

Title:

Effect of reheating and storage temperature on the growth of psychrotrophic *C. botulinum* spores in LTLT cooked meat

Authors & affiliations:

*Annemarie Gunvig and Mari Ann Tørngren
Danish Technological Institute, DMRI
Gregersensvej 9, DK- 2630 Taastrup*

Abstract: (Your abstract must use **Normal style** and must fit in this box. Your abstract should be no longer than 300 words. The box will 'expand' over 2 pages as you add text/diagrams into it.)

Prolonged cooking of meat at a low temperature, less than 65°C (LTLT), is ideal for enhancing the eating quality of meat by reducing toughness and cooking loss and improving juiciness. Furthermore, it is possible to obtain a rose colour in the centre of the meat. To ensure the safety, both vegetative cells and psychrotrophic *C. botulinum* spores must be eliminated during the heating. *L. monocytogenes* is a relevant indicator organism regarding the elimination of vegetative cells because *L. monocytogenes* is able to survive mild heat treatments and multiply at low temperatures.

To ensure a shelf life of more than 10 days at 3-8°C, the Food Standard Agency (FSA) recommends heat treatment at 90°C for 10 minutes or a time and temperature combination sufficient to achieve a 6 log reduction of psychrotrophic *C. botulinum* spores. At temperatures below 63°C, spores are not eliminated during low temperature cooking and will require storage at maximum 3.3°C to prevent growth.

According to the international food safety authorities, heat treatment and reheating of food must be carried out at a time/temperature combination that ensures food safety, and documentation for a safe process is required.

Because foodservice, restaurants, catering etc. handle food very differently, it is difficult to make recommendations for reheating. The number of survival organisms will depend on the initial heating, storage temperature and how many times the product is reheated. This study shows the effect on shelf life depending on storage temperature (3°C, 5°C and 8°C) and the effect of reheating of products containing pathogenic spores and *L. monocytogenes* either on the surface or in the core of the meat. Results will be shown at the congress.