

BIOMÉRIEUX

GO BEYOND THE TEST RESULTS

A Fresh Approach For The  
Salmon Industry



Your Trusted Partner in Augmented Diagnostics

PIONEERING DIAGNOSTICS

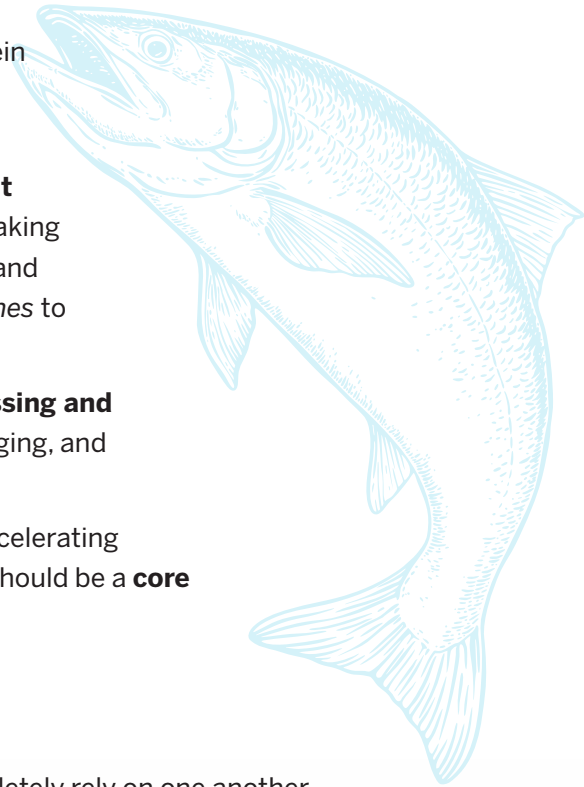
# Navigating Complexity in Salmon Safety & Quality

The salmon industry is one of the most **globalized and high-value** protein categories in the world — which means it doesn't come without its own unique set of challenges.

The most popular salmon products lend themselves to the **most difficult quality obstacles**. Cold-smoked salmon does not undergo a kill step, making contamination risk higher. Ready-to-eat salmon is vacuumed packaged and refrigerated, creating conditions for pathogens like *Listeria monocytogenes* to **grow and persist**.

Additionally, salmon production involves a **complex, multiphase processing and supply chain system**: aquaculture, harvesting, filleting, smoking, packaging, and distribution — with each step introducing contamination risk.

With all these factors to consider, controlling microbiological risk and accelerating quality decisions is not just a component of a food safety program, but should be a **core business strategy**.



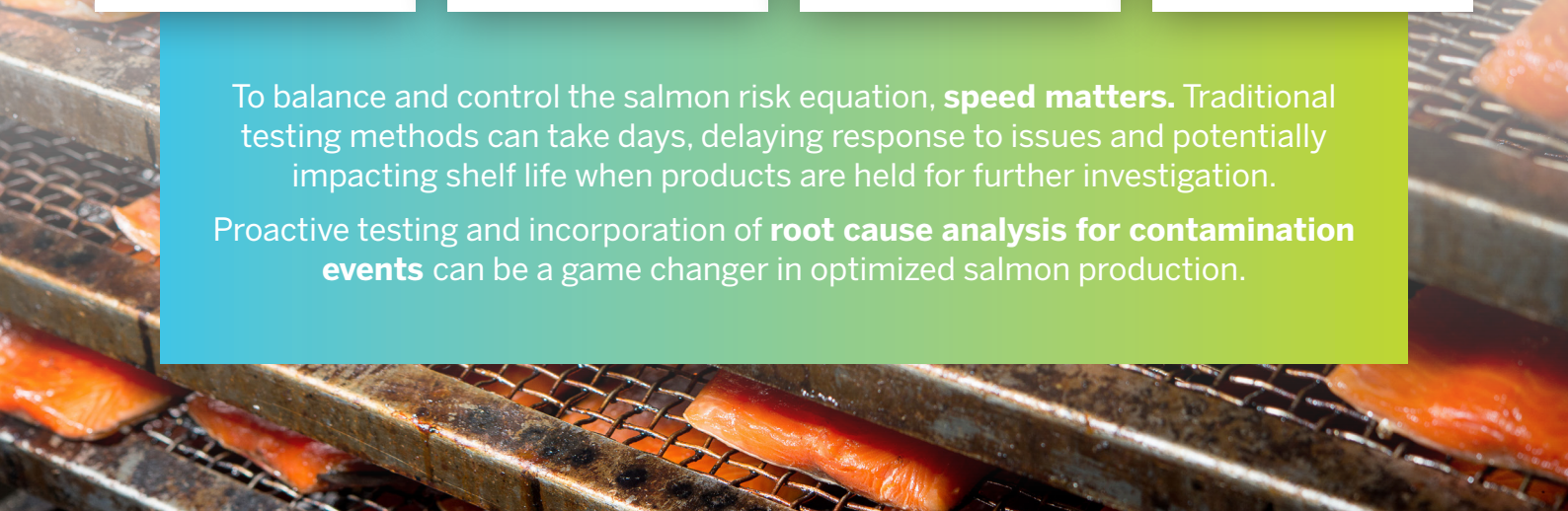
## The Salmon Risk Equation

In fresh and smoked salmon, four dimensions are inseparable and completely rely on one another.

			
<p><b><i>L. monocytogenes</i> Control</b></p> <p><i>L. monocytogenes</i> management directly impacts product safety, testing timelines, and shelf life, driving significant value in the salmon industry.</p>	<p><b>Shelf Life &amp; Transit Time Optimization</b></p> <p>Extending shelf life and optimizing transit time are critical to meeting global market demands for freshness and safety.</p>	<p><b>Strategic Investments for Competitive Edge</b></p> <p>Investing in rapid testing, improved equipment, and environmental monitoring can enhance operational certainty and financial returns.</p>	<p><b>Holistic Leadership Approach</b></p> <p>Integrating safety, operations, and finance allows leaders to improve product value, customer relationships, and market access.</p>

To balance and control the salmon risk equation, **speed matters**. Traditional testing methods can take days, delaying response to issues and potentially impacting shelf life when products are held for further investigation.

Proactive testing and incorporation of **root cause analysis for contamination events** can be a game changer in optimized salmon production.



# bioMérieux: Your Partner in Enhanced Salmon Safety & Quality

## Who We Support



Primary processors  
(harvesting)



Smokehouses &  
RTE facilities



Retail private  
label suppliers



Integrated  
salmon groups

## From Environment to Product: Total Control of *L. monocytogenes* Risk

*L. monocytogenes* is the most significant pathogen associated with salmon and is frequently cited as a key driver of recalls.

With our **GENE-UP® TYPER** solution, we have developed an innovation against *L. monocytogenes* stress, offering simultaneous identification and typing. The platform allows users to track contamination patterns in their facility and make evidence-based decisions for improvements.

With GENE-UP® TYPER, you not only know that you have an issue — **you know exactly what it is, where it comes from, and what to do.**



## GENE-UP® TYPER In Action

### Better Understanding of *L. monocytogenes* Contaminations in Salmon Production

A ready-to-eat salmon producer was **experiencing recurring contamination** with *L. monocytogenes*, a common pathogen in salmon products. Testing for this contaminant is especially important in smoked salmon, as it is a ready-to-eat food and **susceptible to contamination risks.**

bioMérieux helped our partner implement GENE-UP® TYPER with the PATHOGEN GENOMICS APP and Whole Genome Sequencing to gain a better understanding of their pathogen contaminations.

**Download Case Study**

**CASE STUDY - FROM INSIGHT TO ACTION**  
Augmented Diagnostics with Pathogen Mapping for better understanding of *Listeria monocytogenes* contaminations in the salmon production.

**BACKGROUND**  
A ready-to-eat salmon producer was experiencing recurring contamination with *L. monocytogenes*, a common pathogen in salmon products. Testing for this contaminant is especially important in smoked salmon, as it is a ready-to-eat food and susceptible to contamination risks.

**CONCLUSION**  
Pathogen Mapping is a component in an advanced solution called Augmented Diagnostics. By partnering with bioMérieux and using Pathogen Mapping and discriminating the origin of a persistent *Listeria monocytogenes*. The Augmented Diagnostics solution enabled the company to make an informed decision, mitigating future more complex contamination risks through rapid and efficient action.

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# THE AUGMENTED DIAGNOSTICS APPROACH: FROM TEST RESULTS TO ACTIONABLE INSIGHTS

bioMérieux's Augmented Diagnostics is an innovative approach to food safety & quality. This approach gives you faster, more confident decisions by combining **advanced microbial testing** with **cutting-edge genomics**, **data science**, and the support of **trusted industry experts**.

ADVANCED  
MICROBIOLOGY

MOLECULAR

GENOMICS

DATA SCIENCE &  
EXPERTISE

## AUGMENTED DIAGNOSTICS

SMART & DYNAMIC RISK ASSESSMENT

### MICROBIOLOGY & MOLECULAR



#### SAMPLE & MEDIA PREPARATION

- BIOBALL®
- BLUE LINE™
- Culture Media



#### SPOILERS & QUALITY INDICATORS

- TEMPO®
- D-COUNT®
- BACT/ALERT®
- GENE-UP®
- VERIFLOW™



#### PATHOGEN DETECTION

- VIDAS® KUBE™
- Chromogenic Plates
- GENE-UP®



#### MICROBIAL IDENTIFICATION

- VITEK® MS PRIME
- VITEK® COMPACT PRO
- API®



#### CUSTOM MOLECULAR BIOLOGY

- The xPRO™ Program

### AUGMENTED-DX PORTAL

Data Insights, Investigations, Reporting



#### INVESTIGATION & ROOT CAUSE ANALYSIS

Pathogen Investigation:

- GENE-UP® TYPER
- PATHOGEN GENOMICS APP

Spoiler Investigation:

- SMARTBIOME™



#### DIGITALIZATION

- ENVIROMAP®
- VILINK®



#### PEOPLE & PROCESS UPSKILLING

- EM E-Learning
- Process Optimization
- EM Consulting Services

### GENOMICS & ENVIRONMENTAL MONITORING EXPERTISE



LEARN MORE ABOUT THE AUGMENTED  
DIAGNOSTICS APPROACH ON OUR WEBSITE.