



Shelf-Life Testing – SLT

| What is Shelf Life?

A shelf-life study is the most effective scientific method for determining the expiration date, best-before date, or general shelf life of a prepackaged food product. It provides evidence that the food will remain safe, palatable, and nutritious until the end of its declared shelf life.

Shelf life can be affected by a wide range of factors, including:

- **Intrinsic factors** related to the product itself (acidity, moisture, packaging, formulation)
- **Extrinsic factors** related to external conditions (temperature, humidity, etc.)

Shelf-life studies apply to new products, as well as those with modifications in recipe, manufacturing process, packaging, or storage temperature.

| Why Conduct a Shelf-Life Study?

All products with a shelf life of 90 days or less (perishable foods) are required to display a “best before” or expiration date.

It is the responsibility of manufacturers, retailers, and food service providers to determine the accurate shelf life of their products based on both food safety and quality.

| Regulatory Overview

- Foods with a shelf life of 90 days or less, except for fresh fruits, vegetables, and certain other items, must bear either a “best before” date or a packaging date, depending on where they are packaged and sold.
- Products packaged off-site (not at the point of sale) must display a “best before” date.
- Products packaged and sold at the same location must include both a “best before” date and a packaging date.
- Foods with a shelf life of more than 90 days are not required to display a “best before” date, although some manufacturers may choose to do so voluntarily.

What AGAT Laboratories Can Offer You

AGAT Laboratories offers real-time shelf-life testing, as required by law. The process begins by estimating a theoretical or predicted shelf life for the product.

This estimate is based on:

- scientific literature,
- reference documents,
- or comparable products already on the market.

Laboratory Testing Services

- Total aerobic and anaerobic bacterial count
- Yeast and mold count
- Total coliforms
- Escherichia coli (including E. coli O157:H7 and STEC)
- Lactic acid bacteria
- Salmonella spp.
- Listeria monocytogenes
- Clostridium botulinum (for canned foods, honey, etc.)
- Clostridium perfringens
- Bacillus cereus
- pH – influences microbial survival and growth
- Water activity (Aw) – measures the amount of free water available to microorganisms

Note: The specific tests required may vary depending on the product type, its composition, and the regulations of the destination country (for exported products).

Duration and Frequency of Testing

The testing schedule is directly related to the estimated shelf life:

- If a product has an estimated shelf life of 7 days, testing should be conducted daily until day 7 or until the product no longer meets safety or quality standards.
- For a product with a shelf life of 2 years, testing should be performed at the start, the end, and at intervals throughout (e.g., every 3–4 months).

How to Submit Samples

It is essential to provide complete product information to the laboratory. A specific traceability form is available on our website or from your project coordinator.

You must provide one or two finished, ready-for-sale containers of the product for each testing point.

AGAT Laboratories offers storage at the required temperature for the full duration of the study (ambient, refrigerated, frozen, or special conditions upon request: accelerated, tropical, etc.). Please ensure that storage temperature details are included so the laboratory can replicate the actual storage conditions of the manufacturer, supplier, or distributor.

Note: Information based on official MAPAQ and CFIA regulations.