

POULTRY HARVEST PATHOGEN REDUCTION CASE STUDY

AREA OF CONCERN

Sterilex was contacted by a poultry harvest processing plant to assist with *Salmonella* pathogen reduction pre-chill.

ISSUE

Pre-chill Pathogen Reduction – Poultry Harvest

Even with appropriate antimicrobial intervention steps in pre-chill, data collected during internal bio-mapping illustrated that the facility was still seeing *Salmonella* rebound throughout the eviscerating process. The primary areas of concern are the eviscerator, cropper, venters, wash/rinse cabinets, fecal brushes, inside-outside-bird wash (IOBW) and on-line reprocessing (OLR) cabinets and dips.

BACKGROUND

Reducing the presence of *Salmonella* and *Campylobacter* and establishing a low microbial baseline pre-chill is critical to minimizing pathogen loads as product enters the chilling system and moves through the cut-up/debone and packaging process. Reducing *Salmonella* and *Campylobacter* pre-chill enhances the facility's antimicrobial intervention program.

The presence of *Salmonella* and *Campylobacter* was evaluated to compare the facility's current sanitation effectiveness and evaluated again immediately following a shock treatment using **Sterilex Ultra Disinfectant Cleaner Solution 1 (Solution 1)** and **Sterilex Ultra Activator Solution (Solution 2)**.

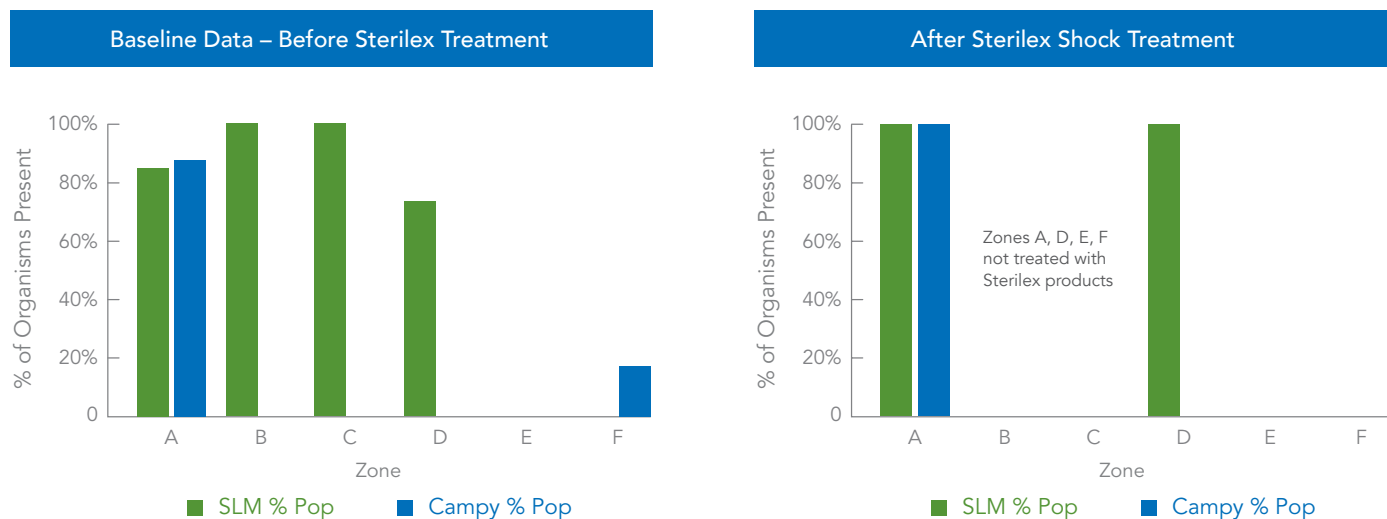
The shock treatment using Sterilex's **Solution 1** and **Solution 2** was only applied to the eviscerator, cropper, venters, wash/rinse cabinets and IOBW's on both lines.

RECOMMENDATIONS

Shock Treatment

1. Foam all surfaces with a chlorinated alkaline detergent, followed with a water rinse.
2. Prepare solution of **Solution 1** and **Solution 2** mixed at a 1:1:10 ratio (16 oz of each solution/gallon of water).
3. Generously foam all equipment to ensure thorough coverage.
 - a. Minimum contact time 10 minutes
4. Rinse surface thoroughly with a potable water rinse.
5. Reapply foam on all equipment to ensure thorough coverage.
 - a. Minimum contact time 10 minutes
6. Rinse surface thoroughly with a potable water rinse.
7. Reapply foam on all equipment to ensure thorough coverage.
 - a. Minimum contact time 10 minutes
8. Rinse surface thoroughly with a potable water rinse.
9. Apply final, no-rinse food contact sanitizer.
10. As a best practice, complete the shock treatment 3–5 times in the same sanitation downtime event.

RESULTS



The facility collected bio-mapping data prior to applying a Sterilex shock treatment to gather data on the effectiveness of their current sanitation and antimicrobial intervention program. Sterilex and contract sanitation personnel applied a shock treatment of Sterilex’s [Solution 1](#) and [Solution 2](#) (see application recommendations in previous section) and gathered bio-mapping data to show the results following of Sterilex shock treatment.

Bio-mapping results in the week immediately following the Sterilex shock treatment in Zones B and C illustrated a 100% reduction from carcass rinses taken from the areas treated. This indicates that *Salmonella* presence from equipment is significantly reduced.

Zone A

Scald, pick – first antimicrobial rinse cabinet – Sterilex product was not applied to this equipment.

Zone B + C

Post-scald, post-pick, eviscerator, cropper, venters and wash/rinse cabinets – the current antimicrobial intervention is PAA in the spoon nozzle cavity. Data from the week prior to the Sterilex treatment indicated that *Salmonella* increased moving from post-scald post-pick to the first antimicrobial rinse cabinet.

IOBW – current practice is to use chlorine in this cabinet. Baseline bio-mapping data from the week before Sterilex treatment indicated a high presence of *Salmonella*.

The post-shock treatment data indicated a total reduction of *Salmonella*. Establishing a zero baseline of pathogens is critical to minimizing the pathogen load that is carried through the rest of the production process.

Zone D

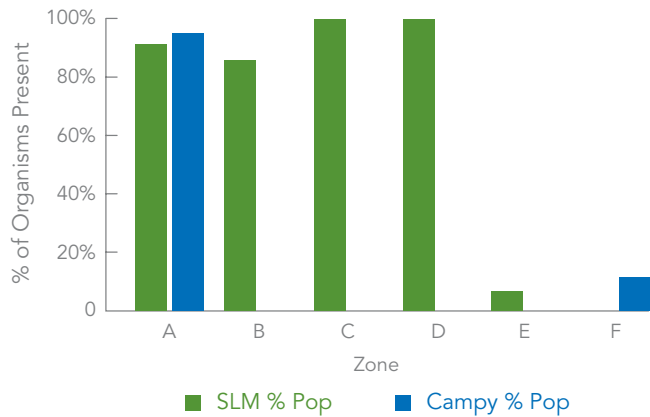
OLR – Sterilex product was not applied to this equipment in the first bio-map set shown above. The data set shows significant *Salmonella* presence. The OLR recirculation system has a high presence of *Salmonella* even after the cleaning process is completed.

Zone E + F

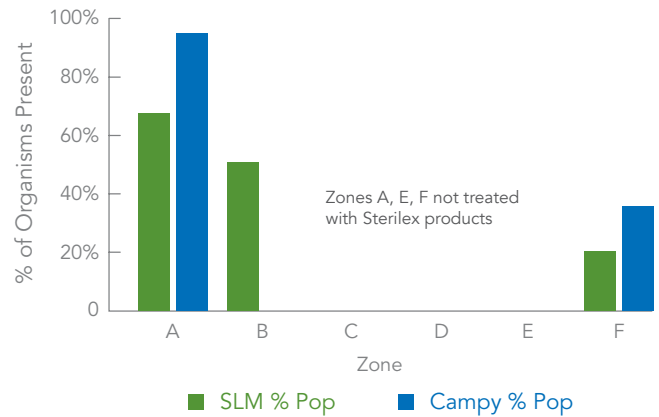
Chiller system and post-chill/rehang – Sterilex product was not applied to this equipment.

2 MONTHS LATER

Baseline Data – Before Sterilex Treatment



After Sterilex Shock Treatment



Zone A

Scald, pick – Sterilex product was not applied to this equipment.

Zones B, C, D

Sterilex trained contract sanitation site manager on how to interpret bio-map data to effectively target areas with a high presence of pathogens. The site manager used the bio-map set to target zones B, C, D two months later with a Sterilex shock treatment (referenced on page 1). Again, there is significant *Salmonella* reduction in all areas treated. The OLR recirculation system was effectively treated and the presence of *Salmonella* was removed.

Zone E

Chiller – Sterilex product was not applied to this equipment.

Zone F

Rehang, post-chill – The initial baseline data showed a rebound of *Campylobacter*. This is likely from cross-contamination during the rehang process. Evaluating the data, one might assume that reducing the load in pre-chill after applying the Sterilex shock treatment helped prevent the opportunity for cross-contamination.

CONCLUSIONS

This case study suggests that **Sterilex Ultra Disinfectant Cleaner Solution 1** and **Sterilex Ultra Activator Solution** is effective at killing pathogens including *Salmonella* on poultry harvest processing equipment.

On equipment where **Solution 1** and **Solution 2** were applied, the plant saw a large reduction of *Salmonella* and *Campylobacter*. Additionally, post-chiller data results imply that if pathogens are not properly addressed in previous zones, cross-contamination is a big concern.

Effective shock treatment protocol and subsequent weekly maintenance procedure with **Sterilex Ultra Disinfectant Cleaner Solution 1** and **Sterilex Ultra Activator Solution** are essential to reducing pathogen loads and removing *Salmonella* from equipment typically known for high micro incidence.