CASE STUDY

Intervention Program Reduces Bacteria in Poultry Processing

INTRODUCTION

Test the ability to achieve and maintain target peracetic acid (PAA) and pH concentration for an effective **intervention program** in poultry processing facilities.

BACKGROUND

Hydrite, a manufacturer of PAA, has established an intervention program for food born illness pathogens. The program includes **chemistry**, **chemistry delivery systems**, **process monitoring and controlling system** with **subject matter expertise** in the art of meat and poultry processing.

PLANT SETTING

The trial was conducted in a facility that processed two different sized birds daily. First shift slaughtered and processed birds in the 8.5-10.0 lbs range, during shift change bird size was reduced to 6.5-8.4 lbs birds.

The facility utilized two evisceration lines that utilized chlorine as the intervention chemistry. From the evisceration lines into a 3 staged chiller system. The chill system was comprised of a screw style pre and middle chiller with a drag style final chiller, all three of the chillers intervention chemistries were PAA and 50% sodium hydroxide.

WOGs exit the chiller system, are rehung and travel to second processing for further processing. During the further processing stage individual parts are treated with an additional intervention step of PAA and 50% sodium hydroxide. Parts treated with intervention chemistries include breast, tenders, whole wings, cut wings, thighs, and drums.

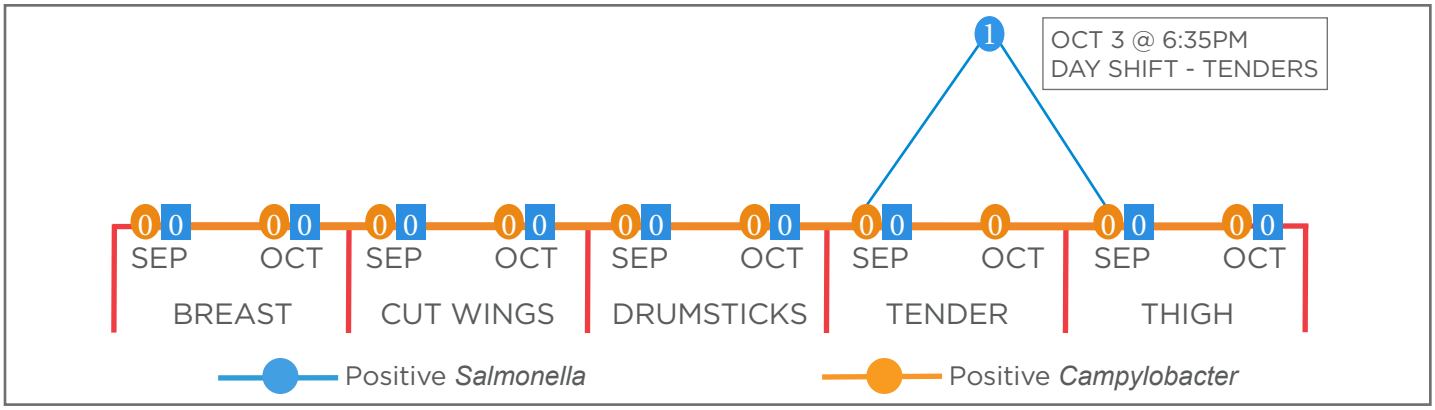
All intervention chemistry is applied in either a conveyor dip tank or a parts chiller. In water usage reduction efforts, the establishment also practices less than daily sanitation on the middle, final and all of the parts chillers in the process. The pre-chillers are dumped and cleaned daily, while in accordance with 9 CFR 416.2(g)(3)

PROGRAM EVALUATION

Factors determining successfulness were set into two categories:

1. Micro performance for the chemistry application
2. The ability to maintain desired concentrations for the chemical delivery system

Micro data was collected for *Salmonella*, *Campylobacter*, Rapid Aerobic Plate counts (RAP), and Enterobacteriaceae (EB). *Salmonella* and *Campylobacter* were recorded as pass/fail, EB and RAP were enumerated. Micro samples collected were analyzed using the BAX® system.



Part Type	Date	Time	Shift	Salmonella Results	Campy Results	EB Results
Drumsticks	9/26/2022	6:00PM	N	Neg (-)	Neg (-)	0
Tender	9/28/2022	2:56PM	D	Neg (-)	Neg (-)	7
Cut Wings	9/28/2022	6:47PM	N	Neg (-)	Neg (-)	56
Breast	9/29/2022	2:21PM	D	Neg (-)	Neg (-)	0
Thigh	9/29/2022	6:07PM	N	Neg (-)	Neg (-)	210
Breast	10/3/2022	3:03PM	D	Neg (-)	Neg (-)	1
Tender	10/3/2022	6:35PM	N	Pos (+)	Neg (-)	11200
Cut Wings	10/4/2022	5:58PM	N	Neg (-)	Neg (-)	6
Thigh	10/5/2022	6:15PM	N	Neg (-)	Neg (-)	36
Drumsticks	10/6/2022	2:10PM	D	Neg (-)	Neg (-)	0
Thigh	10/10/2022	2:37PM	D	Neg (-)	Neg (-)	0
Drumsticks	10/10/2022	6:10PM	N	Neg (-)	Neg (-)	0
Breast	10/11/2022	1:34PM	D	Neg (-)	Neg (-)	0
Cut Wings	10/11/2022	6:08PM	N	Neg (-)	Neg (-)	0
Tender	10/12/2022	6:00PM	N	Neg (-)	Neg (-)	85

CONCLUSION

Hydrite's chemical intervention program shows reduction in both *Salmonella* and *Campylobacter* as well as indicator species testing achieving the desired results being one element of safe and wholesome products being produced.

Hydrite intervention program focuses on multi-hurdle intervention process, focusing on applying physical, mechanical, and chemical interventions. Utilizing technology to dose chemistry accurately and consistently, based on the application method. Process monitoring equipment catalogs concentration levels both automatically and manually entered data to provide detailed analysis of the systems performance for audit purposes.

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