

E COLI CONFERENCE 2012

Pre-harvest Control of STECs in Cattle

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THE POLITICS OF FOOD SAFETY

How Food Safety Policies Are Made

(and how to change them)

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How Food Safety Policy Is Made

- ▣ 1. Statutes (Primary as in FSMA or secondary as in Risk Based Inspection [Christmas Tree])
- ▣ 2. Rules and Regulations
 - *Office of Management and Budget (OMB)
 - *Office of Information and Regulatory Affairs (OIRA)
- ▣ 3. Directives
- ▣ 4. Consumer Demand
- ▣ 5. Media and Advocates
- ▣ 6. Retail Outlets

FAO Forecast

- ▣ From 2000 to 2050, the world's population will increase from 6.8 Billion to 9.0 Billion
- ▣ We will need to increase our food production by 100% to meet the growing numbers and the growing middle class
- ▣ With limited land, water and cattle feed, 70% of this increase will have to come from efficiency improving technologies such as Confined Animal Feeding Operations (CAFOs), feed additives as growth promoters, GMOs, etc.
- ▣ We need to change

Creating Changes

- ▣ John Kotter's Book, "*How to Create Change*"
First you must create or have a sense of crisis
- ▣ Jack in the Box was the Beef Industry's crisis, changing to Shared Best Practices, PH is not competitive attitude
- ▣ From 1999-2009, 41% reduction in *E coli* O157:H7 foodborne illnesses.
- ▣ But pretty flat reduction rate since 2004 – still a problem, but not a crisis. Less than 1/100,000
- ▣ USA Today, NYT efforts to "create a sense of crisis" created change, even if inappropriate

The 1% Fringe

- ▣ US Population is increasing by 200,000 per day
- ▣ 3 billion worldwide are moving into the middle classes, producing increasing demand for protein over rice
- ▣ Increased production must lead to abundant, affordable, safe and sustainable food supplies
- ▣ 99% of the world is interested in cost, nutrition, taste, freshness and choice.
- ▣ Watch out for the fringe that wants to take away choice and influence policy makers

The 1% Fringe

- ▣ BPI and “Pink Slime”
- ▣ School lunch program ground beef testing (USA TODAY)
- ▣ rbST free dairy
- ▣ Ractopamine free beef and pork
- ▣ Cage Free layers
- ▣ Gestation Stall free sows
- ▣ 95% want choice based on price, quality, brand
- ▣ 4% want choice based on animal husbandry
- ▣ 1% want to reduce meat consumption and they are winning against modern agriculture

Choice?



Potential Pre-Harvest Changes

- ▣ Probiotics and Phages – Cost?
- ▣ Vaccines---Already used for animal health
- ▣ Vaccines – Who pays the Cost if for human health
- ▣ Vaccines – How USDA changed its policy
- ▣ Feed and water additives – Cost?
- ▣ Phages as rinses vs. additives – FDA's roles
- ▣ Feed and biofuels role
- ▣ Live Cattle washes
- ▣ Reducing/eliminating antibiotics in feed
- ▣ Why change if no crisis and change adds costs?

AMI's Proposed Post-Harvest Policy Change

- ▣ Petitioned USDA in June, 2005, for Whole Carcass, Low Dose Irradiation to be a processing aid, not an additive which requires the Bioterrorism-like Radura Symbol on the label
- ▣ FSIS sat on the petition to prevent change
- ▣ Conference on 9/12/2008
- ▣ Consumer opposition (is it based on science or is it driven by personal meatless agendas?)
- ▣ Consumer groups want change, but not these changes. They want slower line speeds, grass fed cattle, free range chickens, pigs in the mud (with Trichinosis in the meat?)
- ▣ Inspectors want job security

1996

- ▣ PulseNet – Pulsed Field Gel Electrophoresis

- ▣ FoodNet

These two new programs led to decreasing the heat on beef as the sole source of *E coli* illnesses, and

- ▣ The finding of *E coli* O157:H7 in Spinach in 2006 and increasingly in other produce created a crisis in the produce world and lead to the Food Safety Modernization Act (How? Later)

- ▣ Maybe will lead to a national *E coli* vaccine policy?

E. Coli O157:H7 illness Attribution 1982-2002

- Ground Beef — 33%
 - Produce-----34%
 - Other beef-----11%
 - Dairy-----6%
 - Unknown-----12%
 - Other-----4% (Other includes person to person, petting zoos, day cares, water, farms)
-
- Until 1998----- 100% attributed to beef
 - 2002-----30%
 - 2006-----25%
 - Outbreaks-----20%

20 *E coli* O157:H7 outbreaks tied to salad greens since 1999



CDC's Estimates for FB Illnesses

- ▣ 48 million per year which was 76 million until the day after the FSMA was signed into law (FSMA needed a sense of crisis)
- ▣ 80% are from unknown pathogens (38 million)
- ▣ Of the remaining 20%, or 9.4 million, 58% are from Norovirus. (5.5 million)
- ▣ 3.6 million illnesses are attributed to known bacteria and 90% of these are caused by *Salmonella* spp, *E coli* O157:H7, *Campylobacter* spp, *L. monocytogenes*, *Clostridium perfringens*, and *Toxoplasma gondii*.
- ▣ Infections from these 6 are down over 20% over 10 years and do not account for changes in population such as increased persons at risk and overall numbers.

CDC's Estimates for FB illnesses

- ▣ CDC multiplies the number of laboratory confirmed illnesses by a factor for underreporting of illnesses, hospitalizations and deaths. Higher numbers, sense of crisis
- ▣ The only known pathogen that has gone up is Vibrio at + 85%, but the total is less than 500
- ▣ Salmonella is only down 10% from 1999-09 and is the leading cause of illnesses and deaths
- ▣ Shigella down 55%, L monocytogenes down 26%, E coli down 41% and Campy down 30 %

CDC's Estimates of Foodborne Illnesses

- ▣ Do these numbers represent a crisis, or even a sense of crises? No
- ▣ But outbreak identification has improved, as has identifying the source and increasing recalls
- ▣ While foodborne illnesses are actually down by over 20% from 1999-2009, the number of media hits increased by over 200% creating a false sense of crisis to the average American and to our elected officials.

E. Coli Illness Attribution to Foods 2006-2009

- ▣ The locations of the crisis have moved from ground beef to:
- ▣ 2006 – spinach – -----265 ill, 5 deaths
2006--Taco Bell lettuce – 71 cases
- ▣ 2007 – Pepperoni pizza---21 cases
- ▣ 2009 – Cookie Dough-----72 cases
- ▣ 2009 – National Steak – blade tenderized – 21 ill
Hagen has the crisis to back labeling changes
- ▣ Shifting of the blame similar for Salmonella

Food Safety: Who Does What

- ▣ And Why: The statutes
- ▣ USDA: Meat, poultry and egg products with daily continuous inspection
- ▣ FDA: Everything else; with an audit every 5-10 years (Maybe)
- ▣ Pretty simple really, until you dig a little deeper

FDA vs. USDA



The Ridiculous Dual Jurisdiction

- ▣ Closed faced sandwich vs. open faced
- ▣ Corn dog vs. Bagel dog
- ▣ Chicken Noodle soup vs tomato soup
- ▣ Baby food: Peas vs lamb
- ▣ Pizza: Pepperoni vs Veggie
- ▣ Eggs vs Egg products
- ▣ Catfish vs. Salmon
- ▣ Bison vs. Beef
- ▣ Casings and other oddities

Why Not Change Flawed Policy ?

- ▣ Because there is no crisis and therefore there will be no unanimity regarding the solutions
- ▣ Does an open faced sandwich really need another layer of inspection?
- ▣ Have any infants become ill from baby food?
- ▣ What is the real risk of eating corn dogs?
- ▣ Industry wants all FSIS inspection removed
- ▣ Consumers want all FDA products under FSIS-like continuous inspection
- ▣ Chicago conference December, 2005

Changes in Poultry Policy

- ▣ Salmonella Improvement Plan – classic carrot and stick worked
- ▣ Posting results of Salmonella sets on the web (consumers)
- ▣ Allowing efficiency improvements in excellent performing plants (industry)
- ▣ Positive carcass rate went from 18% in 2005 to 7% in 2009.
- ▣ Ground Beef is less than 0.5% positive, so why do we tolerate even 7% in poultry, and why not test poultry parts, not carcasses?
- ▣ HIMP Plants expanding – maybe. The policy of only 20 plants was set by a judge.

Policy Changes in Meat and Poultry

- ▣ Retail stores now listed when involved in a recall
- ▣ Policy was changed on a dark and stormy night on the way to Brussels --- Really
- ▣ Tracebacks to source improvements
- ▣ Declaration of non-O157 STECs to be adulterants in ground beef after fact finding conferences and Japan and EU crises
- ▣ Catfish inspection added to USDA

Less visible recent policy changes

- ▣ Downer rule -- Hallmark
- ▣ Change in ownership=Change in Inspection level – TOPPS
- ▣ Change in status of vaccines – increase in recalls, positive samples and illnesses 2006-2008
- ▣ Trim testing on domestic product
- ▣ Trim testing on international imports – Ranchers and TOPPS. New Zealand adamantly opposed
- ▣ Single temp for poultry – Bird Flu scare
- ▣ Public Health Information System – TOPPS and 185 new FTEs

Statutes Directing USDA/FSIS

- ▣ Federal Meat Inspection Act – 1906 Left out Bison, so they are technically under FDA
- ▣ Poultry Products Inspection Act – 1957 Assumed eggs were not a poultry product, I guess, so
- ▣ Egg Products Inspection Act in the 1980s took dried, frozen and liquid egg products and gave them over to continuous inspection by USDA. Left shell eggs at FDA.
- ▣ Humane Handling Act led to the largest meat recall ever with the Hallmark incident.
- ▣ Labeling – Accurate and not misleading (Tysons)
- ▣ All statutes written as a result of a perceived crisis

Policy Changes on the Horizon?

- ▣ Antibiotics on farm and in feed
- ▣ Distance between feed lots and produce fields
- ▣ Vaccination for E coli O157 becoming a marketing tool
- ▣ “Meat glue” being banned
- ▣ Multi-Antibiotic resistant Salmonella being declared an adulterant
- ▣ Risk Based Inspection for meat and poultry products

E coli O157:H7 is an Environmental Toxin

- ▣ If Congress would recognize *E coli* O157:H7 as an **environmental contaminant**, threatening the health and lives of our children and elderly in nearly every food they eat and drink, and change policy to require and fund a national vaccine program in cattle for *E coli* O157:H7 similar to the National Vaccine Program that pays for the great majority of childhood immunizations that have led to the elimination of Smallpox on this Earth, and markedly reduced Polio, Diphtheria, Measles, Rubella, etc., they could save lives and suffering.

E. coli O157:H7 and baby spinach - 2006



Traceback to four farms
One farm environment had
outbreak strain of *E. coli* O157
Beef cattle, stream, wild pigs, soil



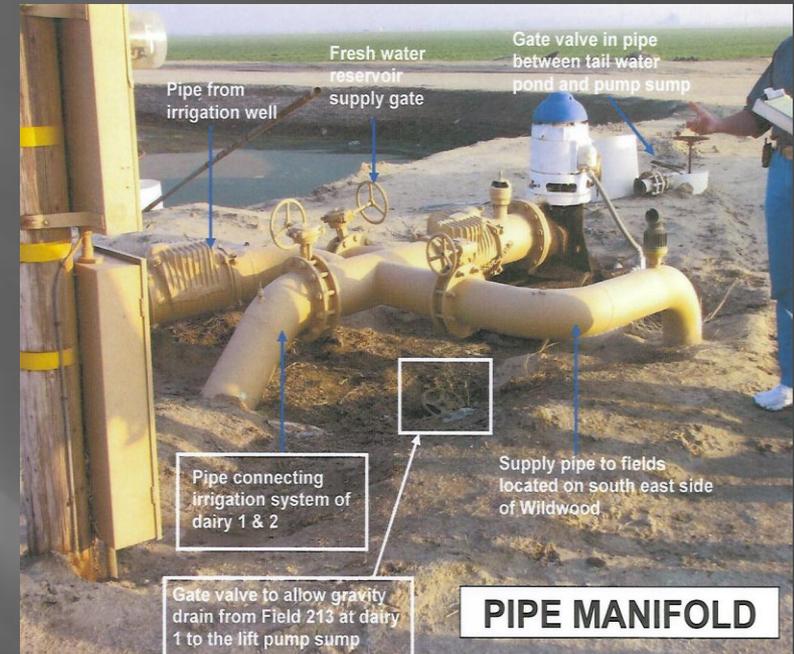
Cattle 0.5 mile from field
? Spring flooding into irrigation wells
? Wild pigs traversing spinach fields



<http://www.dhs.ca.gov/ps/fdb/>

E. coli O157:H7 and shredded lettuce - 2008

2006 outbreak: 36 cases, 2 states
Taco Chain Y
Shredded lettuce from California farm



Fields adjacent to two dairy farms
10 samples with outbreak strain of O157
- from both dairies
- from three fields

Pipes could connect manure lagoons and irrigation system

<http://www.dhs.ca.gov/ps/fdb/>

Single Agency for Food Safety?

- ❑ I hope not. The cultures are so different that safety would implode for years, and
- ❑ Unless you added billions of dollars, not much would change
- ❑ We had a single food safety agency until 1940
- ❑ Give USDA all animals and all animal products, including all fish and seafood, eggs, milk and cheese. And Bison – they look a lot more like a cow than a catfish does
- ❑ Give FDA all products made from products already inspected by FSIS, like flavorings with meat base, sandwiches, canned goods, etc.

Final Shots

(at barriers to change)

- ▣ Healthy People 2010 goals *for E coli* O157:H7 of less than one per 100,000 persons were met in 2004 and 2009
- ▣ Congresswoman DeLauro's response: "We have seen the numbers go down in the past, only to rise the next year"
- ▣ In 2007 there were 21 recalls for E coli associated with 10 outbreaks
- ▣ American Meat Institute's response: "We have seen the numbers go up before, we know they will go back down".
- ▣ Consumers "Irradiated Poop is Still Poop"

Your Thoughts?

