



The BOC quick guide to:

The latest FSA guidelines on Clostridium botulinum in VP/MAP chilled foods

The UK's Food Standards Agency (FSA) has published updated guidelines on preventing the growth of non-proteolytic Clostridium Botulinum (CB) in VP/MAP chilled foods. So, what do they mean for you?

Who are the guidelines for?

Manufacturers and retailers of chilled vacuum packed (VP) and modified atmosphere packed (MAP) ready-to-eat and raw foods. The advice only applies to food stored at 3°C and above.

Why are they important?

VP/MAP technology places chilled food in a sealed oxygen-free atmosphere to increase its shelf-life by limiting the growth of microorganisms. However, CB likes an oxygen-free environment and, under certain circumstances, can develop on such chilled food unless safeguards are taken. If allowed to grow, CB can produce a powerful biological toxin which causes botulism, a potentially fatal form of food poisoning.

What's the advice?

Food safety experts recommend a maximum 10 day shelf-life for chilled VP/MAP foods that are kept at temperatures between 3°C and 8°C both throughout the food chain and then in storage.

If you seek a longer shelf-life, you must operate one, or a combination, of the following validated 'controlling factors' to inhibit the growth of CB within your chilled food products:

- **Temperature** – a heat treatment of 90°C for 10 minutes, or equivalent*, at the slowest heating point in the food, ideally in the final sealed pack
- **Acidity** – a pH of 5.0 or less throughout the food and throughout all components of complex foods**
- **Salt** – a minimum salt level of 3.5% in the aqueous phase, throughout the food and throughout all components of complex foods
- **Water** – a water activity (aw) of 0.97 or less, again throughout the food and throughout all components of complex foods
- A combination of heat and other preservative factors (e.g. nitrite) which must first be validated by expert scientific advice

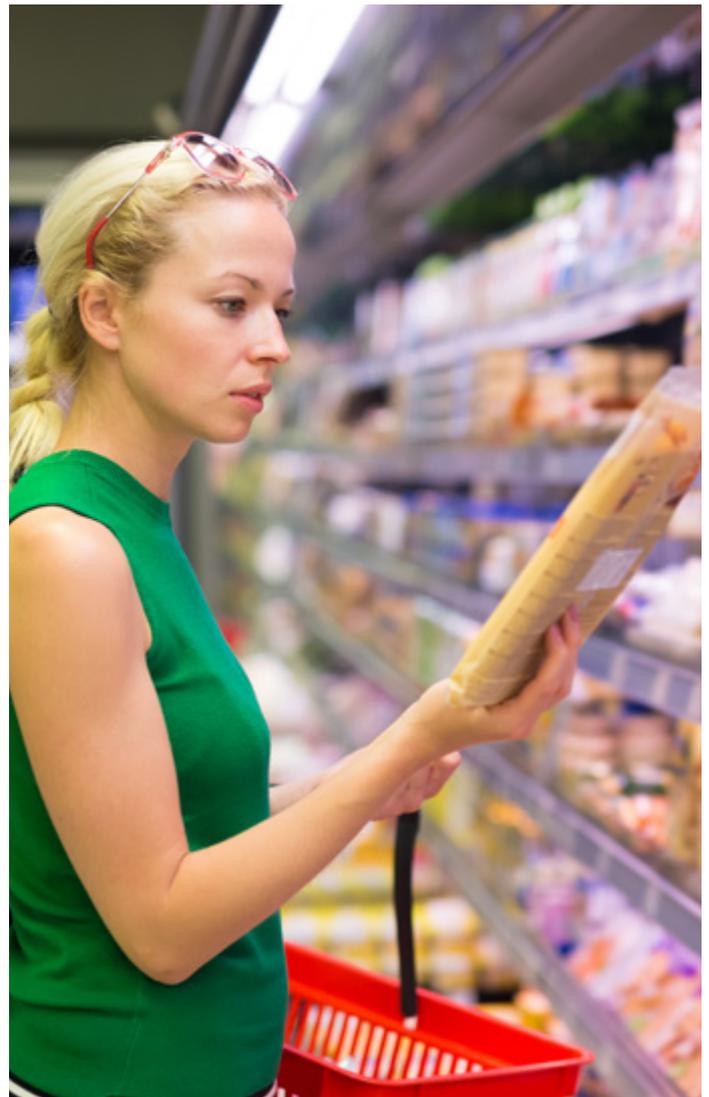
'Rolling shelf lives'

The FSA is greatly concerned by the practice of 'rolling 10 day shelf lives' and its advice on these is emphatic. If a VP/MAP product is unwrapped (e.g. for slicing or portioning) and then re-wrapped (into VP or MAP), the shelf-life given to the re-wrapped product should not exceed the shelf-life given to the original product. Where the re-wrapped shelf life is intended to be greater than 10 days, the food business carrying out the re-wrapping must apply the necessary 'controlling factors' (see above) to the satisfaction of the relevant regulatory authority.

What are my responsibilities?

It is the Food Business Operator's (FBO) responsibility to ensure the shelf-life they set is appropriate and the safety of the food at the end of shelf-life can be demonstrated.

The FSA guidelines have been published to help you do that. They contain important additional information not covered in this quick guide and throughout they recommend that FBOs should seek expert advice if they need help following the guidance.



For more information see the FSA Guidance 'The safety and shelf-life of vacuum and modified atmosphere packed chilled foods with respect to non-proteolytic Clostridium botulinum', published in June 2017. The guidance is a summary of reports from the Advisory Committee on the Microbiological Safety of Food (ACMSF) which are listed in the FSA document.

* See the report for a list of equivalent time/temperature combinations.

** See point 21 of the report for further explanation of this.

<https://www.food.gov.uk/sites/default/files/multimedia/pdfs/publication/vacpacguide.pdf>

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