

Sanitation Best Practices



Topics

- Seven Steps of Sanitation Process
- Periodic Sanitation Measures
- Additional Control Measures
- Operational Sanitation Controls

7 Steps of Effective Wet Sanitation

1. Prepare Area and Dry Clean
2. Pre-rinse
3. Apply Detergent and Scrub
4. Post-Rinse and Self-Inspect
5. Prepare for Pre-Op Inspection
6. Pre-Operational Inspection
7. Sanitize

Step 1: Prepare Area & Dry Clean

- Lock Out Tag Out
- **Disassemble equipment**
- Remove majority of gross soils
- Remove production supplies
- Empty drain baskets
- Remove trash

Keep it Dry!



Step 1: Prepare Area & Dry Clean

Clean and Cover electronics

- Wipe all surfaces with Alcohol based Cleaner Sanitizer
- Cover with disposable cover
- Inspect for damage



Step 2: Pre-rinse

- Remove remaining soils with hot water (~95%)
- Water System
 - 120°F - 140°F Hot enough to melt fat, too hot will bake on soil.
 - Medium pressure – up to 250 PSI with moderate flow rate (Avoid high pressure: creates aerosols containing bacteria)



Step 3: Apply Detergent and Scrub

- Chemical application controls
 - ✓ The right chemical
 - ✓ Concentration controls
 - ✓ Mechanical action where needed
- Foam entire room (walls, floor, equipment) bottom-to-top direction
- Focus cleaning activities on the whole room not just on the equipment

Drain Cleaning

- Designated brushes (black)
- Perform cleaning with a designated sanitation employee during equipment foaming
- Use chlorinated alkaline cleaner
- Clean and scrub all surfaces
- Sanitize with quat, iodine, chlorine, etc.
- Periodic jetting (drain maintenance) - Preventive Action

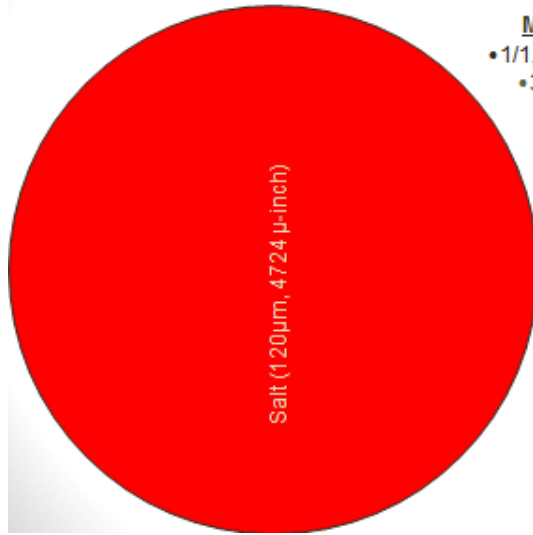


Step 4: Post-Rinse and Self-Inspect

- Flood rinse to remove chemical using low pressure
- Rinse in the order detergent was applied – rinse before chemical dries
- Visually inspect using a flashlight
- 100% free of soils, hazes, water beads, residual chemical
- Verify by sight, touch, smell and analytical tests (where needed – pH, etc.)

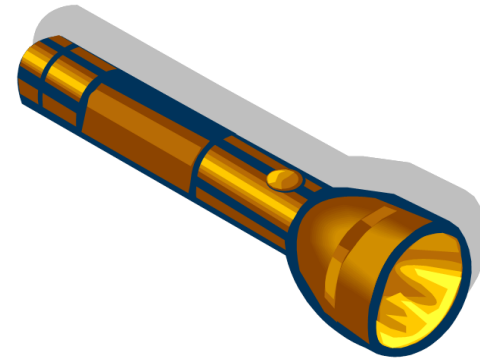
Can you See a Harborage Point?

THE "INVISIBLE" BACTERIA



- | <u>Micron (µm)</u> | <u>Micro-inch(µ-inch)</u> |
|---------------------|---------------------------|
| • 1/1,000,000 meter | • 1/1,000,000 inch |
| • 39.37 µ-inch | • 0.0254 micron |

- | |
|---|
| • Yeast (5 µm, 197 µ-inch) |
| • Mold spore (3 µm, 118 µ-inch) |
| • <i>Listeria</i> (0.5 µm, 19.7 µ-inch) |



Is this Clean?



What are we looking for?

What does it mean?

- Loose soil (food or meat particles)
 - Rinsing, overspray, etc.
- Adhered product residue
- Greasy feel – beaded water
 - Water temp? Proper chemical? Concentration?
- Residual chemicals
- Equipment issues (damage)
- Deficiencies noted should be addressed by repeating the sanitation cycle!
- Inspect for the same items above in *Step 6*

Step 5: Prepare for Pre-Op Inspection

- Put on clean outerwear
- Wash and sanitize hands
- Inspect and sanitize parts not accessible when assembled
- Assemble parts (e.g., safety guards) just enough to cycle equipment during pre-op
- Remove standing water
- Control condensation

Step 6: Pre-operational Inspection

- Cycle equipment
- Complete pre-op inspections according to facility's SSOP - document
- Correct all deficiencies by repeating sanitation cycle
- Monitor for effectiveness (e.g., visual and sampling!)
 - Visual – Detail; know where to look
 - ATP Bioluminescence - Swab to find problem areas. Pass before releasing. Use to improve training
 - Does not replace microbial surface sampling
- Predictive controls - it is all about what you do with the data

What is acceptable?

- Did the cleaning Process work?
 - Just missed a few spots, no big deal, right??
 - Failure in Sanitation – Do it again!
- **Do not** pre-op the facility clean!
- A poor pre-op is a process failure!
 - Avoid the bucket brigade
- **Predictive** pre-op mindset for action – solve it before it is an issue.

Step 7: Sanitize

- Application - Flood Method - Coverage
- Foam sanitize walls and floors with higher concentration (i.e., 800-1000 ppm Quat, etc.)
- Use cool water to blend with sanitizer (< 100°F)
- Choice of sanitizers
 - Chlorine
 - Quat based sanitizers
 - Peracetic/Organic Acids
 - Etc.
- Consider sanitizing after equipment has been reassembled!

Periodic Sanitation Measures

Periodic Infrastructure Cleaning (PIC)

- Determine frequency – based on validation!
- Include all overheads (lights, pipes, etc.), storage areas, hallways, HVAC ductwork, etc.
- Use the 7-Step Sanitation Process
- Select appropriate chemistry
 - Refrigeration units – soft metal safe detergent
- Pre-op and sanitize!



Periodic Equipment Cleaning (PEC)

- Encompasses items on equipment that are cleaned on a less-than-daily basis (frequency to be validated!)
- Inside electrical panels and mechanical enclosures
- Belt removal / COP
- Normally inaccessible surfaces (e.g., bolted connections, guards, interiors)
- Non-daily clean equipment assemblies
 - Packaging machines
 - Vacuum lines
 - Exhaust ventilation



Interventions - Heat Treatment

- Time / Temperature relation
 - Flood equipment with 180° F water
 - Steam Sanitizing Equipment
 - 180° F Sprays on conveyors
- Oven heating cycle
 - Example: Place cleaned equipment in oven set temp at 170dry/170wet for 1hour 45 minutes, then 120 dry/ 0 wet for 15 minutes
- Validate and Document Heat Procedures



Interventions - Heat Treatments

- Supports Regular Sanitation Procedures
- Regular sanitation procedures remove visible and assessable soil.
- Heat Interventions treat (but not clean!) invisible or inaccessible surfaces.



Sanitation Equipment Cleaning

- May include squeegees, shovels, pails, etc.
- Clean all utensils in the same manner as equipment
- Inspect and replace equipment if damaged
- Make sure equipment design is hygienic
- Add to your sampling program!

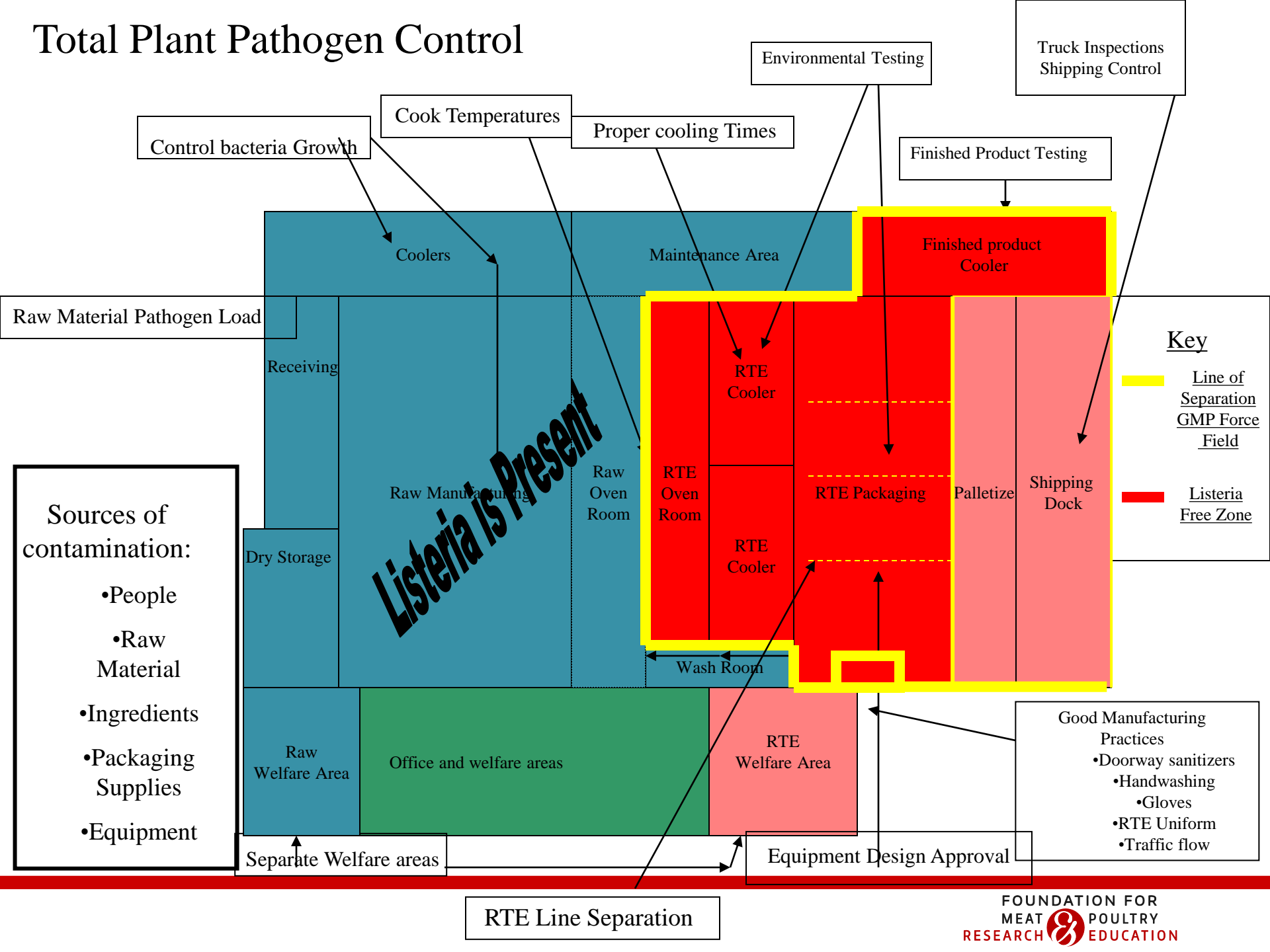
Operational Sanitation

Maintaining Hygiene During Operations

- Control of room temperatures (log growth of bacteria!)
- Controlled entry (GMPs, footwear, tools, materials, transport)
- Handwashing
- Sanitary equipment setup
- Employee PPE (gloves, aprons, etc.)
- Moisture & waste control
- Traffic control & separation
- Routine monitoring to ensure verification of practices



Total Plant Pathogen Control



Control bacteria Growth

Cook Temperatures

Proper cooling Times

Environmental Testing

Truck Inspections
Shipping Control

Finished Product Testing

Raw Material Pathogen Load

Coolers

Maintenance Area

Finished product Cooler

Receiving

Raw Manufacturing

Raw Oven Room

RTE Cooler

RTE Oven Room

RTE Packaging

Palletize

Shipping Dock

Key

Line of Separation
GMP Force Field

Listeria Free Zone

Sources of contamination:

- People
- Raw Material
- Ingredients
- Packaging Supplies
- Equipment

Listeria is Present

Dry Storage

Raw Welfare Area

Office and welfare areas

Wash Room

RTE Welfare Area

Good Manufacturing Practices

- Doorway sanitizers
- Handwashing
- Gloves
- RTE Uniform
- Traffic flow

Separate Welfare areas

Equipment Design Approval

RTE Line Separation

Special Control Situations

- Cross traffic – ovens/cooking areas
- Construction
 - Verification of hygienic conditions prior to operations (Plan!)

Plan for when things go wrong!

- Overhead (roof, ceiling) leaks
- Drain backups
- Undercooked product



Questions?