



Target and reduce *Salmonella* with phage technology.

SALMONELLA CAUSES

1 MILLION
CASES OF **FOODBORNE ILLNESS**



380 DEATHS EVERY YEAR IN THE US.¹

IN-PLANT TESTING REPORTS *SALMONELLA* POSITIVES AS HIGH AS 80% IN POULTRY.²

With new government requirements that *Salmonella* categorizations be published, it's more important than ever to control the bacteria in your plant. Research shows pathogen contamination in broilers increases during cutting and further processing³. In turkey processing, defeathering and handling after washing increased the incidence of *Salmonella* the greatest, but *Salmonella* was detected across each of the eight processing stages tested.⁴

WHAT IF YOU COULD SPECIFICALLY TARGET *SALMONELLA* IN YOUR PROCESSING PLANT WITH A SAFE AND PROVEN TOOL?



REDUCE *SALMONELLA*.

What if you could reduce *Salmonella* where contamination is highest?



BOLSTER CURRENT INTERVENTIONS.

What if you could add a *Salmonella*-targeted product to your current antimicrobial interventions?



MAINTAIN WORKER SAFETY.

What if there were interventions that didn't expose workers to harmful chemicals?

SALMONELLA DOESN'T FAZE THE PHAGE.

Finalyse™ SAL uses phage technology that targets *Salmonella* and uses the bacteria as a host cell to replicate, rapidly reducing *Salmonella*'s presence.

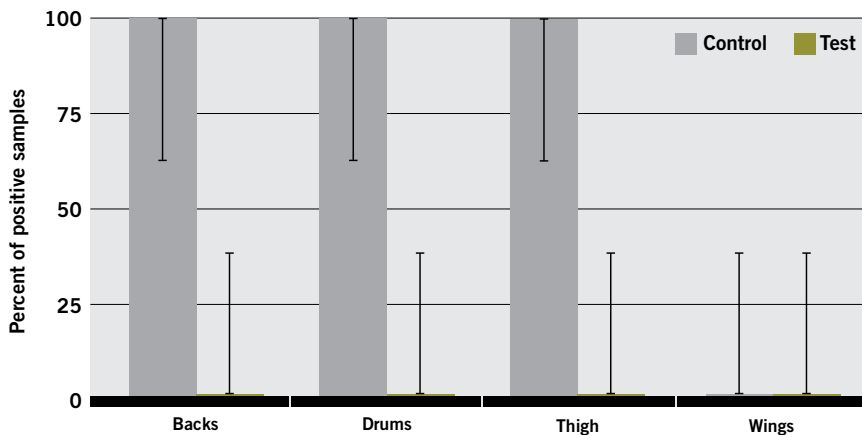
THE PROOF IS IN THE RESEARCH.

Reduced *Salmonella* in ground turkey.

Samples and sample rinses were collected from combos of turkey backs, drums, thighs and boneless wings throughout a commercial turkey processing facility. To replicate a real-world process, samples were transported 113 miles and held in a cooler before Finalyse SAL was applied. The combos were shipped back to the original production facility before grinding.

The comparison of *Salmonella* positive rates by part are shown below.

Figure 1: Comparison of *Salmonella* Positive Rates After Grind



*Error bars are created using Agresti-Coull method with 10 samples per part and treatment

Of the 2,000-pound combination of backs, thighs, drums and boneless wings in the control group, 100% tested positive for *Salmonella*. All samples in the treatment group, which received an application of Finalyse SAL in a Continuous Online Pathogen Eliminator (COPE) chiller, tested negative for *Salmonella*, except one sample of boneless wings taken after cooling but before grinding. The corresponding sample tested negative for *Salmonella* after grinding.⁵



We are powered by ARM & HAMMER's #ScienceHearted vision to meet the growing need for a safe and affordable food supply. Trust us for innovative food safety solutions to help reduce the incidence of common pathogens in animal protein products. To find out all the benefits of Finalyse SAL and contact a rep, visit PassportFoodSafety.com.

1 *Salmonella*. Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases [NCEZID]. <https://www.cdc.gov/salmonella/general/index.html>.

2 Sampling Results from FSIS Regulated Products: Calculations [October 1, 2017 – September 30, 2018]. <https://www.fsis.usda.gov/wps/wcm/connect/68f5f6f2-9863-41a5-a5c4-25cc6470c09f/Sampling-Project-Results-Data.pdf?MOD=AJPERES>.

3 *Campylobacter jejuni*, *Campylobacter coli*, and *Listeria monocytogenes* in Poultry Carcasses and Different Types of Poultry Products for Sale on the Belgian Retail Market. *Journal of Food Protection*: 1999;62(7):735-740. <http://jfoodprotection.org/doi/abs/10.4315/0362-028X-62.7.735>.

4 Nde CW, Sherwood JS, Doetkott C, Logue CM. Prevalence and Molecular Profiles of *Salmonella* Collected at a Commercial Turkey Processing Plant. *Journal of Food Protection* 2006;69(8):1794-1801. <http://www.jfoodprotection.org/doi/abs/10.4315/0362-028X-69.8.1794>.

5 Commercial validation, ARM & HAMMER. Data on file. 2018.