Consumer Acceptance & Marketing of Irradiated Foods

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What we will learn today:

- ***What we have learned about consumer acceptance of irradiated foods.***
- ***Where's the Irradiated Beef?***
- ***What other foods are irradiated?***
- ***Global Overview of Food Irradiation***
- ***Future Prospects for Food Irradiation***
- ***Lessons Learned in the Past.***

Meat Recalls & Foodborne Illness

E. Coli O157:H7 & Listeria Monocytogenes

- ***Jack in the Box (1993)***
- ***Hudson Foods-E. coli O157:H7 (August 1997)***
  - ***25 million pounds (Largest Beef Recall in History)***
- ***Conagra/Swift-E. coli O157:H7***
  - ***19 million pounds (Oct/Nov. 2002)***
- **Thorn Apple Valley-*listeria***
  - **35 million pounds (January 1999)**
- **Bil Mar Foods-*listeria***
  - **33.1 million pounds**
- **Wampler Foods-*listeria***
  - **27.4 million pounds (July/August 2002)**

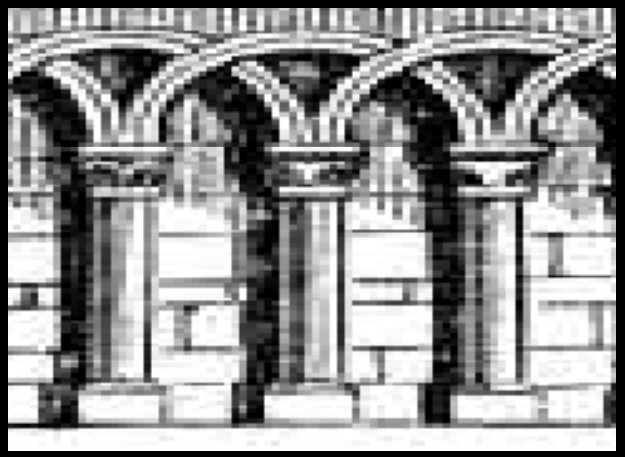
Irradiation: A Food Safety Solution?

Could irradiation do for ground beef what pasteurization did for milk?

1. Learn about the irradiation process
   1. Was it effective?
   2. Would irradiation affect taste, nutrition etc?
2. Determine Consumer Acceptance

1997

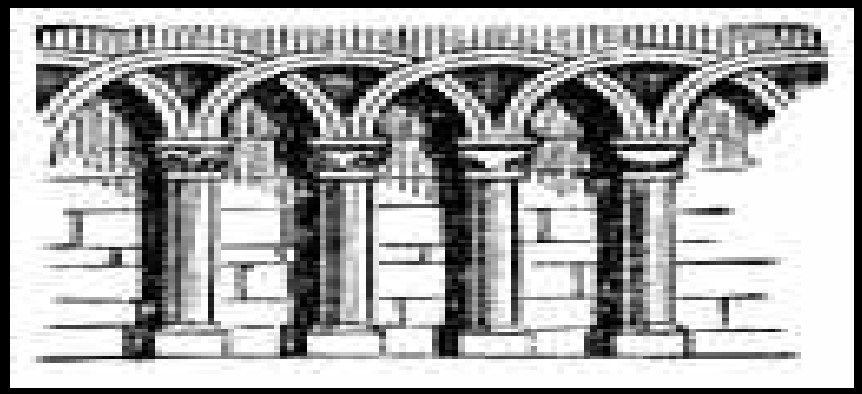
Pillars of Public Health



- Pasteurization
- Immunization
- Chlorination

Source: Dr. Michael Osterholm

Pillars of Public Health



1. Pasteurization
2. Immunization
3. Chlorination
4. *Irradiation?*

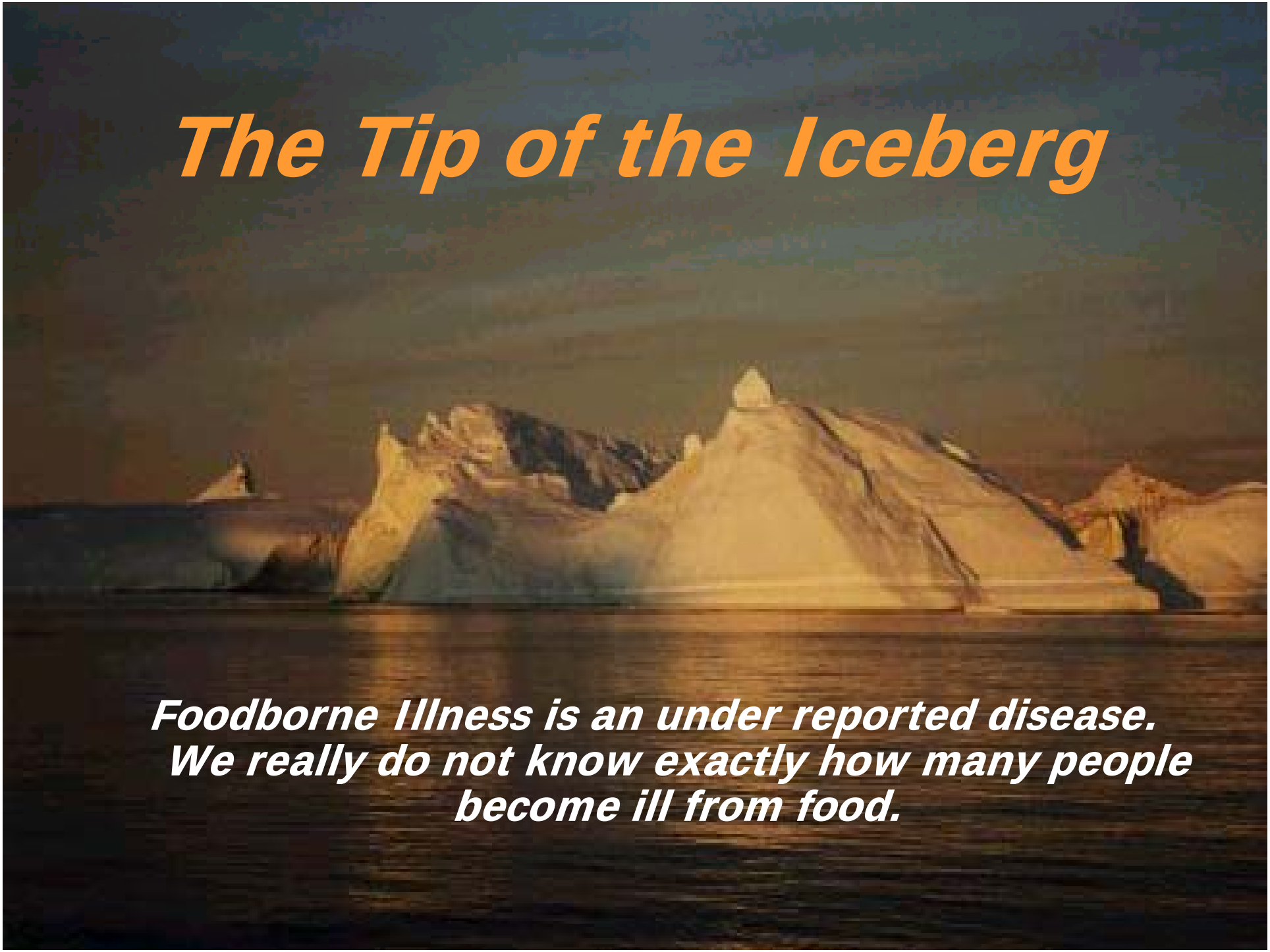
Source: Dr. Michael Osterholm

Foodborne Illness is a Problem

Foodborne Illness is Very Real!

- 76 million cases of foodborne illness
- 5,000 deaths

US Centers for Disease Control (CDC)


The Tip of the Iceberg
Foodborne Illness is an under reported disease.
We really do not know exactly how many people
become ill from food.

Who is most susceptible to foodborne illness?

Children are susceptible because their immune systems are not fully developed.

The elderly are also susceptible to food-borne illness and suffer more severe reactions because their immune system is weaker.

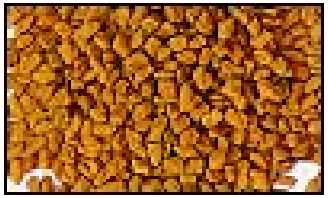
Department of Health and Human Services

Centers for Disease Control and Prevention

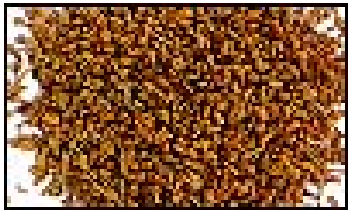
- **According to the Centers for Disease Control and Prevention (CDC), 900,000 cases of illness, 8,500 hospitalizations, and 404 deaths could be avoided if just 50 percent of raw meat and poultry consumed in the U.S. were irradiated.**

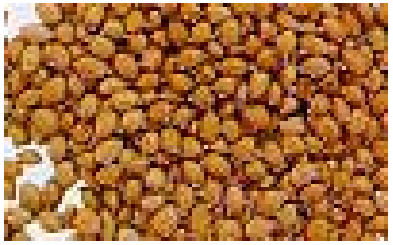
Dr. Robert V. Tauxe, Centers for Disease Control and Prevention, Atlanta

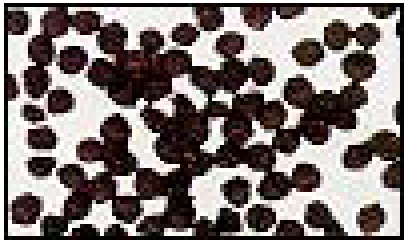
Irradiated Food in US Space Program



Irradiated Spices







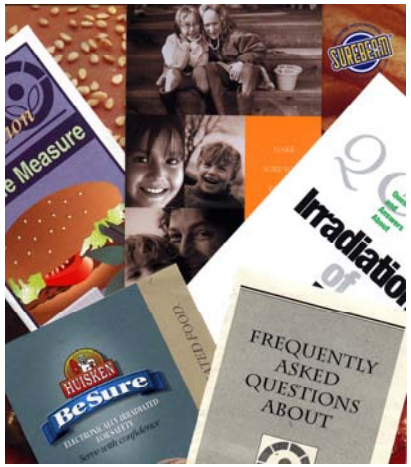
- **It is estimated that approximately 80,000 metric tons (175,000,000 pounds) of commercial spices of spices are irradiated annually in the USA.**

- ***<u>One-third of total US production.</u>***

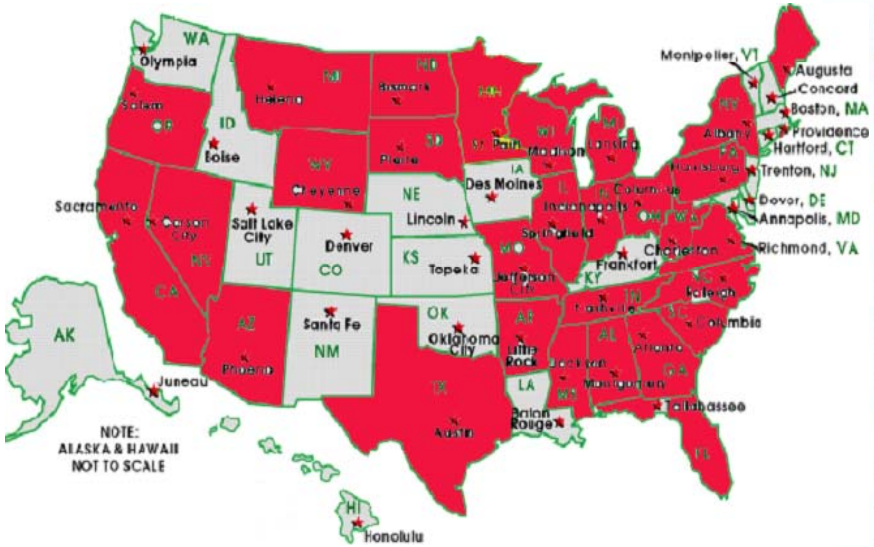
Could irradiation do for ground beef what pasteurization did for milk?

1,000,000 Samples

Could irradiation do for ground beef what pasteurization did for milk?



Education:
Key to Consumer Acceptance



- Argentina
- Brazil
- Canada
- India
- Peru
- Spain
- Thailand
- Uruguay
- USA

30 States

Nine Countries

Minnesota Beef Council

FOOD IRRADIATION Update

January 2007

Food Irradiation Update is published by the Minnesota Beef Council

Quotable Quotes:

The answer to recent E. coli outbreaks and other food-borne illnesses has been sitting on the shelf for decades while hundreds of thousands of Americans have been sickened and thousands have died. INVESTOR'S BUSINESS DAILY; Editorial

"If the spinach that contained E. coli in the outbreak in September and October had been irradiated, there would not have been 199 cases of illness, 102 hospitalizations and three deaths." Dennis Olson PhD; Iowa State University

Such nations as India, Mexico and Thailand are starting to irradiate the food they export to the U.S., which means that produce from abroad could be safer than that grown here. Wall Street Journal Editorial

We asked several leading health scientists whether food irradiation could have prevented the E. coli outbreak at Taco Bell restaurants. "Almost certainly, yes." Dennis Olson, Professor, Iowa State University

"It is shameful and unethical that, each year, hundreds of thousands of people get morbidly ill, and hundreds of people suffer the *sequella* of permanent disability or death, just because of scaremongering against food irradiation by a few elite critics. I challenge those critics of food irradiation to spend one month with a family of a child who died from E. Coli 0157:H7 renal failure syndrome that could have been prevented by food irradiation." Scott Johns V.M.D. Fairview, Pa.

In This Update:

E. coli outbreaks prompt leaders to back irradiation (December 20, 2006) Farm News Iowa; By Randy Mudgett via FSNET

What Did We Learn?

- **Need for Education.**
  - **The word "irradiation" is often misunderstood.**
- **Educated Consumers Readily Accept & Purchase Irradiated Foods.** ***No need to "beat consumers over the head" with education. (A little bit is sufficient).***
  - **Many <u>actually preferred</u> irradiated food**
- **Irradiation had <u>NO</u> significant impact on:**
  - **Taste**
  - **Nutrition**
  - **Quality**
- ***Most Importantly:***

Irradiated foods (ground beef, poultry & fruits) have been successfully sold at retail for 8 to 10 years or more.

When they hear about irradiation, most consumers respond positively

92% Bought irradiated papayas (Bruhn & Noel'87)

80% Bought irradiated strawberries (Terry & Tabor'88)

90+%Would purchase (Pohlman et al, 94)

80% Bought irradiated chicken (Fox & Olson '98)

80% Would purchase irradiated ground beef (FMI & AMI'98)

80% Would purchase ground beef (Nayga '02)

82% Would purchase ground beef (Albrecht '02)

70-75% Would buy irradiated poultry, pork (Johnson '04)

Intent to buy irradiated meat increased 18-64% (Bruhn '05)

Courtesy of Christine M. Bruhn, PhD; University of California at Davis

Irradiated Foods
Factors Affecting Purchase Decisions

John A. (Sean) Fox
Dept. of Agricultural Economics
Kansas State University

1998

Bottom Line

- **The primary factor is information.**

  Favorable information – up to 90% preference

  Unfavorable – down to 10% preference

  (Fox & Olson ’98)

- **Over 50% are not familiar with irradiation**

  Need education

  Need to counter misperceptions

(Sean Fox & Dennis Olson ’98)

Effect of Information

Experiment: WTP for Irradiated Pork

- 53 adults in 3 treatments, 2 groups in each
- Initial info same in each for Trials 1-5

- Following Trial 5;
  - Treatment A: Positive description
  - Treatment B: Negative description
  - Treatment C: Both

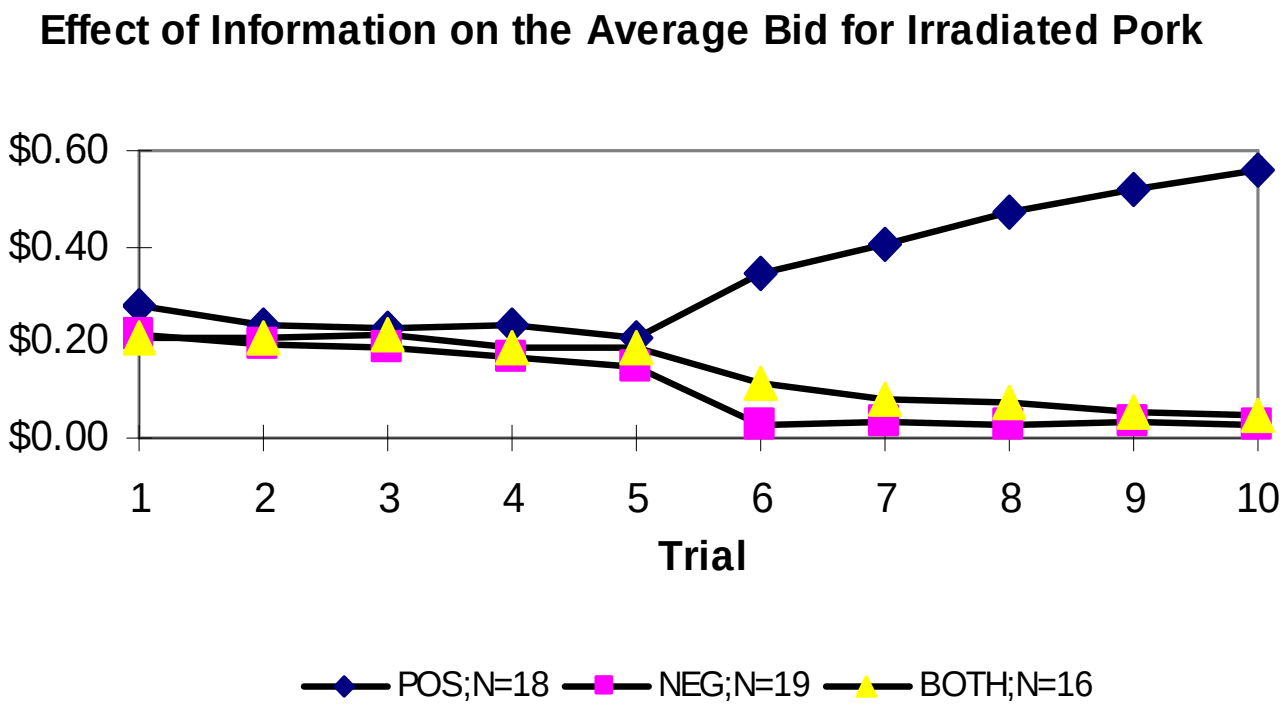
Positive description

- *American Council on Science and Health*.
  - Effectiveness and safety
  - No residue
  - Approved by the AMA and the WHO
  - Used in over 20 countries
  - Help prevent many of the 9,000 deaths from food-poisoning

Negative & Inaccurate Description

- ***Food and Water, Inc.***
  - Produces carcinogens called radiolytic products
  - Lower levels of essential vitamins
  - Unnecessary since proper cooking kills pathogens
  - Eliminates warning signs of the botulin toxin
  - Linked to the U.S. nuclear weapons and nuclear power industries
  - Environmental and workplace risks

Results


Effect of Information on the Average Bid for Irradiated Pork
$0.60
$0.40
$0.20
$0.00
1
2
3
4
5
6
7
8
9
10
Trial
POS;N=18
NEG;N=19
BOTH;N=16

Reasons for Changing Bids

- Positive Information
  - guaranteed safer **60%**
- Negative Information
  - cancer risk **34%**
  - environmental concern **20%**
  - loss of spoilage signs **18%**
  - use of radioactivity **16%**

Can Negative Information be countered?

Experiment:

Participants choose packages of Irradiated or Non-Irradiated chicken breasts

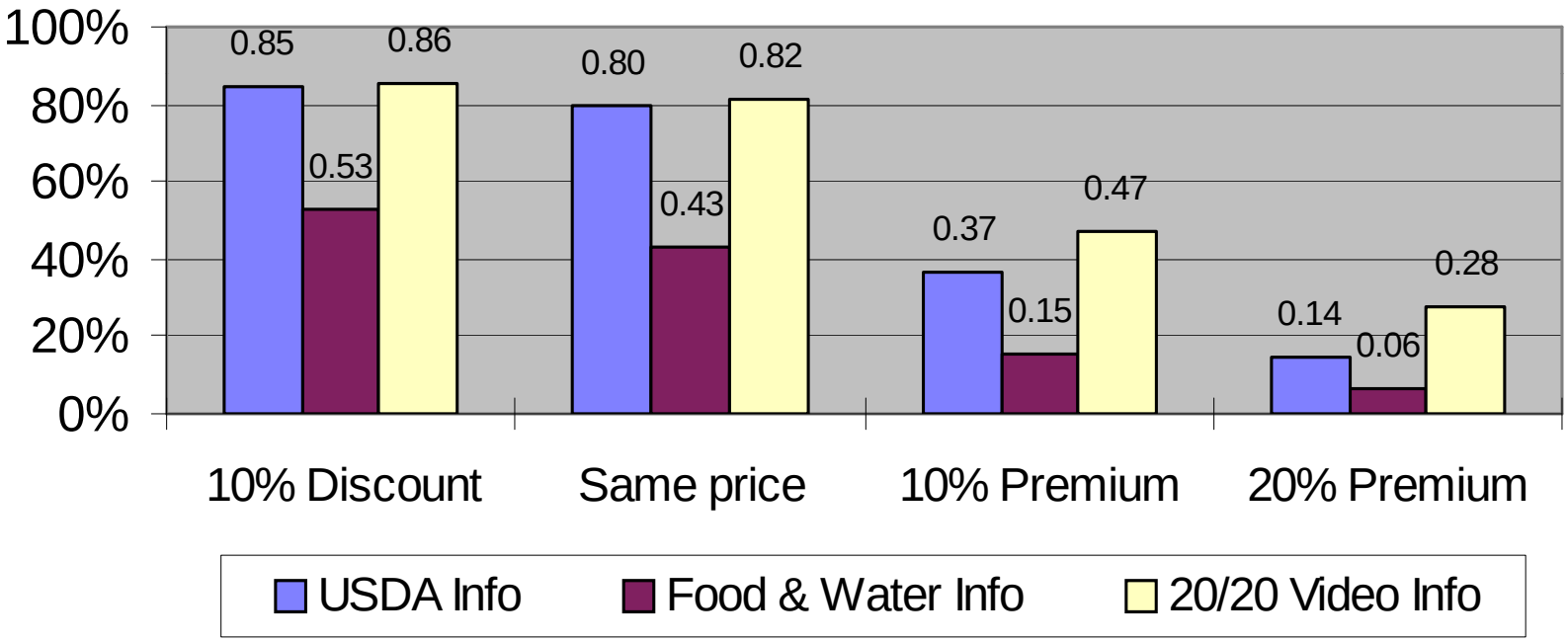
Information sequence

1st : USDA “factual” information

2nd: Negative information (Food & Water)

3rd: Pro-irradiation video (ABC 20/20), discussion

% choosing irradiated

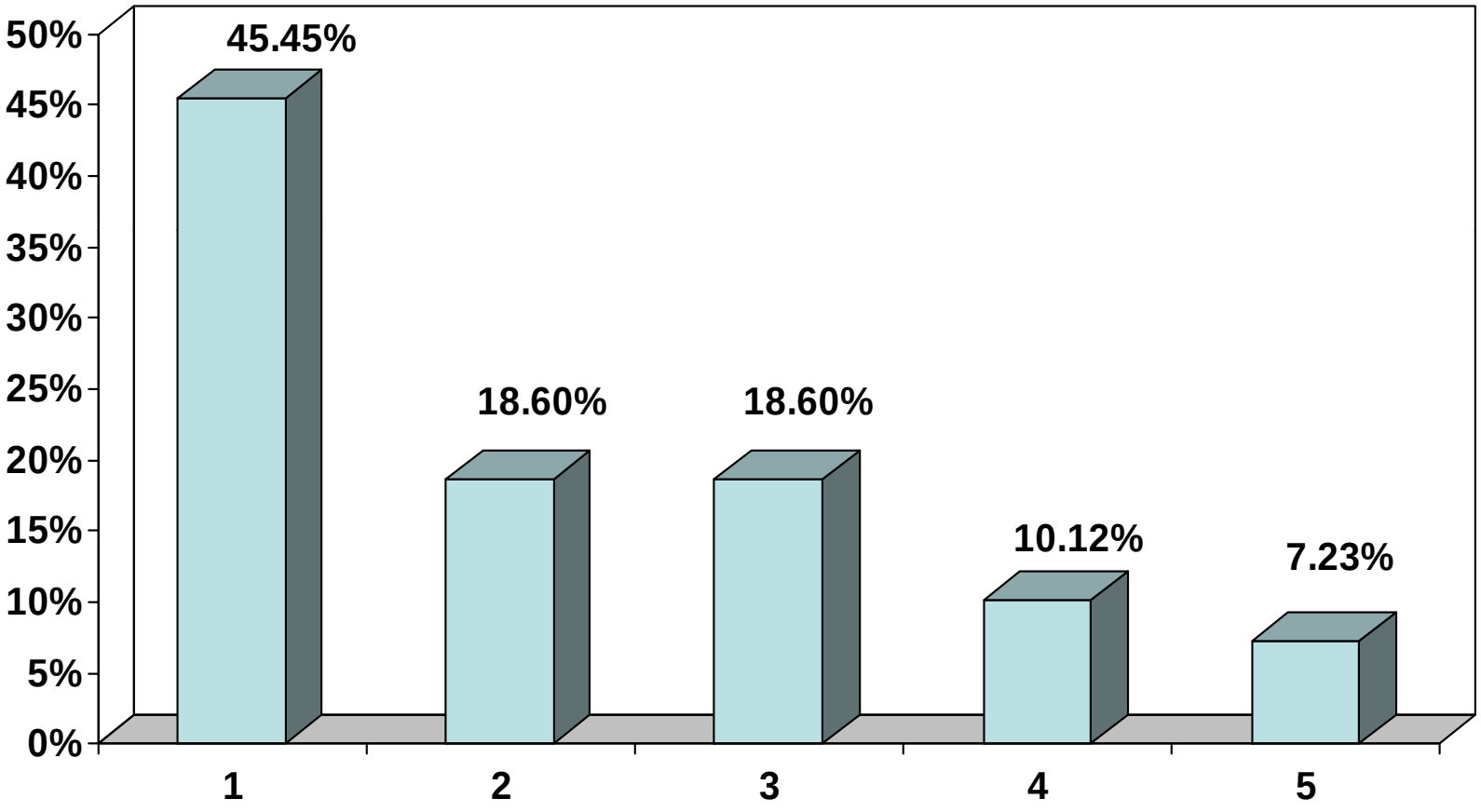


Consumers' Willingness to Purchase and Pay for Irradiated food

Wipon Aiew (Marty)
Rodolfo M. Nayga
John Nichols
Department of Agricultural Economics,
Texas A&M University,
College Station, TX

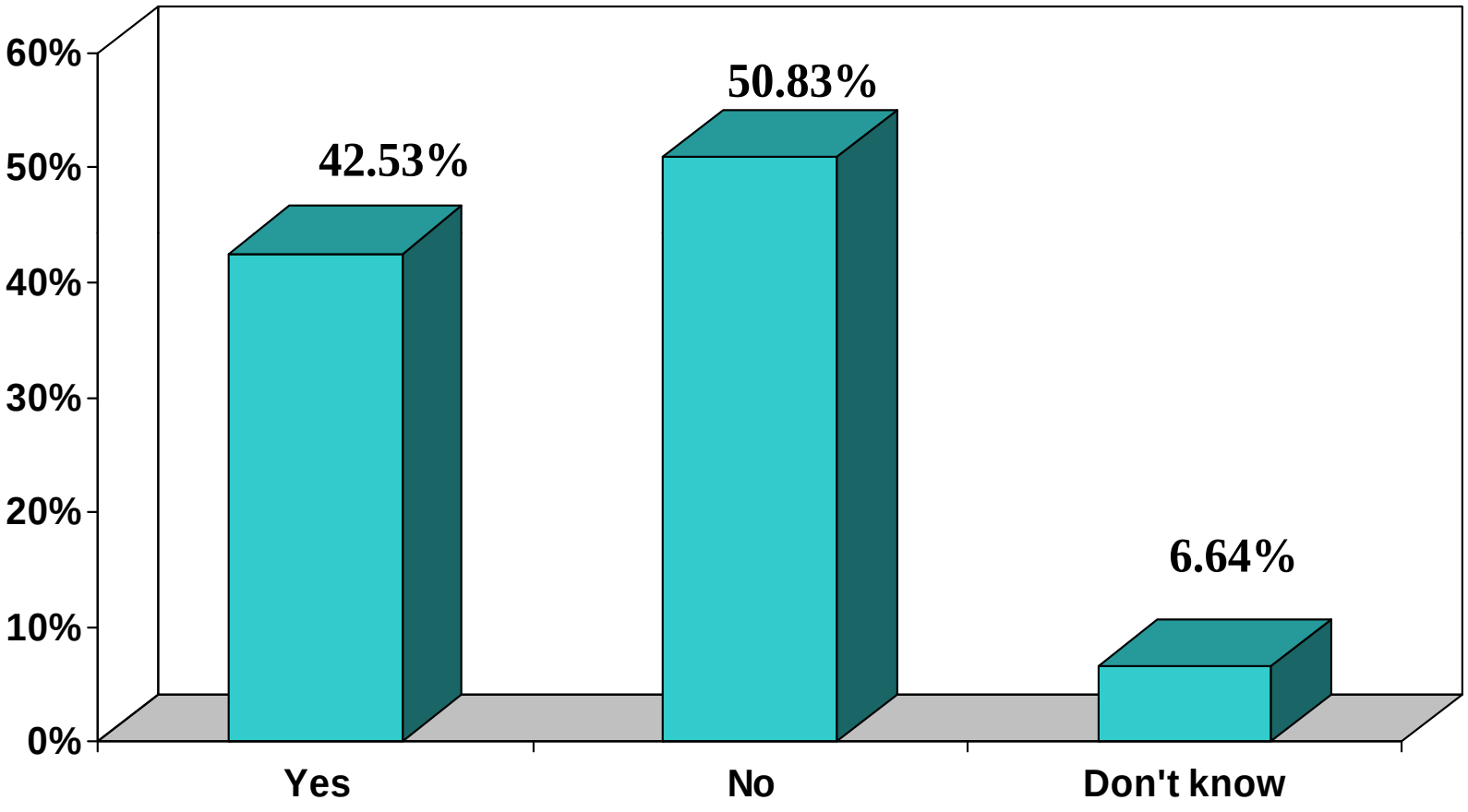
2002

Fig 1. Prior knowledge of food irradiation



1 means zero knowledge, and 5 means very knowledgeable

Experienced getting ill from food poisoning



Radura symbol perception

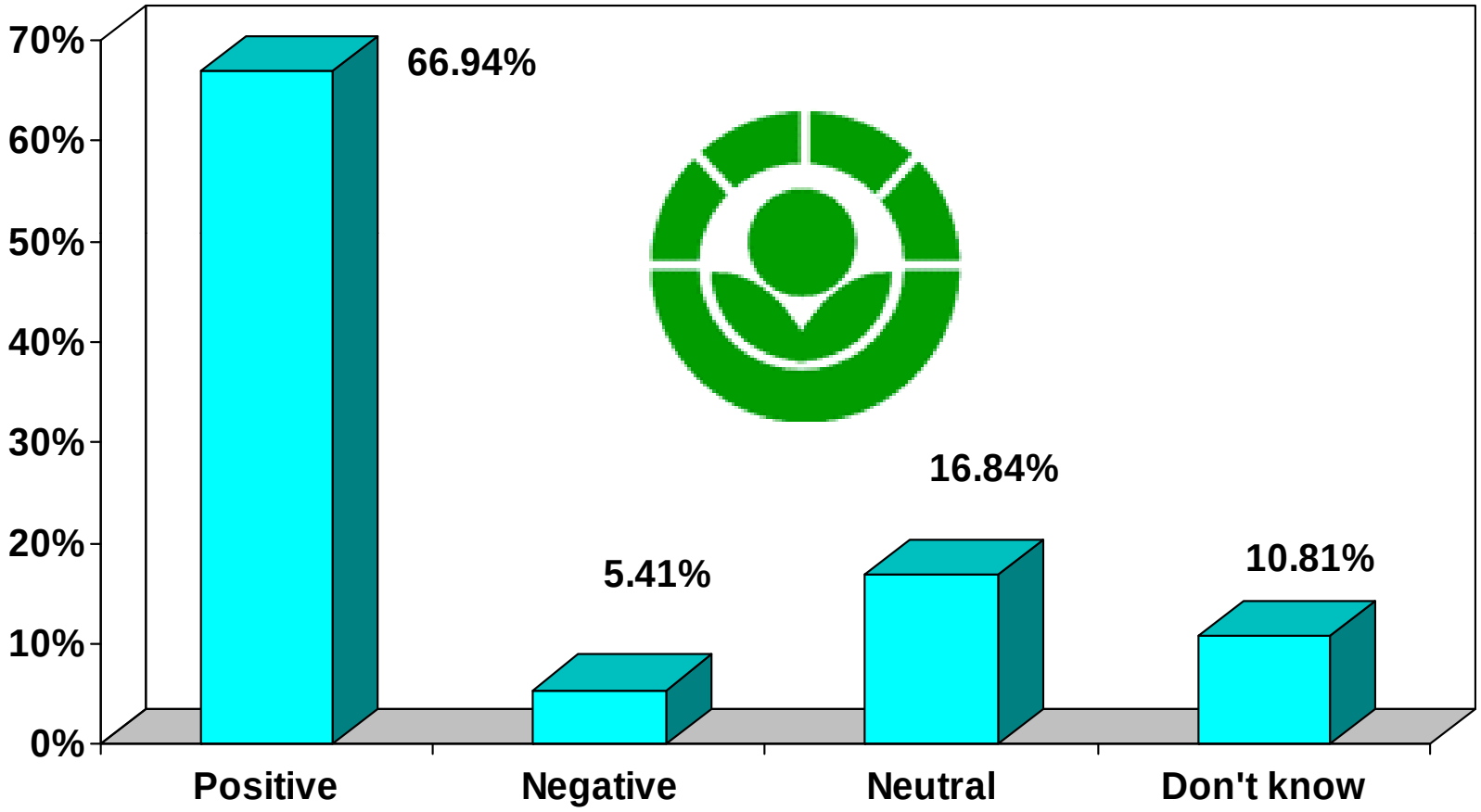


Fig 2a. Consumer Segments

(before giving information on nature and benefit of irradiation)

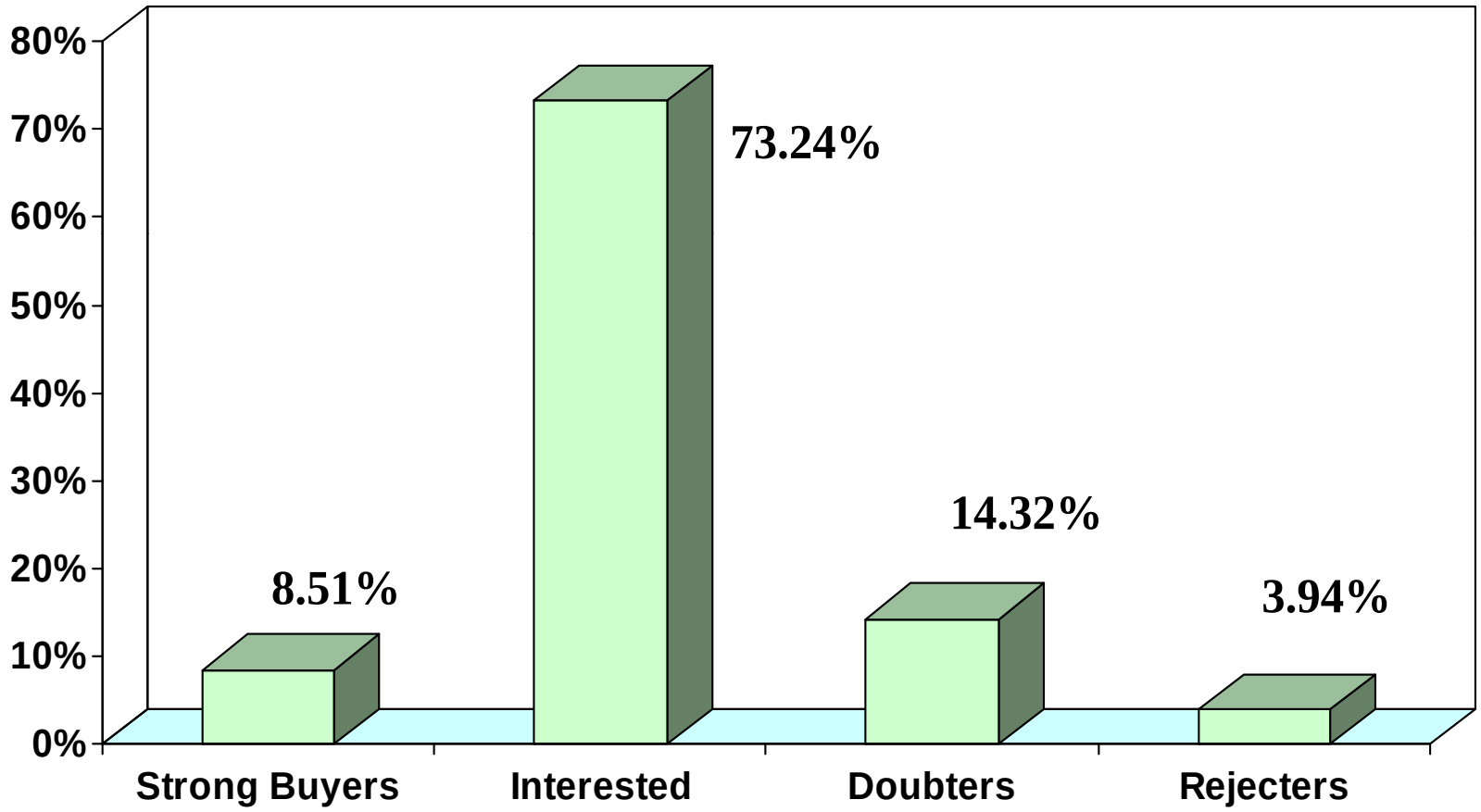
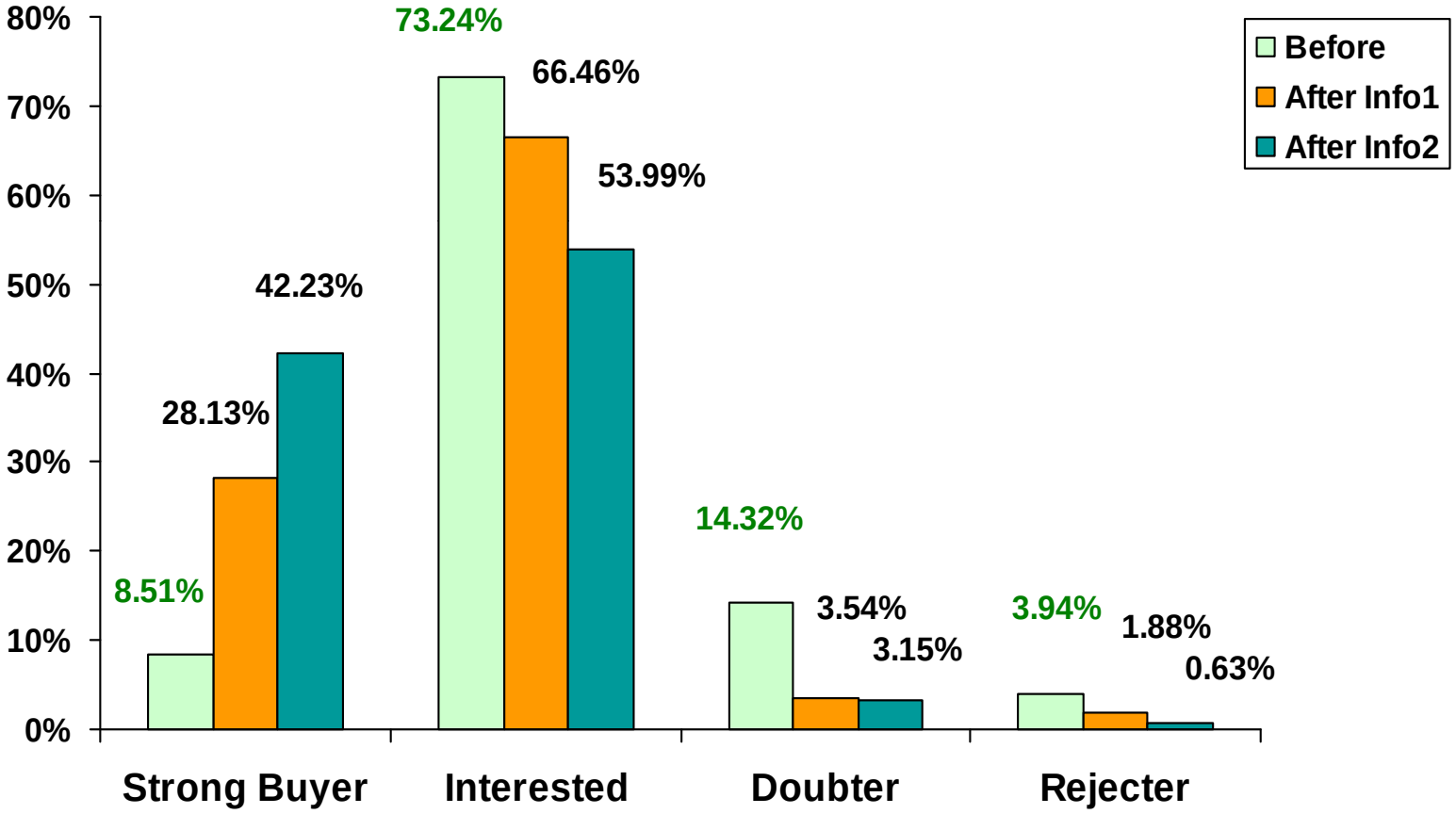
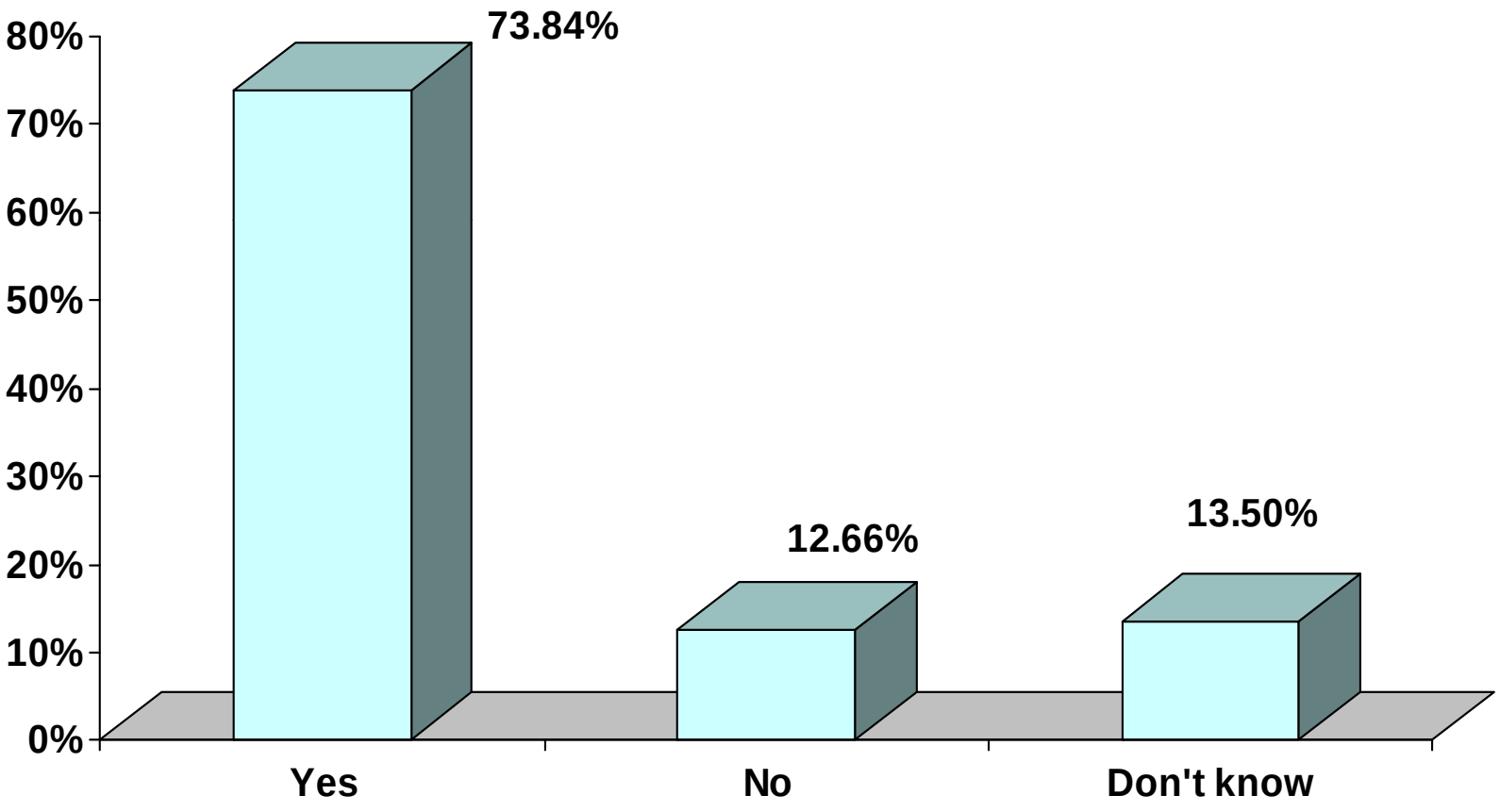


Fig 2abc. Consumer Segments

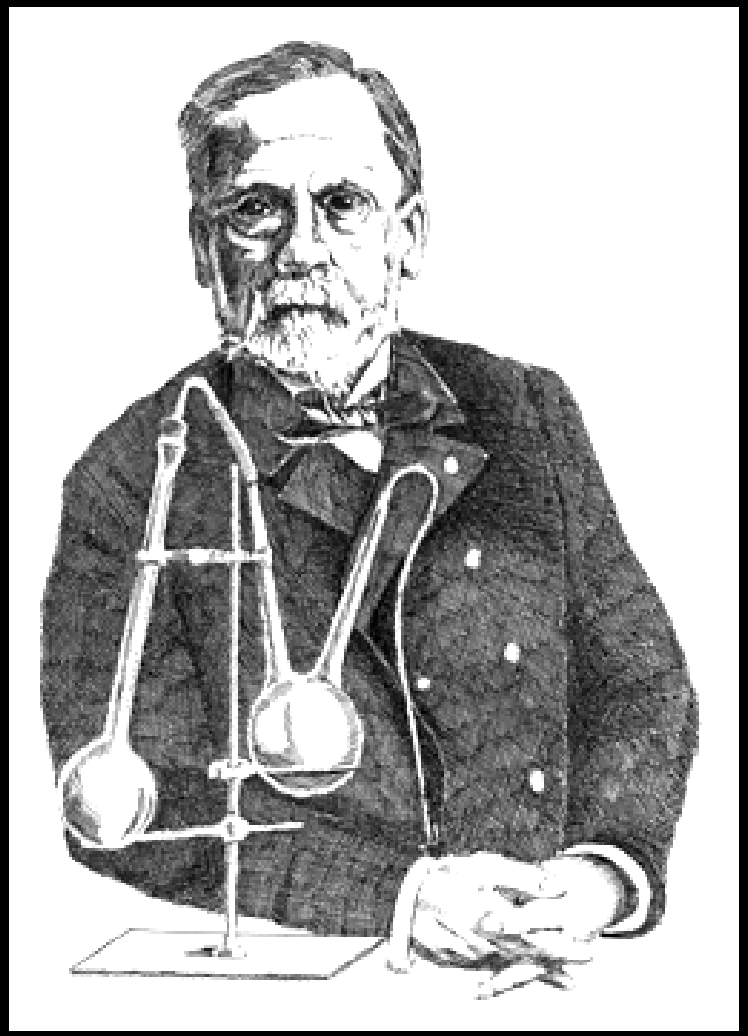
(Comparison before, after info1, and after info2)



Would you buy irradiated ready-to-eat food?



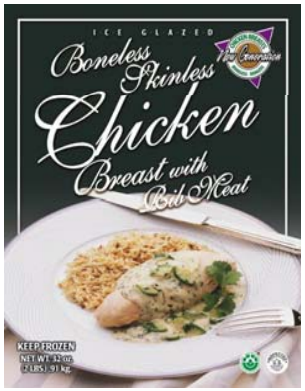
"To those who devote their lives to science, nothing can give more happiness than making discoveries, but their cups of joy are full only when the results of their studies find practical applications."



Dr. Louis Pasteur

Current Meat Applications of Irradiation in the USA

- ***Poultry***
- ***Ground Beef***



Schwan's markets irradiated beef patties nationwide

Schwan's
HOME DELIVERY OF FINE FOODS

Schwan's™
HOME DELIVERY OF FINE FOODS

PREMIUM HEARTLAND QUALITY

OMAHA STEAKS®

SINCE 1917

100% of Omaha Steaks Burgers are Irradiated!

Omaha Steaks, located in the heart of beef country U.S.A.®, has the world's finest beef. You'll savor the superior flavor and texture of this premium quality beef...a legendary classic for over 80 years.

PREMIUM HEARTLAND QUALITY

OMAHA STEAKS

SINCE 1917

- Mail order nationwide
- 80 stores in 23 states
- 5 additional stores planned in 2008
- Expanding by 8 to 10 stores per year

PREMIUM HEARTLAND QUALITY
OMAHA STEAKS
SINCE 1917
OS SalesCo, Inc.

FAMILY OF PRODUCTS New Generation® FOR A SAFER TOMORROW

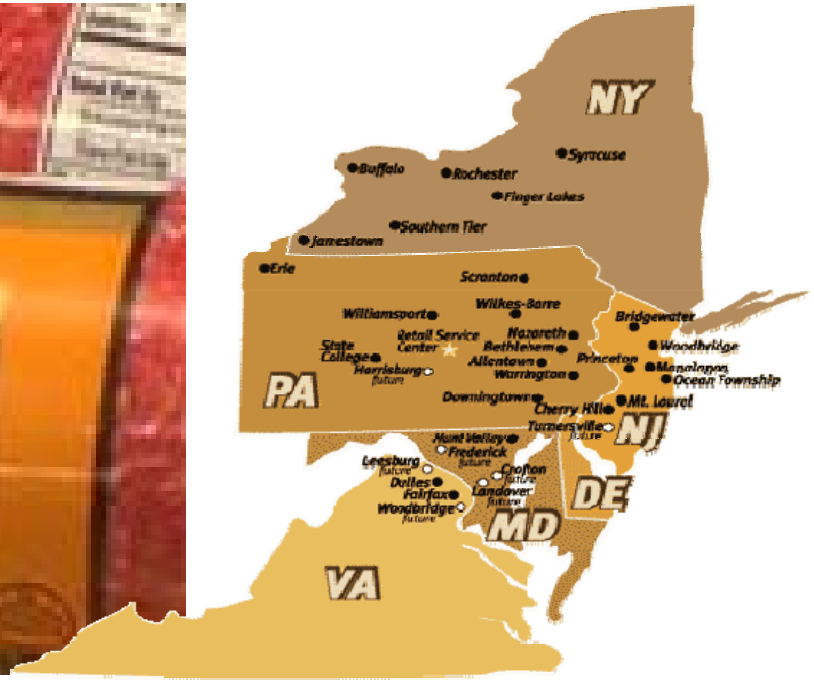
Colorado Boxed Beef of Auburndale, FL

Publix®

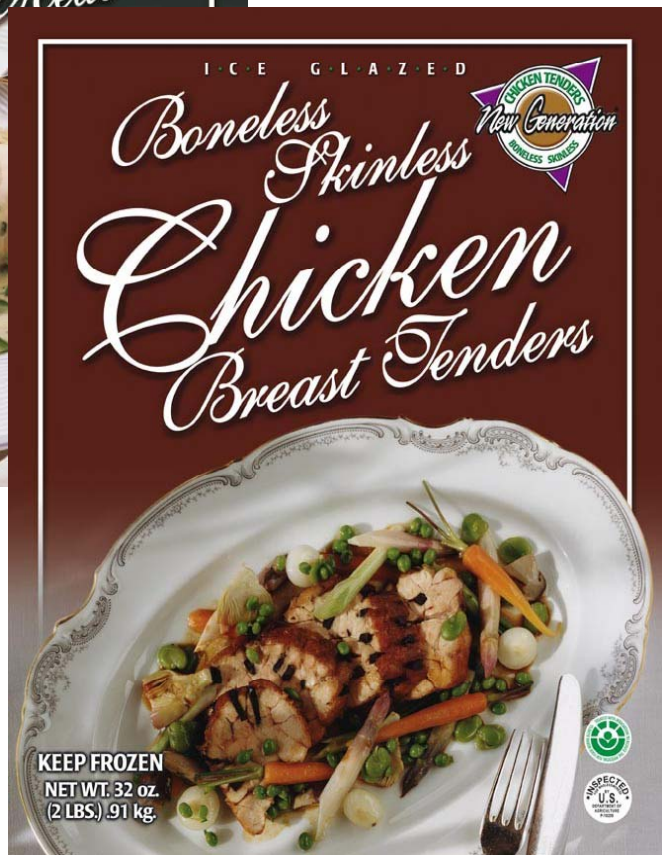
Wegmans
makes great meals easy

"Our decision to sell irradiated ground beef was made to offer our customers another choice in the meat case".

"We are strong believers in the safety and benefits of the irradiation process." **Jeanne Colleluori, Wegman's Communication Specialist**



Irradiated Poultry

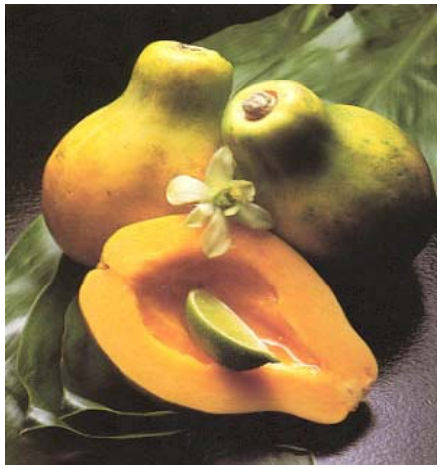


Publix®

Irradiated Fruits & Vegetables in USA

Guava

Mango



Papaya

Star Fruit

Chinese Yam Potato

Okinawa Sweet Potato

Lychee

Rambután

8,000,000 Pounds Annually

Food Technology Services Inc. (FTSI)
Mulberry, Florida

Mango

Guava

Boniato (Camote)
Cuban Sweet Potato

Produced in South Florida, irradiated at Food Technology Services.
Marketed by distributors to Arizona, Texas and California

Hawaii Pride

8 Million Pounds Per Year

Papaya

Rambutan

Irradiated Papaya

PRIDE OF Hawaii

Kroger

Albertsons

SAFEWAY
Ingredients for life..

Additional Irradiated Fruits from Hawaii

- **To ensure that plant pests do not enter the continental United States by importing these commodities, the fruit must undergo irradiation treatment.**

Queen of Fruits: The Mangosteen

From Thailand

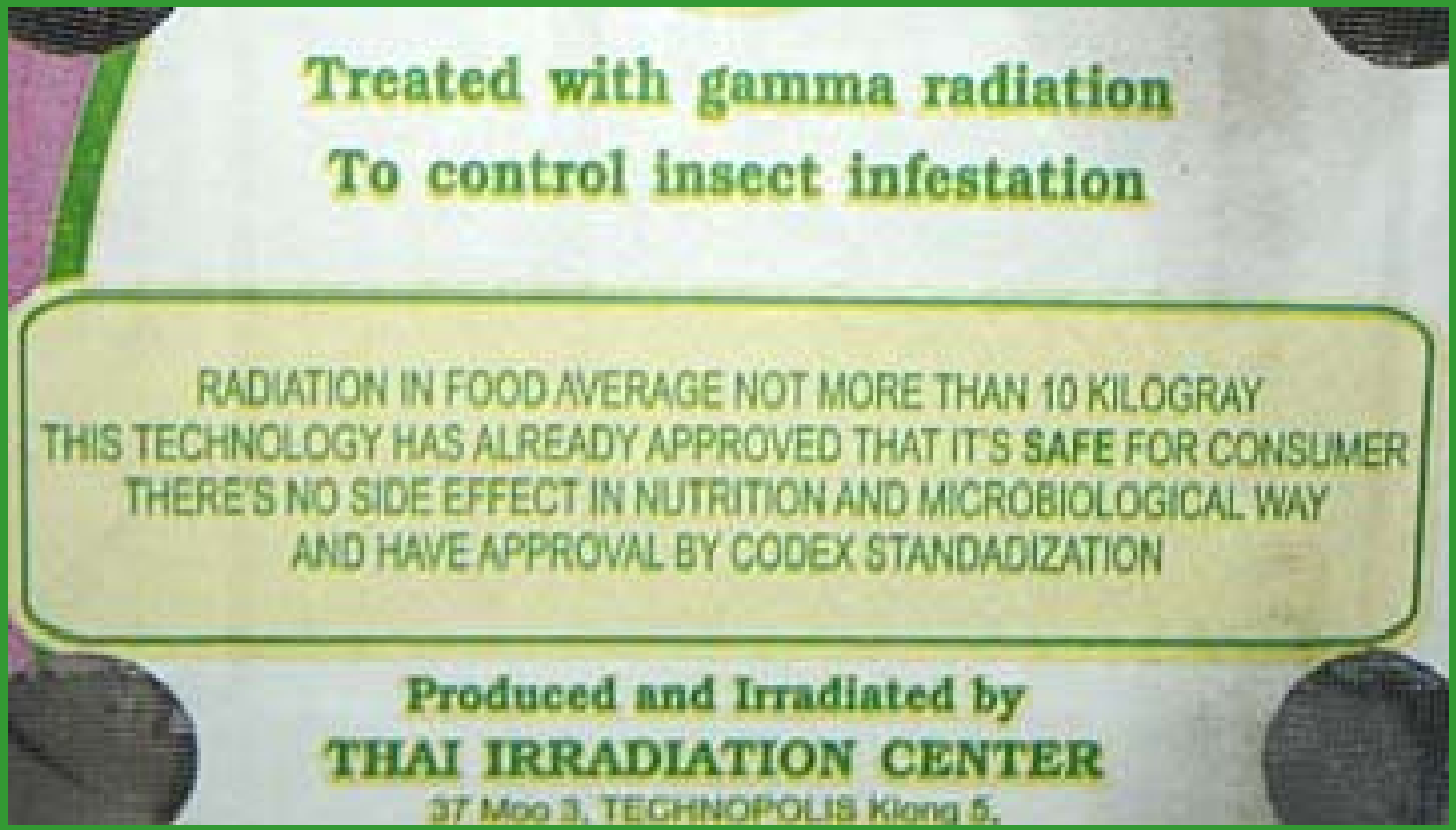
Available From:

Mangosteens have not been allowed into the United States for centuries, but as of July 23, 2007, they were given clearance for import after the process of **irradiation**.

Frieda's
the specialty Produce People

Frieda's
MANGOSTEEN
Treated with irradiation
Product of Thailand
3042

Cub FOODS



Boxes for products irradiated at the Thailand Irradiation Center near Bangkok bear the above label.

Irradiation in the USA Today

- ***Approximately 15-18,000,000 pounds (8,000 MT) of ground beef irradiated annually in USA.***

- ***Approximately 8,000,000 pounds (4,000 MT) of produce irradiated annually.***

- ***Approximately 175,000,000 pounds (70-80,000 MT) of spices irradiated annually.***

Reasons Why the Amount of Irradiated Food in the USA Will Increase Significantly

- **Food Safety Concerns (Leafy Vegetables)**
- **Pathogenic Bacteria Reduction in meat has slowed.**
- **Is it “Farm to Fork” or “Turf to Tort”? Who’s Next?**
- **US Market Access (Framework Equivalency Work Plans) India, Thailand, Mexico & more)**
- **Rapidly expanding Asian & Hispanic Populations.**
- **Emphasis on “Eating Healthy” Fruit & Vegetable Consumption.**
  - **Increasing imports of fruits & vegetables**

Wall Street Journal

REVIEW & OUTLOOK

E. Coli's Enablers

The recent E. coli outbreaks are playing as a familiar morality tale of too little regulation. The real story is a much bigger scandal: How special interests have blocked approval of a technology that could sanitize fruits and vegetables and reduce food poisoning in America.

The technology is known as food "irradiation," a process that propels gamma rays into meat, poultry and produce in order to kill most insects and bacteria. It is similar to milk pasteurization, and it's a shame some food marketer didn't call it that from the beginning because its safety and health benefits are well established. The American Medical Association, the Centers for Disease Control (CDC), the Food and Drug Administration and the World Health Organization have all certified that a big reduction in disease could result from irradiating foods

The campaign against food irradiation is making us sick.

the Star Wars antimissile program." Scary.

None of these mythologies has ever been substantiated by science. The Centers for Disease Control concluded its investigation by noting: "An overwhelming body of scientific evidence demonstrates that irradiation does not harm the nutritional value of food, nor does it make the food unsafe to eat." According to Paisan Loaharanu, a former director at the Food and Agriculture Organization of the United Nations, "The safety of irradiated foods is well established through many toxicological studies. . . . No other food technology has gone through more safety tests than food irradiation."

The Food and Drug Administration bears some of the blame for bending to political pressure and slowing the spread of food irradiation. The food processing industry

December 18, 2006

Lettuce Rejoice

These are salad days for the Food and Drug Administration, which announced last Friday that it will let food producers irradiate fresh spinach and iceberg lettuce to kill e-coli and salmonella. The decision wasn't early or broad enough to avert this summer's food scare, but it's a step in the right direction for consumers and producers who want reasonable options to ensure the produce they're taking home is safe.

Under the new regime, the leafy greens can be zapped before they are sent to market to ensure they aren't carrying bacteria that have been the source of major food scares in recent years. The method can prevent repeats of many of the major U.S. E. coli outbreaks in the past two decades in foods ranging from spinach to onions to alfalfa sprouts and jalapenos.

If it sounds like good news, not everyone was celebrating at Naderite groups like the Center for Science in the Public Interest, which sees irradiation as a threat to regulatory oversight on issues like farm cleanliness. In response to the FDA decision, CSPI insisted that irradiation was not a "silver bullet" and "may not be the futuristic cure-all the agency is looking for." They're the modern-growing appetite to cut costs and increase profits."

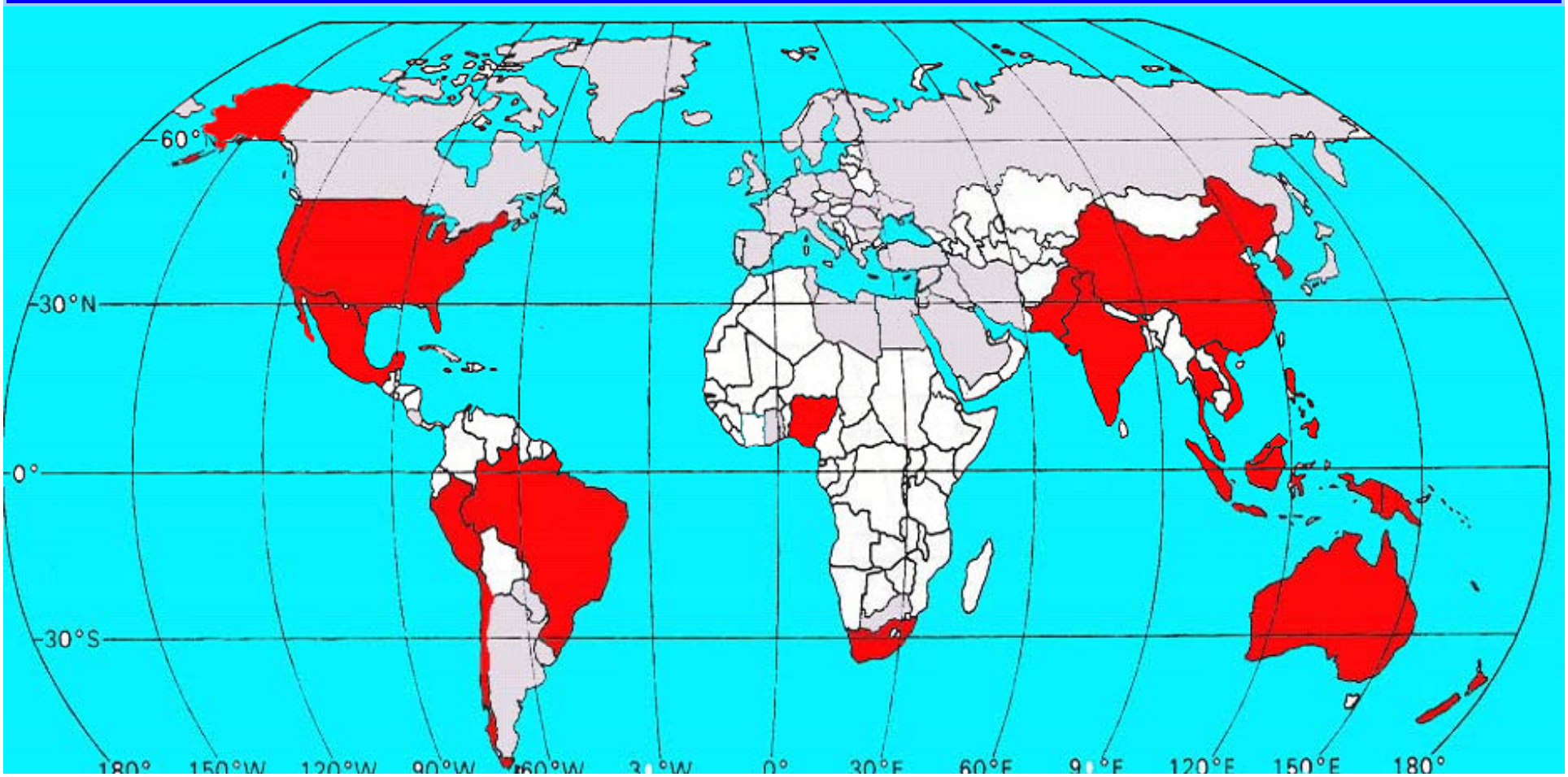
This is the same crowd that presumably thinks you can hire enough inspectors to look at every tomato. In the reality of a global marketplace, contamination can be almost impossible to track. On-farm inspections and other regulations have nothing on a distribution network that offers multiple opportunities for contamination at every stop along the food chain, from washing, to packing, to salsa-making.

Irradiation has already been approved in many other consumer products, including dried spices and meats, as well as the recent addition of shipments of Indian mangoes and Hawaiian papaya. The process has long since garnered the blessings of groups like the American Medical Association and the World Health Organization for its ability to limit foodborne illnesses. At the FDA, irradiation of any given food must be proven safe before it can be approved—the strictest standard available.

In the age of organic food chic, critics may not relent easily, but consumers may soon relieve the suspense. The same arguments and hyperventilation once greeted the introduction of pasteurization for dairy products, now

August 28, 2008

Global Dimensions in Food Irradiation



Countries in Red have "significant" irradiation activity

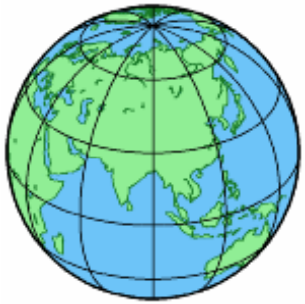
Countries in Gray have irradiation approvals or some activity

Proposed, Planned, Renovated or Under Construction Commercial Food Irradiation Facilities in Selected Countries

Country	Name/Location of Operational facilities	Source Strength	Proposed Facilities	Remarks
Australia	Steritech (Brisbane, Sydney, Melbourne)	Co-60	1 electron beam facility planned	
China	64 facilities at 36 cities, 24 provinces	0.1 to 1 MCi	Additional 20 by 2010	55 facilities currently used for food irradiation
India	Radiation processing plant, Mumbai, KRUSHAK, Lasalgaon, Nasik	430 kCi 45 kCi	3 Co-60	Eight facilities operating; Additional 10 multi-purpose this year (2007)
Indonesia	PT. PERKASA STERILINDO/INDOGAMMA Cibitung Bekasi 17520	590 kCi	1 gamma irradiator	
Korea	Greenpia Co., Ltd. Yeoju, Korea Soya Co., Ltd.	1 MCi 300 kCi	1 for commercial (1 MCi)	
Malaysia	MINTEC Sinagamma Alurtron, MINT	800 kCi 3 MeV (E-beam)	1 (private sector)	Co-60
Pakistan	PARAS Food Ltd. at Lahore, Karachi, Multan, Peshawar, and Quetta	50 kCi (each)	5	Operational Lahore Facility in 2008
Philippines	Multi-purpose Co-60 irradiation facility, PNRI Quezon City	50 kCi	Upgrading existing facility to [illegible]	
Thailand	[illegible]	[illegible]	1 electron beam facility	
Vietnam	VINAGAMMA, Ho Chi Minh City Son Son Co. (E-Beam), Ho Chi Minh City	400 kCi 150 kw	1.Binh Duong Province, 500 kCi Co-60 irradiator to be operational mid-2005 2.Hanoi: 200 kCi Co-60 irradiator being upgraded	

30-40 facilities proposed, under construction, renovated or operational

Source: FAO/IAEA (RCA)



Global Developments in Food Irradiation

- Approximately 300,000 MT of irradiated food entered commercial channels in 2005.
  - About one third of that amount was spices and dried seasonings.

China

China currently irradiates 150,000 metric tones of food annually (up from 120,000 tonnes in 2005 and 100,000 tonnes in 2004).

China has about 180 irradiation facilities with 80 of these being greater than 300,000 ci in capacity. About 55 facilities are used mainly for food irradiation. Plans are to build an additional 20 new irradiation facilities between now and 2010.

India & USA

Mango Diplomacy

Indian mangoes in US after 18 years

The first batch of Alphonso and Kesari mangoes in 18 years arrived in New York April 27, 2007 and was received by Bhaskar Savani, Arun Savani and Niranjan Savani of Savani Farms, importers and distributors of the fruit, at the JFK Airport.

Phytosan S.A. de C.V.
Phytosanitary Irradiation Services

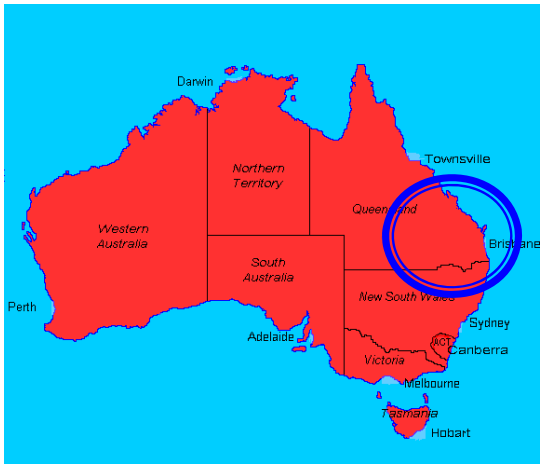
Phytosan S.A. de C.V in Guadalajara, State of Jalisco, Mexico is constructing two phytosanitary irradiation plants.

Thailand

- Thailand became the first country to sign a Framework Equivalency Work Plan (FEWP) with the USDA on January 31, 2006.
- Under the agreement Thailand will be allowed to initially ship six <u>irradiated</u> fruits:
  - Mango
  - Mangosteen
  - Longan
  - Rambutan
  - Litchi
  - Longan.

First Shipment Arrived November 1, 2007

Steritech, Australia

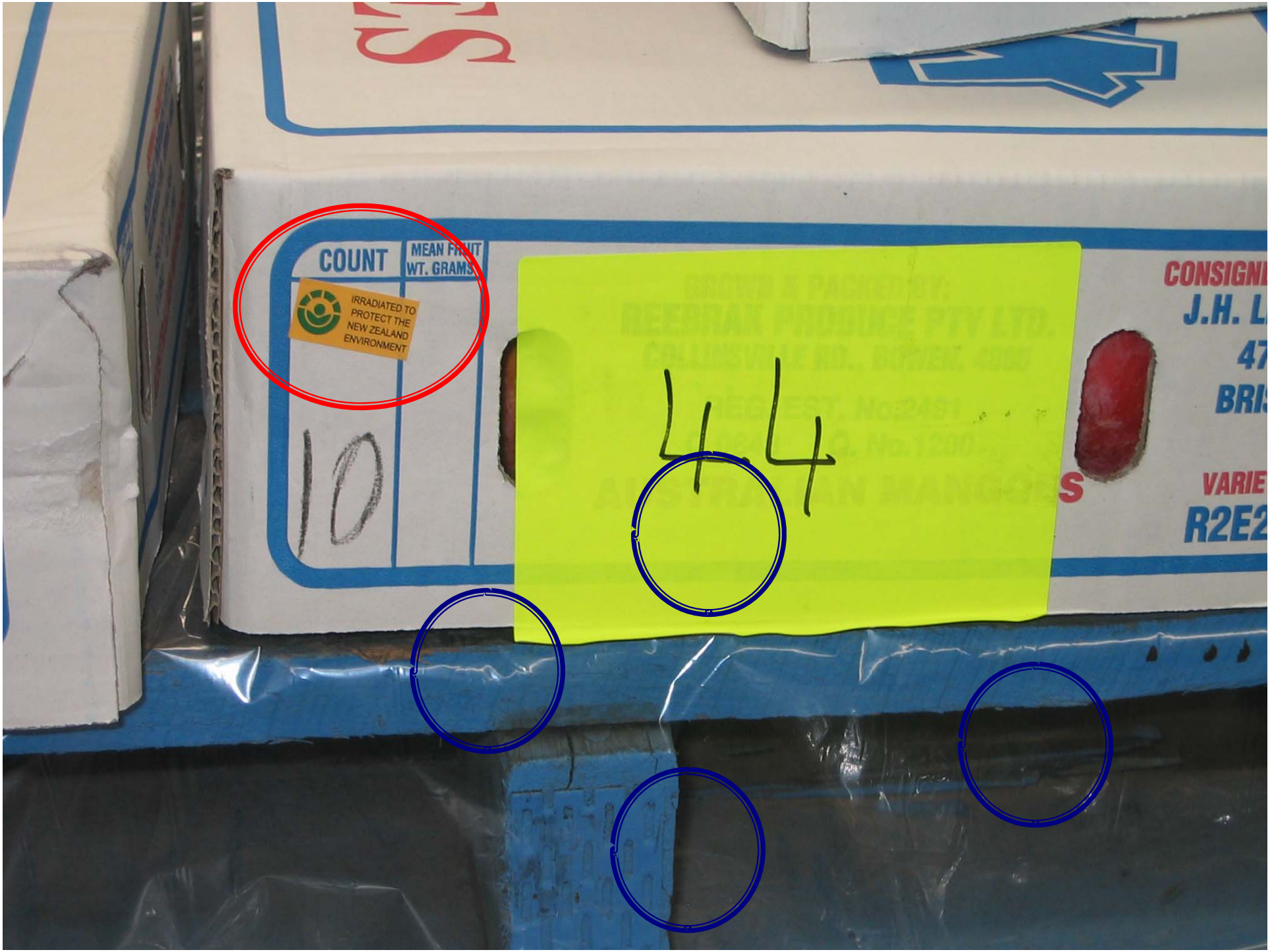


Dandenong, Victoria

Mangos are irradiated every day during the 90-120 day harvest season

270 Metric Tonnes Irradiated in 2007/08

Steritech


COUNT
MEAN FRUIT WT. GRAMS
IRRADIATED TO PROTECT THE NEW ZEALAND ENVIRONMENT
10
44
CONSIGN
J.H. L
47
BRIS
VARIE
R2E2


Brak Pak
5741
R2E2
MANGOES

Peruvian Asparagus

Copitarsia decolora

- **Peru is a leading exporter of green asparagus.**
- **Principal market is United States which receives 80% of Peru's fresh asparagus production.**

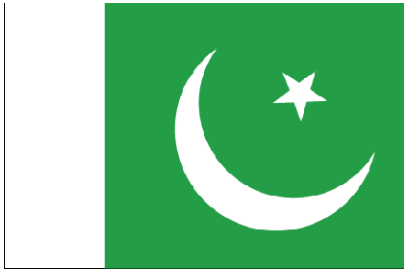
Instituto Peruano del Espárrago y Hortalizas

❑The US has placed restrictions on import of Peruvian asparagus because of the presence of *C. decolora.*

❑As a result, 100% of Peru's fresh asparagus exports must be fumigated with Methyl Bromide.

Pakistan

- Pakistan's first irradiation plant, a joint venture of Pakistan Horticulture Development and Export Board and Pakistan Atomic Energy Commission (PAEC), is now in operation.



Post-harvest fruit and vegetable production losses up to 30-40 %

The Future for Irradiation

- With thousands of tons of nutritious food that could be salvaged, spoiling before it reaches the market;
- With thousands of consumers being sickened and hundreds killed by bacterial infections that can be easily prevented and;
- With a growing need for increased fruit and vegetable consumption to improve public health…..

The Future for Irradiation

***The time for adoption and routine use of food irradiation has arrived*.**

Food Irradiation: Call to Action

Food Safety:

the ticket to play.

Without a safe product you are out of the game.

What We Know.

Foodborne Illness is Very Real!

- 76 million cases of foodborne illness
- 5,000 deaths

US Centers for Disease Control (CDC)

Irradiation can prevent many cases of food borne illness.

Consequences of Not Using Irradiation

- Illness, death & long term disability;

  Also

- Product Recalls
- Damaged or Ruined Reputation
- Lawsuits
- Bankruptcy

The Beat Goes On!

- Canada Says 12 Dead In Food Poisoning Outbreak; *(August 25, 2008; Reuters);*
- More than 1,400 ill by Salmonella Saintpaul; 43 states; *(MarlerBlog; July 2008);*
- 73 Virginia scouts ill, 21 lab-confirmed with *E. coli* O157:H7; eight required hospitalization; *(August 2008; BEEF magazine);*
- *Oklahoma E. coli Outbreak Claims One Life, Sickens Many;*

34 million lbs of ground beef recalled in 2007

US Ground Beef E. Coli Recalls:

Forty Million Pounds in 2 Years

Topps Meat Will Go Out of Business

Following 2nd-Largest Beef Recall in U.S.

- **ELIZABETH, NJ.- Oct 5, 2007- Topps Meat Co. LLC, the meat company responsible for the second-largest beef recall in U.S. history, said October 5th it will close its plant in Elizabeth, NJ., and go out of business, effective immediately.**

  Topps on Sept. 25 began a recall of its frozen hamburger meat that was expanded to comprise 21.7 million pounds of the meat, which may be contaminated with E. coli after federal inspectors discovered inadequate safety measures at its plant.

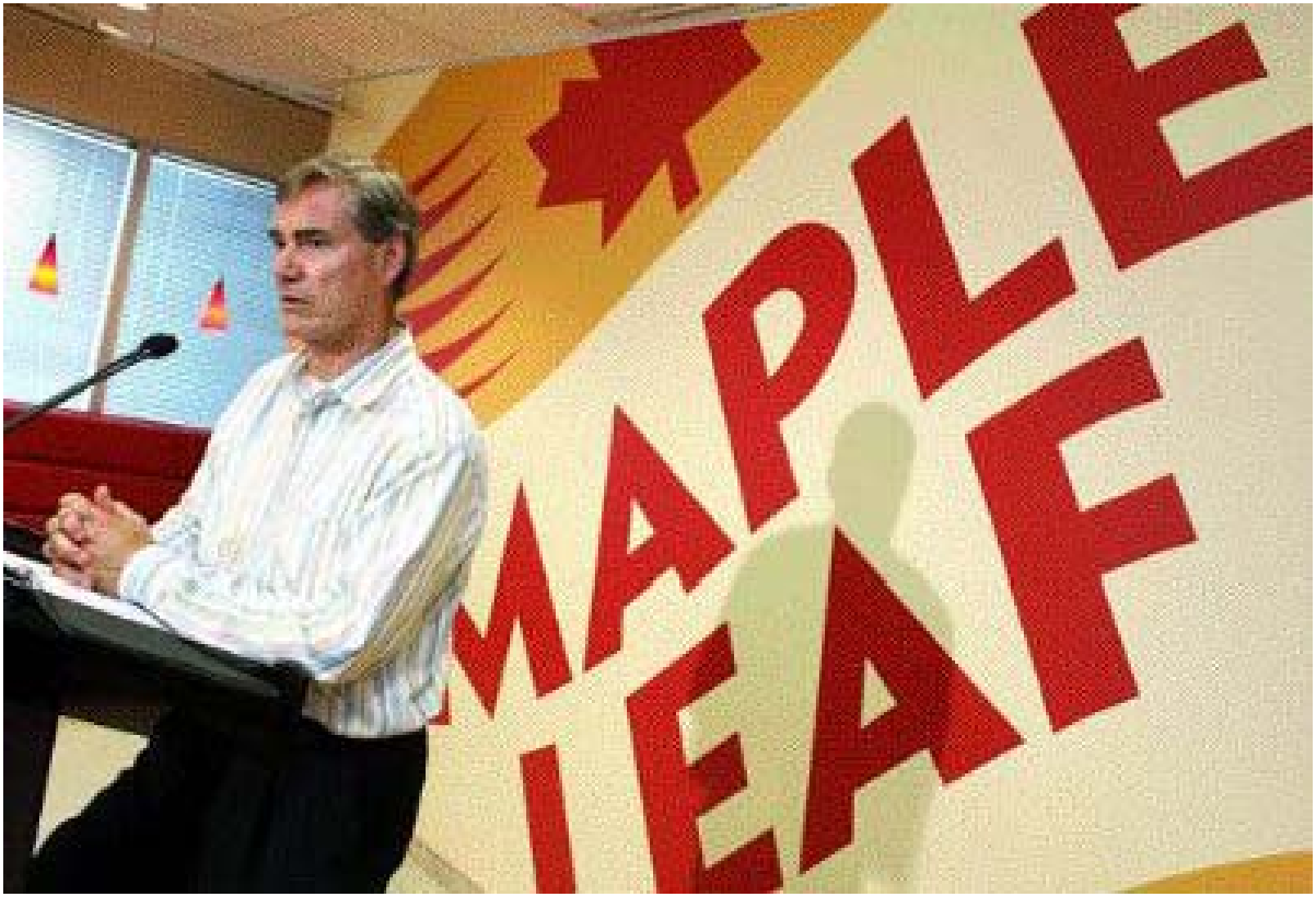
  Investigators think 30 people may have been sickened in Indiana and seven other states. Chief Operating Officer Anthony D'Urso said called the events "tragic."

  "In one week we have gone from the largest U.S. manufacturer of frozen hamburgers to a company that cannot overcome the economic reality of a recall this large," D'Urso said.

  Topps Meat was founded in 1940.


Shooting Fish in a Barrel

“The buck stops here.”



Cattlemen's organizations and processors all say they're behind irradiation – with policies of support on their books that they trot out when queried – but they continue to hide behind the skirt that consumers won't accept irradiation.

Joe Roybal, Editor, BEEF Magazine, Editorial, Sept. 2008

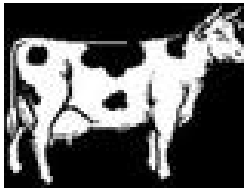
When they hear about irradiation, most consumers respond positively

- ***A wealth of research, however, shows that – with education – 85% of consumers will embrace the technology. Still, the industry dithers, hems and haws over the other 15% – many of them likely non-meat eaters.***

•***Joe Roybal, Editor; BEEF Magazine, Editorial (September 2008)***

Lessons Learned the Hard Way

Hill Top Farm—Home of Certified Milk. Established by L. A. Reymann. Production Certified by Wheeling Certified Milk Commission.

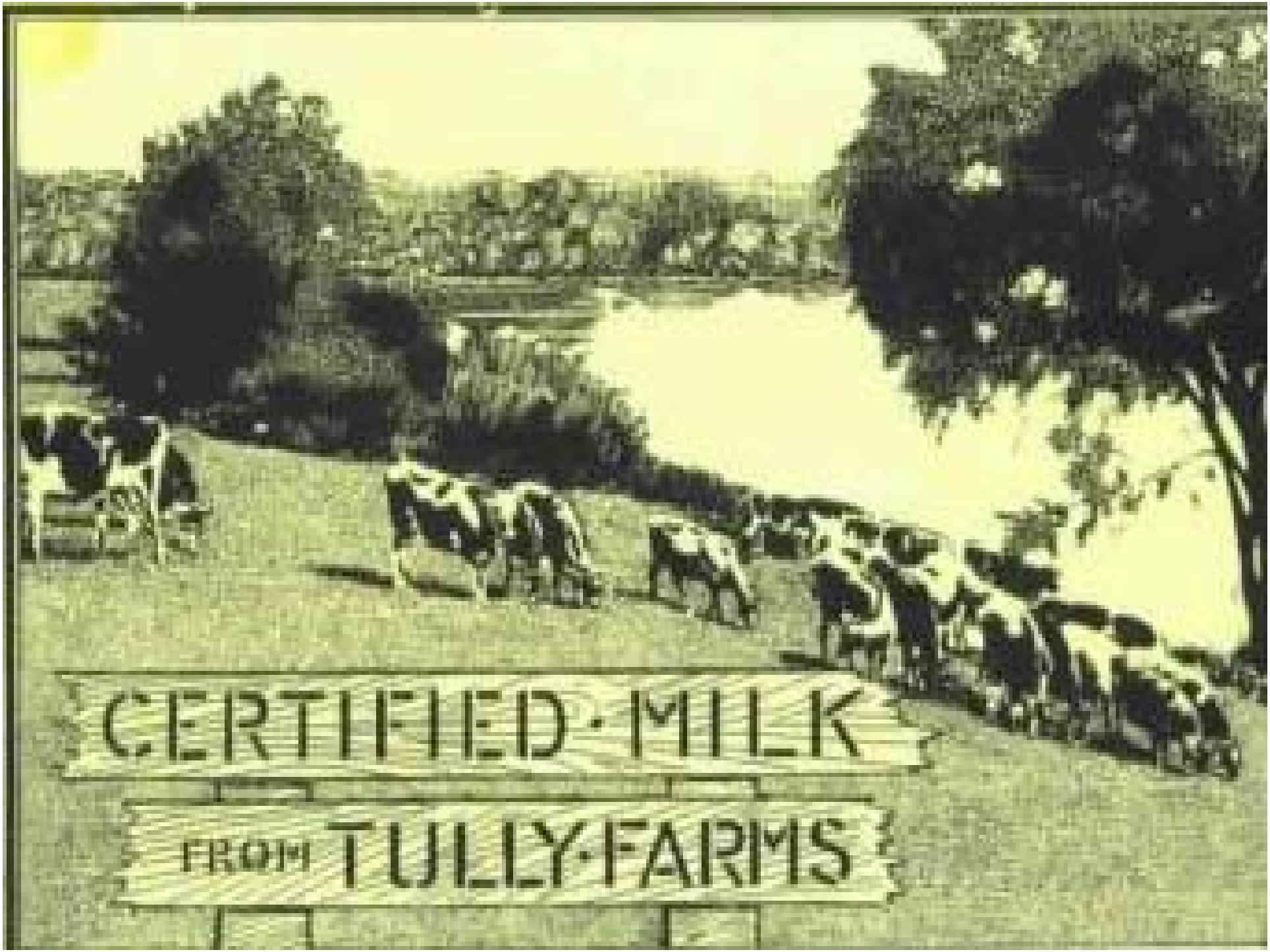


Arguments against pasteurization

- ***This is little more than an excuse for the sale of contaminated milk.***
- ***Pasteurization will be used to mask low-quality foods. Better controls and inspection are what is needed.***
- ***Pasteurization decreases the nutritional value of milk.***
- ***It leads to formation of harmful products in milk. Possibly dangerous substances could be formed.***
- ***This process will increase the price of the product. It is not necessary. We have a direct and prompt food distribution system.***

Sources:

- ***Milk Pasteurization, Hall & Trout (1968)***
- ***Technology Review (December 1997)***


CERTIFIED · MILK
FROM TULLY · FARMS

Middlebrook Farm

- A highly cultivated farm of 200 acres supplies food for the Middlebrook cows. Under the management of a graduate of the New Hampshire Agricultural College, these fertile fields and lush meadows show what trained intelligence and up-to-date equipment can do to “make farming pay”.

At Middlebrook Farm:

- Our cows are subjected to the tuberculin test twice a year, and no cow is added to the herd until it has been tested in this manner. The dairy barn is kept as free from tuberculosis as modern science can make it.

- What with the scrupulous care unceasingly used to banish dirt, these stables are as sweet and clean as the most conscientious housekeeper could demand of her kitchen. **Nowhere else, except in a hospital, is such thorough-going warfare waged against dirt and bacteria as in a high-class dairy farm, such as Middlebrook, which produces certified milk**.

Certified Milk is honor milk. It is intended especially for babies and invalids.

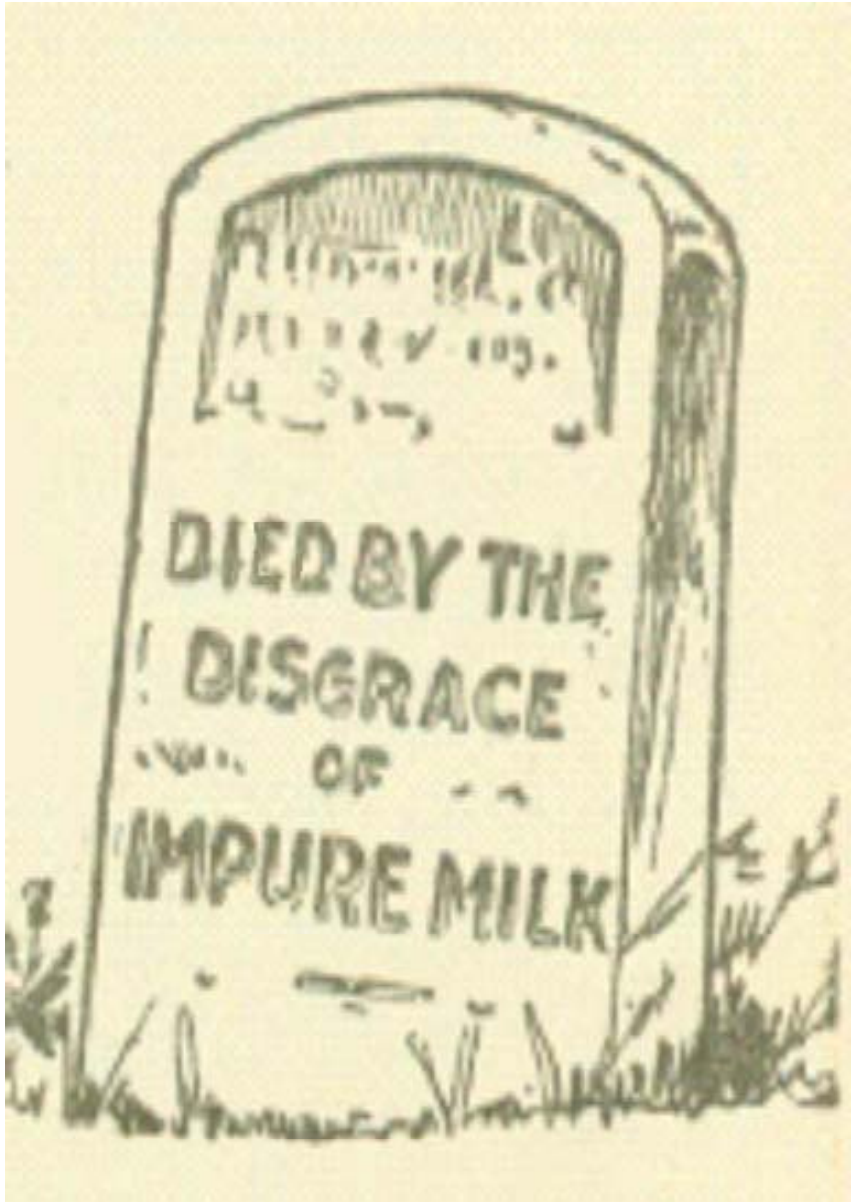
Certified milk is the very best, freshest, cleanest and purest raw milk that it is possible to produce.

Grade A milk is not quite as good as certified milk. It must be pasteurized before you buy it.

All About Milk; 1923, Metropolitan Life Insurance Company

Certified milk means "blue ribbon" quality and the dairy farm which obtains such a certificate belongs on a select and very limited honor roll.

http://www.dover.lib.nh.us/DoverHistory/middlebrookfarm.htm



Middlebrook Farm

- Middlebrook Farm at Dover, New Hampshire was a large supplier of certified raw milk during the early 1900's. The farm was well managed and prided itself on using the most scientific methods of feeding and production. **During the mid-1940s, Bovine Tuberculosis struck the herd and all the cows had to be destroyed.**
  http://www.dover.lib.nh.us/DoverHistory/middlebrookfarm.htm

Let’s Connect the Dots

Middlebrook Farms

•Hired expertise, UNH grad;

•Used up-to-date equipment;

•Scrupulous sanitation, health testing;

•Sold Certified raw milk;

•No “Kill Step” used;

•Hired design [illegible] T[illegible]

Our Finest Ground Beef Company

•Hired “Best & Brightest;”

•Invested millions of $ in equipment;

•Scrupulous sanitation; Used HAACP

•No “Kill Step”; Sold non-irradiated ground beef;

•Multi-million pound recall, illness, lawsuits, bankruptcy.

End of Story

Pasteurization: Routine Practice

- ***What made the difference?***
- ***It wasn't the dairy farmers;***
- ***It wasn't the dairy plants;***
- ***It wasn't the consumer.***

So What Made the Difference?

What Helped Make Pasteurization of Milk a Routine Practice?

1. Public support from public health officials
2. Lawmakers & legislation

Experts consistently rejected pasteurization.

They focused on controlling the conditions of production around milk rather than "altering" the milk itself. In Chicago, pasteurization's eventual acceptance as a milk purification process came from legislation adopted by the city in 1908.

Milk Pasteurization in the City of Chicago, 1908-1916

THE WALL STREET JOURNAL. September 9, 2008

The Food and Drug Administration's action on the irradiation of produce was long overdue ("Lettuce Rejoice," Review & Outlook, Aug. 28). Millions of dollars worth of produce has been needlessly destroyed, thousands of individuals have become sick and some have died, by the failure of the FDA to approve irradiation for all fruits, meats and vegetables long ago.

Ralph C. Whaley, M.D.
Barron, Wis.

The NEW ENGLAND JOURNAL of MEDICINE

November 9, 2006

Don't Eat the Spinach —
Controlling Foodborne Infectious Disease

Dennis G. Maki, M.D.

“I believe it is time to overcome our irrational fears and act to ensure the safety of our food (by using irradiation)”.

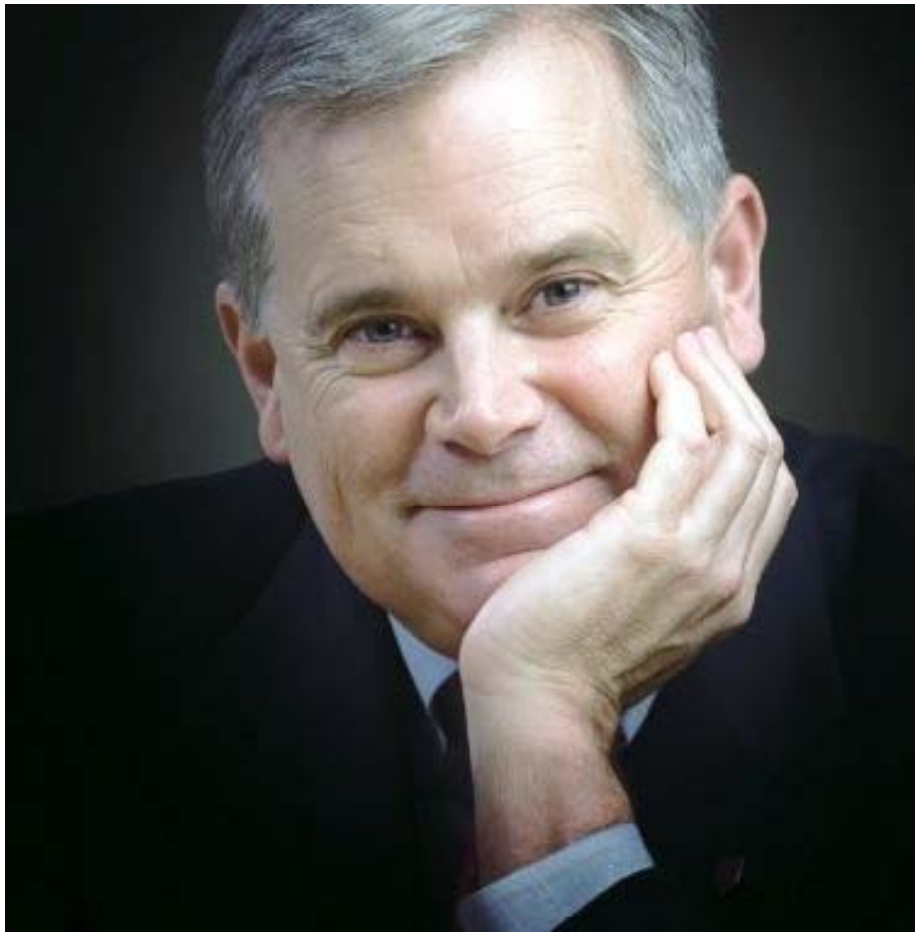
Dennis G. Maki, M.D; University of Wisconsin

Star Tribune; *November 24, 2007*

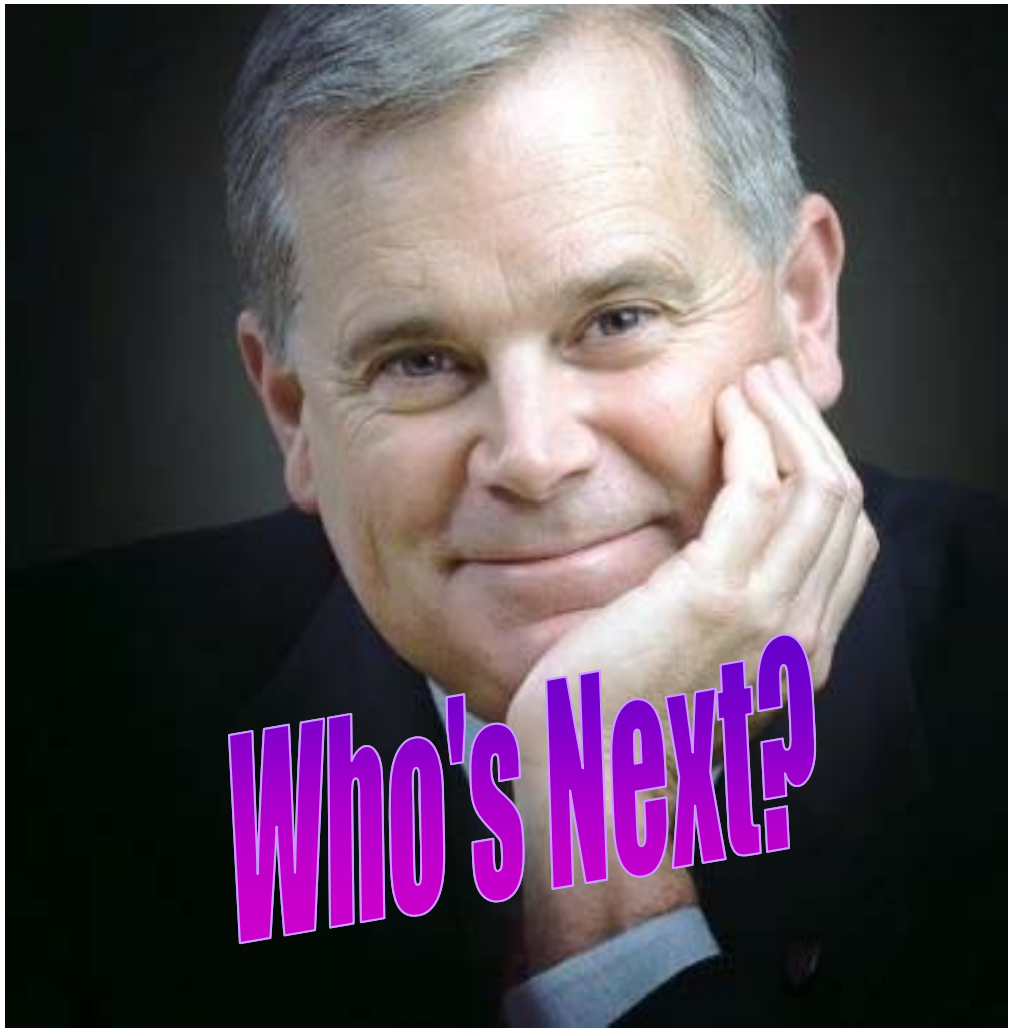
"E. coli is simply the enemy; we should treat it as nothing less: Irradiation is the only way we can confidently say the meat we eat is safe"

Dr. Michael Osterholm, Director of the Center for Infectious Disease Research and Policy & professor in the School of Public Health at the University of Minnesota.

Which is the Biggest "Threat" to Your Business?



For those involved in foodborne illness recalls; this man is the most feared person in America



Seattle-attorney Bill Marler has trouble finding a fast food restaurant to eat at that he has not sued!

The Legal Standard: Strict Liability

- **The focus is on the product; not conduct.**
- **You are liable if:**
  - **The product was unsafe and thus defective**
  - **The defective product caused an injury**

STRICT LIABILITY IS LIABILITY *WITHOUT* REGARD TO FAULT.

Denis Stearns, Attorney, Marler Clark

“Farm to Fork” or “Turf to Tort”

American Legal Institute's Third Restatement of the Law, Torts: Products Liability, adopted in 1998, states in section 2, ‘Categories of Product Defect’:

***

"A product is defective when, at the time of sale or distribution, it contains a manufacturing defect.... A product:

a) contains a manufacturing defect when the product departs from its intended design <u>even though all possible care was exercised in the preparation and marketing of the product</u>.

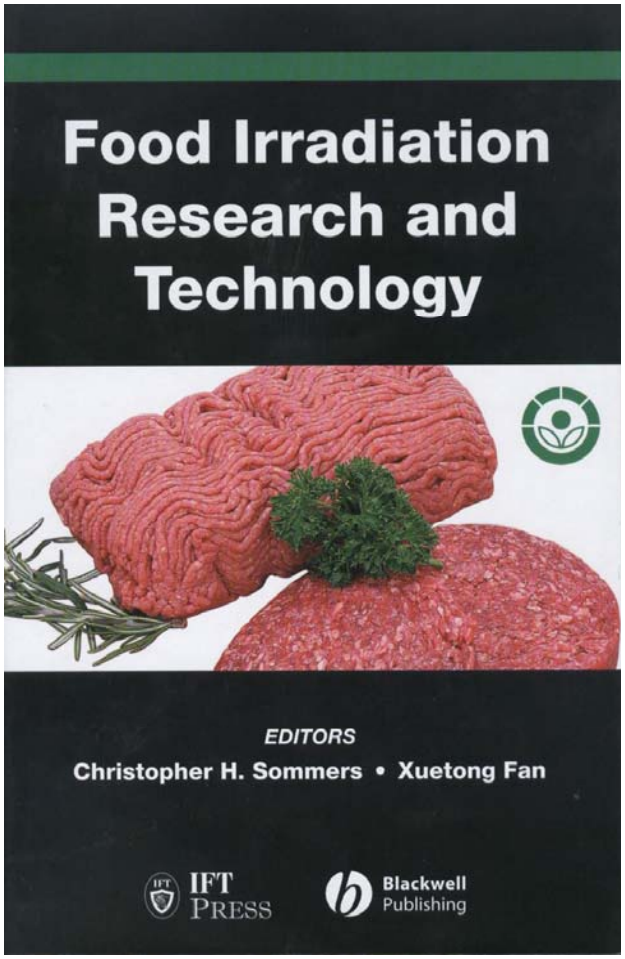
b) is defective in design when the foreseeable risks of harm posed by the product <u>could have been reduced or avoided by the adoption of a reasonable alternative design</u> by the seller or other distributor, or a predecessor in the commercial chain of distribution, <u>and the omission of the alternative design renders the product not unreasonably safe</u>."

“It is time for the big retailers to step up and put food safety first. Whether it is peppers procured by Wal-Mart or hamburger handled by Whole Foods, retailers must require – and pay for – safe food from suppliers. Safer food means less ill people, less ill people means less lawsuits. Wal-Mart, Whole Foods, get the picture? You stop buying contaminated food and selling it as safe to your customers and I will stop suing you - easy enough?”

Bill Marler on MarlerBlog (August 24, 2008)


Recalls
Illness
Death
Litigation
Bankruptcy
Make Food Safer by Routine Irradiation
We are at a Crossroads

To Learn More About Food Irradiation



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Chapter Five: Consumer Acceptance & Marketing of Irradiated Foods;

By Dr. Christine Bruhn & Ronald Eustice

Thank You!

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