

Publication abstract

Improving *Listeria* control on ready-to-eat deli meat and dairy products

Based upon:

“Evaluation of Commercial Anti-Listerial Products for Improvement of Food Safety in Ready-to-Eat Meat and Dairy Products”

Pilar Colás-Medà , Inmaculada Viñas, Isabel Alegre

Postharvest Biology and Technology Unit, Department of Food Technology, Engineering and Science, University of Lleida, Spain
AGROTECNIO-CERCA Center, Spain

Antibiotics 2023, 12 (2), 414

Detection and Control of Pathogens in Food Production

For consumable items like cooked ham, fresh cheese, and fuet (dry-cured Spanish pork sausage), where *Listeria monocytogenes* poses a risk, the use of biopreservation methods adds an additional barrier to prevent pathogen growth during storage. A study conducted by several research groups at the University of Lleida, Spain, evaluated the effectiveness of bacteriophage (phage) product [Phageguard L \(PGL\)](#) (also known as Listex) for the inactivation of *L. monocytogenes* in three different food matrices.

Trial setup

The present study simulated a commercial production scenario in a laboratory setup to evaluate whether an intervention is effective for inactivating *Listeria* in industrial practices. The three matrices—cooked ham, fresh cheese, and dry-cured Spanish pork sausage—were inoculated with a cocktail of *Listeria* strains and then treated with Phageguard L. Two different treatment levels were tested. Treatment of the commercially cooked ham and fuet were done on the surface, while the fresh cheese treatment was applied during the cheese-making process. After phage treatment, the three food matrices were incubated at storage temperatures. Temperature is a parameter directly related to efficacy.

Conclusion

The study shows that Phageguard L is effective against *Listeria* in all three matrices. Cooked ham showed maximum *Listeria* reductions of 3.0 log with the different phage concentrations. After several days, the *Listeria* counts decreased further below the detection limit. In fresh cheese, significant reductions of more than 3 log were found for both phage doses, with *Listeria* counts below the detection limit. Bacterial retrieval in fuet was done in two stages. One stage presented no significant reductions. However, the second stage showed a maximum reduction of 0.7 log was observed. The findings demonstrate the effectiveness of Phageguard L for *Listeria* control in ready-to-eat deli meats and dairy products.

**Below
Detection**

Listeria reduction on cooked ham and fresh cheese

Phageguard L treatment applied to cooked ham resulted in a 3.0 log reduction. Further reductions below detection level were measured after several days post-treatment. Phage application on the fresh cheese presented fast reductions of *Listeria* counts below detection level.

