

# INJECTOR NEEDLE CASE STUDY

## AREA OF CONCERN

Shelf life concerns in poultry processing facility

## ISSUE

A major poultry processor sought to validate the benefits of using PerQuat® technology in injection systems to increase shelf life.

## RECOMMENDATIONS

Sterilex proposed the following actions:

1. Circulate the cleaning solution through the entire CIP injection loop for one hour, followed by a thorough water rinse.
2. Add Sterilex Ultra CIP and Sterilex Ultra Activator Solution to the brine tank at a 1:1:10 concentration (i.e. 10 gallons of each solution filled to 100 gallons of water) and circulate through CIP injection loop, filters, heat exchanger, sanitary piping and needles for 30–60 minutes.
3. Be sure to rinse the drum pump when moving from dispensing Sterilex Ultra CIP to dispensing Sterilex Ultra Activator Solution and vice versa.
4. Thoroughly flush the injection line and needles with fresh water until a quat test strip indicates that no quat is present.
5. Follow with an EPA-registered no-rinse food contact sanitizer.

## BACKGROUND

The source of the problem was linked to a suspected buildup of spoilage organisms and biofilm in the brine tank and injector needles. The existing sanitation program was not effective.

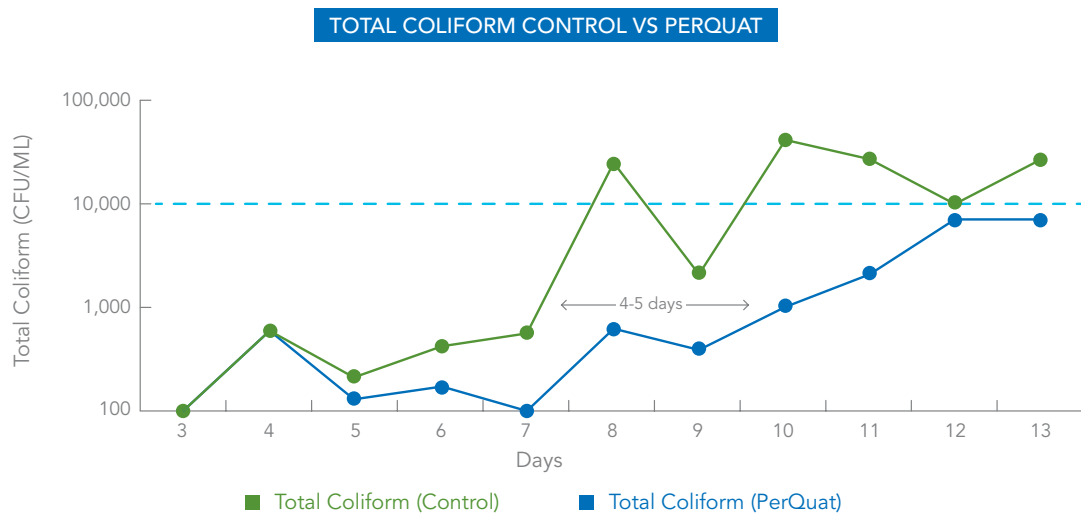
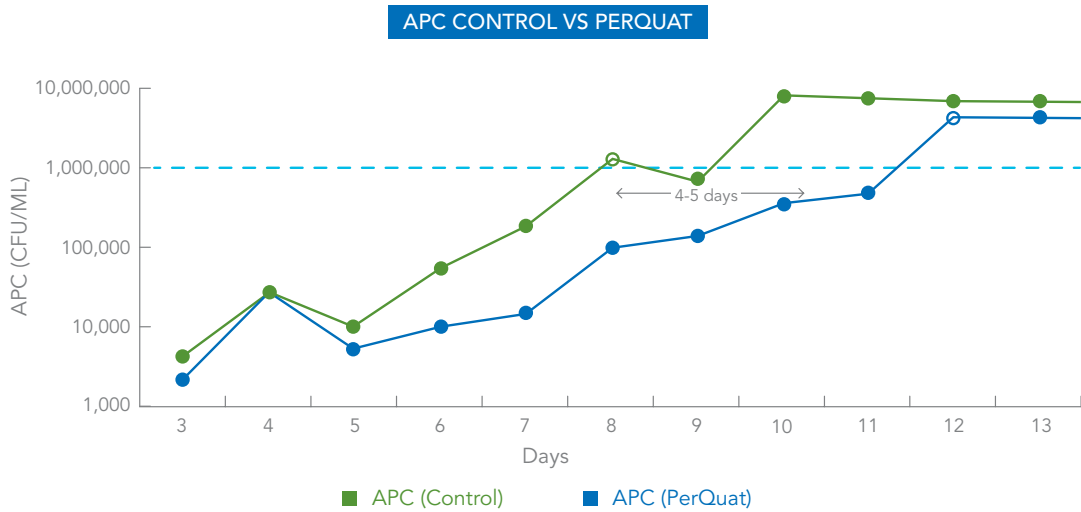
## RESULTS

### Microbial Testing Results

From day three through twelve, dramatic reductions in APC counts and total coliform counts by day were observed. In general, microbiological thresholds were reached 4–5 days later after PerQuat treatment as compared to the control sample, leading to an increase in shelf life.

### Organoleptic Results

Organoleptic differences between the two sets of samples were even more dramatic. The pretreatment samples began to emit odors at day 7, while the post treatment samples remained fresh smelling until day 12. The color of the control samples remained normal until day 8, at which time the meat began turning brown in color. Grey spotting was also observed until day 13 when the testing was stopped. There was no discoloration of the treated samples. The color remained normal from day 3 through day 13. The surface characteristics of the control samples only remained normal until day 7, at which time a slippery coating was observed on all parts. The feel of the treated samples remained normal until day 12.



## CONCLUSIONS

As observed in this trial, treatment of the injector loop with Sterilex PerQuat technology on a daily basis for two weeks resulted in a 4–5 day extension of shelf life for raw dark poultry meat. Delays in microbiological thresholds as well as significant improvements in organoleptic properties were seen throughout the trial.

Similar results may be observed in any plant with a brine injection process by following a similar injector treatment protocol.