

Dempsey  
food

The Future of Food Safety Is  
Natural:  
Controlling *Listeria* with Inneo

Belinda Elysée-Collen, M.Sc., CFS  
Dempsey Food

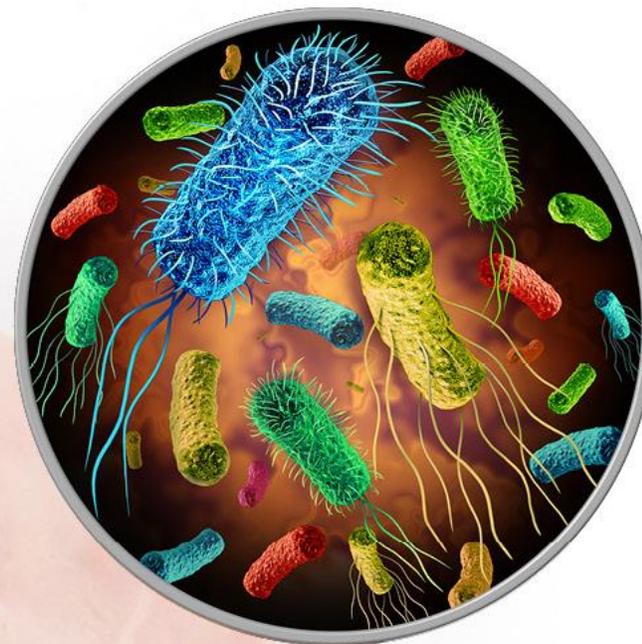
Laurent Dallaire, Ing, M.Sc.  
Innodal



INNODAL  
innocuity · naturally



**100 M\$**





INFO

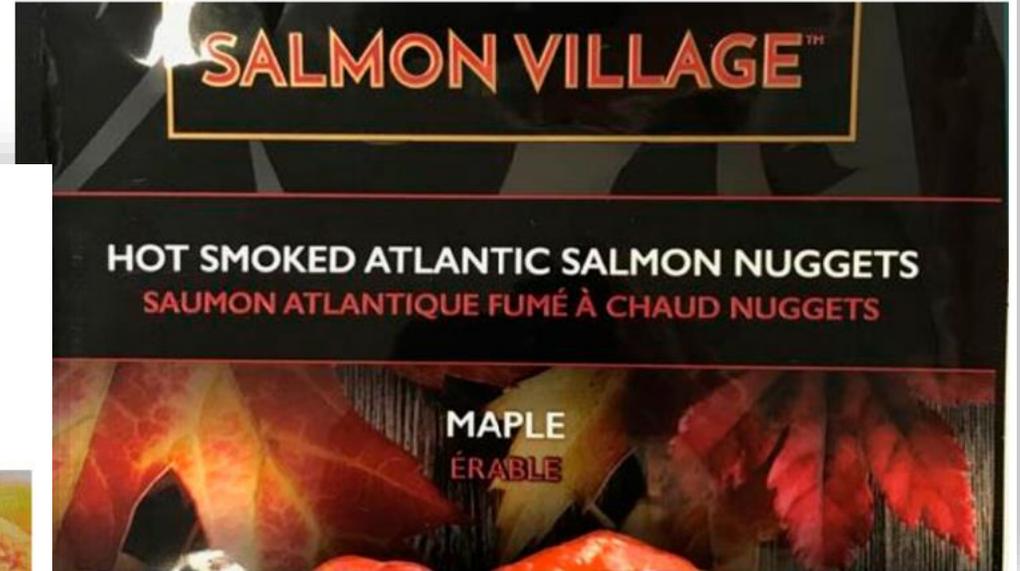
Rappel d'une salade de chou frisé Eat Smart possiblement contaminée



pépites de poulet  
sées à la salmonelle



ICI Saskatchewan  
Rappel dans l'Ouest de pépites de saumon fumé à l'érable  
Salmon Village



LA PRESSE

Fromages: la *listeria* fait encore  
des siennes



de consommer de la laitue romaine au Québec et en



BRIEF

# Tyson recalls 8.5M pounds of ready-to-eat frozen chicken

Published July 6, 2021

 [Christopher Doering](#)  
Senior Reporter

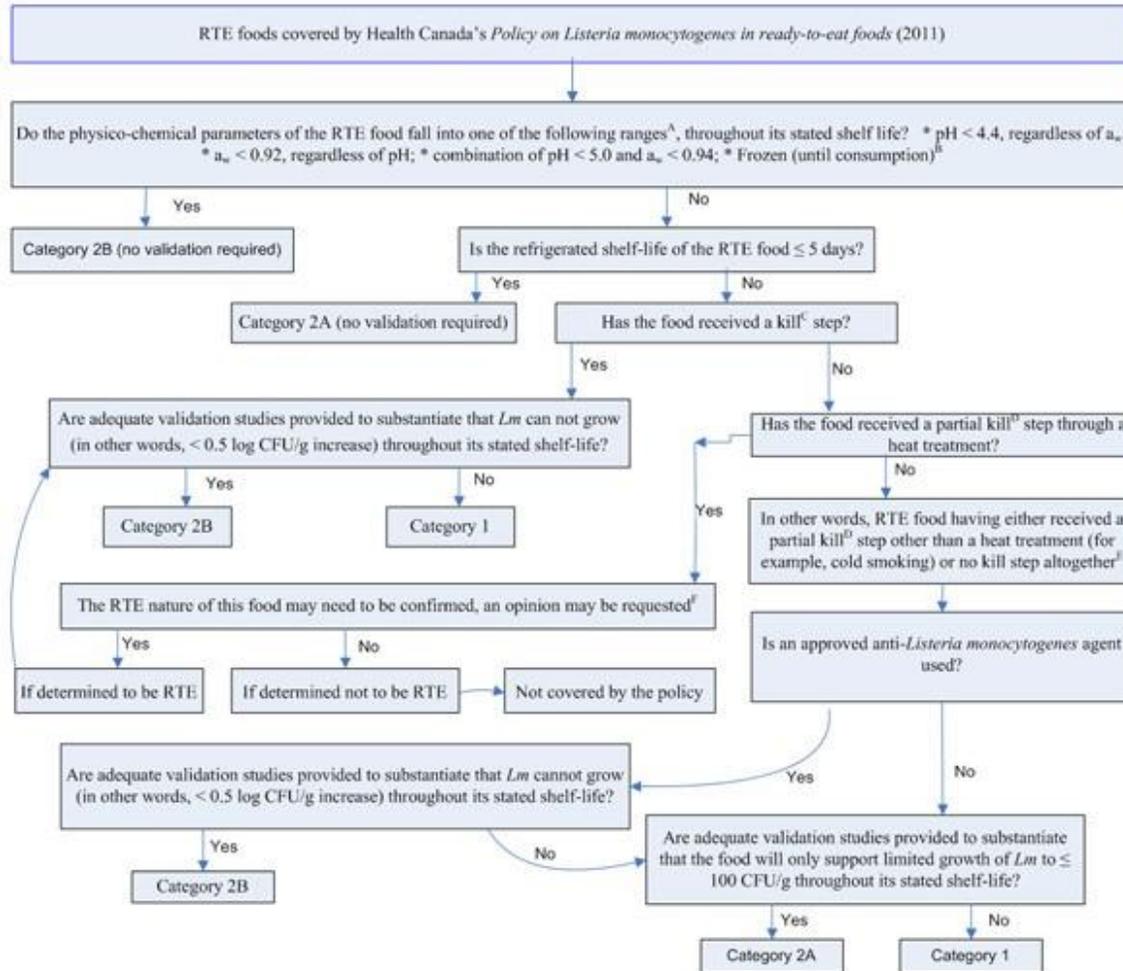


Permission granted by Tyson Foods

## Dive Brief:

- Tyson Foods is recalling about 8.5 million pounds of frozen, fully cooked chicken that could have been contaminated with listeria, the [company](#) and the [USDA](#) said in separate statements. The affected products were produced at one plant located in Dexter, Missouri,

# Control of *Listeria* in the food product

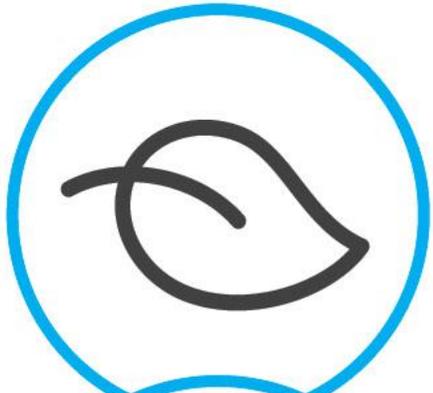


# Examples of tools currently available to control *Listeria* in the food product

Type	Name	Dosage
Physico-chemical parameters	pH	<4,4 <sup>4</sup>
	a <sub>w</sub>	<0,92 <sup>4</sup>
Thermo-mechanical treatment	Cooking	83°C – 3sec <sup>6</sup>
	Pasteurization	72°C – 16sec
	HPP	3min – 87 000psi
Additive	Sodium lactate	3% <sup>1-2</sup>
	Sodium diacetate	0,25% <sup>3</sup>
Processing aid	Ozone	2,5 – 20 ppm <sup>5</sup>
	Hydrogen peroxide	88 – 2750 ppm <sup>5</sup>



1) [https://www.researchgate.net/publication/276488740\\_Effects\\_of\\_Sodium\\_Lactate\\_on\\_the\\_Survival\\_of\\_Listeria\\_Monocytogenes\\_Escherichia\\_coli\\_O157H7\\_and\\_Salmonella\\_spp\\_in\\_Cooked\\_Ham\\_at\\_Refrigerated\\_and\\_Abuse\\_Temperatures](https://www.researchgate.net/publication/276488740_Effects_of_Sodium_Lactate_on_the_Survival_of_Listeria_Monocytogenes_Escherichia_coli_O157H7_and_Salmonella_spp_in_Cooked_Ham_at_Refrigerated_and_Abuse_Temperatures)  
2) <https://meridian.allenpress.com/jfp/article/57/2/108/166902/Inhibition-of-Listeria-monocytogenes-in-Cold>  
3) <https://www.canada.ca/en/health-canada/services/food-nutrition/legislation-guidelines/policies/food-additives-that-may-currently-used-class-2-preservatives-potentially-control-growth-listeria-monocytogenes-ready-foods-sold-canada.html>  
4) <https://www.canada.ca/en/health-canada/services/food-nutrition/legislation-guidelines/policies/validation-ready-foods-changing-classification-category-1-into-category-food-relation-policy-listeria-monocytogenes-ready-foods-2011.html>  
5) <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-additives/processing-aids.html>  
6) <https://www.fda.gov/media/99598/download>



**Fresh**



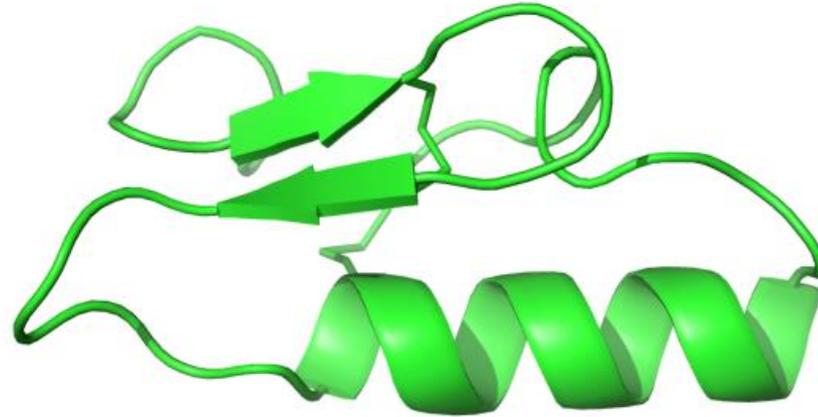
**Healthy**



**Natural  
preservation**







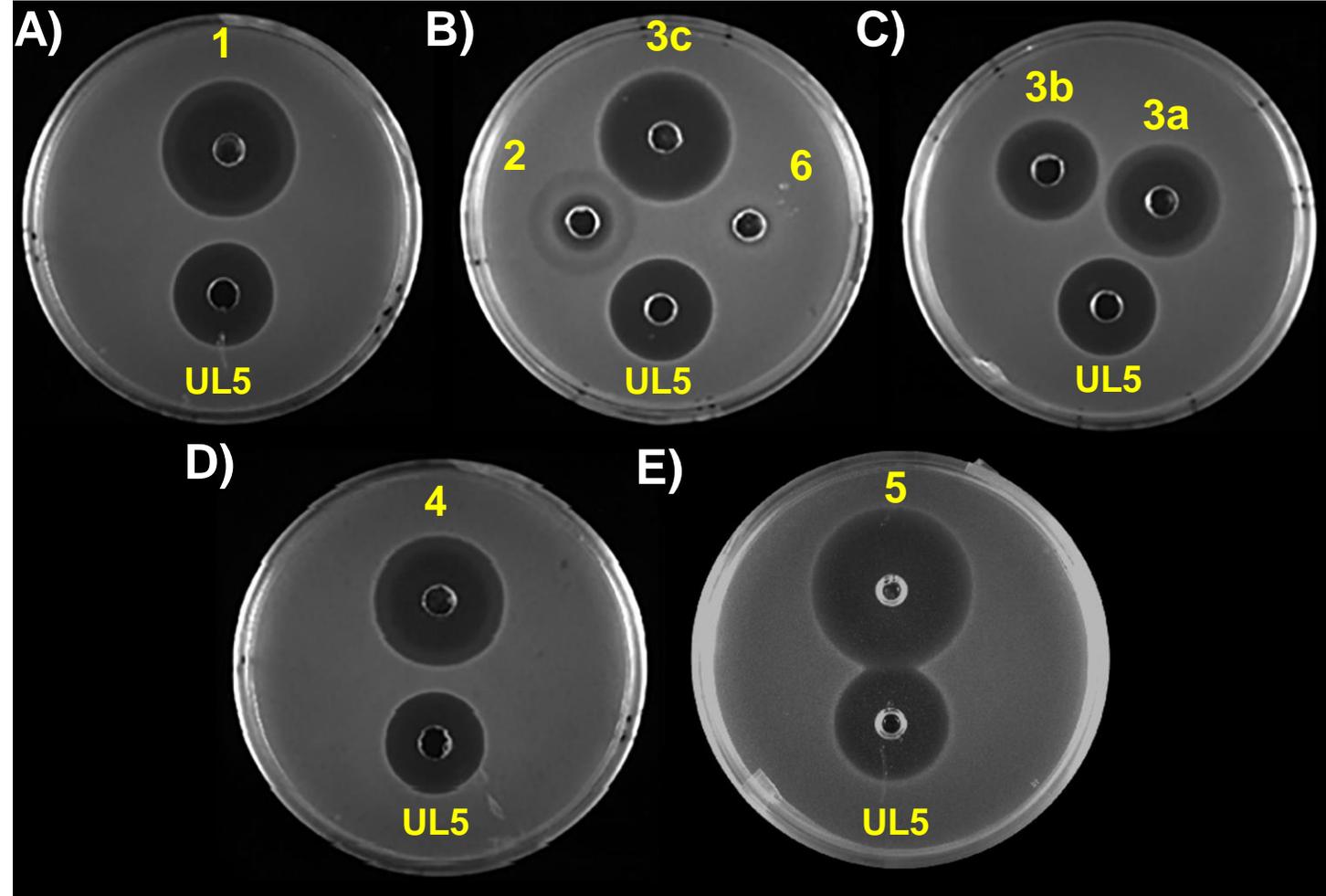
**Inneo** is a product based on Pediocin: a peptide that consists of **44 natural amino acids**.

Pediocin acts to destroy bacteria cells by **permeabilizing their cell membrane**.

Inneo's action on *Listeria spp.* is **immediate**. This product feature ensured that our product became an **antimicrobial processing aid** (ADDPP18043001) under **Health Canada**, which allows it to be used across Canada, without having to be added to the list of ingredients.



- 1: Linear
- 2: Peptide oxydized
- 3c: Cyclic pediocin
- 4: Leucine + linear
- 5: Leucine + cyclic
- 6: Trully linear

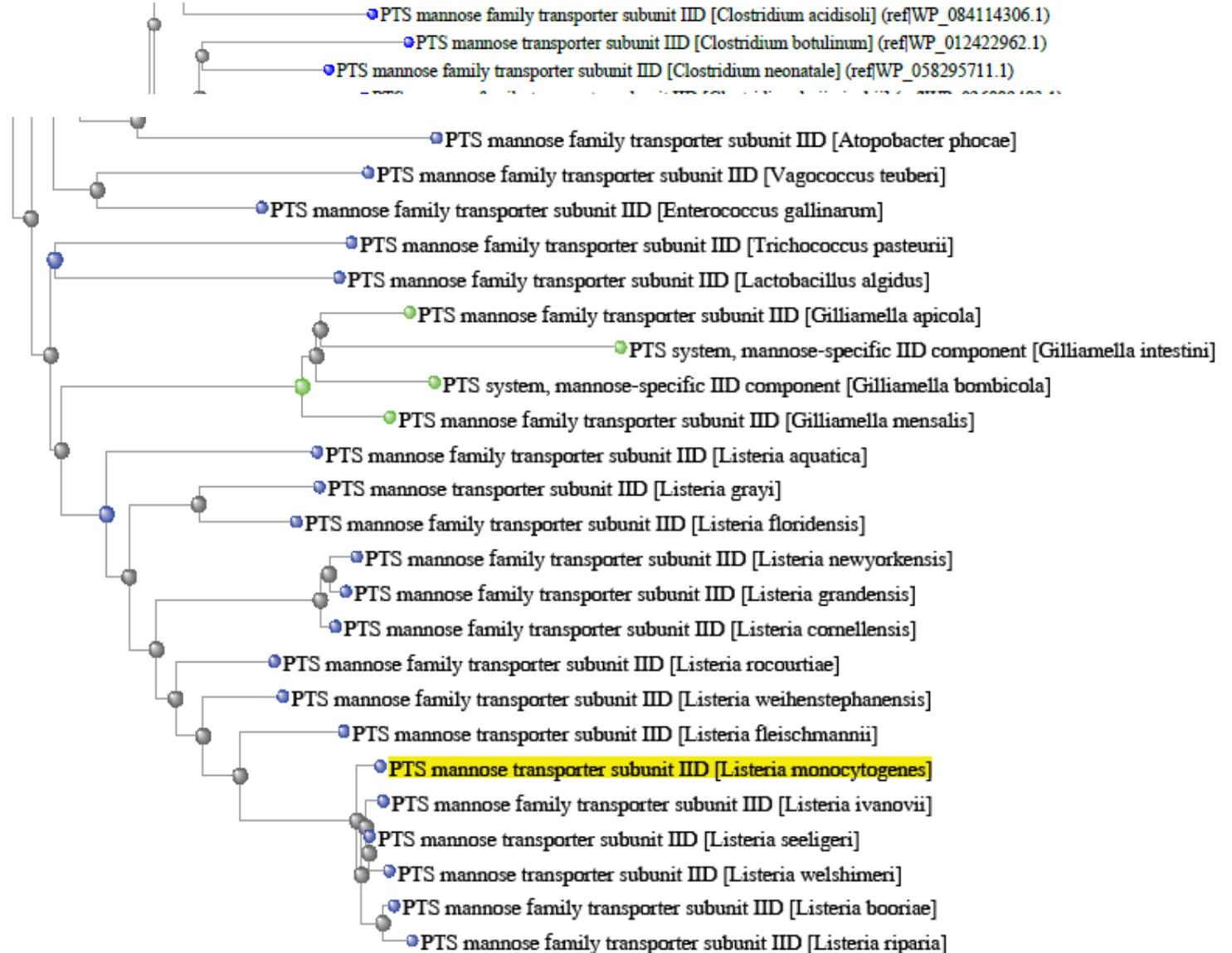
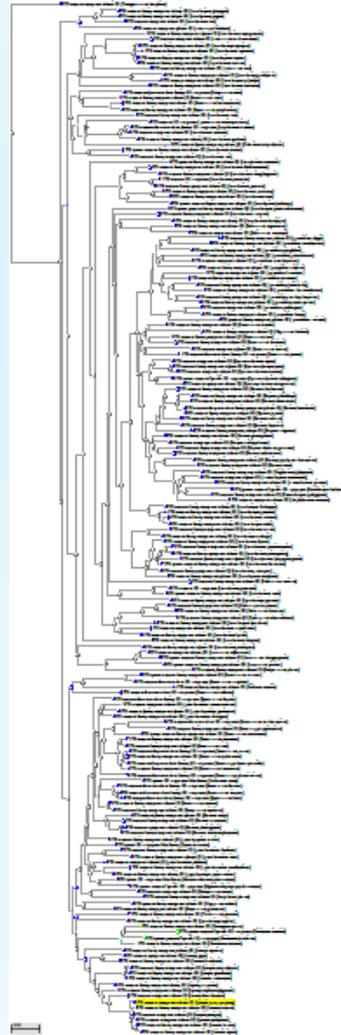


*Listeria monocytogenes* ATCC19111 – TSBYE medium  
Peptide quantity per well: 15 nmoles (75 µg)



Strains	Reference	MIC (nM)	Diffusion (mm)	Media
<i>Carnobacterium divergens</i>	ATCC 35677	1.9	35	BHI
<i>Listeria monocytogenes</i>	LSD530	13,5	30	TSBY
<i>Leuconostoc mesenteroides</i>	ATCC 23386	1.9	33	MRS
<i>Listeria seeligeri</i>	ATCC 35967	4.7	32	TSBY
<i>Clostridium perfringens</i>	AAC 1-222	37.8	25	RCM
<i>Clostridium perfringens</i>	AAC 1-223	75.7	22	RCM
<i>Listeria murrayi</i>	ATCC 25401	151.4	28	TSBY
<i>Lactobacillus plantarum</i>	ATCC 8014	605.5	23	MRS

**Bédard F.**, Hammami R., Zirah S., Rebuffat, S., Fliss I., Biron E., Synthesis, antimicrobial activity and conformational analysis of the class IIa bacteriocin pediocin PA-1 and analogs thereof, *Scientific Reports*. **2018**





**100 %  
Natural**

**1000x  
more  
efficient**

**Clean  
Label**

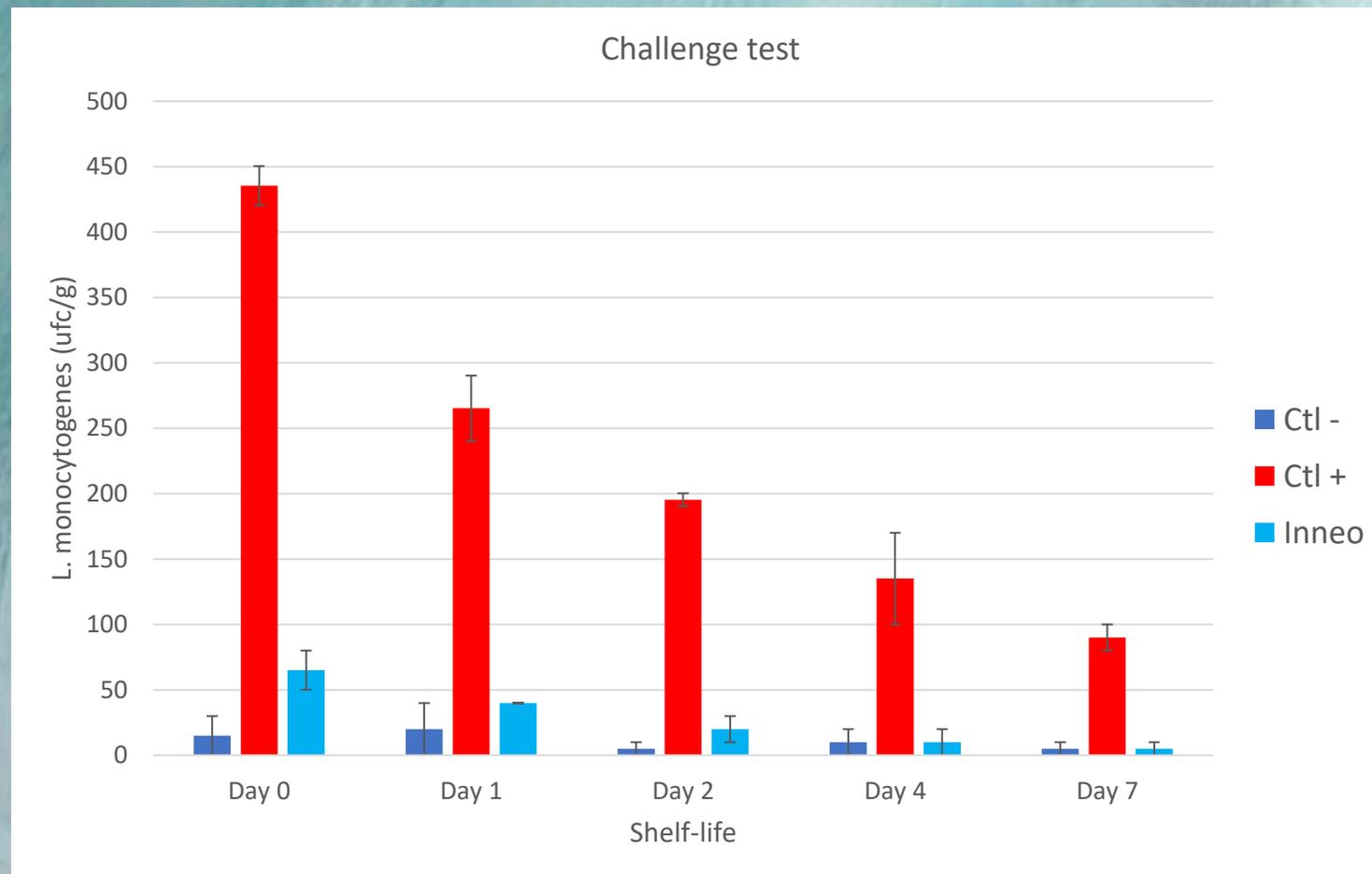




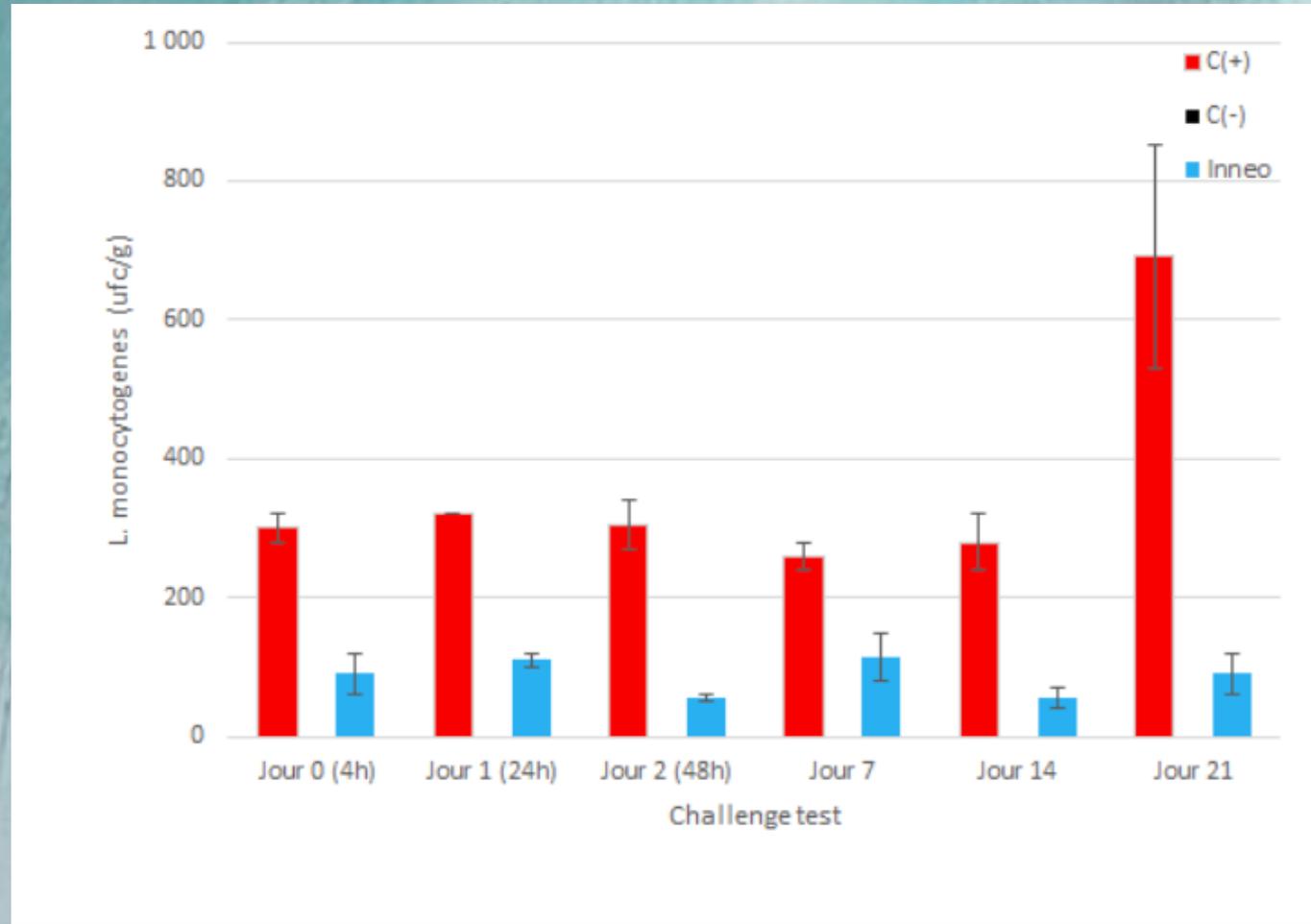
# Manual system



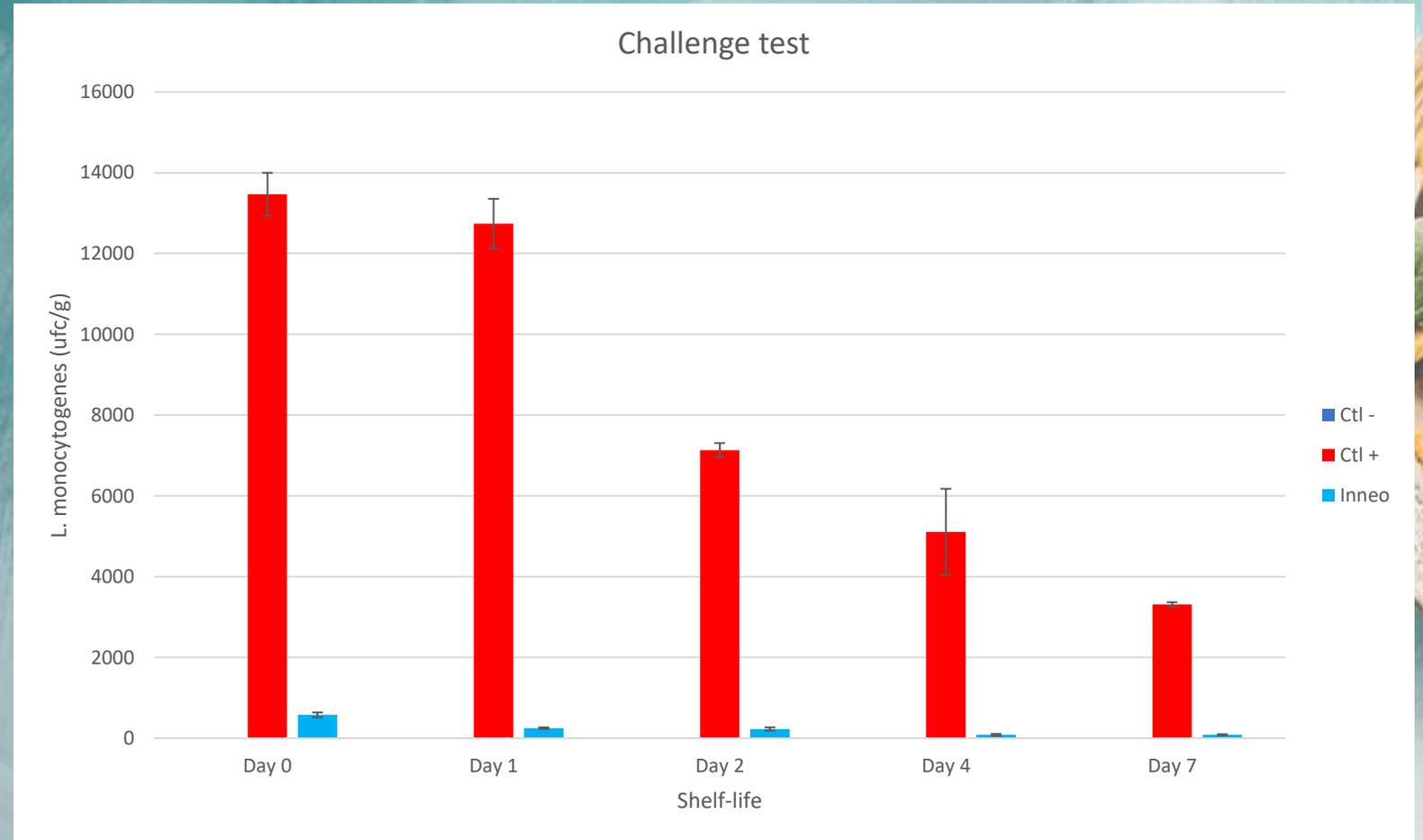
# Inneo on salmon



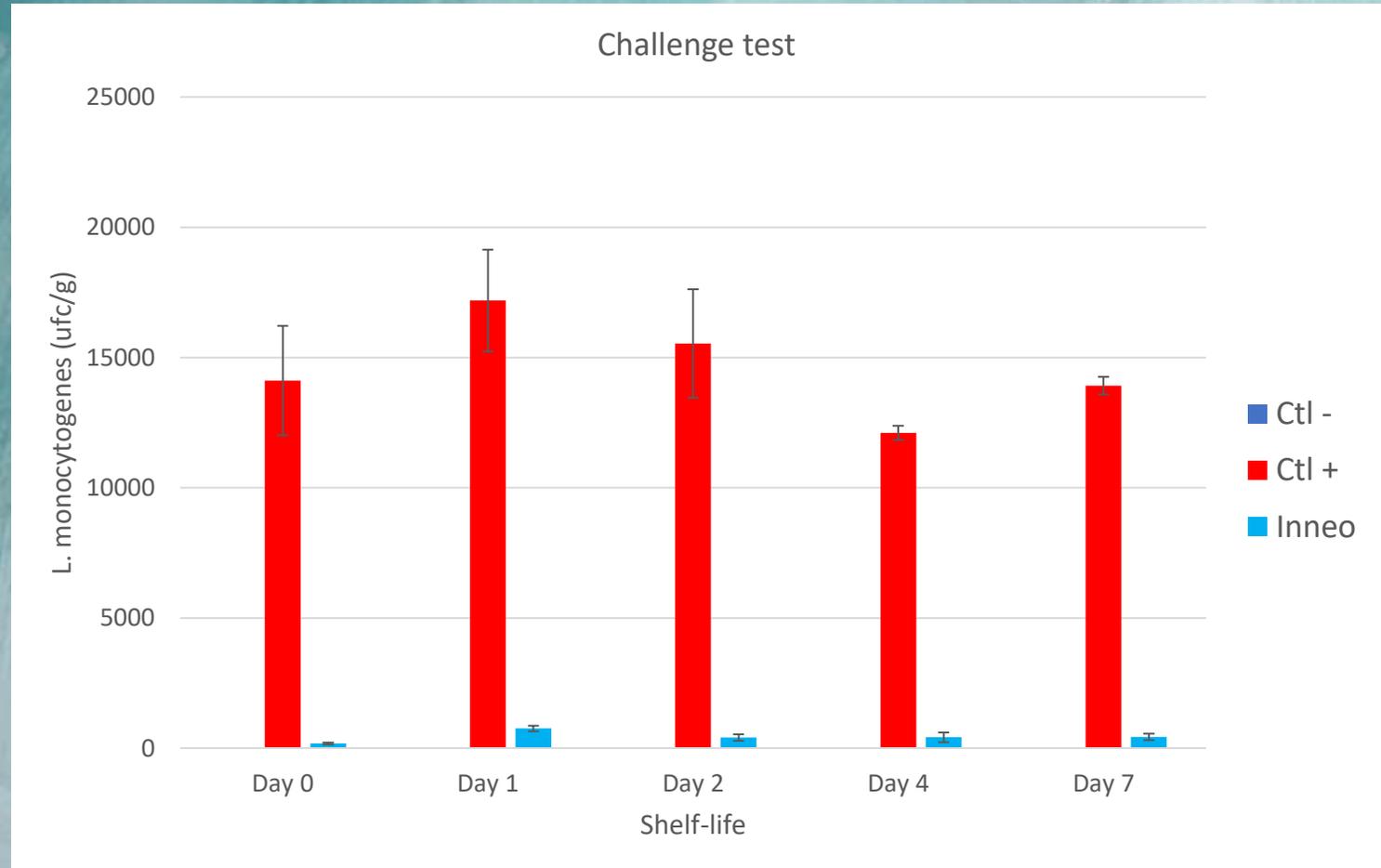
# Inneo on cold-smoked salmon



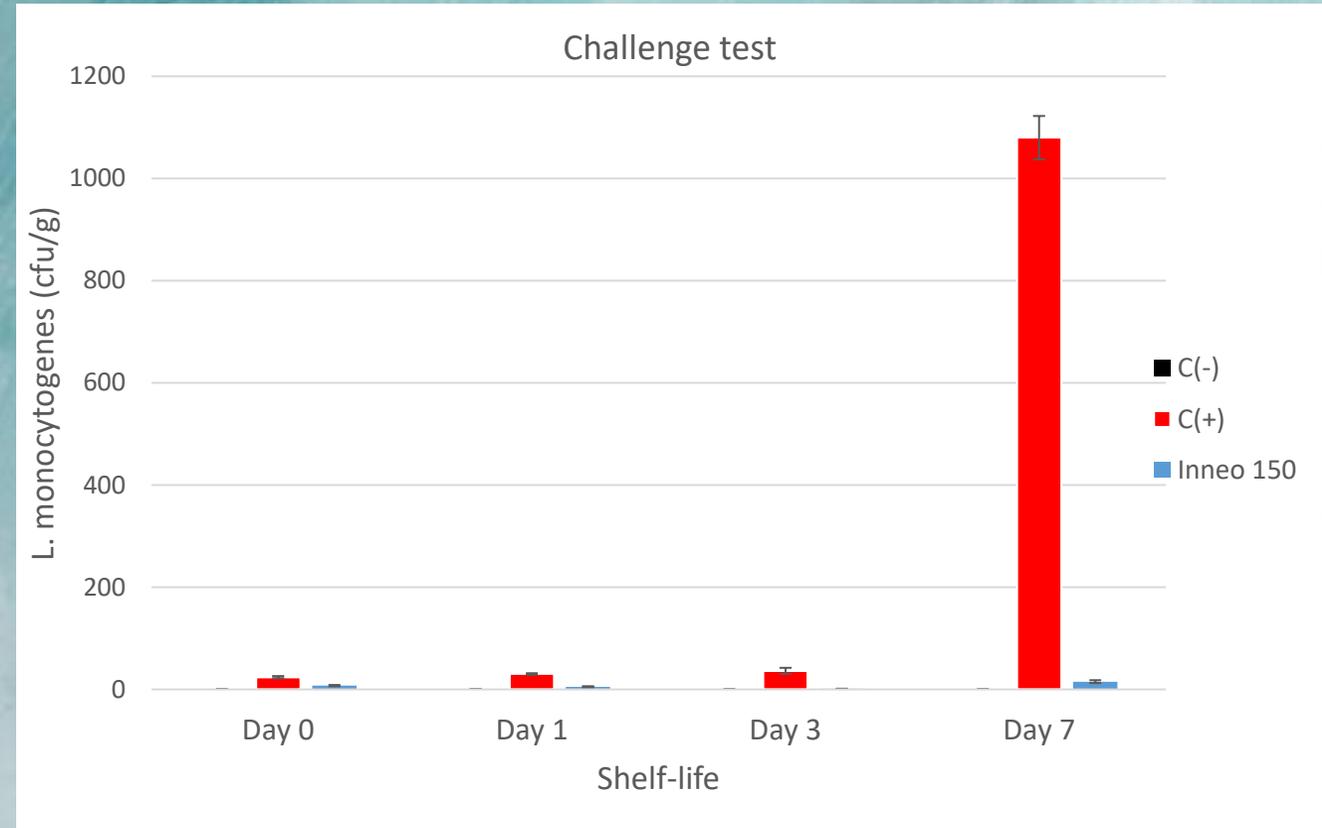
# Inneo on fresh beef



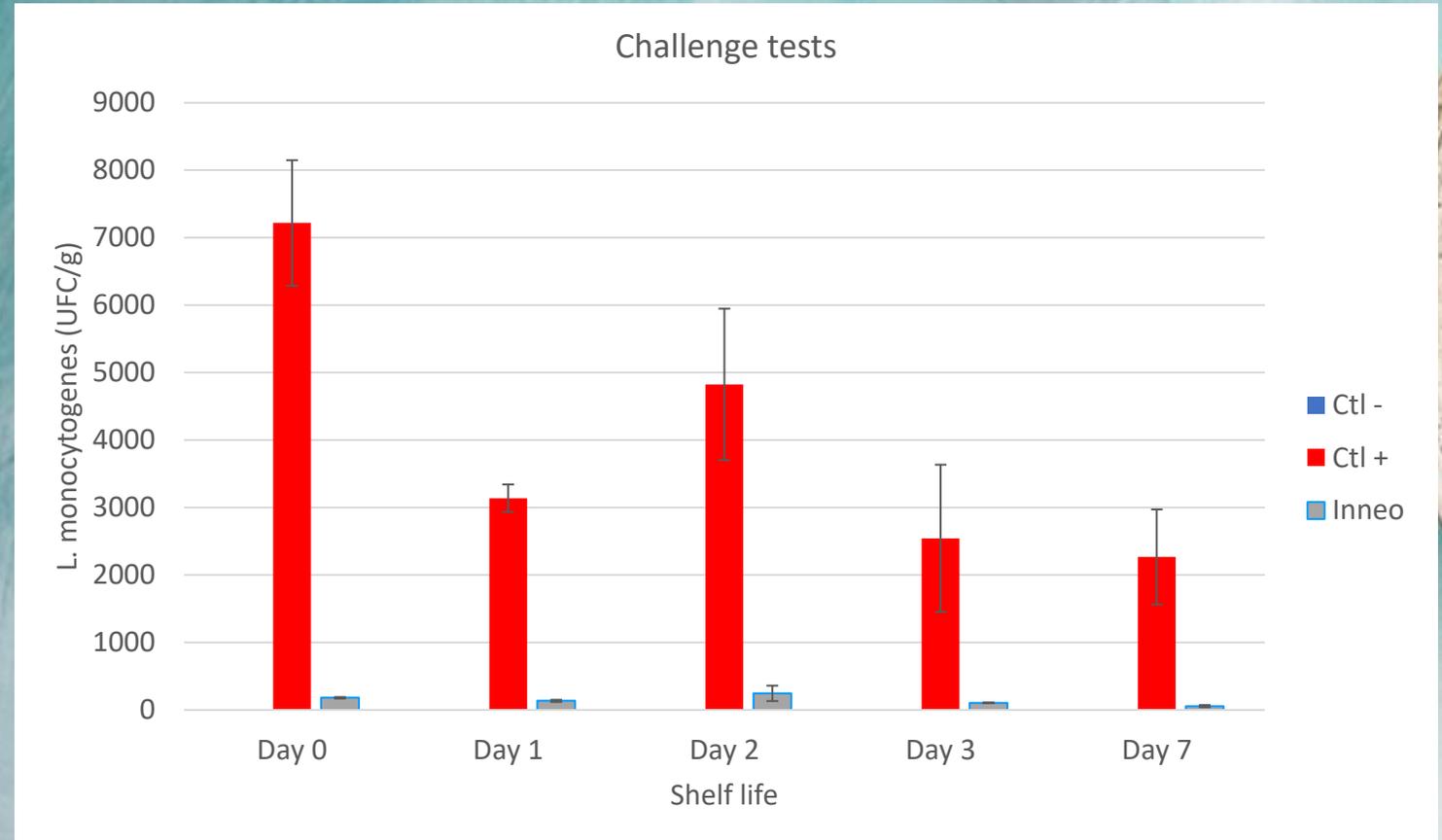
# Inneo on pork ham



# Inneo hot dog sausages



# Inneo on thawed mixed vegetable



Service and  
product

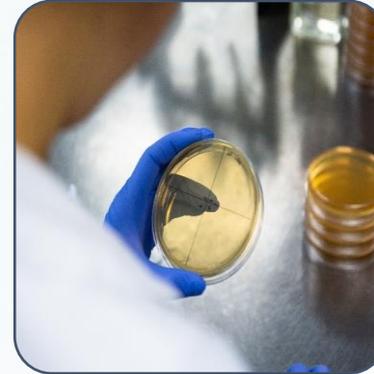
# IMPLEMENTATION PROCESS & EXPERTISE



Microbiology



Food Science



Biotech  
Engineering



Pharmaceutical  
Science

# Thank you!

## Contact Information



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