

Quantification of the controls that should be placed on meat prior to mincing

Area of research interest: [Foodborne pathogens](#)

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Conducted by: Food Refrigeration and Process Engineering Research Centre at the Grimsby institute

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Background

Legislation (Regulation [No. 853/2004](#), Annex III, Section V, Chapter III, paragraph 2) imposes strict limits on the age of meat, from slaughter to mincing, which can be used to produce mince. This restricts the use of aged meat in the production of mince.

In 2006 the Food Refrigeration and Process Engineering Research Centre, then part of the University of Bristol, carried out an independent review for our organisation to critically assess the available scientific literature on the survival and growth of microorganisms that are important for safety and quality during storage of meat and the production of minced meat. This review, entitled 'Safety implications of the manufacture of minced meat from aged meat' concluded that there was no scientific evidence to justify the restrictions in [Regulation 853/2004](#), however, nor was there much data on the specific risk.

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Research Approach

This study aimed to provide data to help us quantify the controls that should be placed on meat prior to mincing using a risk based approach.

The study was conducted with industry and the main approaches were to:

- identify and describe industrial practice and collect available data
- update the 2006 review entitled 'Safety implications of the manufacture of minced meat from aged meat'
- determine the microbiological status of currently produced mince
- assess the likelihood of safety and quality problems using existing chilling and storage data
- make recommendations on the controls that should be put in place for meat to be minced, including aged meat, and how they can be applied within a risk based food safety management system

This project has updated the 2006 review and added further data collected and supplied by the UK industry on current processing conditions and microbiological status of mince. This addresses the knowledge gaps identified in the 2006 review and helps to strengthen the evidence base.

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Results

In the 2006 review, the authors concluded that there appeared to be a lack of scientific evidence for the time restrictions included in the legislation and no evidence of an increased risk to human health from meat that has been stored hygienically and at appropriate temperatures for longer than the time limits specified in the legislation. Published studies since that review and the data supplied/collected by the UK meat processors in this study appear to further support the author's conclusion. The literature review identified no publications that show that the safety (ie pathogen levels) of mince produced from older meat is compromised or vice versa. The literature review also identified that there was no clear published scientific literature to support the restrictions on the time between slaughter and production of minced meat. No specific additional control measures for chilled meats stored for periods longer than specified in the regulations, which differ from those for chilled meat stored for periods in compliance with the regulation, have been identified.

Mince made in the UK from chilled meat stored for long periods is intended to be consumed fully cooked and, for species other than poultry meat, is required to be labelled with cooking information. There is no evidence that there is any additional risk of consumption of fully cooked mince made from such meat than from the consumption of fully cooked mince made from unaged meat.

The authors suggest a range of controls based on available data (section 5 of the report) and recommend that further research is funded to specifically look at the influence of post-slaughter storage times and conditions on the safety and quality of aged meat and mince produced from that meat under controlled conditions.

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Research report

England, Northern Ireland and Wales

PDF

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