

SENSORY GUIDES



Become an expert in
sensory analysis

**SENSORY
SHELF-LIFE**

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Sensoriality is the first thing that deteriorates in a food product. Even if the product is still safe and the physico-chemical and biological indicators are still correct, the consumer may reject it due to sensory changes.

Previous questions

- **Until when?** The maximum time for a VUS study is when the product is rejected by the consumer.
- **How often?** The recommended minimum number of measurement points is 6. These 6 measurement points can be spread evenly over the lifetime, but it is best to group them towards the end of the lifetime, when deviation is most likely to occur.
- **What to measure?** You should only measure critical descriptors. The objective of the study is to know when the consumer rejects the product, so it is not necessary to measure all the characteristics of the product, but only those that are more likely to fail in the times established in the study.

Test conditions

Before starting the study, the **temperature, humidity, illumination**, and even the position in which the samples are stored should be defined.

For the control sample these should be the optimal storage conditions.

For an accelerated study, the conditions can be modified.

For example temperature:

- **Canning:** Control (4°C)
Accelerated (25°C-40°C)
- **Dehydrated:** Control (-18°C)
Accelerated (25°C-45°C)
- **Refrigerated:** Control (0°C)
Accelerated (5°C-20°C)
- **Frozen:** Control (-40°C)
Accelerated (-5°C-15°C)

Experimental designs

Basic

- A single batch is stored and sampled at each analysis point.
- Several sensory evaluation sessions are carried out.

Staggered

- We work with several batches, each with a different life span.
- A single sensory evaluation session is carried out.



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Failure criteria

We define the end point of the study as the point at which the consumer rejects the product. The ideal is to identify which is the first attribute that causes this rejection and from what intensity this rejection occurs or the percentage of rejection from which we consider the product to be invalid.

This will be our failure criterion and will allow us to simplify the experimental design, measuring only the critical points and decision making, documenting **from which conditions the product should be considered as unfit.**

Cut-off point methodology

It is necessary to carry out a preliminary study to indicate at what level of intensity the consumer rejects the product.

Once this cut-off point has been defined, we can use a panel of **trained tasters** to evaluate the intensity of the critical attributes.

The flexibility of inviting tasters makes it possible to use a basic design.

Survival methodology

Adaptation of the survival analysis applied in clinical or sociological studies.

A consumer panel is used, which accepts or rejects the product at the different times evaluated.

Due to difficulties of recruitment, a staggered design is usually used.

Tip

Invest your evaluation efforts at critical points in the study.

Conduct more frequent evaluations in the final phases of the study than in the initial phases.

Bibliographic recommendation

Sensory shelf life estimation of food products

Hough, Guillermo and Fiszman, Susana

