

The Economics of Food Safety in the Produce Industry



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Introduction

- The US is the safest food supply in the world
 - Incidents in many agricultural sectors- especially processed foods
 - Fresh fruits and vegetable Industry perception
 - Recent produce industry outbreaks
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Introduction

- According to the CDC, more than **76 million** people *are affected*; and **5,000 die** as a result of *food poisoning every year*.
- The most common food-borne illnesses are *Campylobacter*, *Salmonella*, and *Escherichia Coli*
- *E. coli O157:H7* most common. (22 leafy green outbreaks in past 12 years) – all 22 indicated a *California source*



Health Costs of Foodborne illness

■ A recent study estimated total *health costs* of food safety outbreaks at **\$152 billion** in the U.S.

- Physician services
- Hospital services
- Medicines
- Quality of life losses
 - Deaths
 - Pain and suffering
 - Disabilities



This does not include agricultural losses

Health Costs of Foodborne illness

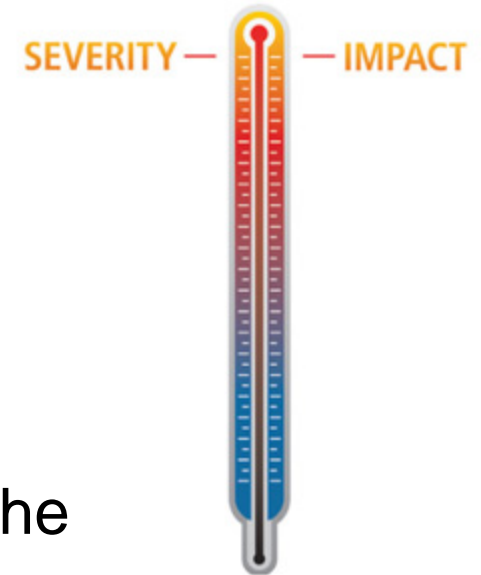
- From the total \$152 billion; \$39 billion attributed to produce industry outbreaks

- What about the cost to agriculture?



Consumer Response

- Consumers react to a food safety alert by immediately reducing consumption
- Unknown source, origin, etc.- shut down movements.
- Reduction in sales depends on severity of the outbreak:
 - Number of people affected
 - Number of deaths
 - Regional scope
 - Type of products
 - Origin
 - Length of outbreak



Consumer Response

- There are also longer term impacts on consumption
 - The entire supply chain may face legal liability
 - Longer term impacts may be several weeks, months or even years, depending on the severity of the outbreak
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Producer and handler costs

- Producer and handler costs were analyzed using three case studies:
 - Spinach Outbreak – September 2006
 - Cantaloupes – March 2008
 - Tomatoes – June 2008 (Jalapeno and Serrano peppers)
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Tomatoes

- Sales declined immediately as news spread that tomatoes in both US and Mexico were potentially implicated in *salmonella* food poisoning
 - Farm level loss in the US was estimated at \$25 million
 - Retail loss in the US - \$89 million
 - Canada increase sales of \$97 million, as consumption shifted from the US and Mexico
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Spinach

- Movements of spinach (domestic and imports) began to fall following the CDC identification of *E. Coli 0157:H7* in spinach
 - Farm level loss in U.S. spinach – estimated at \$12 million
 - Retail loss in the U.S. – over \$63 million
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Cantaloupes

- The *Salmonella* source was linked to a single firm in Honduras
 - Farm level loss in the U.S. was estimated – at \$5.8 million
 - Retailer loss in the U.S. – \$ 20.7 million
 - Farm level import losses were estimated at – \$23.7 with almost all to Honduras
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Compliance costs

- Information on compliance costs is scarce
 - Survey of LGMA – annual costs of compliance was **\$604,000** up from \$210,000 prior to the spinach outbreak of 2006
 - Potential losses of \$12 million (farm level) and \$63 million (retail) > cost of compliance
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Compliance costs

- Increase in compliance costs mainly to:
 - Third party audits
 - More staff dedicated to food safety issues
 - Mandatory water testing
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Alternatives to producers

- There are three alternative types of initiatives that we consider producers may adopt:
 - Individual Initiatives
 - Cooperative Initiatives
 - Public sector support
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Individual Initiatives

- Producers can take it upon themselves to comply or not with the set of standards
 - Large growers – fixed costs
 - Niche markets such as farmers markets or other direct marketing
 - Assurance the product is safe
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Cooperative Initiatives

- California Leafy Green producers is a good example
- Group of growers can use the LGMA as their guidelines or develop their own
- International growers should consider the guidelines setup by GlobalGap

<http://www.caleafygreens.ca.gov>

Public Sector Support

- The government can play a useful facilitating role
 - Work with producers to harmonize differing standards
 - Educational services – extension
 - Third party audit procedures
 - Technical assistance in establishing guidelines
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Summary

- The costs of compliance are much smaller than the economic losses following a food safety outbreak (emphasis on prevention)
 - A common set of standards would facilitate the design of produce safety guidelines
 - Guidelines must be commodity specific and also based on best available science
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