



Ensuring Food Safety through Sanitation

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Commercial Food Sanitation

Agenda

- **What is Sanitation?**
- **Critical Thinking**
- **Food Safety at the Cliff – Why**
- **Preventive Control Equation**
- **Top 5 reasons for Positives**
- **What to do after a positive**
- **Environmental monitoring**
- **Sanitation Techniques**

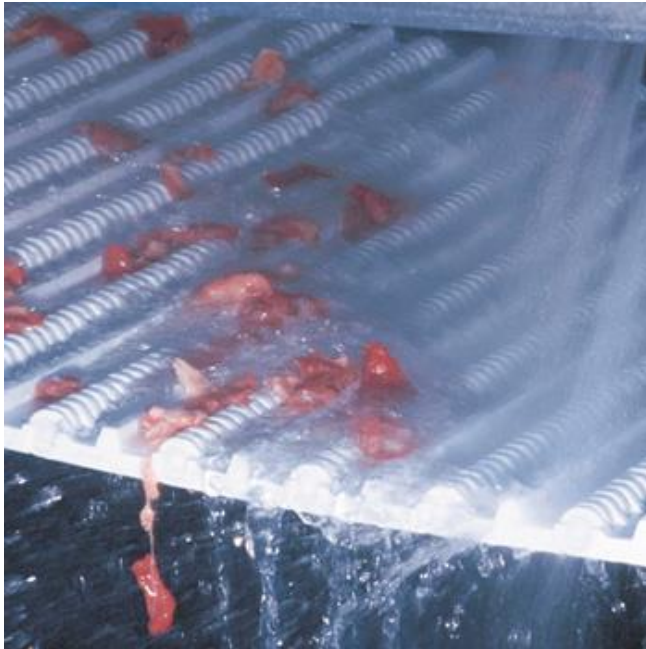
Sanitation Defined

Sanitation is a way of life. It is the quality of living that is expressed in the clean home, the clean farm, the clean business and clean food industry. Being a way of life it must come from within and be nourished by knowledge, as an obligation and an commitment to society. (a culture)

A Lesson in Sanitation

Corona Virus

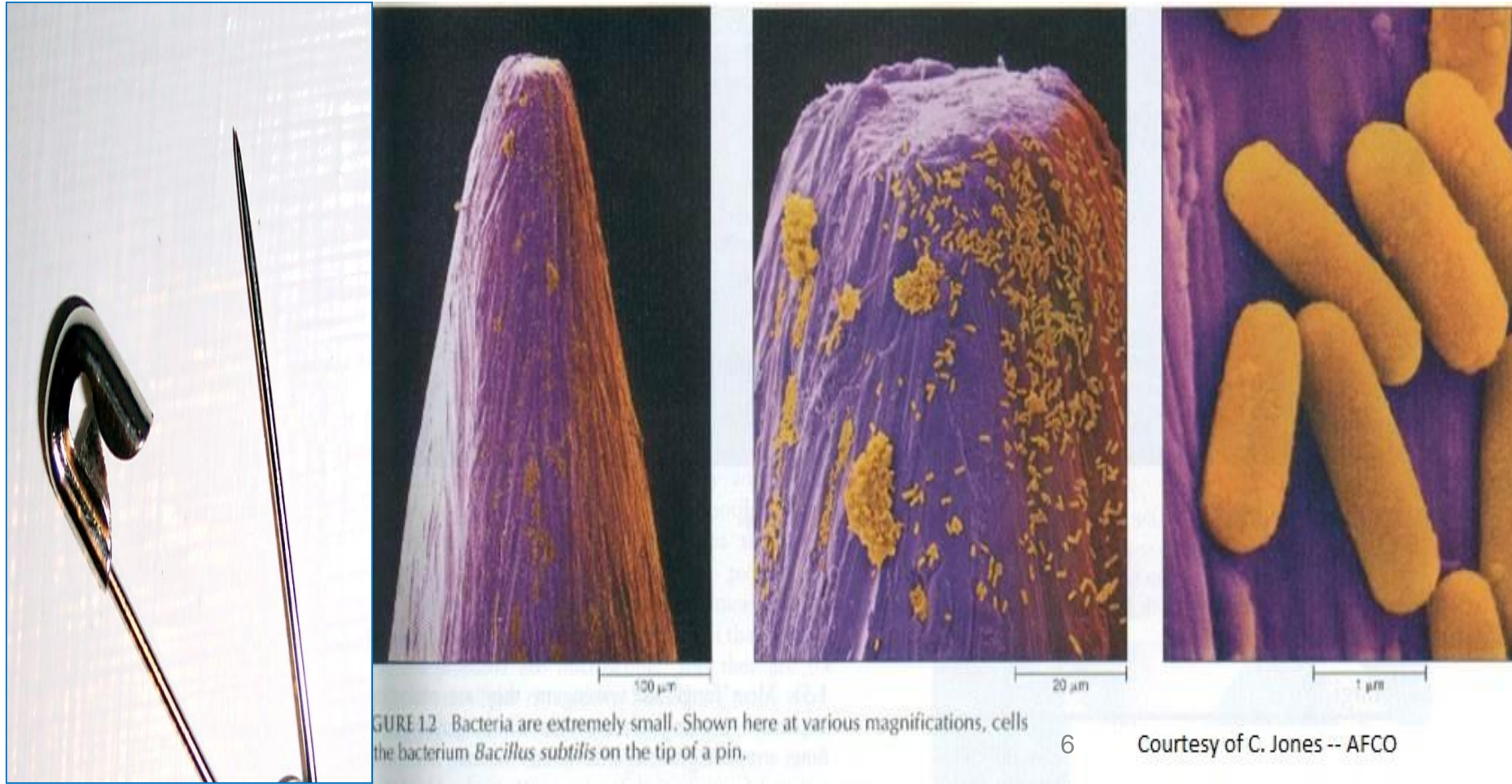
Sanitation's Goal = Perfection with Elimination of unwanted cross contaminants;



- **Microorganisms**
- **Allergens**
- **Off-Flavors & Off-Odors**
- **Chemical Residue**
- **Product Residue**
- **Foreign Material**

Standard of Clean = Visual, Foreign Material, Chemical, Microbiological, & Allergens Deviations.

Bacteria on the Head of a Pin



Perspectives on ensuring food safety – always critically think of potential risks

“Critical thinking is the process of purposeful, self-regulatory judgment. This process gives reasoned consideration to evidence, context, conceptualizations, methods, and criteria.”

*American Philosophical Association Delphi
Consensus definition*



Contamination was not found in the fields!



killed 33 people in 2011

It came from within the plant

The Knife Carried the Infection into the fruit



The Risk of Not Being 100% Perfect with Preventive Controls

• Produce 2 billion portions and Safety Risks

• 99 % Food Safe	20,000,0000
• 99.9% Food Safe	2,000,000
• 99.99%	200,000
• 99.999%	20,000
• 99.9999%	2,000
• 99.99999%	200
• 99.999999%	20
• 99.9999999%	2
• 99.99999999%	.2

The impact of imperfect sanitation is high risk and underestimated

Perfection can be lost in a split second with the wrong decision .

It's hard to be Perfect

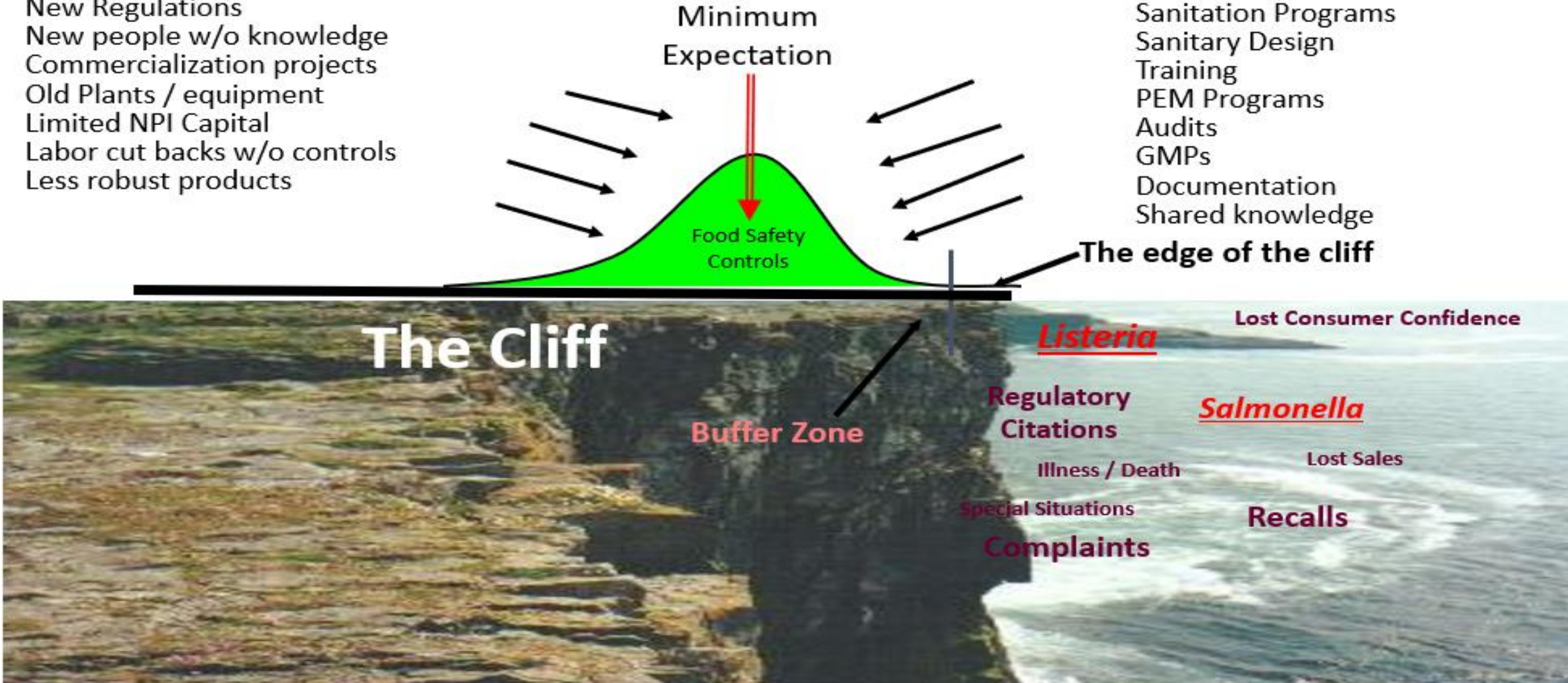
To Ensure food Safety You Must Practice for Perfection - targeting sustainable programs and thorough Execution.

Pushing to the edge

- Change
- New Regulations
- New people w/o knowledge
- Commercialization projects
- Old Plants / equipment
- Limited NPI Capital
- Labor cut backs w/o controls
- Less robust products

Assuring Food Safety

- Raw/RTE separation
- Sanitation Programs
- Sanitary Design
- Training
- PEM Programs
- Audits
- GMPs
- Documentation
- Shared knowledge



The Cliff

Buffer Zone

Listeria

Salmonella

Regulatory Citations

Illness / Death

Special Situations

Complaints

Lost Consumer Confidence

Lost Sales

Recalls

Food Safety News Headline How Close to the Cliff's Edge?



Leafy greens, including romaine lettuce, are chopped and washed in huge volumes as part of the bagged salad production process. This allows bacteria on one head of lettuce to be spread to hundreds or thousands of bags.
Photo illustration

Stages of Continuous Improvement

Good

2,500 hrs. of practice
1.25 Years of practice

Great

5,000 Hours
2.5 Years

Excellent

10,000 Hours
5 Years



Stages of Continuous Improvement

Terrible



At Risk



Poor



Best



Stages of Continuous Improvement

Terrible

Think of personal safety



At Risk

Potential cross contamination



Poor

Critically think of implications

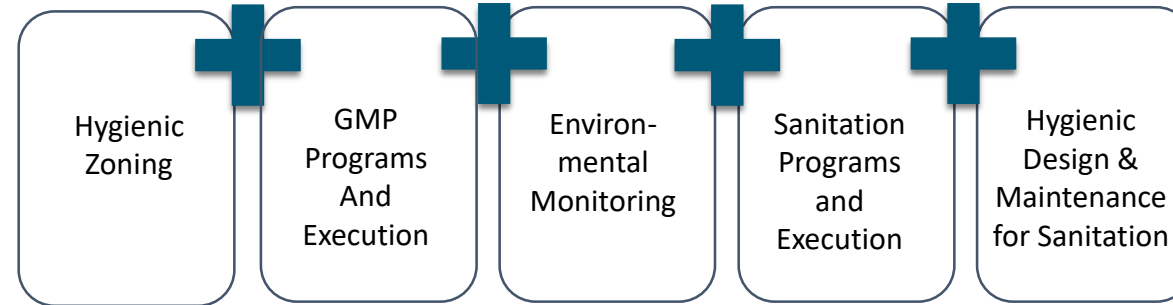


Good

Critically think of best practices



CFS Preventive Plan Principles



= *Pathogen Control*

Seven Steps of Effective Wet Sanitation (one step at a time)

Good

Enables Effective Sanitation

Bad

Direct Link to Poor Sanitation

Ugly

Are an easy source to contamination

GOOD

1. GMPs
2. Hot Water
3. Continuous employee training
4. Hand Scrub
5. Continuous inspection
6. Flood sanitize
7. Single use cleaning aids
8. Synchronized process
9. Flashlights issues
10. ATP verification
11. Dedicated trainers & training tools
12. Dedicated tool storage

Step 1: Dry Clean

- LOTO, secure and disassemble equipment.
- Remove gross soils from the equipment and floor.
- Remove production supplies from the room.
- Remove trash from room.
- Drain baskets emptied.

Step 2: 1st Rinse

- Remove remaining visible soils with hot water (95% as a benchmark).
- Gross soils prohibit surface cleaning if not removed prior to soaping.
- Parts rinsed and ready to be placed into COP tanks for cleaning.

Step 3: Soap & Scour Proper PPE Required

- Foam the walls, then the floor, and then the equipment.
- Set contact time. Do not allow soap to dry, may form a stronger soil.
- Scour to remove films, fats, & proteins.
- Drains cleaned prior to starting step 4.

Step 4: Post Rinse & Inspect

- Remove chemical and soils via flood rinse.
- Rinse in the order the soap was applied. Walls, floor, then equipment.
- Avoid spraying the floor once the post rinse of equipment begins.
- Use a flashlight to verify clean. Should occur throughout step 4.
- 100% free of soils, hazes, or water beads. Verify by sight, feel, & smell.

BAD

1. High pressure water & air
2. Reusable cleaning tools
3. Switches
4. Bearings
5. Congestion
6. Door seals

Step 5: Remove & Assemble

- Put on clean outerwear.
- Sanitize hands.
- Verify all chemical is removed (sight, Ph paper).
- Remove all standing water & overhead condensation.
- Standing water prevents sanitizer contact with the surface.
- Pre-op inspect parts that will not be accessible after assembling.
- Sanitize inaccessible parts prior to assembling.
- Assemble (follow LOTO).
- Re-lubricate where needed.

Step 6: Preop

- Inspect to ensure free of chemicals, tools, cleaning supplies before starting the equipment, and guards are in place.
- Run equipment prior to inspecting.
- Complete the formal preop spelled out in the plant's SSOP (sight, smell, touch, ATP are recommended tools)
- Correct all deficiencies and provide feedback to the sanitor responsible.

Ugly

1. DRAIN BACK UP
2. Standing water
3. Aerosols
4. Hollow Rollers
5. Biofilms
6. Mops and foam squeegees
7. Fibrous belting
8. Co-mingling
9. Not accessible

Step 7: Disinfect & Sanitize

- Make sure there is no standing water before beginning.
- Foam disinfect entire processing area walls (5 ft min), floor, & equipment (i.e. 800-1000 ppm Quat for 10 min). Follow label.
- Low pressure low volume rinse with portable water the product contact surfaces only.
- Ensure there is no pooling water.
- Foam sanitize no rinse concentration the product contact surfaces.

Objective of a PEM

1. Find the Damn pathogen
2. Identify home residence
3. Celebrate that you found it
4. Kill the damn thing and its family
5. Blow up it's residence
6. Reconnaissance to ensure death
7. Celebrate

Top 5 Reasons for an Environmental Positive

Hygienic Design Flaws

- Sandwich joints
- Hollow Rollers
- Hidden Areas
- Hygienic Zoning not implemented with hurdles

Poor Sanitation Controls

- Incomplete or abbreviated sanitation programs / SSOPs
- Not following the 7 steps of Sanitation
- Ineffective corrective actions for positives
- Poor training of Sanitors

Unknown presence of *Lm.*

- Ineffective monitoring program
- Not swabbing to seek and eliminate
- Don't know where to swab / look
- Poor swabbing techniques

Cross Contamination

- Maintenance activity on lines not followed by cleaning
- Hose aerosols land on to product contact surfaces
- Sanitation & production tools used in raw and RTE.
- Condensation presence above product contact areas

GMPs

- GMP programs not robust or not followed
- Hand contact which crosses from zone 3 to zone 1
- Programs are not employee friendly
- Management does not have presence on the floor.

What to do after a positive

Investigate

- Document
- Secure area
- Data Review
- Assemble team
- Talk to line employees

Take Action

- Vector Swab (FU Swab #1)
- Define Cleaning activity (SSOP)
- Plan repairs immediate or planned (CAPA)
- Execute Cleaning
- Verify cleaning execution

Verify Actions

- Return to normal cleaning
- Re-swab original site (FU swab #2 > vector results)
- Re-swab original site (FU swab #3 > FU #2 results)
- Swab site weekly as routine site.

Summary

Ensuring food safety through sanitation happens with practice toward perfection. With critical thinking, establish and set expectations to stay safe on the cliff.