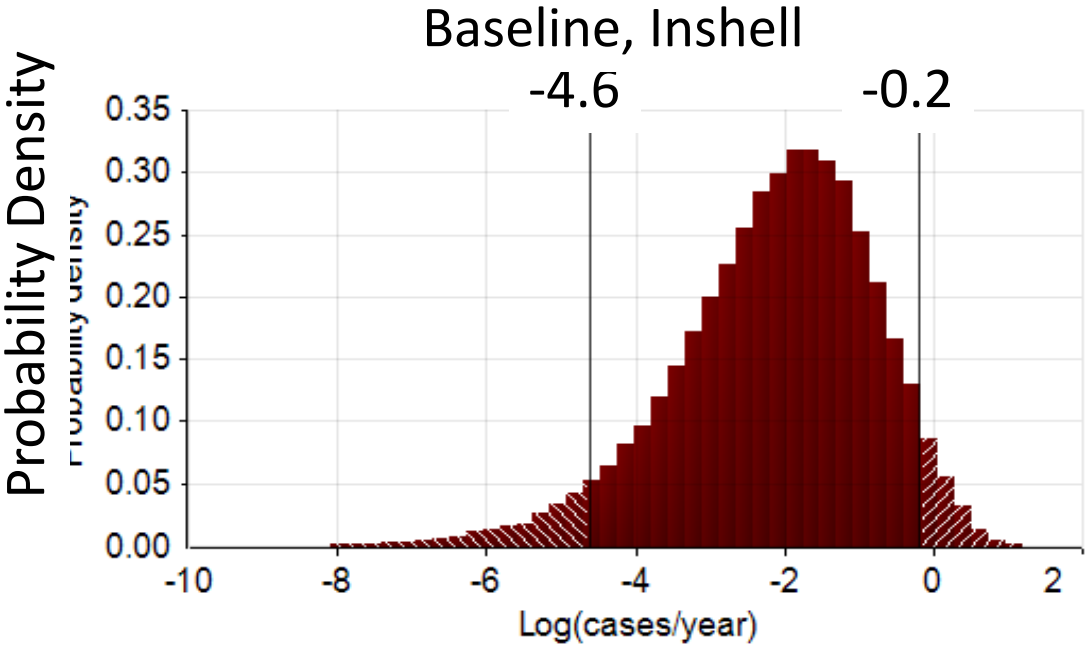


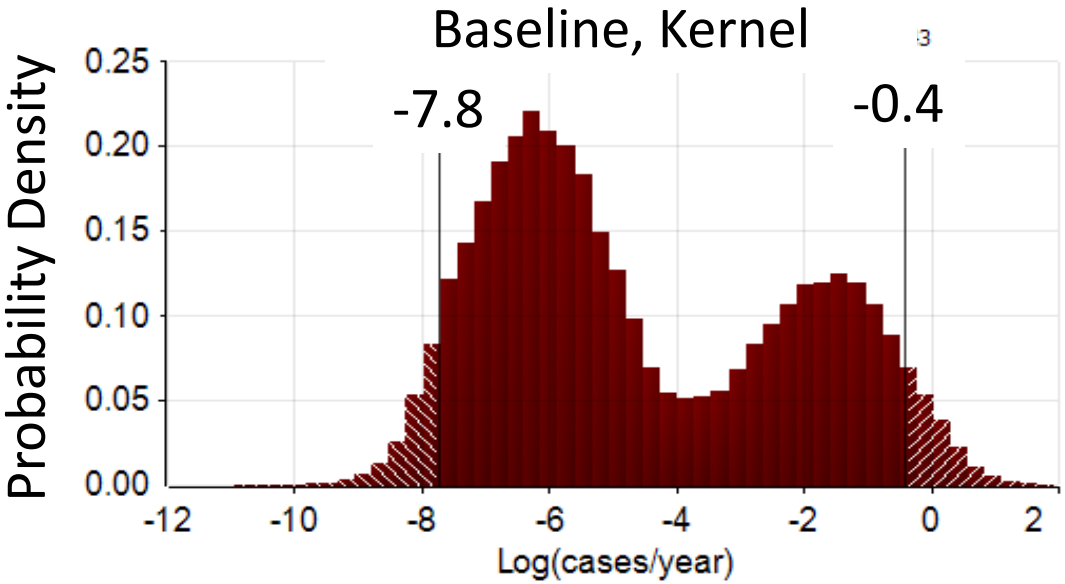
New Data Generated
Data from Survey
Almond Risk Assessment
Published Data

RiskLognorm(2.61,1.13, RiskShift(2.02))

Model in @Risk

Output

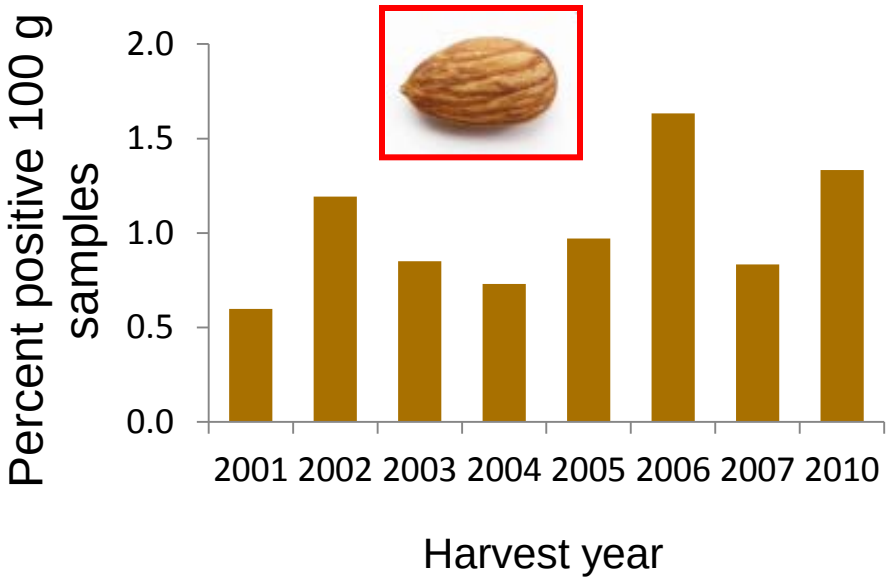




Recommendations Example: Time

Data Gaps Identified

Prevalence



Source

Sources and mechanisms of transfer of *Salmonella* in the production and postharvest tree nut environment 2012-2013

Funding:

- Center for Produce Safety, Specialty Crop Block Grant Program, Almond Board of California, Pistachio Research Board

Co-PI:

- Dr. Michele Jay-Russell, UC Davis

Industry Partners:

- Bob Klein, Administrative Committee for Pistachios
- Tim Birmingham, Almond Board of California

Distribution of *Salmonella* in pistachios and development of effective sampling strategies 2012 -2013

Funding:

- Center for Produce Safety, Specialty Crop Block Grant Program, Pistachio Research Board

Co-PI:

- Dr. Robert Atwill, UC Davis

Industry Partners:

- Bob Klein, Administrative Committee for Pistachios
- Dried Fruit and Nut Association

Distribution

Salmonella

Questions?