Emerging Food Safety Issues: What are the opportunities?

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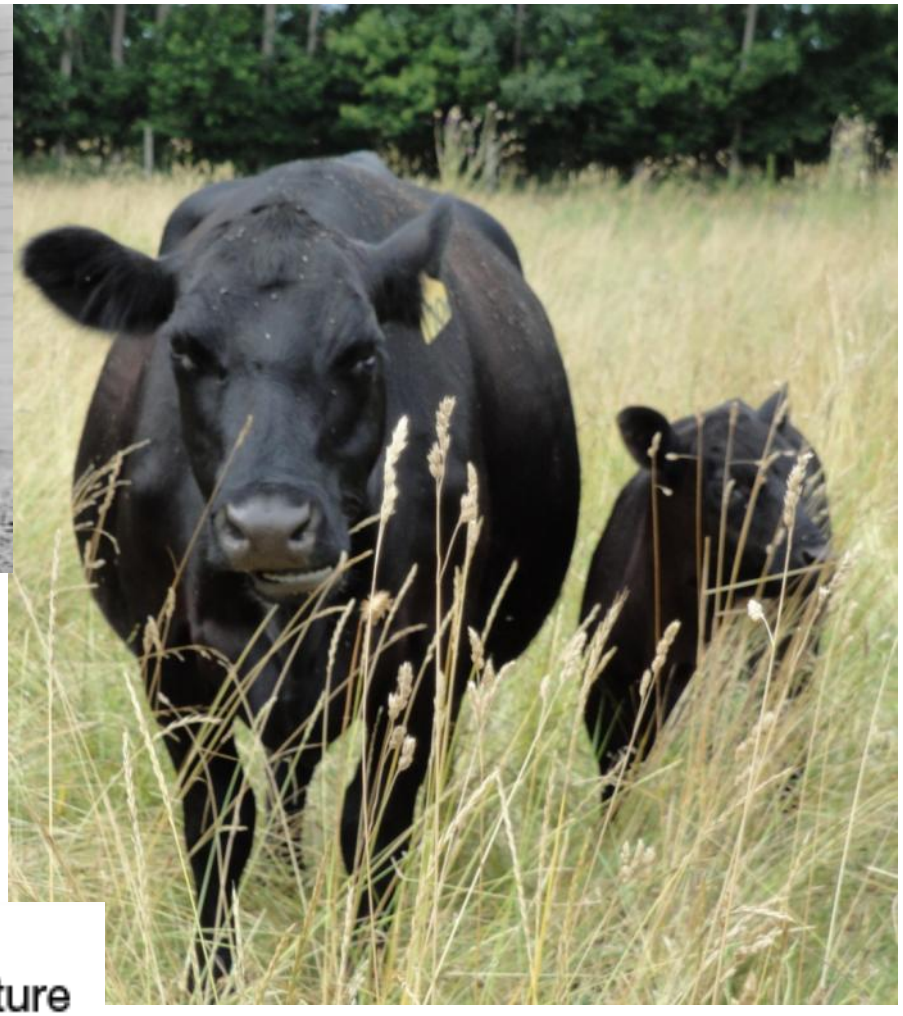
Program Info | Curriculum | Tuition and Fees | Admissions

Acknowledgements/Disclaimers

Oklahoma Historical Society



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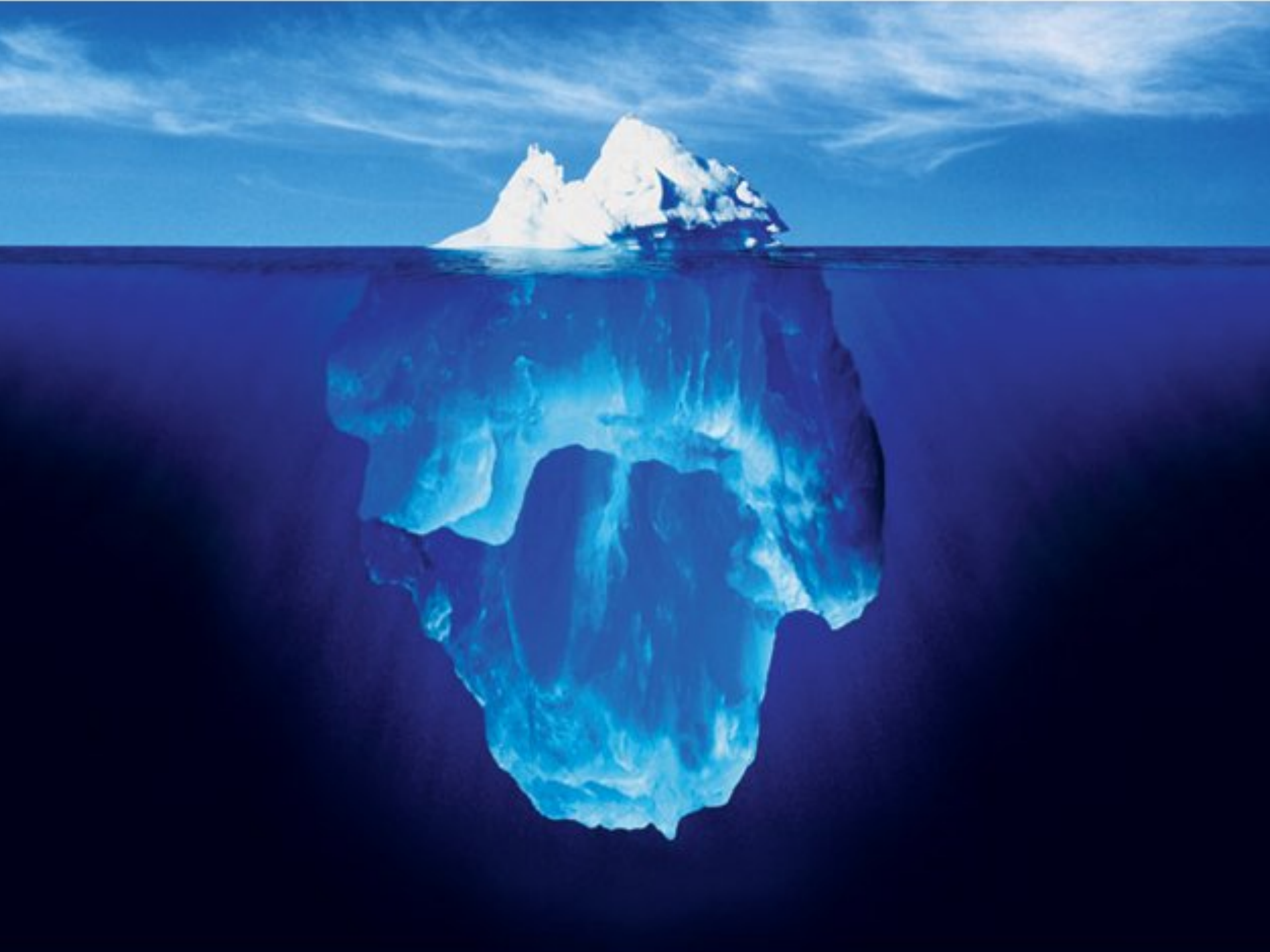
DEPARTMENT OF HEALTH & HUMAN SERVICES · USA ·

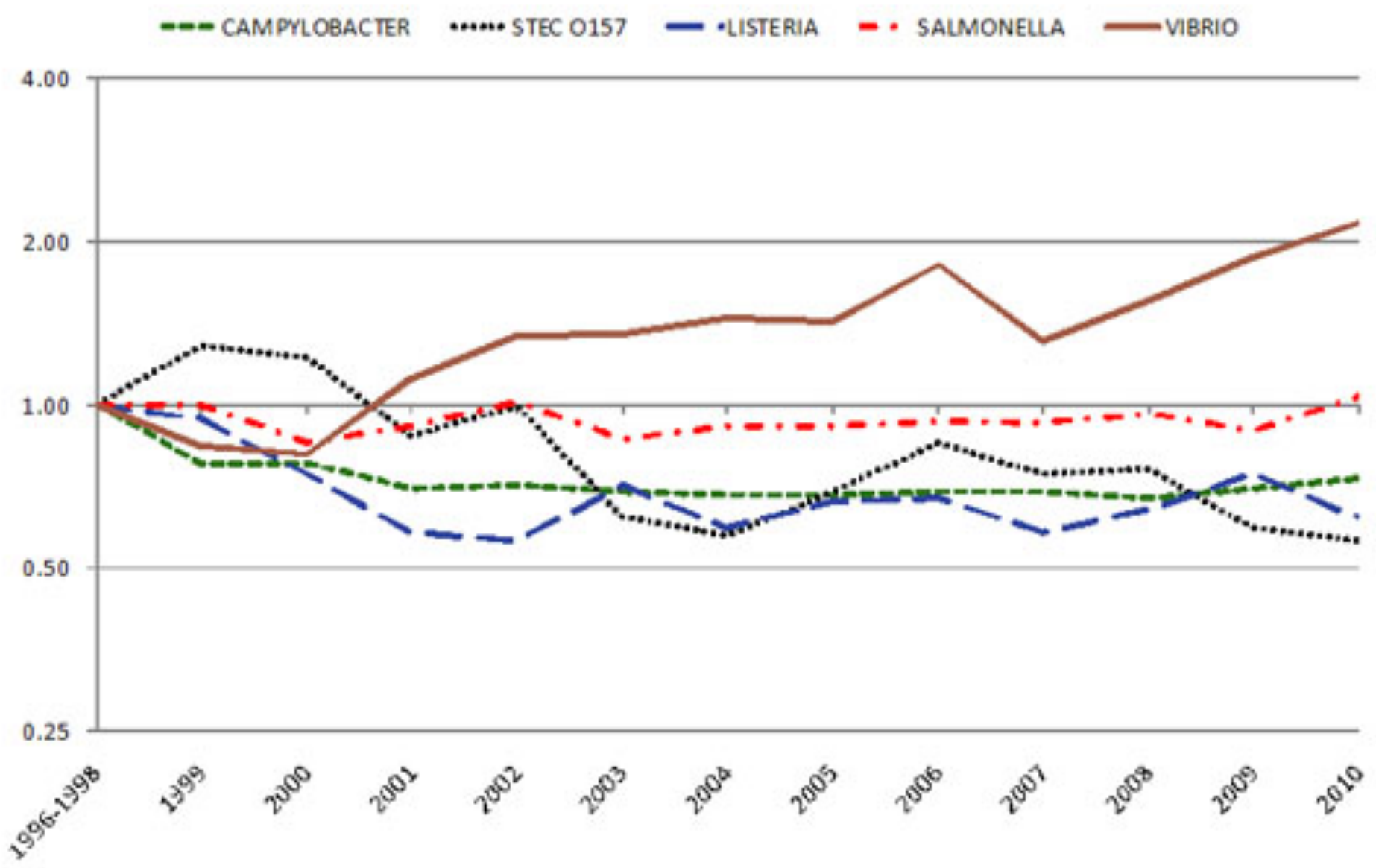
USDA United States Department of Agriculture
National Institute of Food and Agriculture



CDC Estimates of Foodborne Illness (Scallan *et al* 2011)

Illnesses	47.8 million
Hospitalizations	127,839
Deaths	3,037
US Population	313.6 million

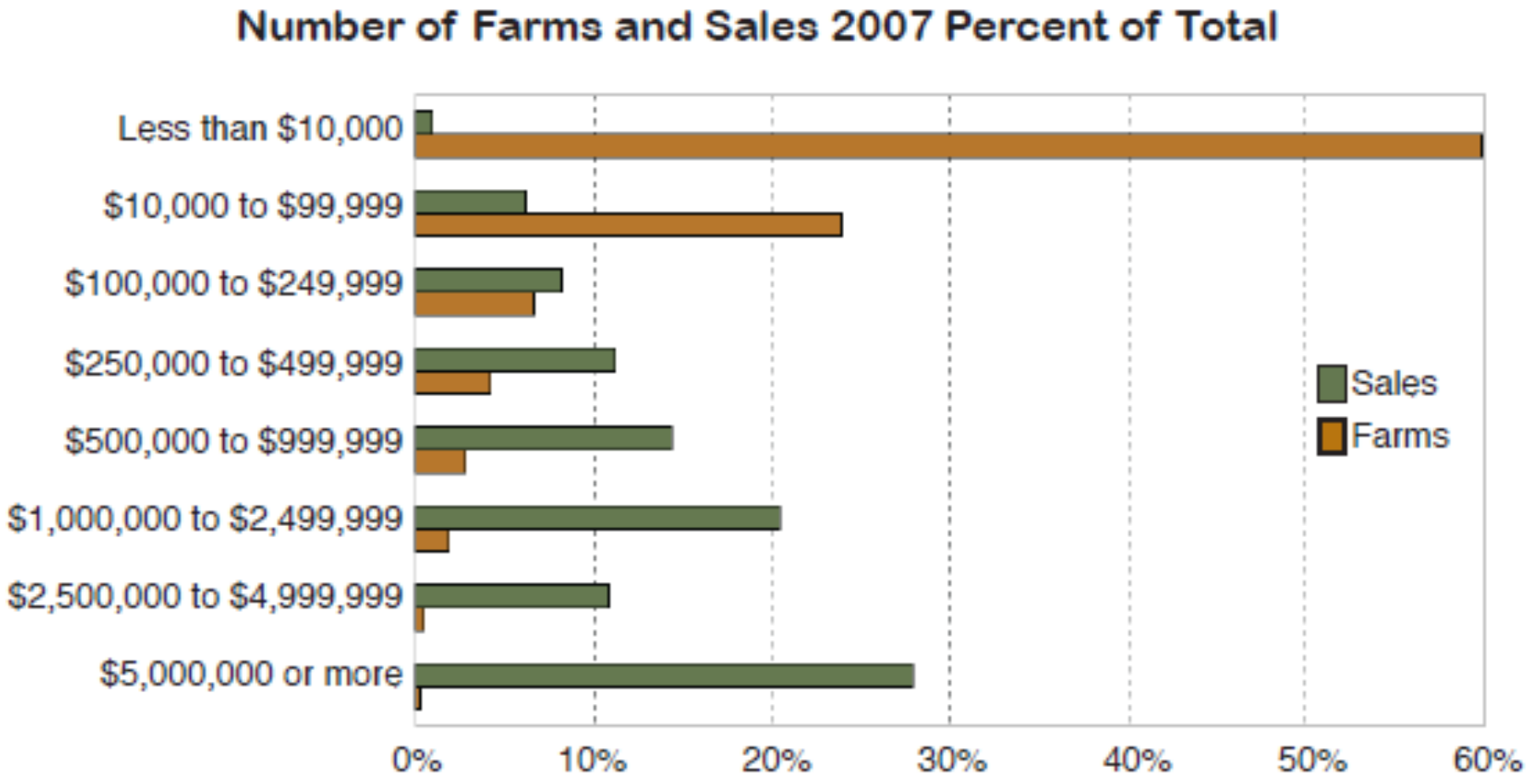
47.8/313.6=0.15 = ~1 in 7 people/year



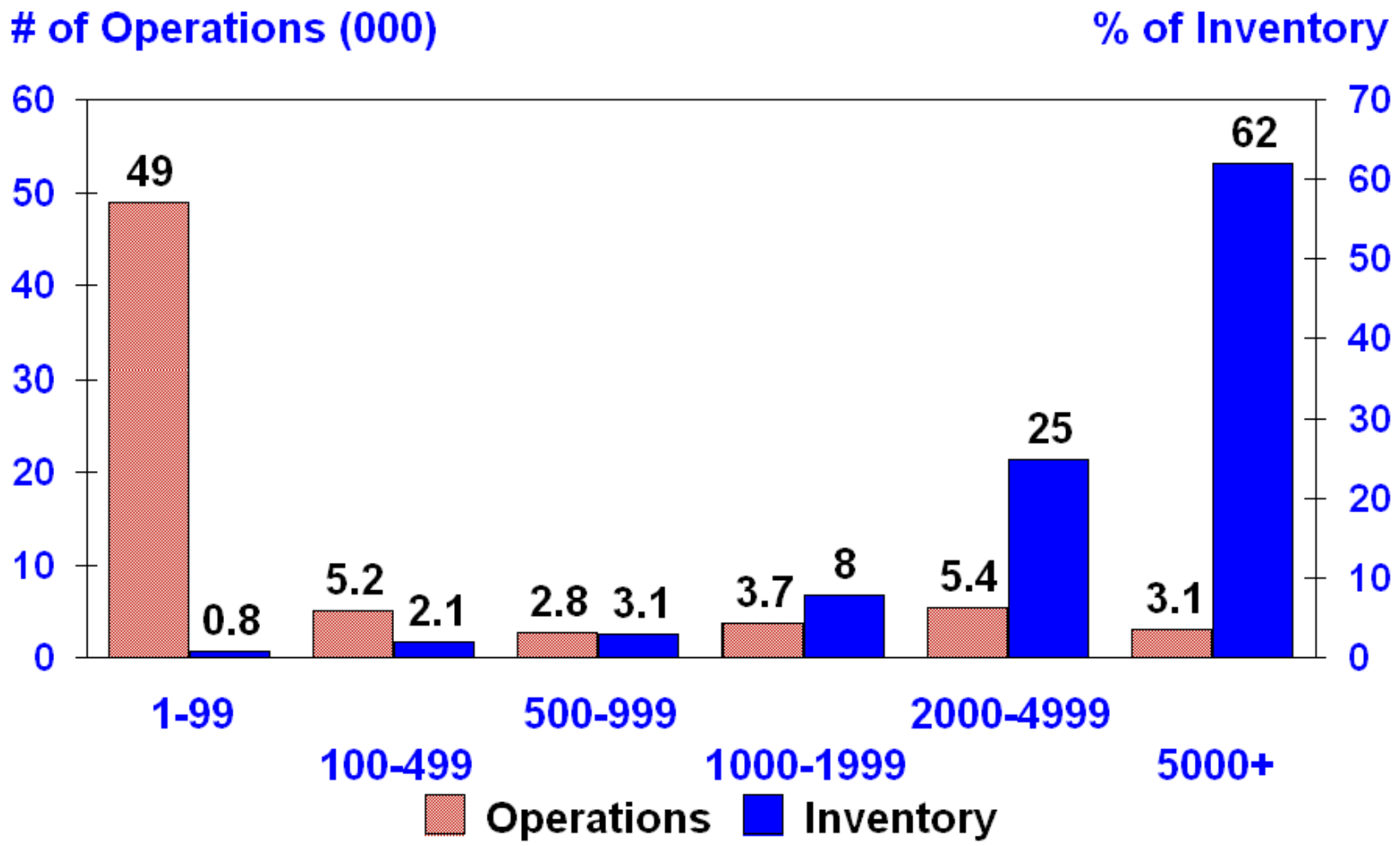
http://www.cdc.gov/foodborneburden/trends-in-foodborne-illness.html

Outline

- Food industry structure
- Emerging Food Safety Issues
- Impacts
- Opportunity!


Number of Farms and Sales 2007 Percent of Total
Less than $10,000
$10,000 to $99,999
$100,000 to $249,999
$250,000 to $499,999
$500,000 to $999,999
$1,000,000 to $2,499,999
$2,500,000 to $4,999,999
$5,000,000 or more
Sales
Farms
0%
10%
20%
30%
40%
50%
60%

U.S. Hog Operations
Number of Operations and Percent of Inventory, 2010



USDA-NASS
2-11-2011

Mondelēz International
Kraft
Spin-off
Cadbury
TASSIMO
GLACÉAU
Coca-Cola
Yum!
Spin-off
PEPSICO
QUAKER
Kellogg's
WRIGLEY
MARS
Uncle Ben's
Nestlé
30%
L'ORÉAL
WONKA
P&G
IAMS
Johnson & Johnson
Unilever
(Parfums)
(Parfums)
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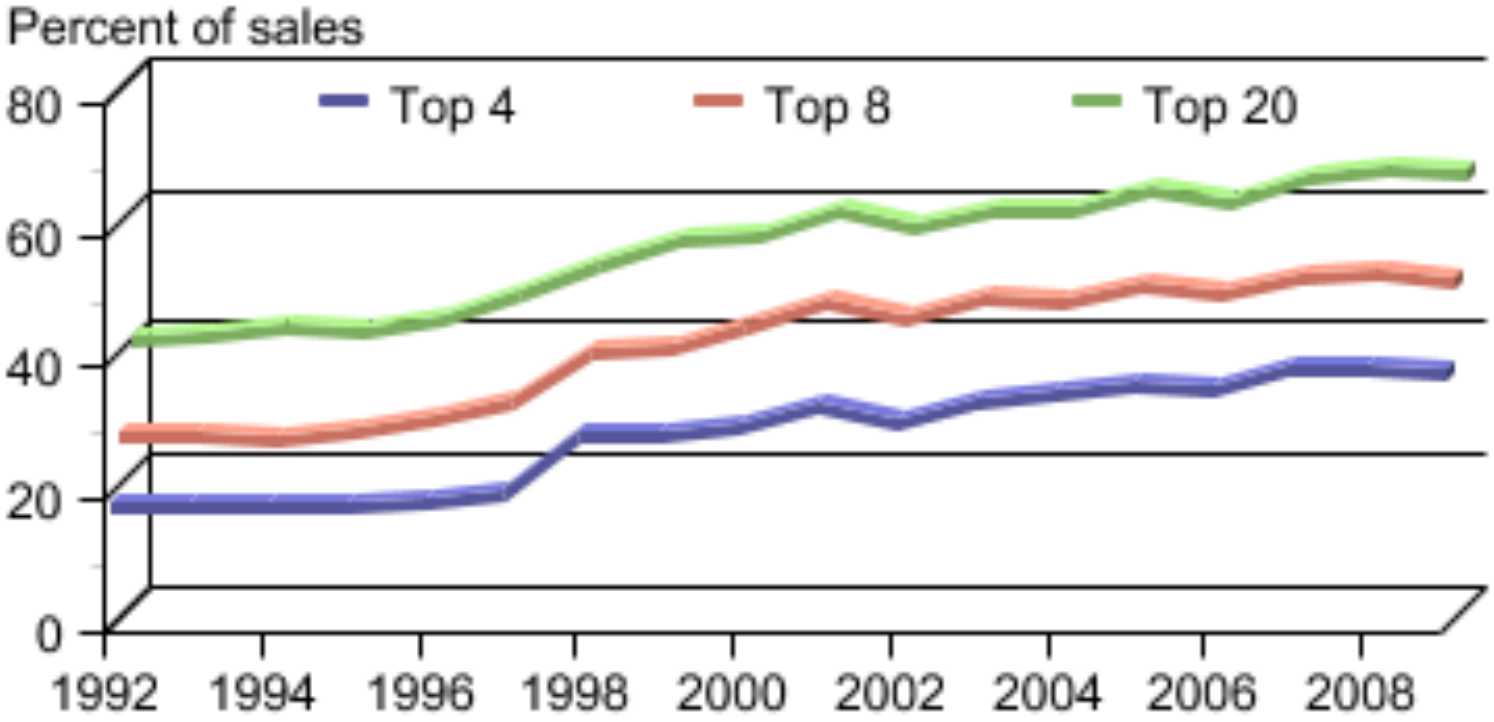
Top 4, 8, and 20 firms' share of U.S. grocery store sales, 1992-2009

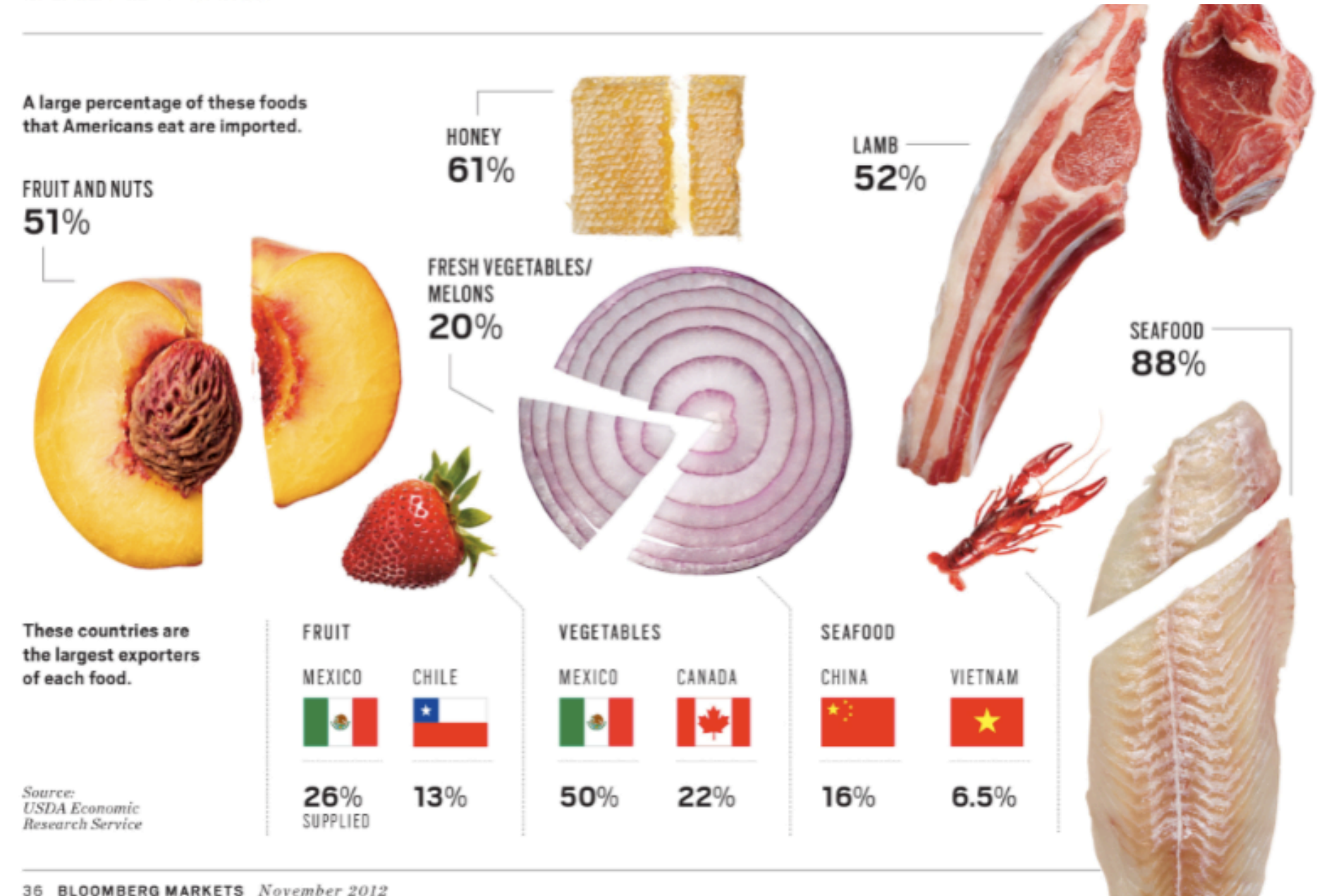
Divestitures and internal growth contributed to rising shares in recent years



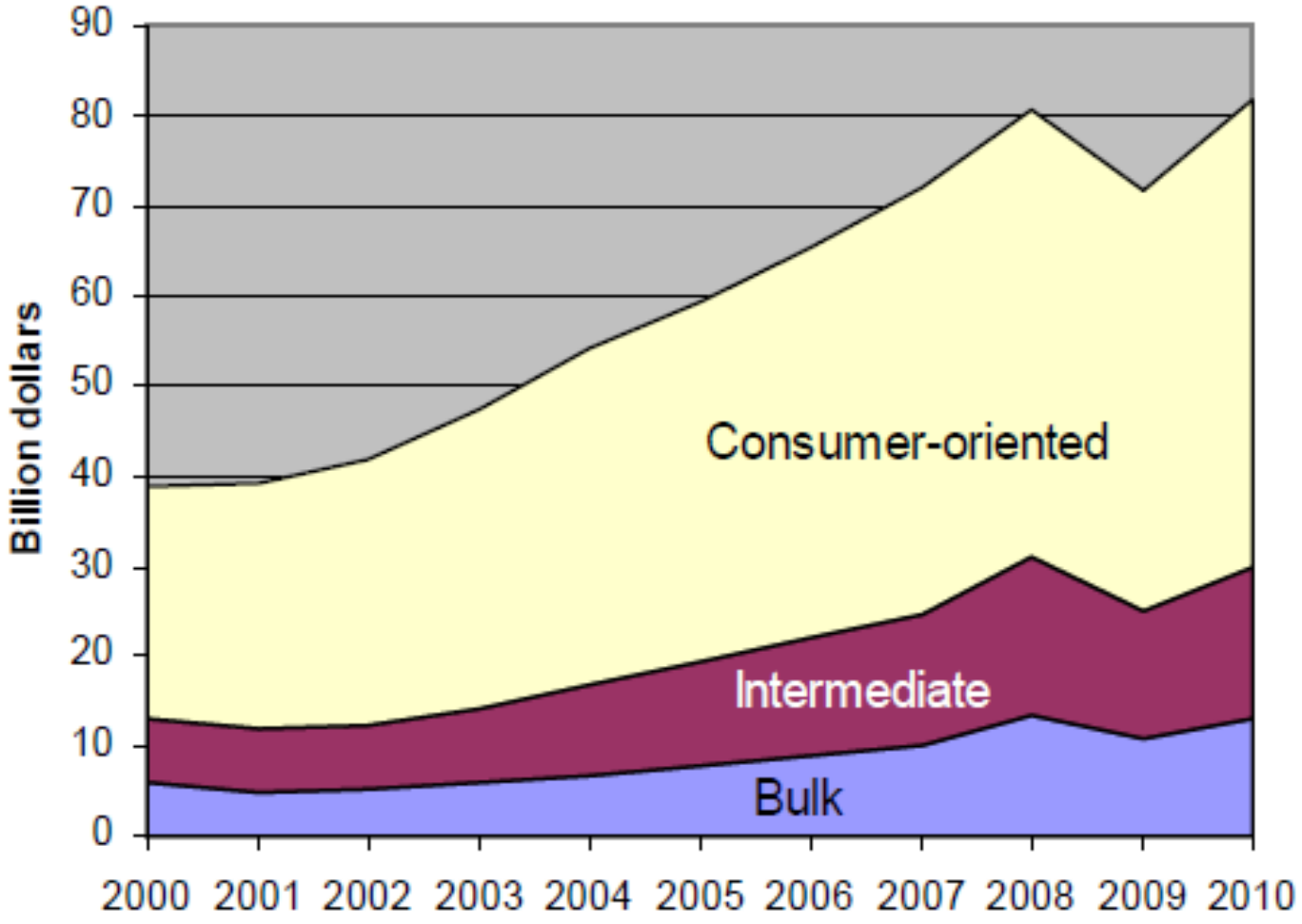
Source: USDA, ERS calculations using data from U.S. Census Bureau, Monthly Retail Trade Survey, 1992-2009; and company annual reports.

WHERE YOUR FOOD COMES FROM

Imports of foods have doubled in a decade and account for ~1/5 of what we eat

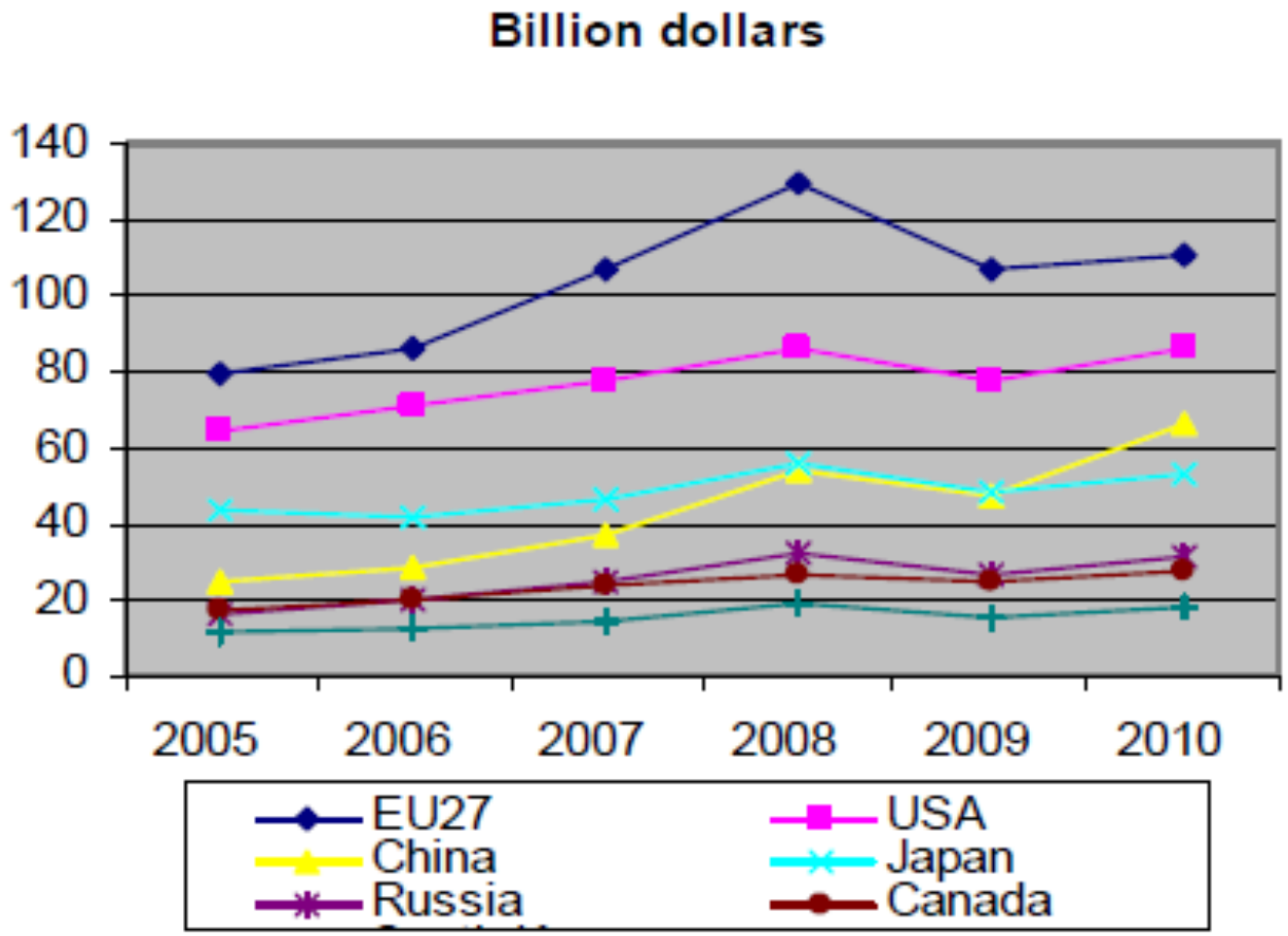


Analysis of longer-term trends shows that U.S. imports of consumer-oriented agricultural products expanded rapidly from 2000, doubling to $52 billion.

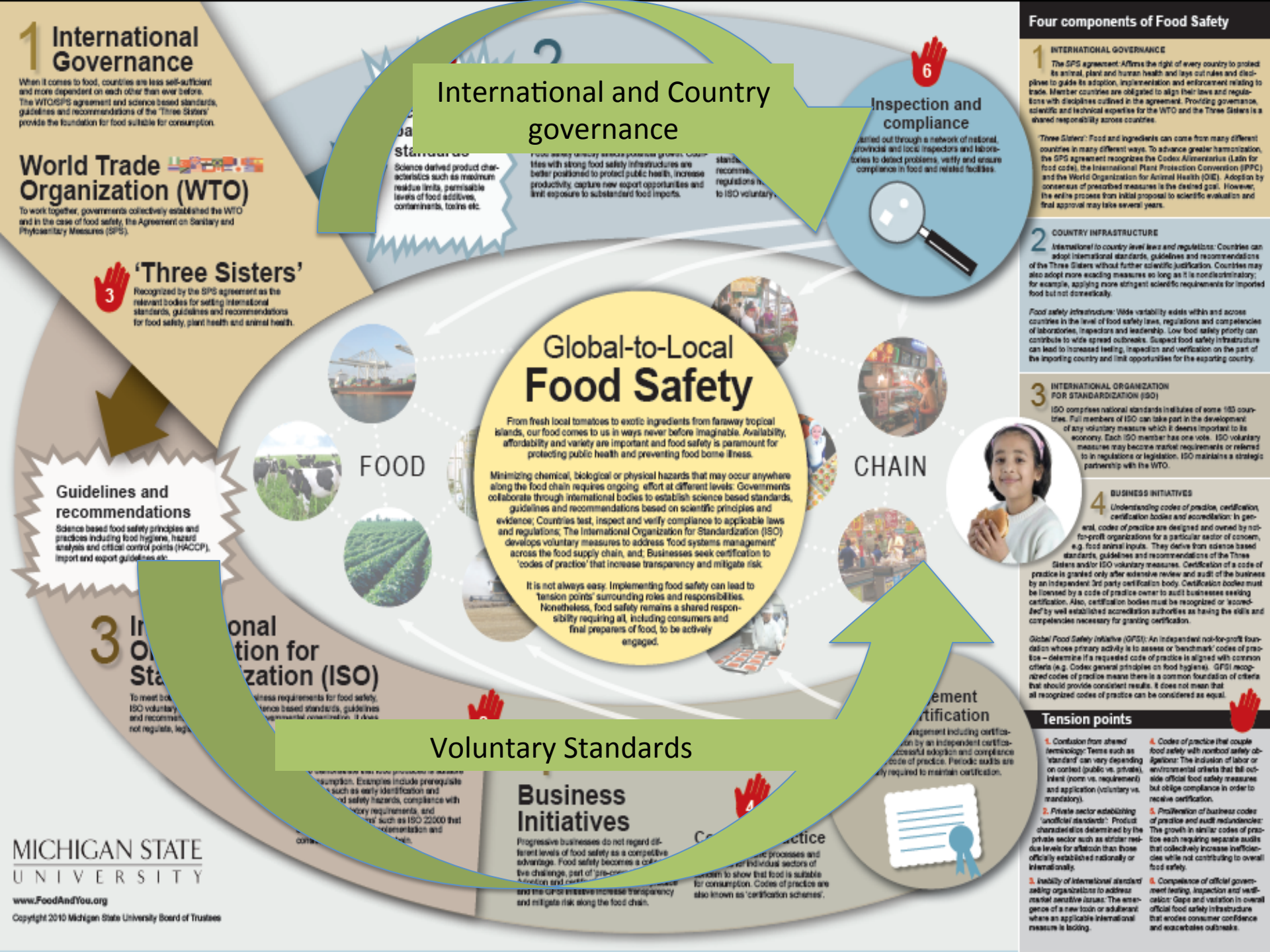


Source: USDA, FAS, GATS database.

The United States was the leading single-country destination for agricultural goods imports during 2005–10; imports increased 35% by value during the period.



Source: GTIS, Global Trade Atlas Database.



Four components of Food Safety

1 INTERNATIONAL GOVERNANCE

The SPS agreement: Affirms the right of every country to protect its animal, plant and human health and lays out rules and disciplines to guide its adoption, implementation and enforcement relating to trade. Member countries are obligated to align their laws and regulations with disciplines outlined in the agreement. Providing governance, scientific and technical expertise for the WTO and the Three Sisters is a shared responsibility across countries.

'Three Sisters': Food and ingredients can come from many different countries in many different ways. To advance greater harmonization, the SPS agreement recognizes the Codex Alimentarius (Latin for food code), the International Plant Protection Convention (IPPC) and the World Organization for Animal Health (OIE). Adoption by consensus of prescribed measures is the desired goal. However, the entire process from initial proposal to scientific evaluation and final approval may take several years.

2 COUNTRY INFRASTRUCTURE

International to country level laws and regulations: Countries can adopt international standards, guidelines and recommendations of the Three Sisters without further scientific justification. Countries may also adopt more exacting measures so long as it is non-discriminatory; for example, applying more stringent scientific requirements for imported food but not domestically.

Food safety infrastructure: Wide variability exists within and across countries in the level of food safety laws, regulations and competencies of laboratories, inspectors and leadership. Low food safety priority can contribute to wide spread outbreaks. Suspect food safety infrastructure can lead to increased testing, inspection and verification on the part of the importing country and limit opportunities for the exporting country.

3 INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO comprises national standards institutes of some 163 countries. Full members of ISO can take part in the development of any voluntary measure which it deems important to its economy. Each ISO member has one vote. ISO voluntary measures may become market requirements or referred to in regulations or legislation. ISO maintains a strategic partnership with the WTO.

4 BUSINESS INITIATIVES

Understanding codes of practice, certification, certification bodies and accreditation: In general, *codes of practice* are designed and owned by not-for-profit organizations for a particular sector of concern, e.g. food animal inputs. They derive from science based standards, guidelines and recommendations of the Three Sisters and/or ISO voluntary measures. Certification of a code of practice is granted only after extensive review and audit of the business by an independent 3rd party certification body. *Certification bodies* must be licensed by a code of practice owner to audit businesses seeking certification. Also, certification bodies must be recognized or 'accredited' by well established accreditation authorities as having the skills and competencies necessary for granting certification.

Global Food Safety Initiative (GFSI): An independent not-for-profit foundation whose primary activity is to assess or 'benchmark' codes of practice – determine if a requested code of practice is aligned with common criteria (e.g. Codex general principles on food hygiene). GFSI recognized codes of practice means there is a common foundation of criteria that should provide consistent results. It does not mean that all recognized codes of practice can be considered as equal.

Tension points

1. *Confusion from shared terminology:* Terms such as 'standard' can vary depending on context (public vs. private), intent (norm vs. requirement) and application (voluntary vs. mandatory).
2. *Private sector establishing 'unofficial standards':* Product characteristics determined by the private sector such as stricter residue levels for aflatoxin than those officially established nationally or internationally.
3. *Inability of international standard setting organizations to address market sensitive issues:* The emergence of a new toxin or adulterant where an applicable international measure is lacking.
4. *Codes of practice that couple food safety with nonfood safety objectives:* The inclusion of labor or environmental criteria that fall outside official food safety measures but oblige compliance in order to receive certification.
5. *Proliferation of business codes of practice and audit redundancies:* The growth in similar codes of practice each requiring separate audits that collectively increase inefficiencies while not contributing to overall food safety.
6. *Competence of official government testing, inspection and verification:* Gaps and variation in overall official food safety infrastructure that erodes consumer confidence and exacerbates outbreaks.

FSMA: Food Safety Modernization Act

January 4, 2011

United States Food and Drug Administration

- Increased Powers
- Focus on prevention
- Requires the use of food safety plans
  - HACCP: Meat, Poultry, Juice and Seafood

FSMA

- Increases surveillance activities
- Increases on-farm food safety measures
- Food laboratory certification
- Inspection and Import controls
  - Foreign supplier certification and 3rd party certification

Provisions in effect

1. Consumer friendly web-search for recalls
2. Mandatory recall authority
3. Food facility registration & Suspension
   (Enhanced from Bioterrorism Act)
4. Notice of imported food shipments
   (Enhanced from Bioterrorism Act)
5. Authority for FDA to detain suspect food items
   (Enhanced from Bioterrorism Act)
6. Expanded records access authority
7. Authority to collect fees to recover costs of re-inspections or mandatory recalls

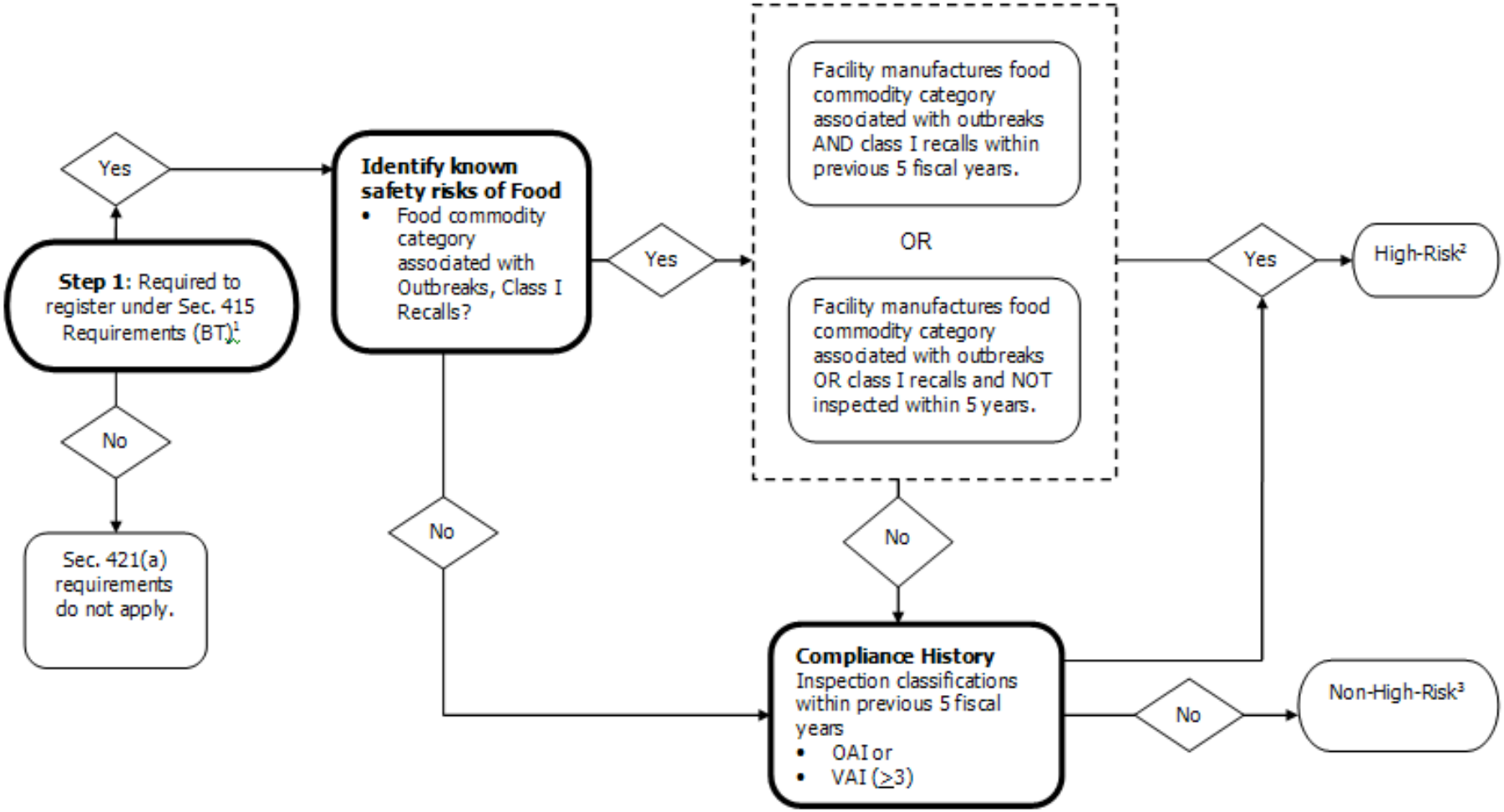


Diagram 1. FY12 FSMA Domestic Facility Risk Category
1. FY12 based on data from agency's Official Establishment Inventory. Resources are allocated for facilities not required to register.
2. Inspect within three-year period.
3. Inspect within seven-year period.

Preventive Controls for Human Food

- HACCP-like Food Safety Plan
- Applies to facilities that manufacture, process, pack or hold human food
  - With exceptions
- Hazard Identification, Preventive Controls, Monitoring, Corrective Actions, Verification, Record-keeping
- Done by a QUALIFIED PERSON! (Training!)

Produce Food Safety

(1) agricultural water;
(2) biological soil amendments of animal origin
(3) health and hygiene
(4) animals in the growing area and
(5) equipment, tools and buildings

- Worker TRAINING!

Antimicrobial Use in Agriculture

- Antimicrobial Residues
  - Amount of chemical in food products
- Antimicrobial Resistance
  - Ability of bacteria to resist the effects of the antibiotic

Cephalosporin Order of Prohibition

Animal & Veterinary

Cephalosporin Order of Prohibition Goes Into Effect

April 6, 2012

The U.S. Food and Drug Administration (FDA) announced today that the order of prohibition of cephalosporins originally published on January 6, 2012 is now effective.

The order prohibits certain uses of the cephalosporin (excluding cephapirin) class of antimicrobial drugs in cattle, swine, chickens and turkeys.

FDA is taking this action to preserve the effectiveness of cephalosporin drugs for treating disease in humans. Prohibiting these uses is intended to reduce the risk of cephalosporin resistance in certain bacterial pathogens.

In its order, FDA is prohibiting what are called "extralabel" or unapproved uses of cephalosporins in cattle, swine, chickens and turkeys, the so-called major species of food-producing animals. Specifically, the prohibited uses include:

- using cephalosporin drugs at unapproved dose levels, frequencies, durations, or routes of administration;
- using cephalosporin drugs in cattle, swine, chickens or turkeys that are not approved for use in that species (e.g., cephalosporin drugs intended for humans or companion animals);
- using cephalosporin drugs for disease prevention.

The order had a comment period of 60 days that began on January 6, 2012 and closed on March 6, 2012. The FDA carefully reviewed all submitted comments and determined that the order of prohibition, as published on Jan 6, 2012, should go into effect on April 5, 2012 without further revision or delay.

#209

Guidance for Industry

The Judicious Use of Medically Important Antimicrobial Drugs in Food-Producing Animals

- Requires veterinary Oversight
- Withdrawal of growth promotion use

FDA Milk Residue Survey

- 900 samples from farms that have had a meat residue violation
- 900 random samples of other farms
    - 30 different antimicrobial and anti-inflammatory residues

Dry product/novel product food safety

- Increasing scrutiny on pathogen survival in dry products
  - Flour
  - Nuts
  - Other dry ingredients
- “Novel vehicles”
  - Nut butters

Take home

- Good news: effort to improve food safety
  - Good for public health
  - Good for food industry
  - Good for agriculture

- Challenges/opportunities:
  - Lets meet the expectations!
  - Increasing public and private standards
  - Need for education and training