

Building an external and internal food safety culture – and measuring it

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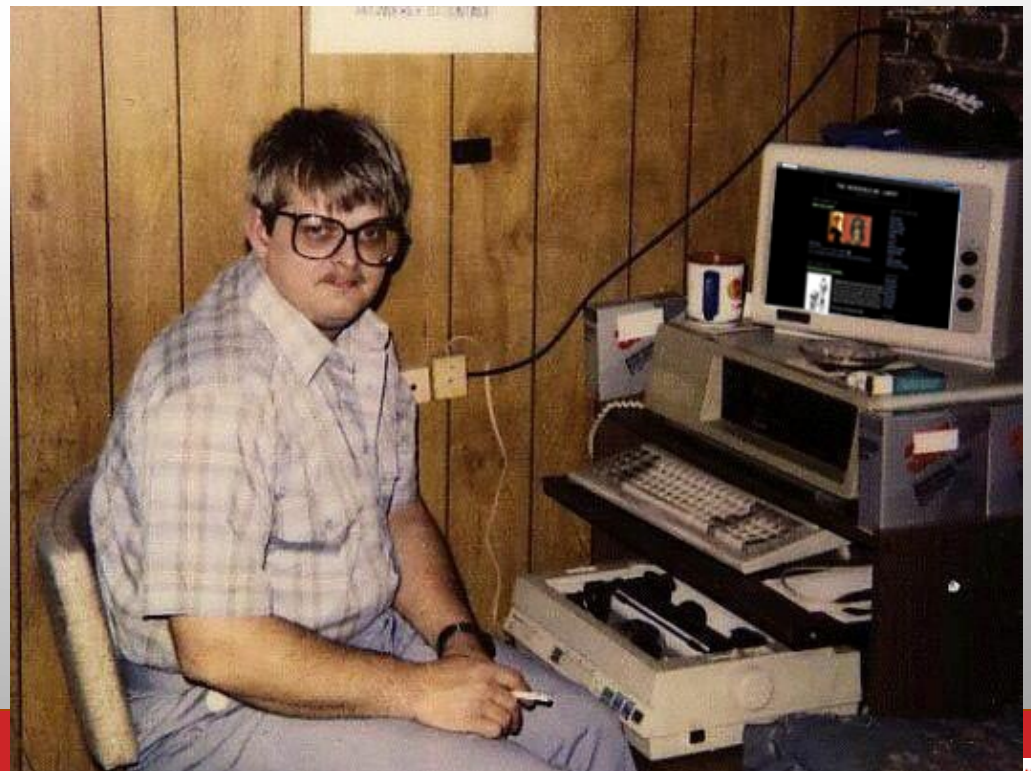
Food safety culture

- It is a set of shared attitudes, values and beliefs around food safety
 - Production/sources
 - Handling/storage
 - Preparation
- You can have a good food safety culture or a bad one



Why should I care?

- People actually do get sick
 - You can't control how people handle your products
 - You can limit their exposure
- Making people sick is bad for business
 - Reputation
 - Lawsuits
 - Real costs
- Marketing food safety
 - Differentiation and following best practices



Regardless of standard

- You have to have a plan
- You have to have validated controls that are verifiable
- Someone is going to check
 - These are all minimum standards (especially if there is an outbreak)



Smiling Hara Tempeh

- Salmonella Paratyphi B
- 71 illnesses
- 9 hospitalizations
- Linked to starter culture



“For us it means that we’ve identified the point of entry. It had nothing to do with our sanitation, protocol or Blue Ridge Food Ventures. It did not originate in Asheville and it was unknowingly passed along to us. So it’s a big relief to us. Now we can look at moving forward — it’s up to the FDA to trace this further.”



Do they ask for any proof of micro analysis?
Do they have compelling labels?
Do they know how their product is used?



What FSMA Safe Food For Canadians Act and GFSI don't address

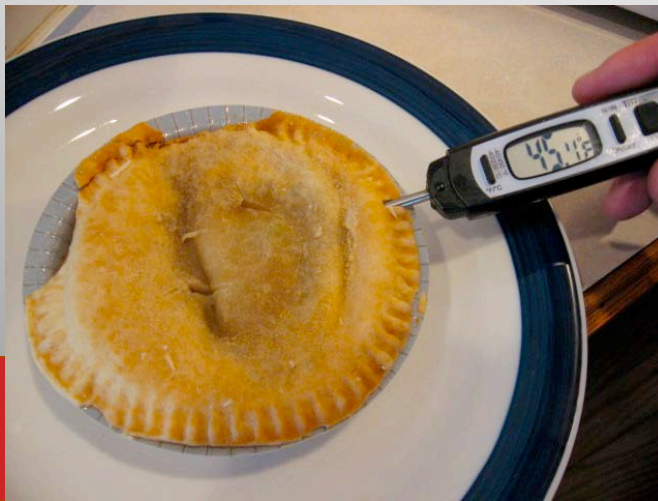
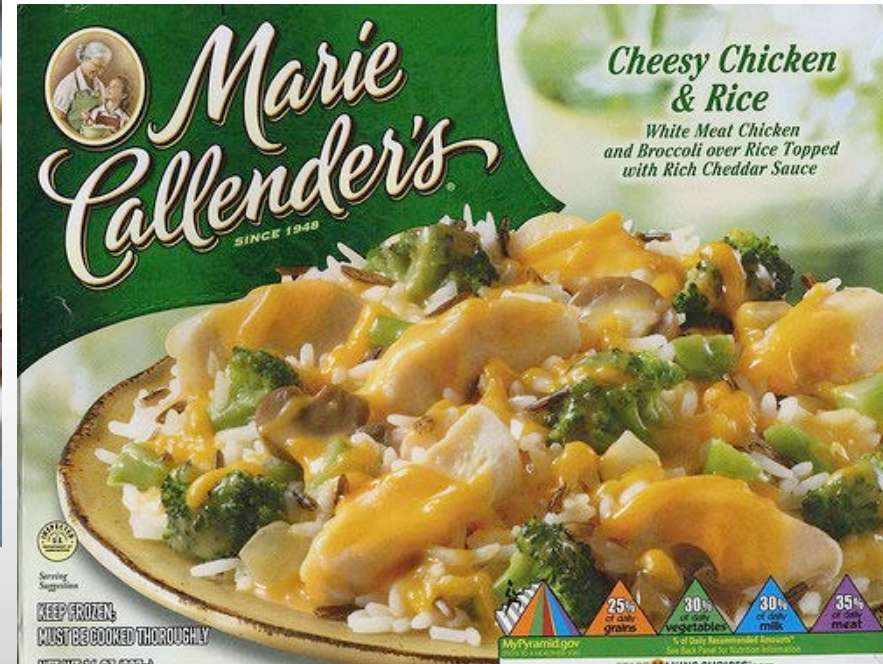


Product packaging of fully cooked vs. uncooked products



Similar appearance of fully cooked and uncooked breaded products

Alberta Food
Processor's
Assoc. March 20, 2013



REHEATING PROCEDURES FOR CLASSIC PASTAS

*Taylor Street's Baked Ziti
Mom's Lasagna
Eggplant Parmesan*

All Other Pastas



Oven
or Stovetop

1. Place pasta and 1 oz. of water into an oven-safe container covered with foil.
2. Preheat oven to 425.
3. Bake until thoroughly hot.
 - Baked Ziti: Approximately 20 minutes
 - Lasagna/Eggplant: Approximately 25 minutes.

1. Place pasta and 1 oz. of water into a large sauce pan and cover with a lid.
2. Turn heat on low and slowly reheat, stirring occasionally, for about 5 minutes or until thoroughly hot.

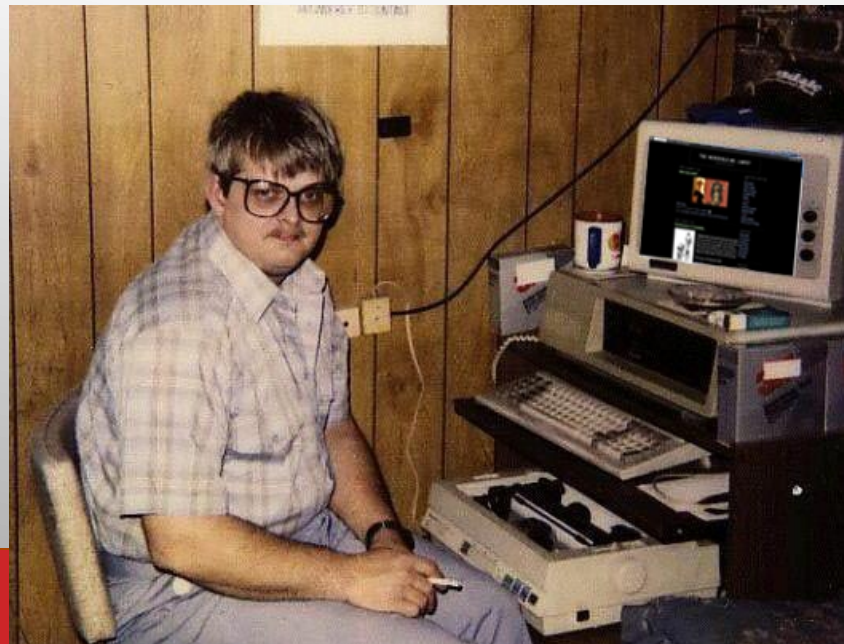


Microwave

1. Remove lid from plastic container and replace on top, allowing some room for steam to escape.
2. Cook on high heat for about 1 1/2 minutes.
3. Stir pasta (if applicable), rotate container a quarter turn, and cook for an additional 1 - 2 minutes, or until thoroughly hot.

MAGGIANO'S
A LITTLE ITALY

- “You sir... are a moron. They send you home with cooked food not raw meat.”



We evaluate food handling behaviors.



Performance indicator (food safety culture) data

- Inspection results
- Audit reports (GFSI or otherwise)
- Microbiological results
- Self-audits
- Staff knowledge
- Self-reported practices
- Behavior





Barrie Bros.
LOCAL FOOD
COMPANY **1892**

od
r's
0, 2013

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Welcome

Since 1892 - Four generations, one family.

*Dedicated to farming with care and sharing the fresh, local harvest
year round at our century farm retail store.*





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News & Events

VOLUNTARY RECALL OF SOUP

Further to the recall of our broccoli soup, as a precautionary measure, we are asking customers and retail locations to return all pressure canned soups the point of purchase for credit. The soups were manufactured in a Guelph-area food production facility contracted by Barrie Brothers, and it has been determined that there was inadequate processing.

We apologize for any inconvenience and appreciate your assistance with this voluntary recall.

Here is a link to the [Canadian Food Inspection Agency](#), the report is also posted below.

OTTAWA, December 9, 2010 - The [public warning issued on December 8, 2010](#) has been expanded to include other vegetable soup products.

The Canadian Food Inspection Agency (CFIA) and Barrie Bros. Local Food Company 1892 are warning the public not to consume Barrie Bros. vegetable soups described below because these products may be contaminated with *Clostridium botulinum*. Toxins produced by these bacteria may cause botulism, a life-threatening illness.

The following Barrie Bros. Local Food Company 1892 vegetable soup products, sold in a 744 mL Mason glass jar with a metal lid, are affected by this alert. These products do not have a lot code or a Best Before date.

| Product | Size | UPC |
|--|--------|-----------------|
| Fresh Asparagus Soup | 744 mL | None |
| Fresh Cauliflower Soup | 744 mL | None |
| Butternut Squash Soup | 744 mL | None |
| Sweet Potato & Red Pepper Soup | 744 mL | 8 31411 00045 3 |
| Potato & Leek Soup | 744 mL | 8 31411 00046 0 |
| Jeff Suddaby's Gourmet Curried Pumpkin & Sweet Potato Soup | 744 mL | 8 31411 00040 8 |

ConAgra food safety culture survey

(Food Technology, Jan 2012)

- Surveyed plant staff, managers, supervisors
- Asked about perception, self policing, good and bad
 - Specifically wanted to know more about lessons learned from food safety issues and incidents and how they would prevent future problems.
 - Employees want to be able to rely on one another.
 - Recognition



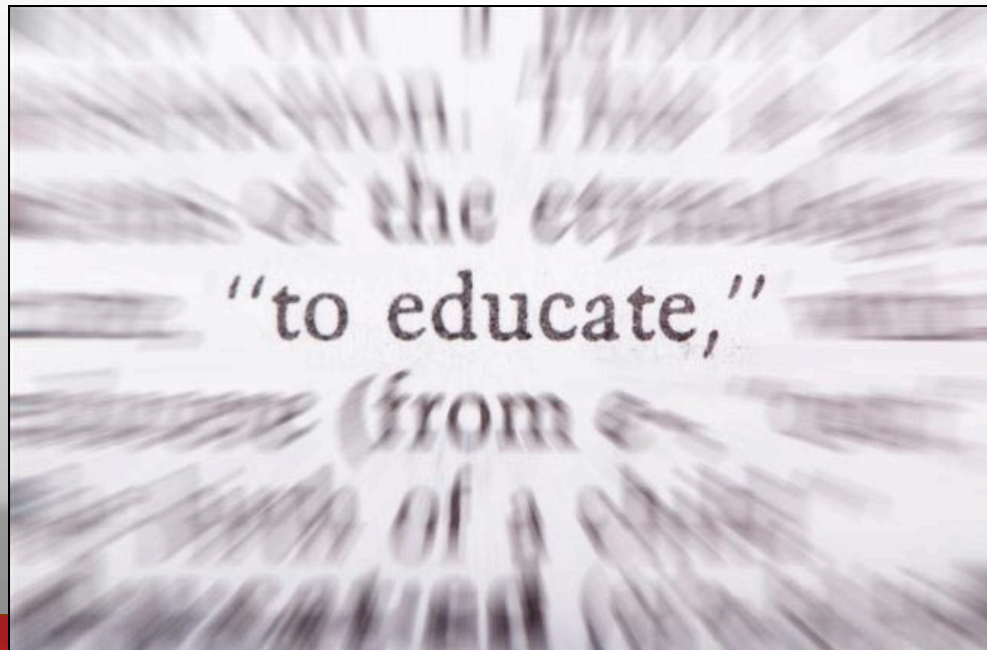
Here's the rub

- Significant deviations between stated and actual behavior
 - DeDonder et al.; 2008; Clayton and Griffith 2003; Jay et al., 1999; Redmond et al., 2004; Surgeoner et al., 2009
- Most evaluations use this self-reported data for measuring knowledge and intended changes
 - Redmond and Griffith, 2004; Chapman et al., 2010



Our food safety issues would be fixed if...

- We just had more education

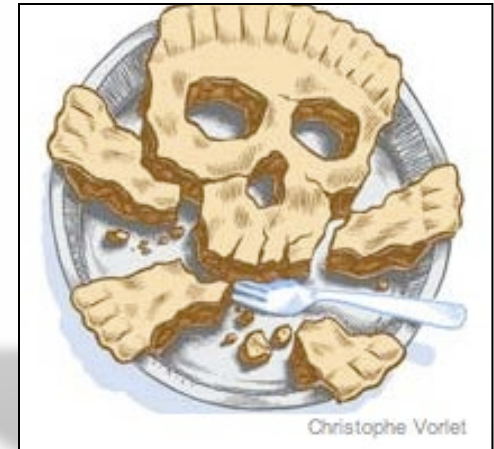


Why did my grandmother overcook pork?



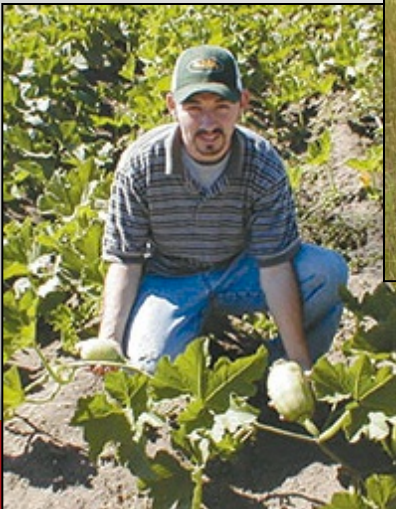
Evaluating messages

- Consumers are often blamed in outbreaks
- “common sense/food safety is simple”
- Education alone \neq application of knowledge gained
- Providing easy access to tools does not necessarily improve desired practices



From the literature

- Using stories and narratives better than statistics alone
 - Cole, 1998; Cole, 1997; Howard, 1991; Leventhal, 1970; Morgan et al., 2002; Slater and Rouner, 1996
- Sticky factor



- Put food safety into context
 - Leventhal et al., 1965; Lordly, 2007
- The medium is the message – and it better be correct for the target audience



- **Generate dialogue**
 - Ajzen, 1991; Bohm et al., 1993; Dignum et al., 2001; Schein, 1993
- **Surprising messages**
 - Shannon, 1948



Surprising message?

- "Upon indigestion, the larvae are freed from the cyst by and then proceed to migrate to the intestine. Here they develop to maturity and after fertilization the adult worms produce living embryos which invade the blood stream and are carried to all, or nearly all, of the voluntary muscles of the body."





DIRTY HANDS = RUNNY BUM

0800 693 721



20/20 RULE
WASH 20 SECONDS
DRY 20 SECONDS



**CLEAN
HANDS**
WASH 20 SECONDS
DRY 20 SECONDS



**WASH UP OR
THROW UP**
WASH 20 SECONDS
DRY 20 SECONDS

**NOW
WASH
YOUR
HANDS!**



**YOUR
CHOICE**
CLEAN HANDS
X RUNNY BUM



**We tell our staff
about outbreaks
at businesses
similar to ours.**



Food Safety Infosheet December 19, 2011
www.foodsafetyinfosheets.com



Outbreak linked to cross-contamination and ill staff.
Raw chicken was washed in the same sink as lettuce.

75 ill with salmonellosis after eating at the Tenth Hole Tea Rooms in Southsea (U.K.)

SALMONELLA FOUND IN PRE-COOKED PASTA AND A DISHCLOTH STAFF TESTED POSITIVE

An investigation into a 2009 outbreak of *Salmonella* Enteritidis PT8 linked to a U.K. restaurant found poor food handling practices led to the illnesses. Salads prepared on-site were the most likely source of the outbreak.

Investigators found Tenth Hole Tea Rooms, had recently switched suppliers of lettuce (from a pre-shredded product to whole heads which required washing) and staff were processing the salad ingredients in a sink that was also used to wash chicken. The sink was not properly cleaned and sanitized between activities.

Investigators also found staff working while sick with salmonellosis and a rotation of part-time employees through job stations that increased the risk of cross-contamination.

What you can do:

- Don't wash raw meats. *Salmonella* and other bugs can be sprayed up to 3 feet away by washing.
- Clean and sanitize any equipment or surfaces where raw meats have been cut or handled; pathogens can remain behind and contaminate ready-to-eat foods.
- Sick workers should stay home. Vomiting or diarrhea are often symptoms of foodborne illness which can be passed to patrons by sick workers.

For more information contact Ben Chapman, benjamin_chapman@ncsu.edu

**Our training
program is
designed to
generate
dialogue.**

FOOD SAFETY NETWORK INFORMATION SHEET
September 6, 2007

BIZARRE LAWSUIT SETTLED -- INVOLVING NASA, NASTY FOOD, e³ chef "Dirty Finger Al"



DIRTY FINGER AL

POOR PERSONAL HYGIENE

A former fellow chef for Lackmann was quoted as saying that "Dirty Al" was "grotesque in his hygiene because of filthy hands and fingers and open, oozing sores while cooking." from ksuinspections.com

"I WILL NOT MAKE ANY COMMENTS," MOTTA SAID. WITH THAT, HE HUNG UP.

A federal lawsuit that claimed outdated, spoiled food was served at NASA's Kennedy Space Center, has been settled. The case began several years ago when a former employee of Lackmann (the food service provider for the Center) was fired after she reported food handling problems.

Leaked from this lawsuit was information about the chef who helped run the Space Center's kitchen. Apparently he lacked basic food safety knowledge. Al Motta, also referred to in culinary circles around Orlando as "Dirty Finger Al", allegedly used weeks-old outdated food, including

rancid chicken and rotten vegetables, to feed customers at the center.

Other employees told attorneys that whenever health inspectors were in the area, restaurants would spread the word so that kitchen employees in the Space Center and in other facilities could clean up their act.

The original complaint claimed Lackmann Food Services used weeks-old outdated food, usually disguised in spicy dishes like chili or barbecue. The company denied the allegation at the time, saying it actually does about six times better than average in its state inspections.

www.foodsafetyksu.edu
foodsafetyinfosheets.ksu.edu

Food safety know-how

Dirty Finger Al stumbled over some basic questions from attorneys during pre-trial interviews, even though he's spent most of his life in the food industry.

For example, Motta said that cold food has to be kept below 70 degrees to avoid bacteria growth, when it actually has to be kept at 41 or below.

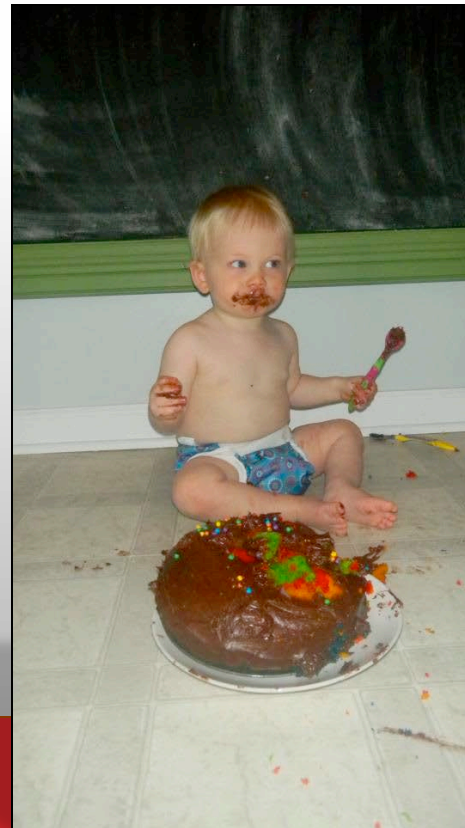
Don't be a Dirty Finger Al



We look at research on food safety training (what has worked, what hasn't).



I survey my staff about their food safety practices.



Alberta Food Processor's Assoc. March 20, 2013



Results: Mean events per food handler

| Event | Pre (13.4 hrs) | Post (13.5 hrs) | Change | percentage |
|------------------------------|-------------------|--------------------|--------|------------|
| Handwashing attempts | 21.1 | 22.5 | +1.42* | +6.7% |
| Correct handwashing events | 2.4 | 4.0 | +1.64* | +68.9% |
| Indirect cross-contamination | 15.7 | 13.1 | -2.57* | -19.6% |
| Direct cross-contamination | 1.9 | 1.0 | -0.85* | -81.7% |

*Significance level ($p < .05$, 95% CI)

What we were able to take away for the organization

- When it's busy, people get sloppy and food safety isn't a priority
- Training in context to the environment
 - (team/activities)
- Handwashing problems
 - almost always around paper towel use
- Anecdotes about hot holding (or lack of)

A framework for success

- Survey questions to assess food safety knowledge, as well as skills and ability
 - Cannot stop there, and don't dedicate too many resources
- Validate food safety management tools
 - Equipment/policy audits
- Implement behavior science into existing food safety and outreach programs
 - Ethnography or observation



Posted on **March 17, 2013** by **Ben Chapman**

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Home-canned food kills Argentinean man: Botulism in food causing deaths for over 1000 years

Mrs. Kalisz, my grade 7 and 8 family studies teacher warned of the dangers of botulism by showing our class a bulging can of beans (which she kept in a ziplock bag). What I took away from that story was to never buy or use dented cans (although that practice can be debated). Botulism from commercially canned foods has been pretty rare in North America since the 1970s with only a couple of cases in 40+ years.

The first case of food-related botulism recorded in the medical literature occurred in Germany in 1735 and was traced to uncooked fermented blood sausage. Food safety history guru (and pretty decent margarita recipe developer) [Carl Custer](#) pointed out in an IAFP workshop that botulism concerns (and regulatory responses) go back further than that. In the 10th century, Emperor Leo VI of Byzantium prohibited the manufacture of blood sausage because of repeated illnesses leaving folks paralyzed and dying not too long after exposure. Botulism (derived from *botulus*, the latin word for sausage) is pretty nasty.



Food Safety Talk Podcasts

By Don Schaffner and Ben Chapman

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Podcast Description

Ben Chapman is an Assistant Professor and Extension Food Safety Specialist at North Carolina State University and Don Schaffner is Extension Specialist in Food Science and Professor at Rutgers University. Every two weeks or so Ben and Don get together to talk about food safety current events and the challenges of making the food supply safer.

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Total: 9 Episodes

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