

Publication abstract

Efficacy of commercial bacteriophages in reducing *Salmonella* on poultry products

Based upon:

“Efficacy of a Commercial Phage Cocktail in Reducing Salmonella Contamination on Poultry Products- Laboratory Data and Industrial Trial Data”

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The study evaluated the effectiveness of commercial bacteriophage (phage) product [Phageguard S \(PGS\)](#) in reducing *Salmonella* on poultry, both in artificial contamination scenarios and in real-world industrial settings.

Trial setup

For the artificial contamination, skin-on and skinless poultry were inoculated with *Salmonella Enteritidis* and then treated with bacteriophages at both a low and high concentrations. Samples were analyzed after 24, 48, and 144 hours. The industrial trials were conducted across multiple poultry producers. Chicken livers, necks, breasts, and turkey backs were dipped in phage solutions and tested for the presence of *Salmonella* compared to untreated controls.

Conclusion

The experiments demonstrated more than 1 log reductions in *Salmonella* on both skin-on and skinless poultry within 24 hours of phage application. The industrial trials showed significant reductions: 21% of untreated chicken liver samples tested positive, whereas only 1% of treated samples were positive. The industrial trials demonstrated reductions in *Salmonella* positives by 94% for chicken livers, 58% for necks, 80% for breasts, and 88% for turkey backs. These results were statistically significant, confirming that bacteriophage application could substantially reduce *Salmonella* contamination in poultry products and provide a meaningful tool for food safety in real-world poultry processing environments.

-94%
Positives

Salmonella positives comparison in chicken livers

In the industry trials, **19/90** untreated chicken livers tested positive for *Salmonella*, while only **1/90** chicken livers treated with phage application tested positive.

-58%
Positives

Salmonella positives comparison in chicken necks

In the industry trials, **50/60** untreated chicken livers tested positive for *Salmonella*, while **21/60** chicken necks treated with phage application tested positive.

-80%
Positives

Salmonella positives comparison in chicken breast

In the industry trials, **94/190** untreated chicken breasts tested positive for *Salmonella*, while only **33/260** chicken breasts treated with phage application tested positive.

-88%
Positives

Salmonella positives comparison in turkey backs

In the industry trials, **37/37** untreated turkey backs tested positive for *Salmonella*, while **8/37** turkey backs treated with phage application tested positive.

