Economic and Business Incentives and the Production of Safer Foods

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Presented at 2010 Annual Education Conference of the Texas Public Health Association,
South Padre Island, April 21, 2010

AGRIBUSINESS, FOOD, AND CONSUMER ECONOMICS RESEARCH CENTER



Research presented here was funded in part by a cooperative agreement with the Economic Research Service, U.S. Department of Agriculture.





Agribusiness, Food, and Consumer Economics Research Center

From the fields of producers...to the plates of consumers.

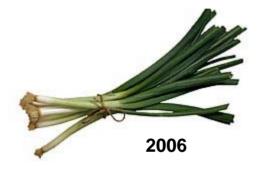
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Through research, educational programs, and industry collaboration, we wish to be the leading institution in addressing issues dealing with the U.S. food and fiber sector.

Food Safety Concerns

In the news:







2006











2008



2007, 2009

Impact on Public Health and the Economy

- Estimated 6.5 million 33 million foodborne illnesses per year, result in more than 9,000 deaths Foegeding and Roberts (1994)

See also the Economic Research Service's (US Dept. of Agric.) cost of illness calculator. http://ers.usda.gov/data/Foodborneillness/

Buzby, J.C., and T. Roberts. 1997. "Guillain-Barr'e Syndrome Increases Foodborne Disease Costs." *Food Review* 20:36–42.

Foegeding, P.M., and T. Roberts. 1994. *Foodborne Pathogens: Risks and Consequence*. Ames, IA: Council for Agricultural Science and Technology, Task Force Report No. 122, September.

What is the Appropriate Response?

Private sector response

- Assurance via process control and certification
- "Voluntary" product recall
- Contracts over tests or processes
- Legal liability system: Civil and criminal law

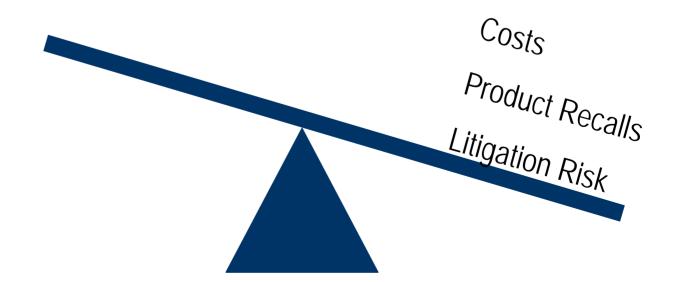
Public sector response

- Mandatory HACCP (process control)
- Mandatory pathogen reduction (testing/inspection)
- Mandatory inspection (meat, poultry, egg, catfish)

Incentives of Food Industry Managers

Goals:

Low Costs
Absence of Product Recalls
Freedom from Litigation Risk



Incentives of Food Industry Managers

Goals:

Maximized Profit
High Customer Satisfaction



Food Industry Incentives for Investing in Prevention

Industry is heavily invested in healthful image of certain foods, particularly brands.



Do investments in reputation enhance incentives for prevention? Or, does a reputation create moral hazard, like insurance?

Market Failure and the Rationale for Government Action

Economics reasoning for government involvement:

Buyers cannot identify safety characteristics "Credence goods"

Therefore, we cannot depend on the market alone to price the risks of contamination, and balance safety risks against the benefits of lower priced food.

Process Verification vs. Inspection

- Philosophy Management can most efficiently identify firm-specific controls and execute the critical steps.
 - Oversight from the government is simply to check that processes are in place and being undertaken.
- The alternative *inspection*.
 - Testing is a key feature of an inspectionoriented form of regulation. Increasingly being adopted throughout industry.

Transactions Costs Economics

- Some values cannot be priced in the market.
- Institutions and management routines arise to reduce, internalize, or shift transactions costs
 - With those institutions or routines, an exchange is possible.
 - Without institutions/routines, high transactions costs simply interrupt commerce and all beneficial gains from trade will be lost.
 - Examples: 3rd party certification, traceability systems

Third-Party Certification Agencies

- A trusted party with expertise to validate that safety practices used in a firm are acceptable.
- Reduces transactions costs
 - Costs are internalized.
 - It's now a predictable cost of doing business
 - Internal benefits (not always)
 - Process control and audit sometimes identify cost savings
 - But without these audits and approvals, the company would lose market access

Attacks on Third-Party Certification Agencies

- A trusted party with expertise, or an outsider who can be bought?
- Government, industry, and media are now scrutinizing very carefully since problems at Peanut Corp. of America.
- It's worth studying what institution can replace these bodies.

Traceability

- May become a routine that enhances trust
- Potential side benefits from customer service or loss prevention
- Right now, many in industry see mandated traceability as a black hole for costs
 - Especially a rule for 24 hr traceback, at the case level

Risk Analysis Framework for Government Action

- Cost-benefit analysis is required for any Federal laws or regulations related to food safety:
 - Benefits of preventing possible illness and death.
 - Probabilistic risk assessments about illness.
 - Costs of control are known with more certainty.
- Slow, deliberative process
 - Science-based.
 - Public comment (Federal Register).
 - Revisions and final report.

Cost-Benefit Model of Pistachio Marketing Order

Dr. Daniel Sumner, University of California-Davis, presented a cost-benefit analysis based on a simulation model.

"Expected benefitsare an increase in consumer confidence in pistachios as a result of aflatoxin regulation, and the combined increases in consumer demand for pistachios due to mandatory USDA regulation and stringent quality standards."

Cost estimate: one half cent per pound

California Leafy Greens

- Leafy Greens Marketing Agreement (LGMA) est. spring 2007
- 120 handlers representing approximately 99% of the volume of California lettuce, spinach and other leafy greens signed.
- Requirements: Expanded good agricultural management practices (GAPs).
- Costs (according to a survey of members):
 - Prior to LGMA, expenditures \$210,000 annually on food safety and promotions per firm; total investment of \$24 million.
 - After the LGMA, annual spending per member increased to \$604,000 with a projected investment across the LGMA of \$71 million, a 201% increase.
 - Compliance Audit function of the LGMA accounts for over \$2 million or 75% of the expenses, including development of an online database for tracking, a compliance office and outside consulting fees.

Balancing Act—Tipping toward More / Different Regulation?

- Industry consensus for tighter regulation and accountability within the food system (evidenced by David Mackay, CEO and President of the Kellogg Company, testimony to Congress on March 19, 2009).
- What might change?
 - Expect HACCP to become required for all food companies, by Federal law.
 - Grant Federal agencies the power to mandate product recall.
 - Create one food safety agency.

Or, tighter enforcement of existing law...

Thursday, October 5, 2006 (AP)

Companies could face criminal charges for tainted spinach

By PAUL ELIAS, Associated Press Writer (10-05) 00:32 PDT San Juan Bautista, Calif. (AP) –

The ongoing probe into the source of a nationwide *E. coli* outbreak linked to tainted spinach turned into a criminal investigation as federal agents [FBI] raided two Salinas Valley produce companies.

Summary

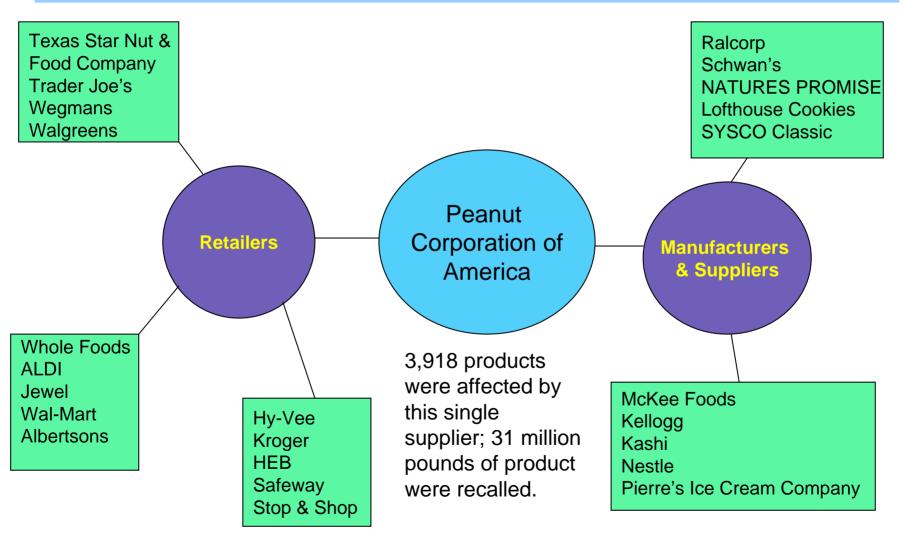
 Public health goals drive a costly food safety assurance system in the USA.

 There is an important role for economics in finding efficient ways to produce the desired health outcomes and balance them with other consumer benefits.

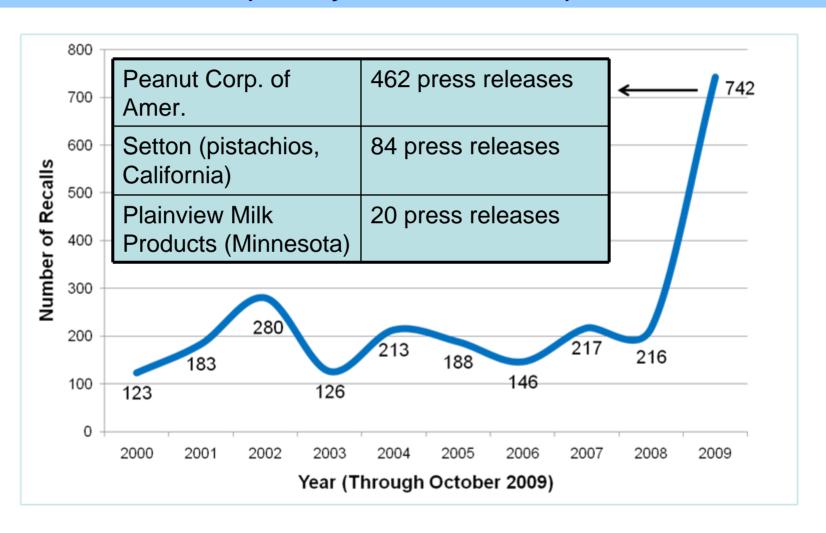
Public Health Impact of Peanut Corp. of America Contamination

- 8 deaths were reported in connection to the salmonella outbreak.
- 500 cases of salmonella poisoning, reported in 43 states, within one month of the PCA announcement.
 - More than half of these cases involved children.

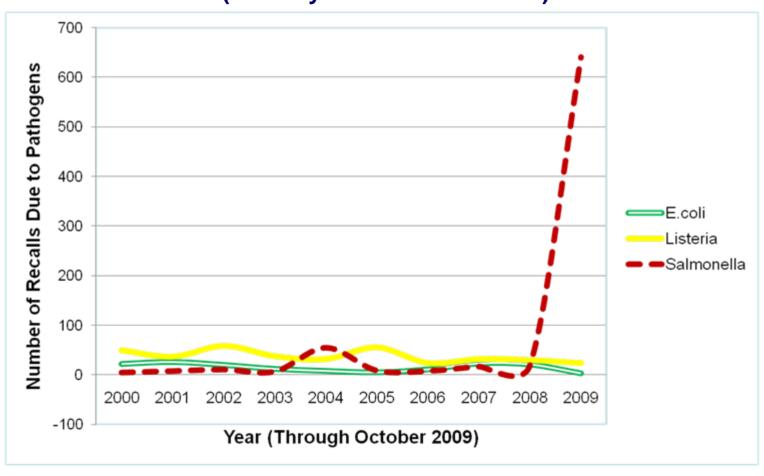
Companies Impacted by the PCA Recall, January 2009



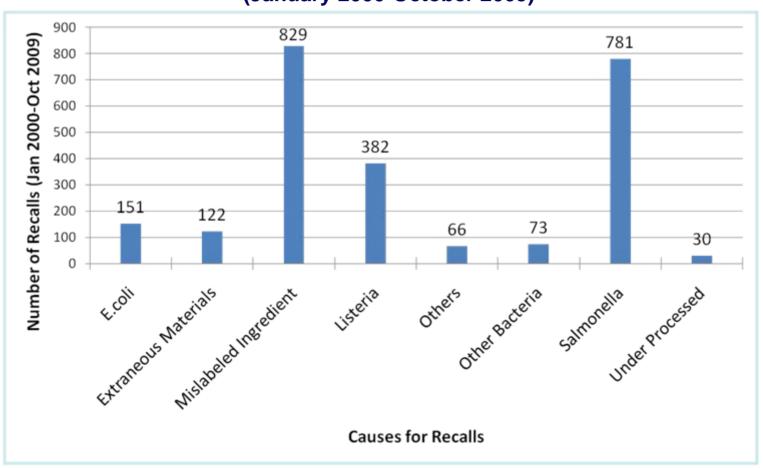
Food Product Recall Events by Year



Recall Occurrence Due to Specific Pathogens, USA

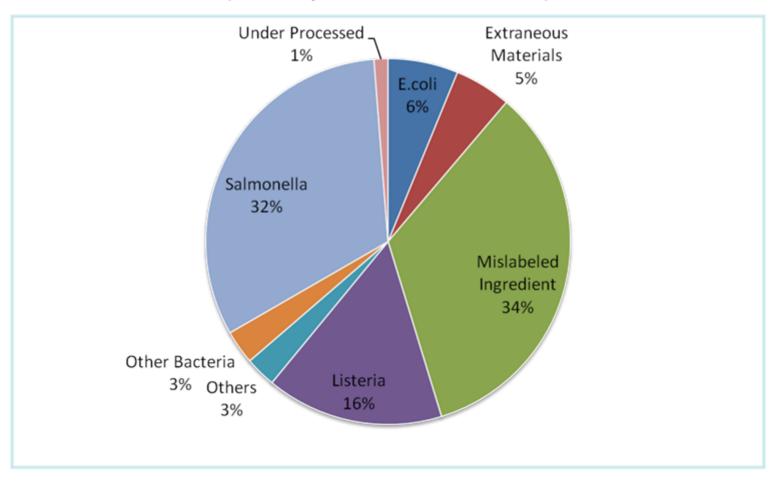


Frequency of Problems Associated with Food Recall Events



Total = 2,434 product recalls in 10 yrs

Problems Associated with Recall Events



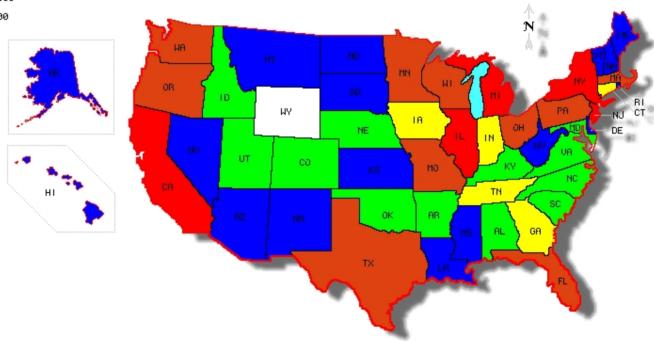
Recall Events per State

(January 2000-October 2009)

Recall Events Per State



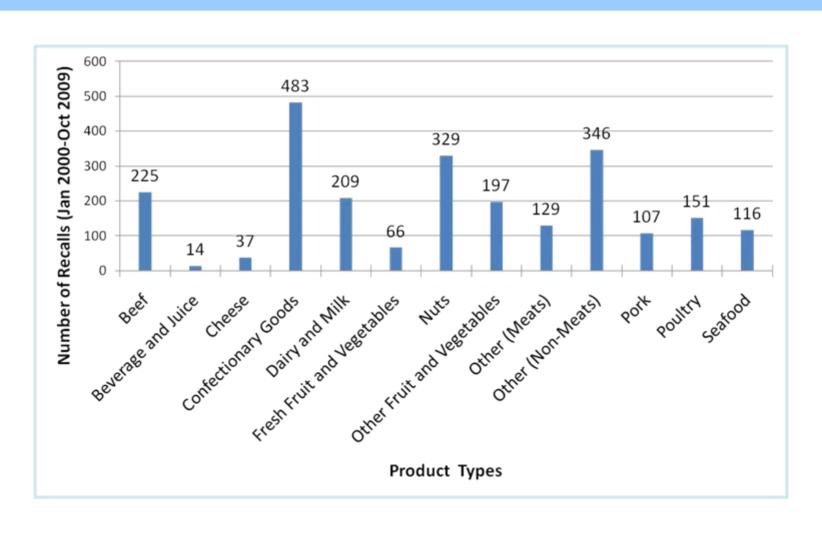
- 11-25
- 26-50
- 51-100
- -> 100



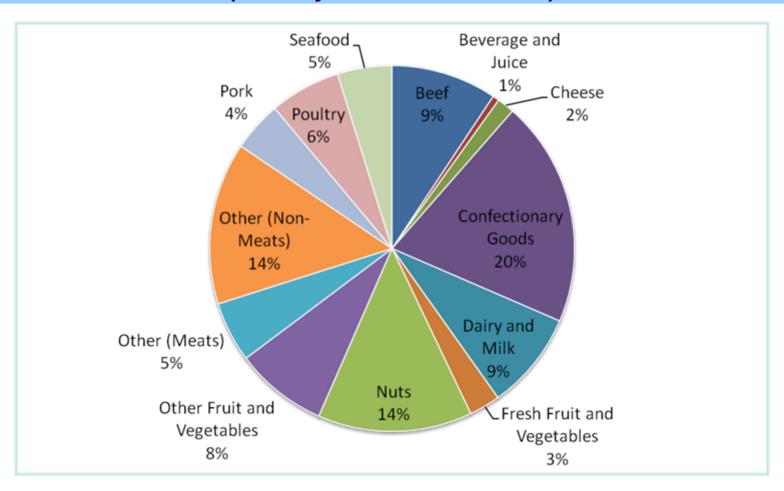
NOTES:

There are 75 missing observations. There are seven observations for Puerto Rico. There were no observations for Wyoming.

Frequency of Products Recalled, USA



Food Recalls by Product Type, USA



Thank you!

Questions and comments to v-salin@tamu.edu
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