

# Food Safety in the US: Are we doing enough?

**The Jack In the Box and Peanut Corporation of America case**

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# Presenter

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# INTRODUCTION TO FOOD SAFETY IN THE US



- ▶ 1785 Massachusetts Act Against Selling Unwholesome Provisions
- ▶ 1862 -President Abraham Lincoln formed the U.S. Department of Agriculture (USDA) and appointed chemist Charles M. Wetherill to lead the Division of Chemistry, which would become the Bureau of Chemistry in 1901 and the Food and Drug Administration in 1930
- ▶ 1906 – Pure Food and Drug Act & Meat Inspection Act
- ▶ 1938 – Federal Food, Drug, and Cosmetic (FD&C) Act
- ▶ 1958 – Food Additives Amendment & GRAS List
- ▶ 1969 – Creation of FDA's Good Manufacturing Practices (GMPs)
- ▶ 1973 – First FDA Regulations on Low-Acid Canned Foods



# INTRODUCTION TO FOOD SAFETY IN THE US

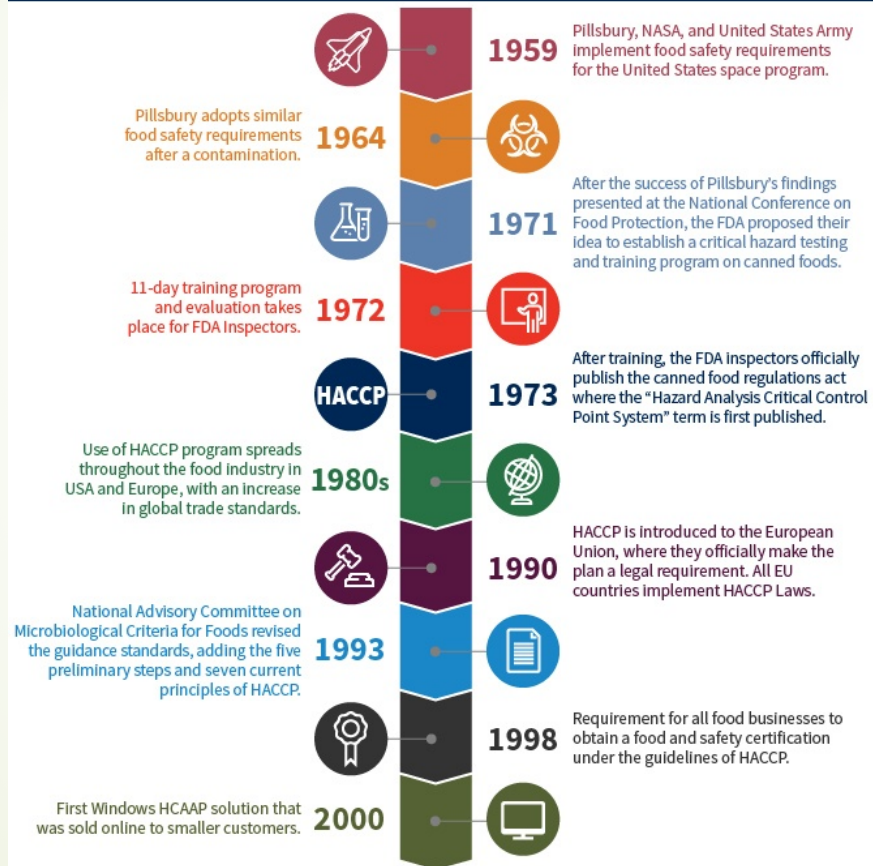
- ▶ 1993 – Jack in the Box E. coli Outbreak
- ▶ 1994 – USDA Declares E. coli O157:H7 an Adulterant
- ▶ 1996 – USDA's Pathogen Reduction/HACCP Rule
- ▶ 2002 – Public Health Security and Bioterrorism Preparedness Act
- ▶ 2011 – Food Safety Modernization Act (FSMA)
- ▶ 2016 – Implementation of FSMA's Foreign Supplier Verification Program (FSVP)



FDA FOOD SAFETY  
MODERNIZATION ACT

# Hazard Analysis Critical Control Point

## THE HISTORY OF HACCP



# Hazard Analysis Critical Control Point



# GROUNDBREAKING CASES OF FOOD SAFETY ISSUES IN THE US



- Several major foodborne illness outbreaks in the U.S. have led to significant reforms in the food industry
- The 1906 Meat Inspection Act and Pure Food and Drug Act: Unsanitary conditions in the meatpacking industry
- The 1993 Jack in the Box E.coli Outbreak:
  - Pathogen: Escherichia coli O157:H7
  - Impact: 732 people became ill, 178 suffered permanent kidney and brain damage, and four children died
- 2006 Dole Spinach E. coli Outbreak
  - Pathogen: Escherichia coli O157:H7
  - Impact: 205 illnesses, 31 cases of hemolytic uremic syndrome, and three deaths.

# GROUNDBREAKING CASES OF FOOD SAFETY ISSUES IN THE US



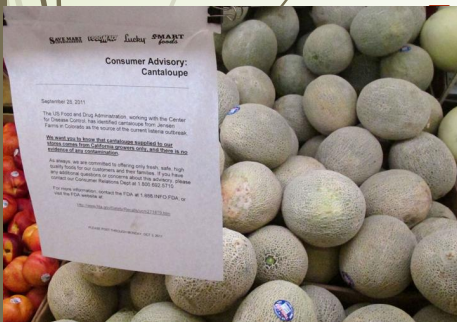
- The 2008-2009 Peanut Corporation of America Salmonella Outbreak
  - Pathogen: Salmonella Typhimurium
  - Impact: 714 illnesses, nine deaths, and one of the largest food recalls in U.S. history.

## The 2011 Listeria Outbreak in Cantaloupes

- Pathogen: Listeria monocytogenes
- Impact: 147 illnesses, 33 deaths, and one miscarriage, making it one of the deadliest foodborne illness outbreaks in U.S. history.

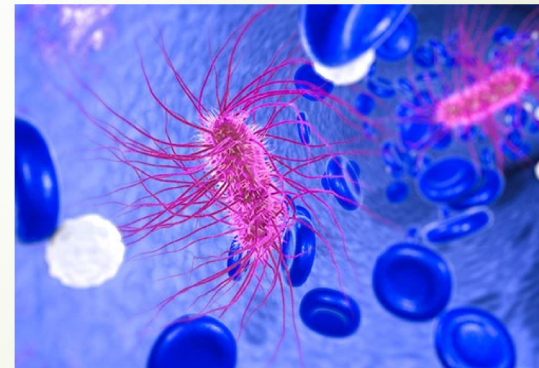
## The 2018 Romaine Lettuce E. coli Outbreak

- Pathogen: Escherichia coli O157:H7
- Impact: 210 illnesses, 96 hospitalizations, and five deaths.



# JACK IN THE BOX-BACKGROUND

- ▶ The 1993 Jack in the Box E.coli Outbreak:
  - ▶ Pathogen: Escherichia coli O157:H7
  - ▶ Location: Western U.S. (Washington, California, Nevada, Idaho)
  - ▶ Impact:
    - ▶ 732 people became ill
    - ▶ 178 suffered severe complications (kidney failure, brain damage)
    - ▶ 4 children died





# JACK IN THE BOX-BACKGROUND

- Detection Timeline:
  - Early January 1993 – Doctors in Seattle reported several cases of severe foodborne illness, particularly among children, with symptoms of bloody diarrhea and kidney failure.
  - Washington State Health Department Investigation – Officials analyzed patient interviews and found a common factor: many had recently eaten hamburgers from Jack in the Box
  - Laboratory Confirmation – Stool samples confirmed the presence of E. coli O157:H7, a dangerous strain of bacteria.
  - Expanding the Investigation – As reports of illness spread to California, Nevada, and Idaho, public health officials traced the contaminated meat back to a California slaughterhouse that had supplied beef to Jack in the Box.

# JACK IN THE BOX-ROOT CAUSE ANALYSIS

- Key Takeaways from the Root Cause Analysis:

- The beef supply chain was contaminated before it reached restaurants.

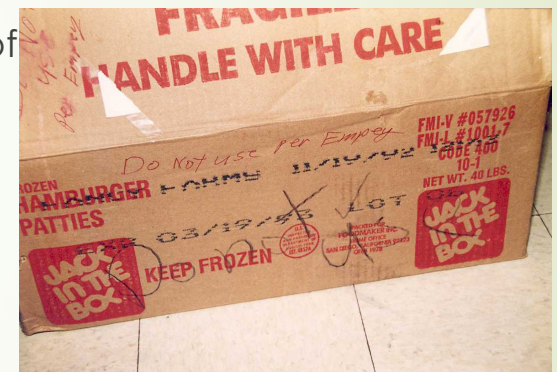
Jack in the Box used an outdated cooking temperature, failing to kill E. coli.

- The outbreak was linked to a failure to cook beef to the USDA-recommended temperature (155°F), as the company followed an outdated standard (140°F).
- Regulations did not require beef suppliers to test for E. coli O157:H7.
- Undercooked hamburgers contaminated with E. coli O157:H7 were served at Jack in the Box locations.
- Weak food safety policies and lack of training contributed to the outbreak.



# JACK IN THE BOX-IMMEDIATE RESPONSE AND RECALL EXECUTION

- Public Response:
  - By late January, Jack in the Box issued a recall of all contaminated beef.
  - The outbreak received nationwide media attention, putting pressure on the USDA to tighten food safety regulations.
  - Jack in the Box recalled approximately 272,000 pounds of ground beef after the 1993 E. coli O157:H7 outbreak was traced back to contaminated meat supplied to its restaurants.



# JACK IN THE BOX-IMMEDIATE RESPONSE AND RECALL EXECUTION

- The recall was one of the largest in U.S. history at the time and affected restaurants in four states: Washington, California, Nevada, and Idaho.
- The 1993 E. coli outbreak nearly destroyed Jack in the Box, but it also forced the company and the entire fast-food industry to prioritize food safety. Today, it is recognized as a leader in food safety standards, having learned from its past failures.



# JACK IN THE BOX-LESSONS LEARNED AND INDUSTRY IMPACT



- USDA declared E. coli O157:H7 an adulterant in ground beef.
- Led to mandatory HACCP (Hazard Analysis and Critical Control Points) systems in meat and poultry plants.
- Strengthened food safety protocols and consumer awareness about cooking temperatures. The Food and Drug Administration (FDA) increased the recommended internal temperature for cooked hamburgers from 140°F to 155°F.

Temp	TIME
140°F (60°C)	27.5 minutes
145°F (63°C)	9.2 minutes
150°F (66°C)	2.8 minutes
155°F (68°C)	47.7 seconds
160°F (71°C)	14.8 seconds
165°F (74°C)	Instant

# JACK IN THE BOX-LESSONS LEARNED AND INDUSTRY IMPACT



- ▶ The USDA's Food Safety and Inspection Service (FSIS) introduced safe food-handling labels for packaged raw meat and poultry retailed in supermarkets.
- ▶ The FSIS introduced testing for E. coli O157:H7 in ground meat.
- ▶ The Jack in the Box recall was one of the most significant food recalls in U.S. history, demonstrating the importance of rapid response, clear communication, and stronger food safety policies to prevent future outbreaks.

# PEANUT CORPORATION OF AMERICA- BACKGROUND

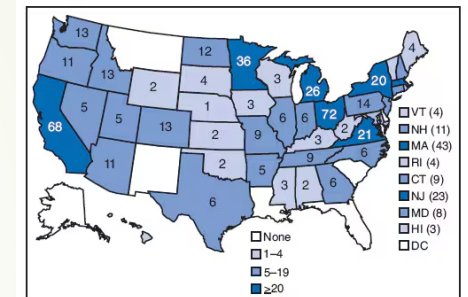
- ▶ The 2008-2009 Peanut Corporation of America Salmonella
  - ▶ Pathogen: Salmonella Typhimurium
  - ▶ Location: Nationwide (U.S.)
  - ▶ Impact: 714 confirmed illnesses across 46 states
  - ▶ 9 deaths
  - ▶ Massive recall of over 3,900 peanut-containing products from major brands like Kellogg's and Nestlé



# PEANUT CORPORATION OF AMERICA- BACKGROUND

- In late 2008, health officials noticed a rise in *Salmonella* Typhimurium infections nationwide.
- Typical symptoms include: Diarrhea (sometimes bloody), abdominal cramps, nausea, vomiting, Fever, chills, headache, muscle aches, fatigue
- Epidemiologists traced the outbreak to peanut butter and peanut paste used in processed foods (e.g., crackers, granola bars, pet treats).
- The CDC and FDA linked the contamination to PCA's processing facilities, leading to an urgent recall.

FIGURE 1. Number of laboratory-confirmed cases (N = 529)\* of *Salmonella* Typhimurium infection with the outbreak strain associated with peanut butter and peanut butter-containing products — United States, 2008–2009



\* Cases reported as of January 28, 2009. Cases reported in the previous 3 weeks might not yet be reported.



# PEANUT CORPORATION OF AMERICA- ROOT CAUSE ANALYSIS

- ▶ The Peanut Corporation of America (PCA) knowingly shipped contaminated peanut products from its Georgia and Texas processing plants.
- ▶ Investigators found unsanitary conditions, including:
  - ▶ Roaches, mold, and leaking roofs
  - ▶ Salmonella-contaminated equipment
  - ▶ Evidence that PCA falsified lab test results, shipping products even after Salmonella was detected.

# PEANUT CORPORATION OF AMERICA- ROOT CAUSE ANALYSIS

- ▶ <https://youtu.be/87dkTVH-qRg?si=ff-H9TaryvUZBqKY>





# PEANUT CORPORATION OF AMERICA- IMMEDIATE RESPONSE AND RECALL EXECUTION

- ▶ 1. Initial Denial & Continued Operations
  - ▶ PCA continued shipping products even after internal tests showed Salmonella contamination.
  - ▶ Internal emails later revealed that PCA's CEO, Stewart Parnell, ordered shipments despite positive Salmonella tests, saying: "Just ship it."
  
- ▶ 2. Product Recalls (January 2009)
  - ▶ Under FDA pressure, PCA issued a limited recall of peanut butter and peanut paste in early January 2009.
  - ▶ As more illnesses were linked to PCA products, the recall expanded to over 3,900 products from major brands like Kellogg's, Nestlé, and General Mills.



# PEANUT CORPORATION OF AMERICA- IMMEDIATE RESPONSE AND RECALL EXECUTION


- ▶ 3. FDA Investigation & Shutdown
  - ▶ The FDA inspected PCA's Georgia plant and found:
    - ▶ Unsanitary conditions (mold, rat droppings, leaky roof).
    - ▶ Records of falsified lab results—PCA had knowingly shipped contaminated products.
  - ▶ FDA doesn't even know of Plainview Texas.
  - ▶ PCA shut down operations in early 2009 and filed for bankruptcy by February.
  
- ▶ 4. Legal & Public Backlash
  - ▶ As evidence of criminal negligence emerged, PCA's CEO and executives faced criminal charges.
  - ▶ Stewart Parnell was sentenced to 28 years in prison, the harshest food safety-related sentence in U.S. history.

# PEANUT CORPORATION OF AMERICA- LESSONS LEARNED AND INDUSTRY IMPACT

- ▶ Largest peanut product recall in U.S. history (over 3,900 products).
- ▶ Peanut Corporation of America shut down and filed for bankruptcy.

PCA's executives were criminally prosecuted—CEO Stewart Parnell was sentenced to 28 years in prison for knowingly selling tainted food.

- ▶ Led to the Food Safety Modernization Act (FSMA) in 2011, giving the FDA more power to prevent foodborne illnesses rather than just reacting to them.



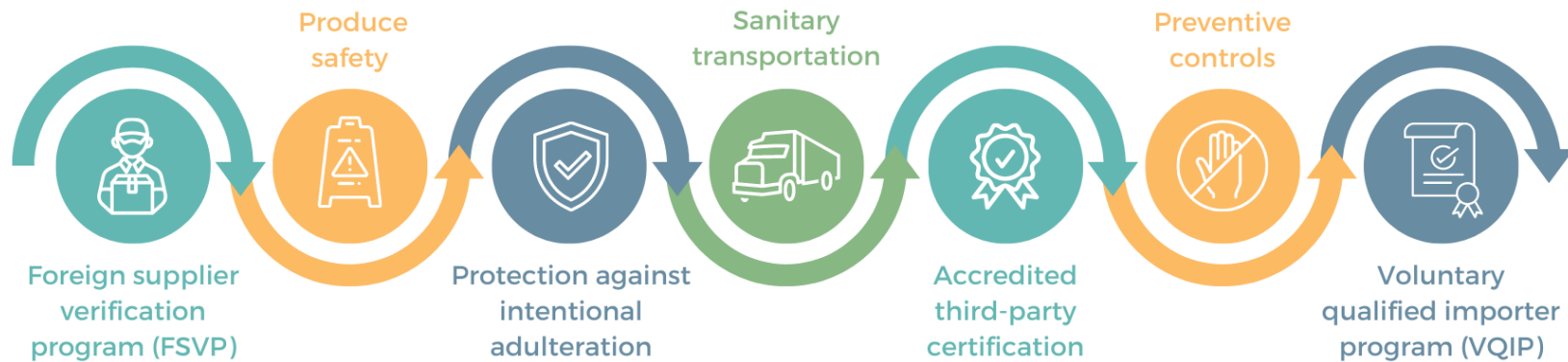
Appeal  
**DENIED**  
Sentences stand  
for peanut execs  
in deadly outbreak

# CONCLUSIONS

- FSMA Food Safety Modernization Act signed into law on January 4, 2011



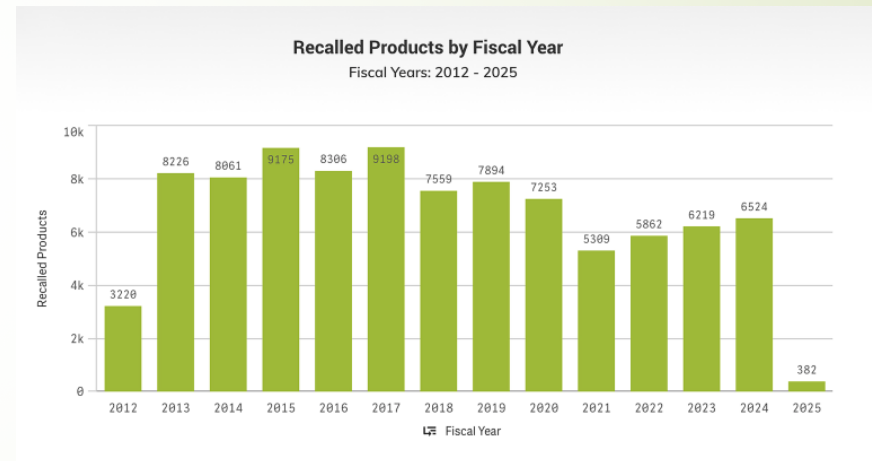
## The 7 FSMA Rules



# Conclusions

## Impact of FSMA on Food Safety:

- Decrease in Recalls: Many food recalls are now caught before products reach consumers due to better preventive measures.
- Better Supply Chain Oversight: Companies must document safety measures, increasing accountability.
- Fewer Outbreaks: Some foodborne illness outbreaks (e.g., Listeria and Salmonella) have decreased due to stricter controls.
- However, challenges remain, such as enforcement gaps, small business compliance costs, and emerging food safety risks.





# Future Challenges



- ▶ **Key challenges of FSMA:**

- ▶ **Complexity and Understanding:**

- ▶ The intricate nature of FSMA regulations can be difficult for smaller food producers to navigate, leading to confusion about which rules apply to them and how to comply effectively.

- ▶ **Cost of Compliance:**

- ▶ Implementing necessary changes to meet FSMA standards can be costly for businesses, particularly for smaller operations, requiring investments in new equipment, training, and record-keeping systems.

- ▶ **Limited Enforcement Capacity:**

- ▶ The FDA may struggle to adequately monitor and enforce compliance across all food producers due to resource constraints, particularly for smaller businesses with less oversight.



# Future Challenges

- ▶ **International Challenges:**


- ▶ Ensuring compliance for imported foods can be complex, requiring robust verification systems and collaboration with foreign regulatory agencies.

- ▶ **Traceability Issues:**

- ▶ Implementing effective traceability systems to rapidly identify and remove contaminated products can be challenging, especially for complex food supply chains.

- ▶ **Small Business Exemptions:**

- ▶ While some small businesses may be exempt from certain FSMA rules, this can still create confusion regarding compliance requirements and potential risks.



Q&A



Thank you



## Relevant Links

- The International Outbreak Museum
- <https://www.outbreakmuseum.com/salmonella/peanut-corporation-of-america-pca/>
- <https://www.today.com/health/recall/food-recalls-2024-rcna177622>