



PhageGuard Listex reduces Listeria on fresh salmon

Smart

- PhageGuard Listex targets only Listeria, leaving the good bacteria intact
- PhageGuard Listex on fresh salmon reduces Listeria by 1.3 to 1.4 logs.

Green

- PhageGuard Listex is a processing aid, no labelling required
- Organic - OMRI listed
- No effect on taste, texture, odor and color
- No detrimental effect on personnel and equipment.

Easy

- Easy to apply.
- PhageGuard Listex can be applied via spraying, dip application or on the batter, ensuring a homogeneous distribution.

The natural solution for Listeria - PhageGuard Listex

PhageGuard Listex is a highly concentrated solution containing phage P100. The phage P100 used in PhageGuard Listex is selected from nature for its specific killing ability against *Listeria monocytogenes*. PhageGuard Listex targets all species of Listeria found in food processing environments.



Application of PhageGuard Listex

The fish itself can be a source of Listeria contamination, which can introduce Listeria to the processing environment. Further contamination of the final product can occur during de-heading, evisceration, filleting, slicing and smoking steps. These products are especially at risk since Listeria continues to grow at refrigerated storage temperatures.

PhageGuard Listex

Dosage	2% treatment shows significant kill of Listeria on skin & flesh
Distribution	0.5 - 1% pickup of the spray solution results in good coverage of surface
Application technique	<ul style="list-style-type: none"> Spraying (on fillets, slicing blade or vacuum packing) Dip application
Contact time	Allow a minimum of 30 minutes before the next surface intervention

Figure 1 represents the results from a trial in which fresh salmon was treated via Electrostatic Spray System (ESS) application with

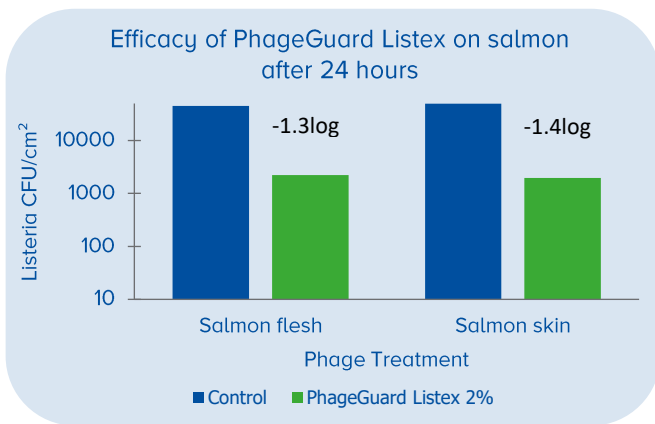


Figure 1. Effect of PhageGuard Listex after 24 hours (4°C) when applied on salmon (flesh or skin side) via ESS application with 0.5% pickup.

PhageGuard Listex at 2%. Subsequently, they were artificially inoculated with *Listeria monocytogenes* at approximately 40,000 CFU (colony forming units)/cm².

- Good distribution of PhageGuard Listex results in a significant decrease in bacterial concentration of treated salmon.

- After storage of 24 hours at 4°C, Listeria reductions of up to 1.4 logs were observed when both the flesh or the skin side were treated, compared to the results of salmon without treatment.

- Shelf life trials performed by *K. Soni and R. Nannapaneni* (2010) have determined that by decreasing the initial Listeria load with PhageGuard Listex, the Listeria load at the end of shelf life was significantly lower than in non-treated products.

Application techniques

Depending on where the risk of Listeria contamination originates, the application may vary:

- Incoming Product: Treat the fillet by spraying both sides presmoking (or one side and the belt) or by dip application
- Brine or Batter: Treat brine or batter
- Critical Process Equipment: Spray during slicing on belts and/or prepackaging on product
- Environmental: Spray hot spots after chemical cleaning and rinse

In conclusion, PhageGuard Listex is a safe and smart Listeria hurdle during processing of salmon, leading to safer products without compromising organoleptic properties or worker safety.

For more information regarding this application data bulletin please use the following contact information:



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