**MyHACCP Hazard Factsheet**

**CATEGORY:** Microbiological

**NAME:** *Clostridium botulinum*

1. **General Information**

*Clostridium botulinum* is a name given to a group of anaerobic, spore forming, toxin producing bacteria. The toxin is very powerful and can cause death if ingested in small quantities. The bacteria are normally placed into two groups: “Proteolytic” which can grow at room temperature and “Non-proteolytic” which can grow at refrigerated temperatures.

1. **Common sources**

*Clostridium botulinum* will grow and produce toxin in the absence of oxygen and as such must be considered to be a hazard associated with the following foods:

* Vacuum packed fish and vegetables
* Low acid canned, jarred or retort pouch packed foods
* Foods immersed in oil
* Foods packed in a modified atmosphere

1. **Properties and common controls**

*Clostridium botulinum* is a spore former and as such is not easily killed by heat treatment. *G*rowth and toxin formation will be inhibited at pH 5.00, by water activity (aw) 0.97 or salt content of > 3.5% throughout the food or a combination of these factors. In the absence of these controls the thermal process should be at least 121°C for 3 minutes (proteolytic) or 90°C for ten minutes (non-proteolytic).

Alternatively, for non-proteolytic *Clostridium botulinum*, the shelf life of the product may be restricted to < 10 days.

1. **References**

FSA Guidance on the safety and shelf-life of vacuum and modified atmosphere packed chilled foods with respect to non-proteolytic *Clostridium botulinum*

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

FSA Vacuum packing online training tool

<http://vacuumpackingtraining.food.gov.uk/introduction/>