PROCESSING PLANT ANTIMICROBIAL INTERVENTIONS

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Draper Valley Farms
Pre-Harvest Control
Vs
Post-Harvest Control
PATHOGEN INDICATOR

- Salmonella
PATHOGEN INDICATOR

- **Salmonella**
- **Campylobacter**
SANITATION INDICATOR

- Generic E.coli
- Not a human pathogen
- Measure of sanitation process of carcass
- Indicates presence of intestinal material, or fecal content
- Cross contamination
PATHOGEN CONTROL

USDA HACCP BASED
- Broad Spectrum
- Decontamination

RESEARCH BASED
- Human specific
- Serotypes control
SLAUGHTER PROCESS FLOW

1. Live Receiving
2. Stun and Kill
3. Scalding
4. De feathering
5. Washing (NY Wash)
6. Evisceration
7. Inside Wash (IOBW)
8. Brush Scrubber
9. Final Wash
10. Chilling
11. Post Chill
12. Refrigeration
This is industry goal.

Effective pathogen reduction.

Bio-mapping of pathogens.

Notes: 1) Each intervention is effective, 2) no matter what season it is or the incoming load, this plant can control Salmonella
• Cross contamination
• Transport cage washing
• Cage sanitation
• Low voltage Electrical stunning
• Minimize compound fractures
• Fecal release prior to scalding
SCALDING

- Pre-scald brushes
- Multi-stage scalding tanks
- Counter-flow water movement
SCALDING

- High flow rates & agitation
- Scalder temperature
- pH reduction
SCALDING

- Cross contamination during scalding
- Opening of skin pores
- Respiratory track contamination
• Hot water spray
• Chlorination?
• Mechanical carcass damage
• Cross contamination
DEFEATHERING

- Hot water spray
- Chlorination?
- Mechanical carcass damage
- Cross contamination

Breast Swab Pre and Post Picking

Salmonella
- Pre Pick: 0
- Post Pick: 0
- Total Positive: 101
- Percentage: 84%

Campylobacter
- Pre Pick: 0
- Post Pick: 69
- Total Positive: 69
- Percentage: 57%

Berrang et al., PS-2001, PreScaid Cloacal Capsule
WASHING (NY Wash)

- After feather picking
- Before Evisceration
- Low pressure high volume wash.
- Antimicrobial Rinse
• Chlorine Solution (20~50 FAC)
• Acidification
• Peracetic Acid PAA
- Cross contamination
- Visceral puncture
- Visible Fecal
• High pressure high volume washing

• Inside / outside washing with Chlorinated Water

• pH adjustment

• Application of Processing Aid chemicals
• High volume low pressure wash

• Antimicrobial application

• Carcass brush Scrubbing

• Remove visible contamination.
FINAL WASH

- 20~50 ppm free available chlorine
- 10% TSP (trisodium phosphate)
- 2% lactic acid
• 5% sodium bisulfate

• up to 0.8% cetylpyridinium chloride
1. Multi stages chilling System
2. Removal of high level of organic material
3. High water flow rate
4. Counter current water flow
Multi-stage Chiller

- Multiple Antimicrobial treatments
- Chlorination
- pH adjustment
- Oxidation reduction potential (ORP)
Post Chill AMI

- Post Chill spray cabinet
- Post chill dip tank
- Post chill AMI
- Refrigeration <40F