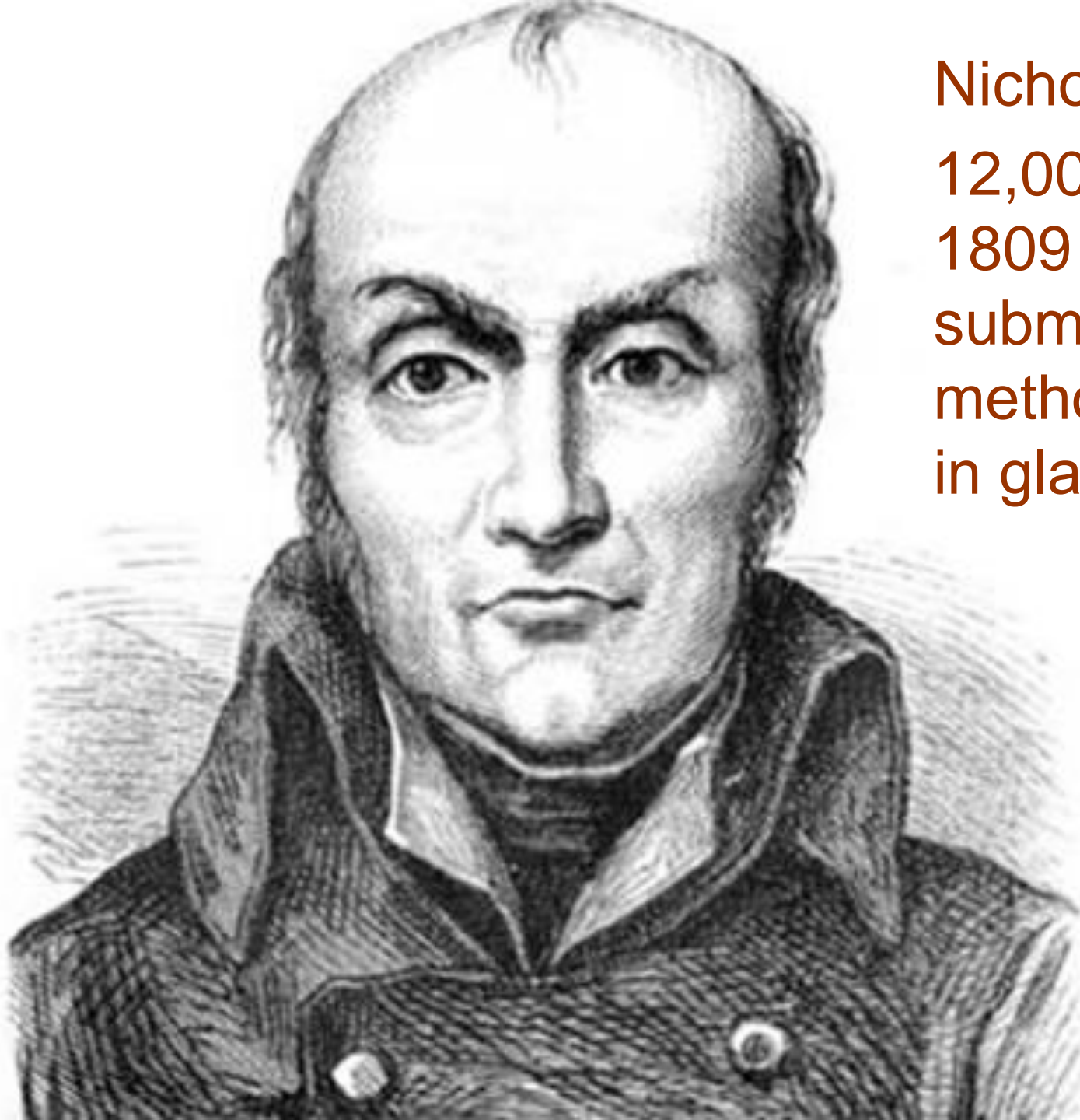


# A Journey Through the Past: Creating and Fostering a Strong Food Safety Culture

Dr. Ben Chapman  
NC State University  
June 11, 2015

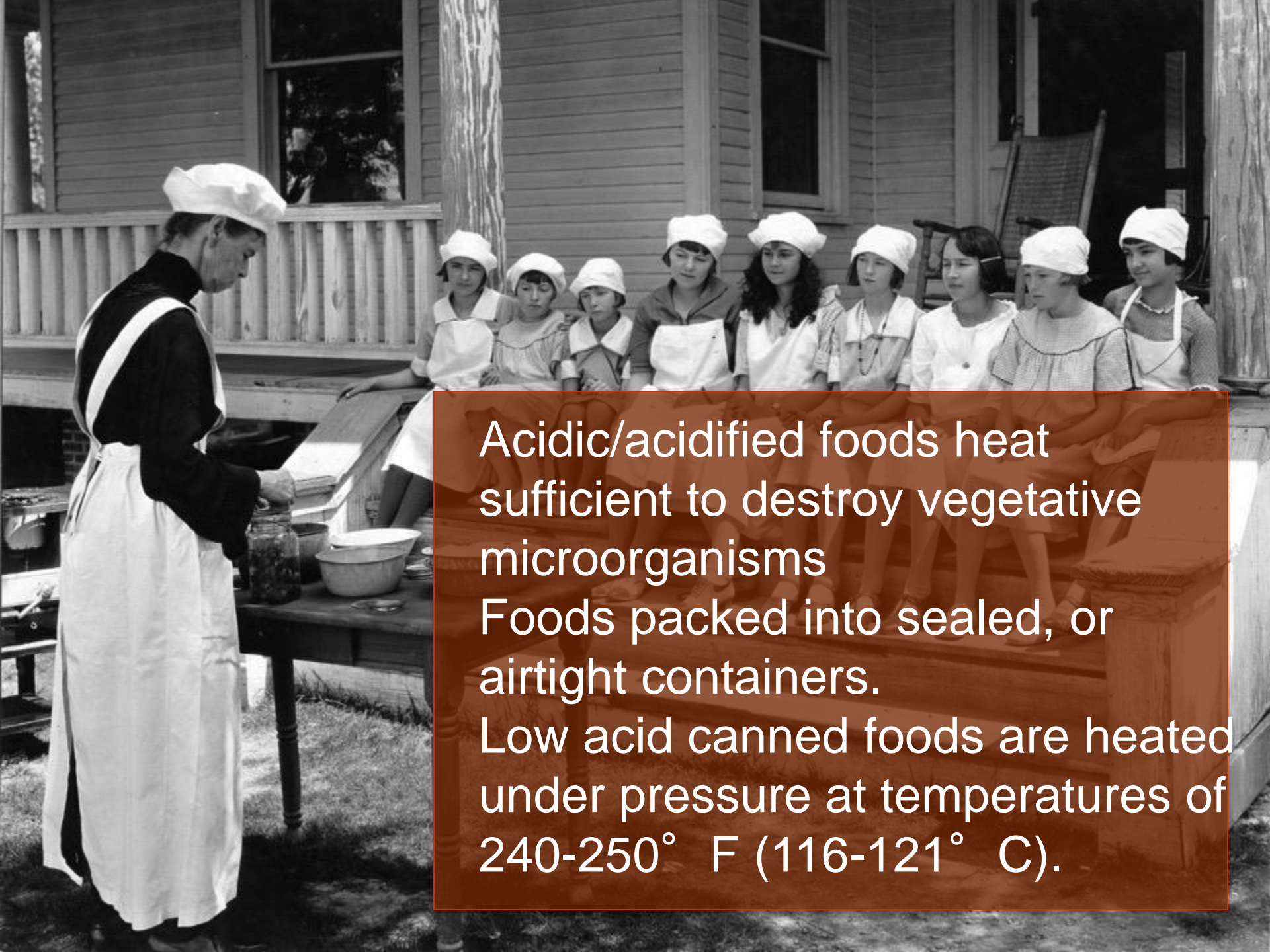






Nicholas Appert  
12,000 francs, in  
1809 when he  
submitted his  
method of “food  
in glass bottles.”





Acidic/acidified foods heat sufficient to destroy vegetative microorganisms

Foods packed into sealed, or airtight containers.

Low acid canned foods are heated under pressure at temperatures of 240-250° F (116-121° C).




Majority of home canners have reported not following science-based home preservation methods


Receive much of their home preservation information through friends and family

Only 45% of respondents thought that home canned foods could be spoiled without obvious signs of spoilage



A photograph of a man with a mustache and goatee, smiling, holding a large white plastic bag filled with a yellowish liquid. He is wearing a dark t-shirt with a graphic. The background is a plain, light-colored wall. A semi-transparent blue box with a red border is overlaid on the right side of the image, containing white text.

2012 CDC surveillance  
160 cases  
25 cases foodborne  
12 were linked to 2  
pruno outbreaks



*Clostridium botulinum*  
Lancaster, Ohio  
One death and 24 illnesses  
Linked to a church potluck  
Canned potatoes in potato  
salad

From The Muehli's  
Kitchen

Potatoes  
Canned Sept. 1, 2009


From The  
Kitc  
  
Potat  
Canned Sept





FDA and CDC  
now go on a  
journey through  
the past when it  
comes to  
pathogens



A close-up photograph of several round, glossy caramel apples. The apples are a deep reddish-brown color and are coated in a thick, shiny layer of caramel. They are arranged on a light-colored, textured surface, possibly a wooden table. The lighting is warm, creating bright highlights on the caramel coating.

7 deaths, 35 ill from Lm  
Outbreak strain with  
genetic match was found  
in apple packing plant  
Caramel apples

**HOLD!!**

DO NOT DISTRIBUTE  
PRODUCT RECALL  
TO BE DESTROYED

SHIPPED BY  
RMS PRODUCE LTD., INC.  
MUSKOGEE, AL 36555  
1-800-833-3333

12/24

11

Fresh Tomatoes

Fresh Tomatoes

Fresh Tomatoes

SHIPPED BY  
RMS PRODUCE LTD., INC.  
MUSKOGEE, AL 36555  
1-800-833-3333







FOOD  
SAFETY  
CULTURE



June 5 - Maricopa County Environmental Services Department identified *Salmonella* Newport in one sample and *Salmonella* Weltevreden in another sample of frozen raw ground tuna products.

The unopened frozen ground tuna products represented two different lots of product imported from Indonesia by Osamu Corporation of Gardena, California

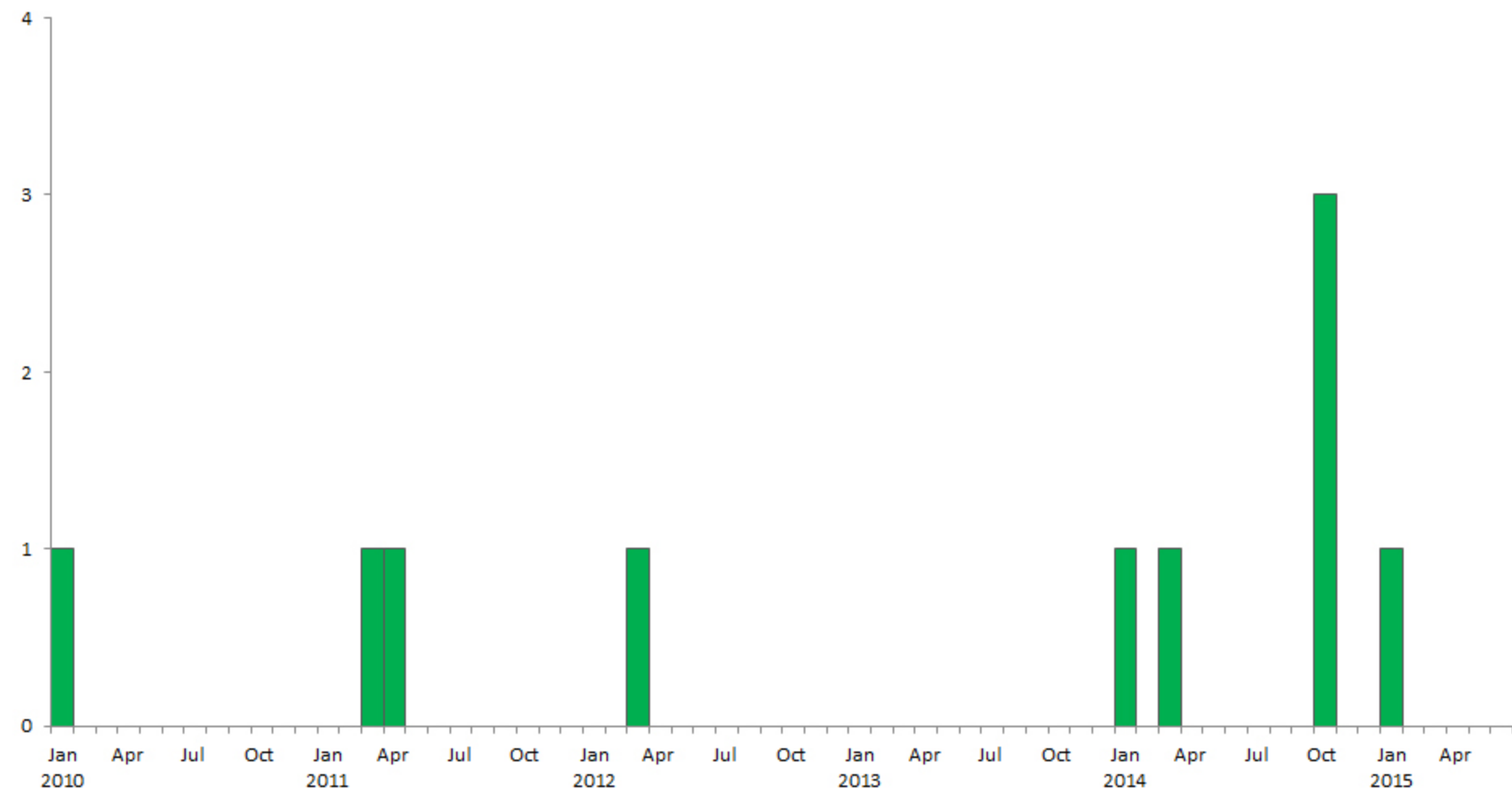






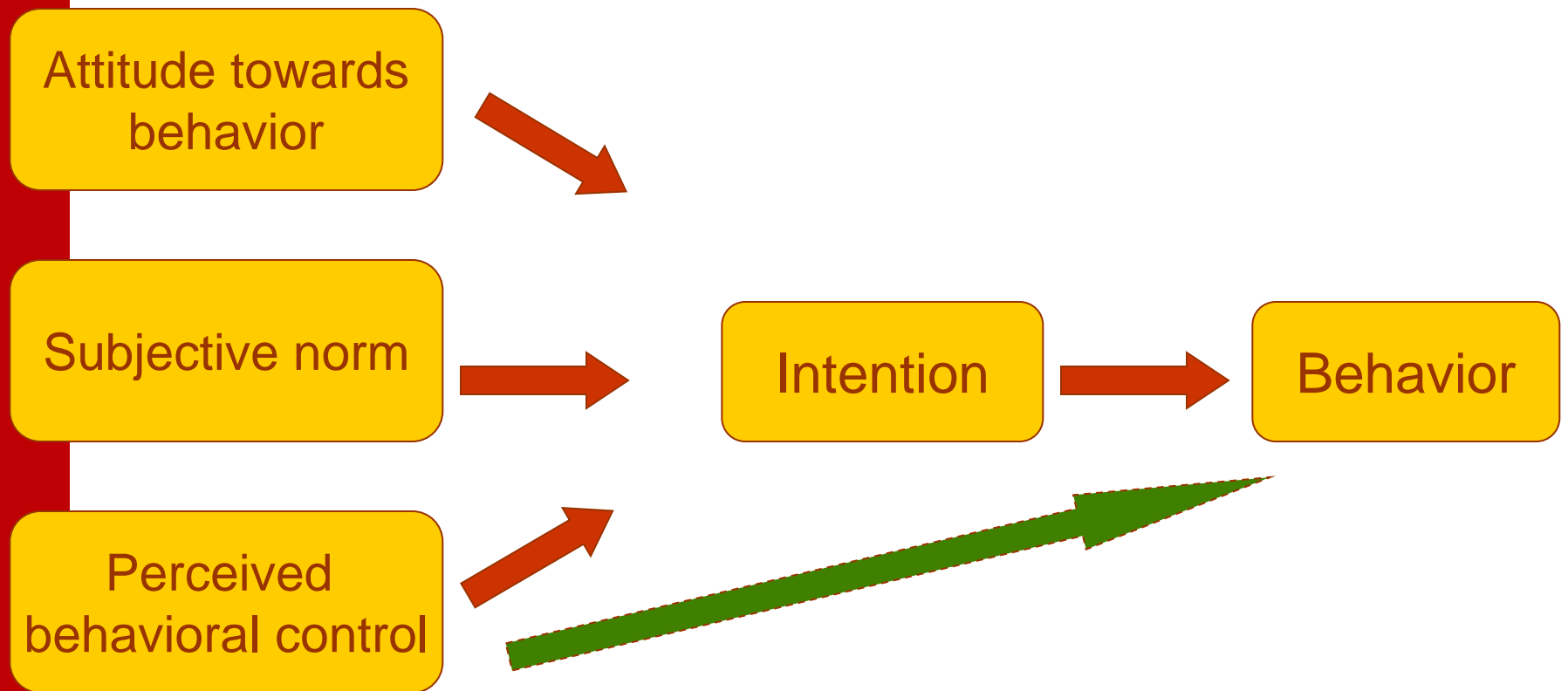
Blue Bell outbreak 2010-2015  
10 Listeria illnesses  
3 deaths  
Inspectors found violations in  
previous 5 years





Month of Illness Onset






Theory of planned behavior, Ajzen, 1991





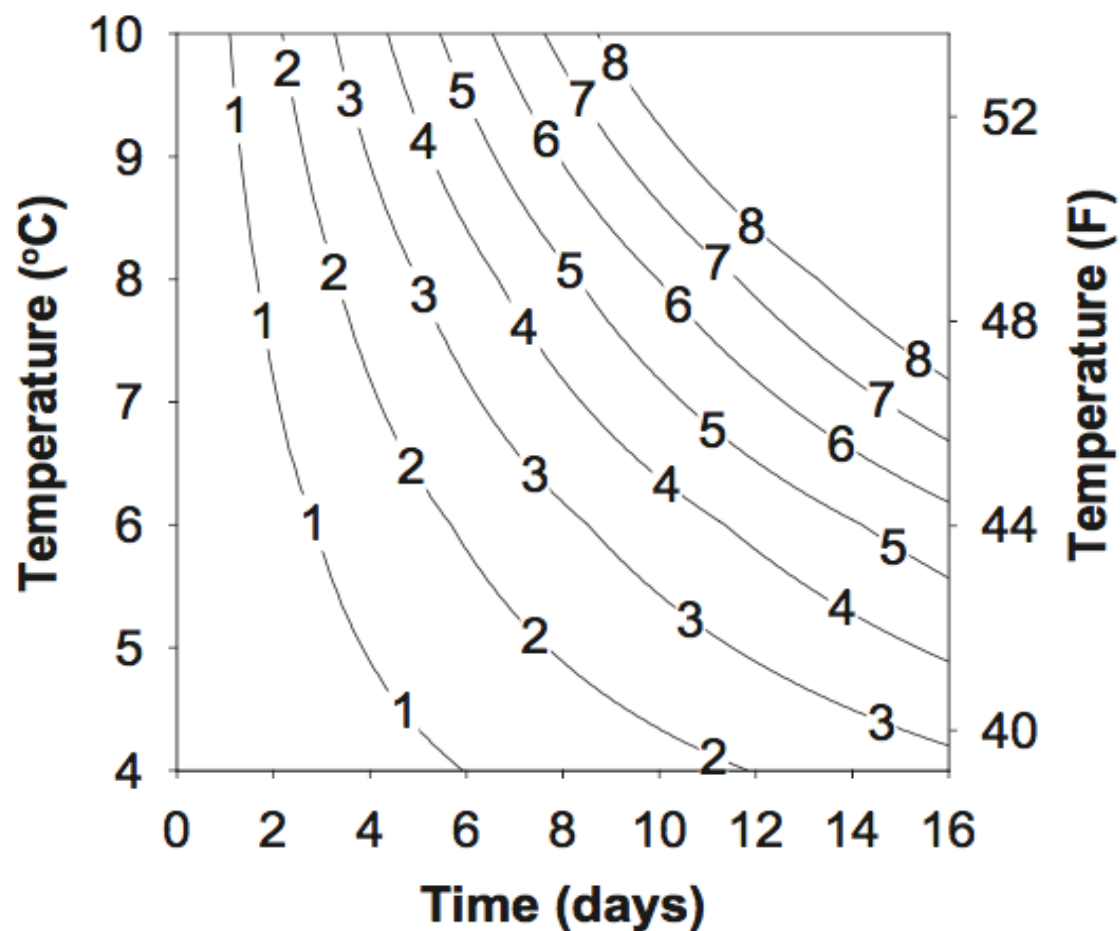




A close-up, slightly low-angle shot of a conveyor belt system in a food processing facility. In the foreground, a large number of ripe, yellow-orange citrus fruits, likely lemons or oranges, are moving along a white plastic conveyor belt. Above the belt, a horizontal white pipe is supported by a metal frame. Attached to this pipe are several white plastic nozzles, each with a black cap. Water is being sprayed from each nozzle onto the oranges below, creating a fine mist. The background is a light blue wall, and the overall lighting is bright and even.

Does retailer-required  
washing increase risk of  
pathogens?

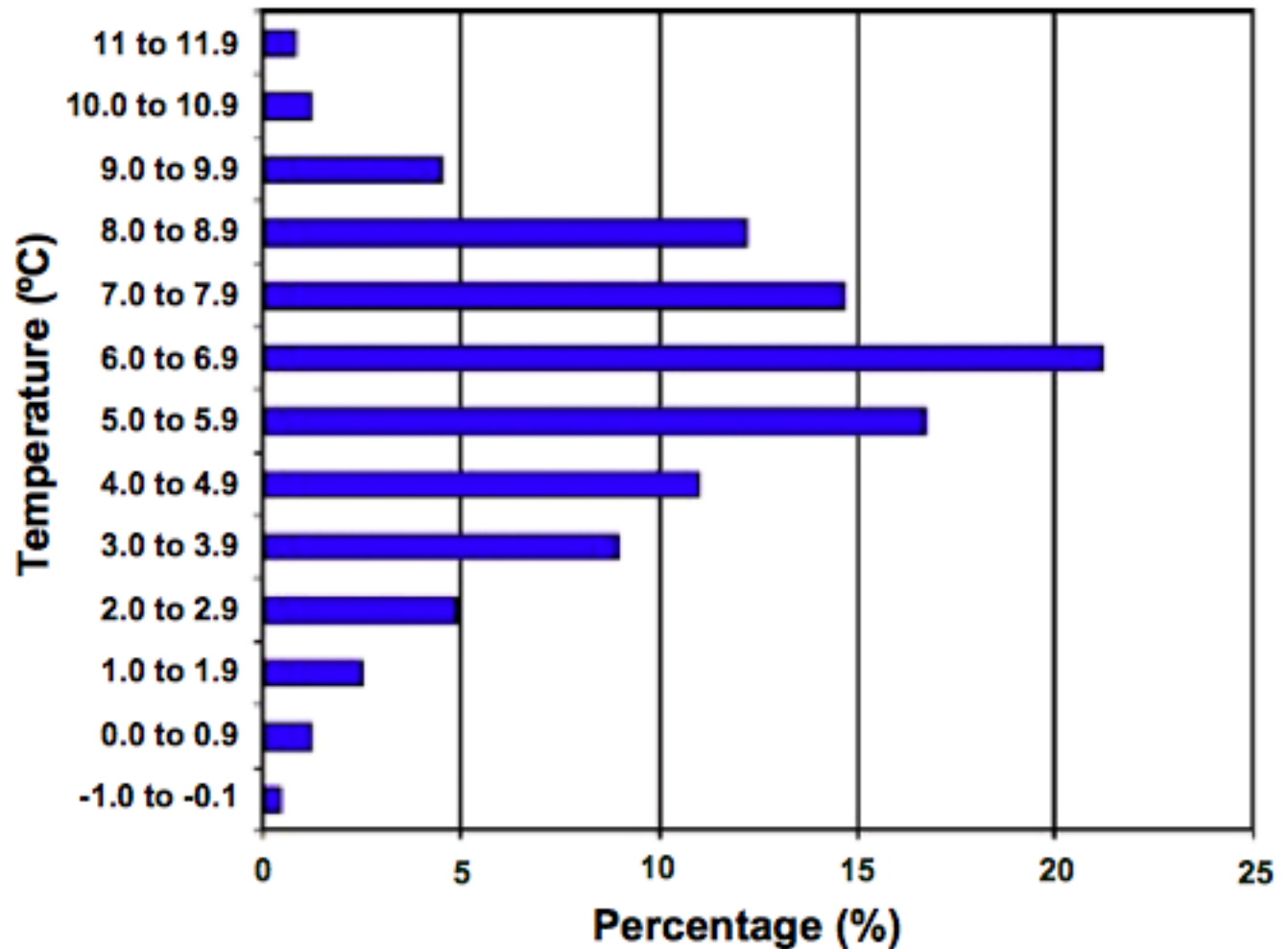
# Is a consumer advisory for handling cantaloupes prudent?



**Fig. 3.** Effect of storage time (x-axis) and temperature (y-axis) on the predicted log CFU/g increase of *L. monocytogenes* populations (contour lines) on cut melons.



# Kosa, 2007: 11% of all respondents had a thermometer



# California cantaloupes:

<http://www.californiacantaloupes.com/our-fruit/storing-and-preparing>

University scientists recommend that melons should be washed under running tap water before cutting. If desired, a scrub brush can be used on the melon rind. Melons, like all fresh produce, must be strictly separated from all potential contact with food items such as raw chicken, meat, seafood and eggs. Food preparers should thoroughly wash their hands, utensils, countertops and cutting boards. Do not store cut cantaloupe at room temperature for any length of time. Sliced melon should be stored in the refrigerator until it is ready to be eaten.



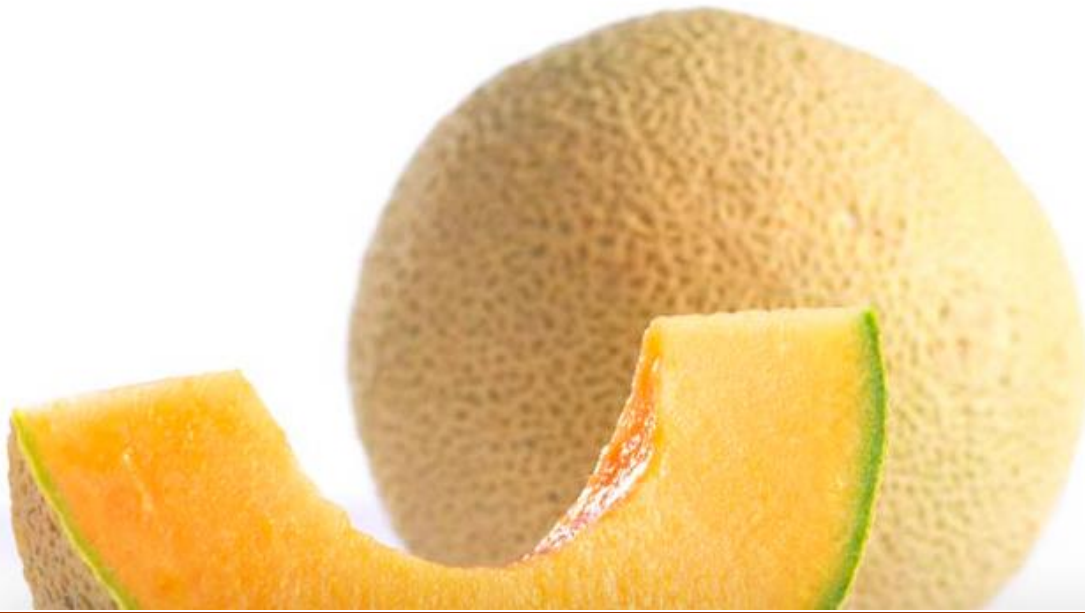
**Store cantaloupes in the refrigerator but do not freeze.**



**Cut cantaloupes only when you are ready to eat**

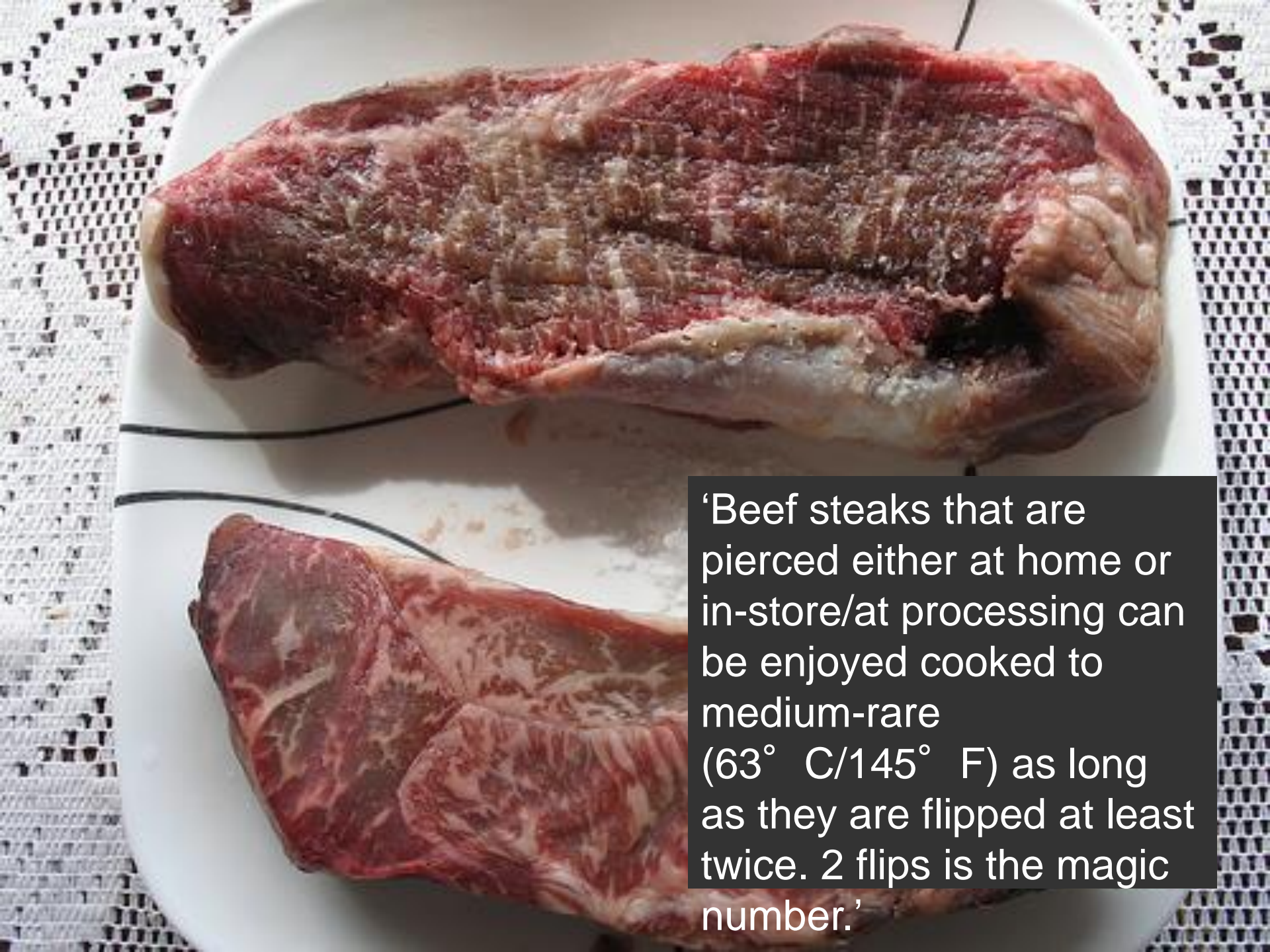


**Cut cantaloupes should be wrapped tightly in plastic wrap and put back in the refrigerator immediately**



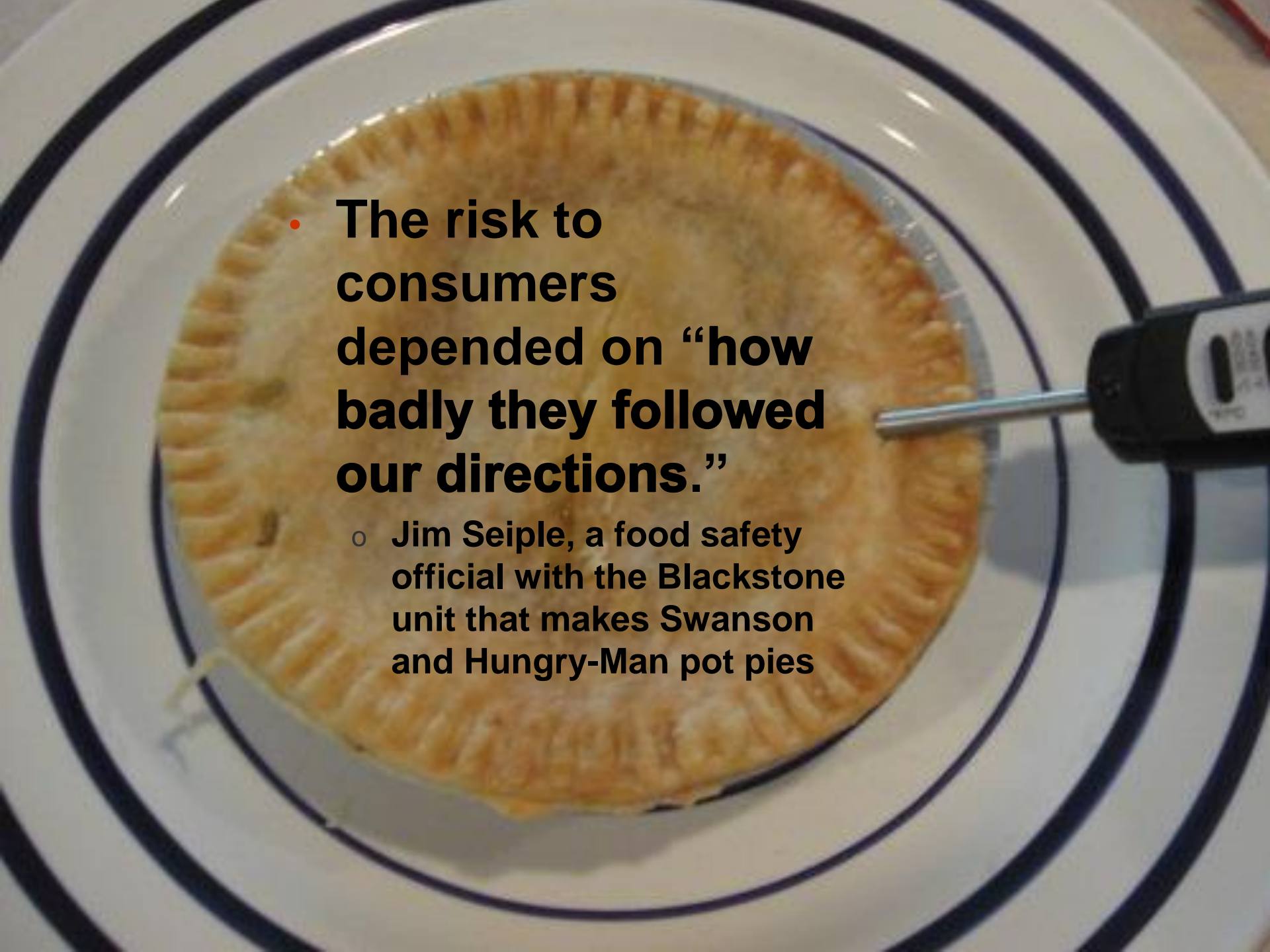






‘Beef steaks that are pierced either at home or in-store/at processing can be enjoyed cooked to medium-rare (63° C/145° F) as long as they are flipped at least twice. 2 flips is the magic number.’



- 
- **The risk to consumers depended on “how badly they followed our directions.”**

- **Jim Seiple, a food safety official with the Blackstone unit that makes Swanson and Hungry-Man pot pies**

11  
Comments

# West Michigan illnesses linked to Detroit meat packing company's ground beef recall



By Sue Thoms | [sthoms1@mlive.com](mailto:sthoms1@mlive.com)

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on May 19, 2014 at 8:52 AM, updated May 19, 2014 at 9:27 AM

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In it

GRAND RAPIDS, MI - An investigation into an outbreak of **E. coli that sickened five Michigan residents**, including two in West Michigan, has led to a recall of ground beef by a Detroit meat packing company.



**Kwikset**



INTRODUCING





Brian Ronholm, FSIS,  
“For consumers, we advise all consumers to safely prepare raw ground beef products by cooking them to 160 degrees Fahrenheit. When dining out, this is equivalent to ordering your burger well done.”

































NC STATE  
UNI

\*In compliance with new food code regulations,  
we remind you that consuming raw or under cooked  
meats, poultry, seafood, shellfish or eggs may increase  
your risk of food borne illness.

Above Entrees Served with choice of potato, salad & bread

NC PIT COOKED BBQ Plate	\$9.95
KNOCKWURST 2 grilled knockwurst on a bed of sauerkraut, mustard, horseradish & french bread	\$ 9.95
STIR-FRIED VEGGIES over rice or pasta with marinated chicken	\$ 12.95
with grilled shrimp	\$12.95

FROM THE GRILL

Angus Beef ground on site. Order It RARE! \* Comes with Homemade

\$ 3	PHILLY DOG mustard, chilli, baco
4oz. \$6.25    6 oz. \$7.50	CHEESEBURGER 4 oz \$ 6.
American cheese, chilli, mustard onions	4 oz. \$ 6.

# Examples of Server Responses

"Eating medium rare has been perfectly fine and no problem..." Told us her sister eating barely browned beef (raw in middle) while she was pregnant and she is just fine.

Assurance of safety, even for at-risk groups

"Medium rare will be cooked to about 135."

Temperature mentioned, but not safe

"The ingredient quality and so long as the o is cooked it is safe is where most of the bad bacteria is."

Incorrect information about meat

"I was actually going to tell you about that- we have to remind you that there is a risk when you order undercooked food. You can still get medium rare, just need to let you know about that."

Good risk communication



**DUDE IT'S  
BEEF!**



“No one should rely on third-party audits to ensure food safety.”

— *Will Daniels, food safety,  
Earthbound Farm*



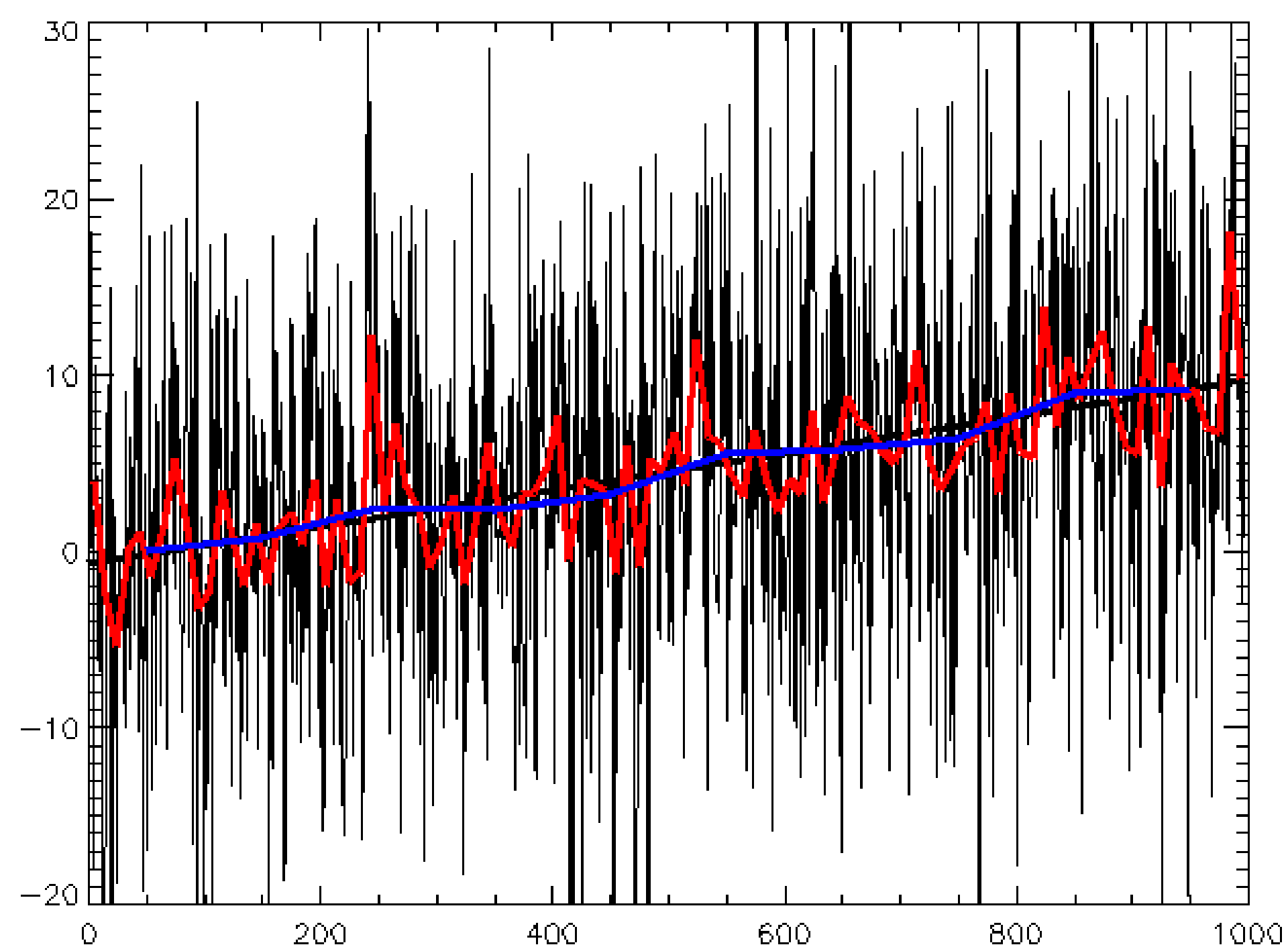
What do they do?  
How do they do it?  
What do they value?  
Take experts to visit

Provide buyers  
with more than  
generics  
Be familiar with  
specific  
risks/stay up to  
date on  
literature



Audit? Sure, but do something with it





# NOROVIRUS



# YOU DON'T WANT IT



"to educate,"

(from

of a

Assuming there are folks  
whose behavior you're  
trying to change, do they  
see you as legit(imite)



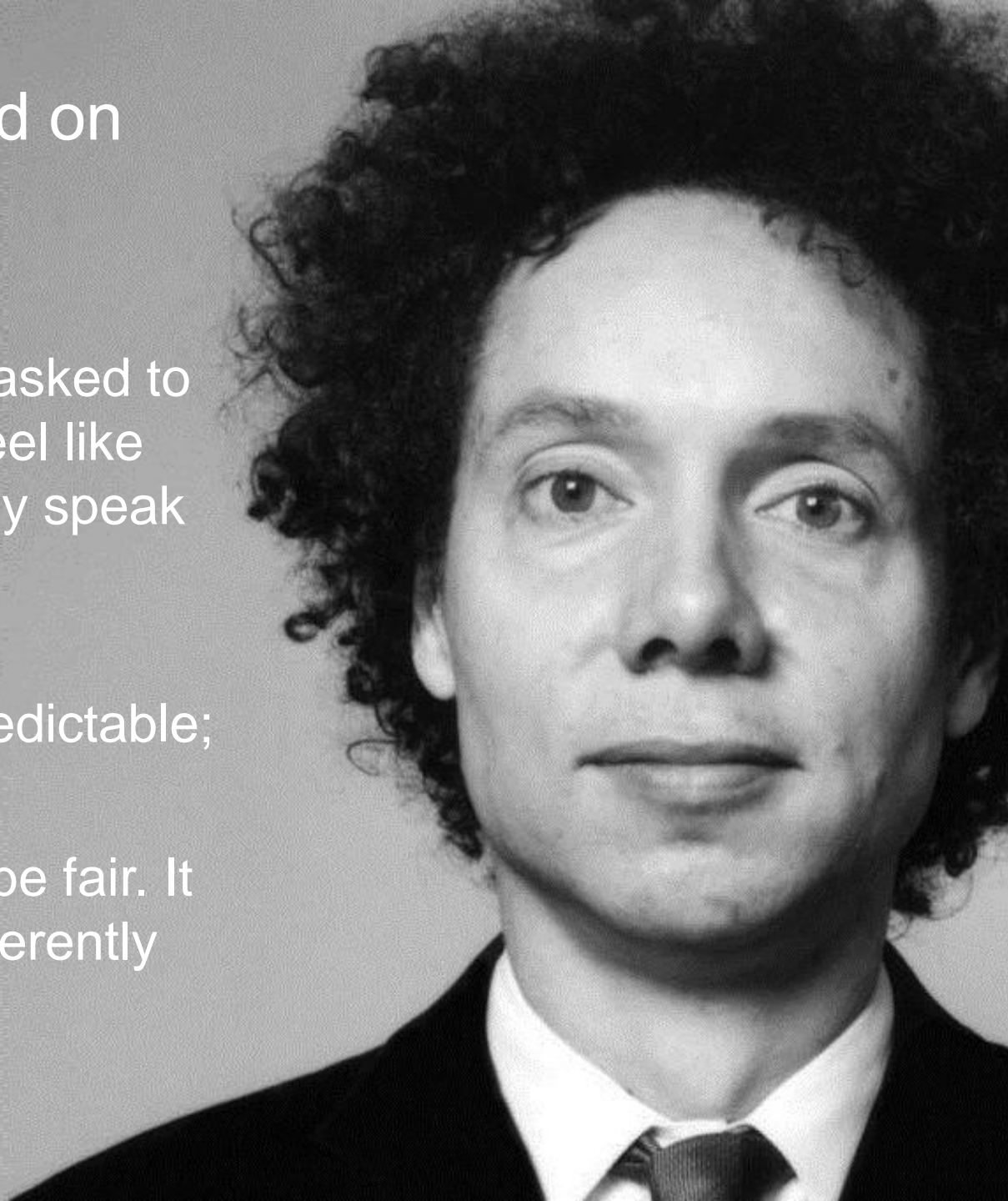


“Legitimacy is based on three things:

(1) The people who are asked to obey authority have to feel like they have a voice - if they speak up, they will be heard;

(2) The law has to be predictable;

(3) The authority has to be fair. It can't treat one group differently from another.”



Food safety culture is more than training  
Know the past, learn from other's experiences  
Tell consumers more – they want it  
Be legitimate  
Focus on behavior (staff and consumers)

The End