

# Publication abstract

## Post-process treatment for reducing *Listeria* on leafy greens: fresh-cut curly endives

### Based upon:

*“Post-process treatments are effective strategies to reduce *Listeria monocytogenes* on the surface of leafy greens: A pilot study”*

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The production process of various types of fresh produce, such as leafy greens, can allow the growth of *Listeria monocytogenes*. As a result, *Listeria* presence is often registered in processing environments on food and/or food contact surfaces. A study on fresh-cut curly endives, conducted by the Research Institute CEBAS-CSIC, Spain, and ISI FOOD PROTECTION, Denmark, evaluated the effectiveness of the bacteriophage (phage) product [Phageguard L \(PGL\)](#) (also known as Listex) to inactivate *Listeria*.

## Trial setup

To evaluate whether an intervention is effective for inactivating *Listeria* in industrial practices, it is important to mimic the conditions of the specific processing environment under examination. The present research simulated a commercial endive production line where Phageguard L was applied on a conveyor belt and during centrifugation. Inoculation of the product was performed using Process Wash Water (PWW) obtained from an actual processing line and containing a *Listeria* cocktail isolated from different vegetables. The two application points within the production line are commonly used in industry. The two treatment procedures were chosen to ensure good coverage of the Phageguard L on the product to treat, a parameter directly relating to efficacy.

## Conclusion

The study results showed that the application point (conveyor belt or centrifuge) did not affect the achieved *Listeria* reductions of the phage intervention. Overall, the achieved results of the *Listeria* inactivation on the fresh-cut curly endives resulted in an average 2.5 log reduction. These results substantiates the efficacy of Phageguard L for *Listeria* control on leafy greens, such as curly endives, as long as good coverage and recommended dose of Phageguard L are ensured.

**2.5** log  
Reduction

### Average reduction of *Listeria* on fresh-cut curly endives

Study results showed an average 2.5 log reduction of *Listeria* on the fresh-cut curly endives. These results indicate the efficacy of Phageguard L for *Listeria* control on leafy greens, such as curly endives.

