1.14 Product Shelf-Life

The SALSA Requirement:
“There shall be a system in place to ensure that the minimum durability (shelf-life) applied to products is determined and checked using appropriate verification techniques.”

About this SALSA Requirement:
This Requirement is intended to ensure you have systems in place to establish a suitable shelf-life for products. The shelf-life of a product is the period during which it retains its organoleptic qualities (odour, flavour, texture and appearance) and remains safe to consume. In high risk products, where pathogenic bacteria can develop over time; correctly defining shelf-life can literally be a matter of life and death for consumers.

It is important for food manufacturers to understand what makes their products safe. Shelf-life must be based on recorded tests of factors important to the product. These typically include microbiological results and taste tests under normal storage conditions. Other factors may be important in different products and these should also be tested.

Tools
- Written steps to cover in your shelf-life trials. Include conditions to which the product is likely to be subjected in real life, e.g. time at non-ideal temperatures to mimic time in customers’ cars on the way home.
- Copies of any customer-specific requirements or Codes of Practice you need to follow e.g. for retailers
- A thorough and professional HACCP study for the product(s)
- A competent external laboratory to conduct the shelf-life tests (look for one certificated to ISO 17025 or UKAS (United Kingdom Accreditation Service)
- A SALSA approved Mentor if you are in any doubt about setting up shelf life studies or interpreting shelf-life trial results - or your laboratory may be able to help.

Tips
- You must always check shelf-life of your own products and keep records of all test results. Do not assume your product shelf-life will be the same as your competitor’s product!
- Design a suitable shelf-life trial that includes realistic conditions to which your product is likely to be subjected. Ensure you understand the law and where the terms ‘Use By’, ‘Best Before’ & ‘Best Before End’ should be used
- For ambient stable products organoleptic tests only will be sufficient
- For high risk products you will also need to conduct microbiological testing
- Once shelf-life has been established, routinely keep samples from production batches to ensure they are still good and safe to eat over the product life (and 10% beyond). Base the testing frequency on a risk assessment and include the susceptibility of the food and results of previous tests - as a minimum complete this annually.

Additional resources:
See the following Guidance Notes and Tools & Tips for:
1.5 Environment (‘C /other parameters) to be controlled, monitored, recorded & verified.
1.12 Labelling must fully conform to legislative requirements, including shelf-life marking.
2.1 HACCP (Hazard Analysis Critical Control Points) 2.1.1 to 2.1.10.
See the Food Standards Agency website for additional information:
https://www.food.gov.uk/business-industry/manufacturers/shelf-life-storage
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What do I need to do to show I comply with this Requirement?
You will need a Procedure stating how you will complete shelf-life trials for your products and how often they will be reviewed. Schedule in shelf-life reviews. Key to your system are:

- A clear understanding of what makes the product ‘safe’. Examples may include:
  - Dry product: water activity (Aw) too low to support the growth of pathogenic microbes.
  - Acidity (pH) too high to support the growth of pathogenic microbes.
  - Sugar or salt concentration too high to support the growth of pathogenic microbes.
  - Chilled product: short life refrigerated storage

- A robust and thorough HACCP study based on knowledge of the raw materials used and to include a risk assessment, so you have defined your product(s) and are clear on the hazards and controls related to your product. The HACCP should be undertaken by someone who has received formal HACCP training and is able to demonstrate competence in HACCP related to the product(s). Review your HACCP if you change anything in your product (ingredients/ recipe/ process) so you can assess if shelf-life is affected.

- Documented shelf-life trials & results. Write down the stages in the trials and why you have chosen certain conditions. This will be particularly important if your product is a ‘short-life, high-risk, ready-to-eat chilled product’. Include details on the ‘storage instructions’ and ‘cooking instructions’ given to customers on packaging.

What does a shelf-life test sheet look like?
The example below shows a shelf-life test record for a chilled product. The same principle can be applied to any product. Microbiological testing may not be required for ‘low risk’ e.g. ambient products, and organoleptic tests only will be sufficient.

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(All the lab results are filed in the Product Development folder for Ham & Cheese Quiche).

How can I use this example in my business?
Develop your own tests using conditions your product is likely to be subjected to. Record results for your organoleptic tests. Use a laboratory to undertake microbiological tests if the product is ‘high risk’ and ask them to interpret the results for you if you are unsure.