



**BUREAU  
VERITAS**

## **SHELF LIFE TESTING**

Shelf life studies help verify whether prepackaged food will remain wholesome, palatable and nutritional until the end of a pre-determined durable life. After this point, the food develops changes in taste, aroma, texture or appearance that are deemed unacceptable or undesirable. Shelf life testing can also determine how long a food can preserve its microbial, chemical and physical integrity, and indicates whether the food is safe for consumption until the end of its shelf life.

### **WHEN DO YOU NEED TO TEST SHELF LIFE?**

During a routine review of a food safety management system, food business operators must validate shelf life when:

- Developing new products
- Modifying existing products, production sites, equipment or processes
- A shelf life study hasn't been performed and is required under regulation

### **HOW DO YOU GET STARTED?**

The responsibility of determining the shelf life of a food product, and thus its best-before or use-by date, lies with the food business operator. The operator is required to conduct properly constructed storage tests under realistic, defined conditions.

The safest and most accurate way to conduct these tests is by engaging a food testing laboratory and specifying the intrinsic and extrinsic properties to assess prior to testing. Intrinsic properties include ingredient quality, composition, water activity, pH, and preservatives. Extrinsic properties include processing, oxygen availability, packaging materials, distribution chain, consumer practices and storage.

When evaluating storage conditions, an important property to consider is temperature. Higher than normal temperatures can induce changes in the food which would not occur in normal conditions. Additionally, the rate at which normal changes accelerate must be known with acceptable accuracy. Food testing laboratories have the right equipment, tools and scientific expertise to expose your food products to these pre-determined conditions and produce reliable data.





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### HOW CAN BUREAU VERITAS HELP YOU?

Our food laboratory performs real-time shelf life testing for clients across North America using the three methods below. A real-time study examines food at regular intervals while it is stored under normal conditions during a period that is greater than its shelf life. Food can be stored either under typical retail temperature conditions or under warmer conditions to inhibit bacteria growth.

 **Sensory / organoleptic visual evaluation** assesses a food's odour and appearance relative to a reference sample, as well as the integrity of its packaging. It is used to monitor and record obvious changes that occur over time.

 **Microbiological testing** is used to evaluate both food quality and safety. It identifies changes in the number and type of spoilage organisms that can occur over time and any foodborne pathogens. Microbial testing can be run concurrently with sensory evaluation to correlate the deterioration of product quality and safety with microbial growth.

 **Chemical tests** can detect changes in quality throughout the product's shelf life. These changes are detected by evaluating characteristics such as peroxide value and the formation of free fatty acids or thiobarbituric acid.

### Not sure which test is right for you?

Our technical experts would be happy to connect you with the shelf life test that's right for your food product.

### 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.