Publication abstract

Bacteriophage application on red meats and poultry to reduce *Salmonella* in final ground meat products

Based upon:
"Bacteriophage application on red meats and poultry: Effects on Salmonella population in final ground products"

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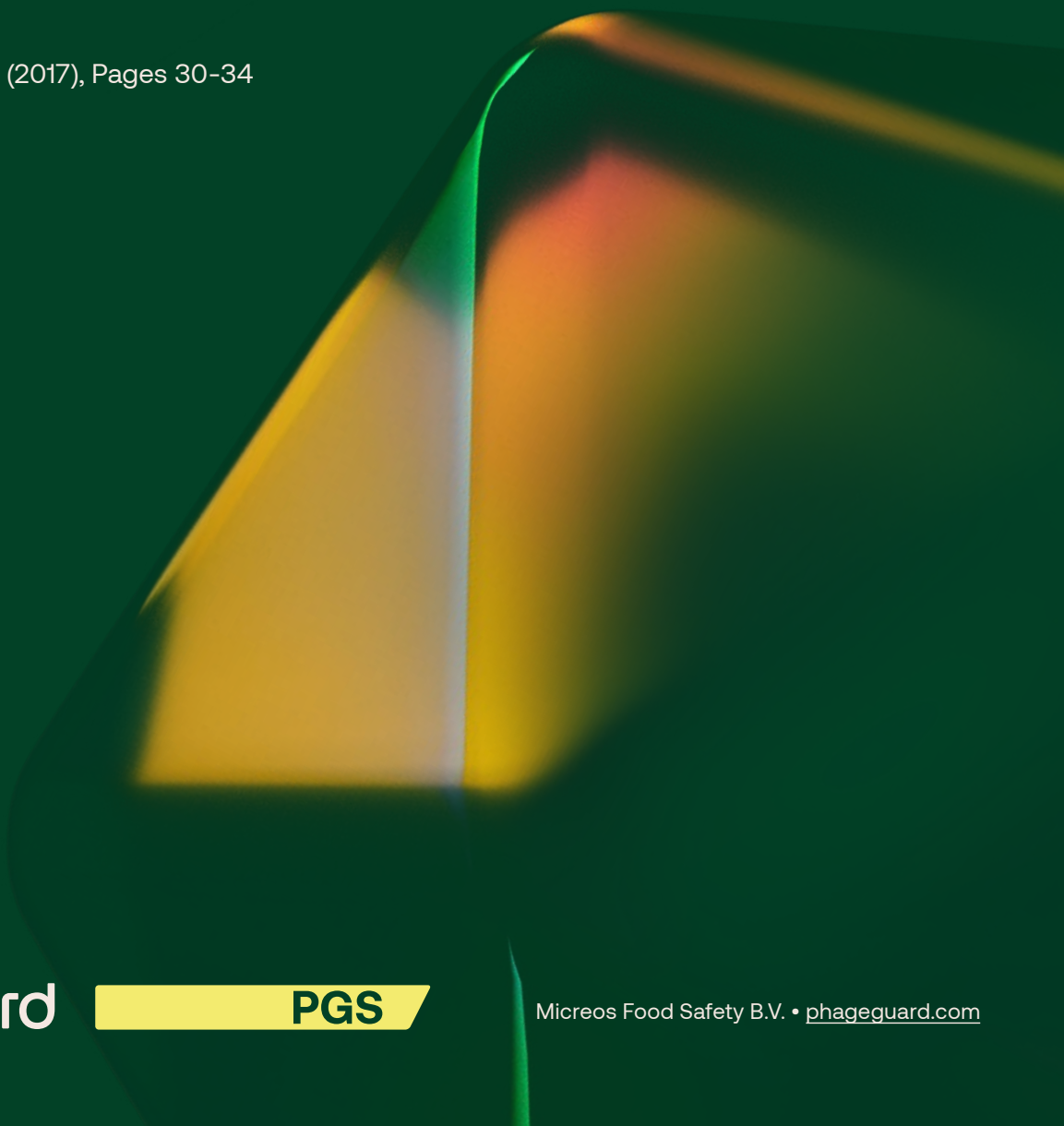
Meat Science, Volume 127 (2017), Pages 30-34



phageguard PGS

Salmonella remains a significant food-borne pathogen in the U.S. It is commonly found in meat products, including red meats, poultry, and eggs, and often contaminates during processing. Research suggests bacteriophages may offer an effective biocontrol strategy for *Salmonella* in ground meat products, without affecting other microbiota. A study conducted by the University of Nevada in the United States evaluated the effectiveness of bacteriophage (phage) product Phageguard S (PGS), on red meat trim and poultry in reducing *Salmonella* populations, as well as the impact of different holding times before grinding.

Trial setup

The trial was conducted using beef, pork trim, and poultry thighs. Three treatments were used: control (no bacteriophage), bacteriophage at low concentration, and bacteriophage at a higher concentration. Holding times were set at up to 6 hours for poultry and and up to 18 hours for red meat. The bacteriophage solution was applied to the trim, which was then ground and analyzed for *Salmonella* populations.

Conclusion

The study demonstrated that bacteriophage application effectively reduced *Salmonella* populations in red meat and poultry under different holding times. Bacteriophage treatments reduced *Salmonella* by 0.7 to 1.1 log, depending on concentration and meat type, with no significant differences between holding times. These findings underscore bacteriophage treatment as a valuable tool in HACCP plans for improved *Salmonella* control in meat products.

1.0 log Reduction

Salmonella reduction in ground beef

Bacteriophage treatment applied to ground beef reduced *Salmonella* populations by 0.7 to 1.0 log, depending on dosage.

0.9 log Reduction

Salmonella reduction in ground pork

Bacteriophage treatment applied to ground pork reduced *Salmonella* populations by 0.7 to 0.9 log, depending on dosage.

1.1 log Reduction

Salmonella reduction in ground chicken

Bacteriophage treatment applied to ground chicken reduced *Salmonella* populations by 0.8 to 1.1 log, depending on dosage.

0.9 log Reduction

Salmonella reduction in ground turkey

Bacteriophage treatment applied to ground turkey reduced *Salmonella* populations by 0.7 to 0.9 log, depending on dosage.

Discover more about phage technology for *Salmonella* control in our Phageguard Knowledge Center

Original publication: Meat Science, Volume 127 [2017], Pages 30-34