MICROBIOLOGICAL CHALLENGE STUDIES

Microbiological challenge studies can validate that a process step delivers its intended purpose in reducing the level of microorganisms to an acceptable level or determine the ability of a product to inhibit the growth of spoilage organisms or pathogens over time. This ensures that food reaches consumers with acceptable quality and safety.

Challenge study designs are specific to each food product type and manufacturing process. The design, implementation, and assessment of these studies are complex tasks that depend on how the product is formulated, manufactured, packaged, distributed, prepared, and consumed. An expert microbiologist must consider the relevant factors and design a study that best assesses the food safety of the product. Failure to account for relevant factors such as product specifications and environmental elements in the test’s design could result in flawed conclusions.

WHEN DO YOU NEED TO CONDUCT CHALLENGE STUDIES?

Food manufacturers will need to conduct challenge studies when looking to:

- Validate a product’s susceptibility to pathogenic growth and spoilage
- Validate processes that are lethal to target organisms (for example cooking, baking and high pressure pasteurization)
- Understand the food safety implications of a new piece of equipment or process

REGULATORY REQUIREMENTS FOR FOOD SAFETY

Food production and trade businesses are responsible for developing and implementing a program to validate that the safety and quality of their food is not compromised. It also ensures that manufacturing processes remain consistent.

Government agencies in the U.S. and Canada have enacted regulations to ensure that the critical control point for every manufacturing, packaging, and shipping process is effective and ensures food safety. Once a process to control the threat of pathogens and spoilage organisms is validated, the risk of a government-initiated product recall and subsequent supervision of manufacturing is minimized.
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HOW CAN BUREAU VERITAS HELP YOU?

Working in collaboration with food manufacturers, Bureau Veritas scientists design each challenge study to simulate what could happen to a product at any point before it is consumed. Conditions are simulated from production, processing and storage, to distribution, consumer handling and the cooking process. It is imperative that the study is appropriate for the food and pathogen of concern and incorporates the necessary elements into the study to yield a valid design and conclusion. The study design, results and conclusions are summarized in a report which you can share with your local regulatory agency for approval.

Process validation provides documented evidence that a particular process is consistently delivering a desired effect to ensure the reduction of microorganisms to a safe level, commonly referred to as log reduction. An alternative method includes a control such as an anti-microbial rinse to deliver this log level reduction. Studies simulated in our laboratory can also be extended to your site for in-plant validation.

Outgrowth studies involve inoculating packaged or ready-to-serve food products with a cocktail of bacterial strains to assess growth over time. Food products that are formulated with “cleaner” or anti-microbial ingredients are tested to validate whether or not they are effective in prohibiting the growth of Listeria monocytogenes. This pathogen is of particular concern because of its ability to grow and survive in varying conditions where it can contaminate food and grow to numbers high enough to cause illness.

Bureau Veritas works with many food manufacturers in the shelf-stable and ready-to-eat food sectors to verify that the food we eat is safe. Our scientists and supporting analytical staff provide dedicated service to our customers each and every day.

ABOUT US

Bureau Veritas is a North American provider of testing, auditing, certification and training services to the food and agriculture industries. Our work ensures the safety and quality of our customers’ food from farm to fork, enabling them to meet regulatory compliance and sustainability objectives. Founded in 1828, Bureau Veritas is the global leader in testing, inspection and certification services with 78,000 employees in 1,500 locations worldwide.