

CASE STUDY

# Challenge Testing in the Development of a New Recipe

Knowledge Inspired.  
Quality Driven.



**SGS**

When you need to be sure

Food manufacturers must constantly improve their recipes in order to meet market demands. In doing so, they must continue to ensure food safety and quality. Challenge testing plays a vital role in ensuring that new recipes and formulations meet stringent regulatory requirements as well as consumer expectations.

## Objective

SGS was tasked with performing challenge testing in order to help a food manufacturer redevelop a multilayered coffee cream dessert. They wanted to understand and confirm the effects of:

- The introduction of a low level of alcohol (1.5%) which predictive growth modeling studies suggest have an inhibitory effect on *Listeria monocytogenes* growth
- The layered structure of the final formulation, as it was intended to be distributed in stores

## Process

Experts at our Cramlington, UK laboratory designed a microbial challenge test, in which specific organisms are introduced into the food product in a controlled manner, and their impact on safety and quality in real world conditions is assessed.

The manufacturer then submitted the final recipe, in its original packaging and conditioning, for testing. Our experts injected a low level of *L. monocytogenes* into the most vulnerable layer of the dessert to monitor the worst case scenario. The inoculation followed the recommendations of ISO 20976-1 for preserving the integrity of the packaging during challenge testing to avoid any adverse impact on parameters.

## Outcome

We were able to confirm that the product was microbiologically stable and did not support the growth of *Listeria* in its present formulation. Extending the testing period beyond the initial prospective shelf life revealed that the recipe remained stable for an additional 10 days.

The study outcome was compiled in a comprehensive report, which included an explanation of the protocol, the testing schedule, the data and its graphical representation, and a clear interpretation of the results.

“Our expertise in challenge testing is vital in the redevelopment of food products. Our rigorous process ensures the product’s safety and quality, giving our clients the confidence to meet regulations and exceed consumer expectations”

**DR. CHRISTOPHE NOEL**  
INNOVATION DIRECTOR AT SGS

## Our expertise

SGS is a trusted partner for businesses in the food industry seeking reliable testing services. We offer a range of challenge testing solutions, including microbial testing, shelf life determination and allergen testing, tailored to meet specific company and food industry requirements.

We have extensive experience with a broad range of products, packaging, organisms (*Listeria* spp., *Clostridium* spp, *B. cereus*, *S. aureus*, etc.) and inoculation methods. Our challenge test protocols are designed using established principles and guidance (EURL Lm, ISO 20976-1:2019).

We will help you to:

- Enhance food safety
- Extend shelf life
- Comply with regulatory standards
- Build consumer confidence

Contact us

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