

Safety implications of the manufacture of minced meat from aged meat

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

Study duration: 2006-01-01

Project code: ZM0105

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Background

European Food Hygiene Regulations, which are directly applicable across all EU member states, have applied since 1 January 2006. They harmonise food hygiene legislation throughout the Community and apply to all food businesses.

Legislation (Regulation (EC) 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.

These requirements apply to approved establishments that produce minced meat that is not sold directly to the final consumer. It does not apply to minced meat intended for heat treatment before sale, such as cooked pies.

Food business operators that sell to the final consumer only (retailers) are exempt from the requirements of Regulation (EC) No. 853/2004. This means that the time limits do not apply to meat that is minced by a retail butcher, in a supermarket, in a restaurant for mince or steak tartare, or to minced meat intended for use in foods that are heat treated before sale, such as cooked pies.

Research Approach

The objective of this review was to critically look at the available scientific evidence that would support the hygiene legislation regarding the regulatory limit on the age restriction of meat at mincing.

The following approach was taken:

1. A literature review was carried out to investigate:

- growth of pathogens and spoilage organisms on meat
- bacterial quality of carcasses
- bacterial growth on carcasses during storage
- bacterial quality of cuts
- bacterial growth on primals (first cuts of meat detached from the carcass during butchering) and cuts during storage
- bacterial quality of cuts from aged meat
- bacterial quality of mince
- bacterial growth on mince during storage
- microbial contamination of chill rooms

- predictive microbial growth modelling

2. A risk analysis of various different pathogens was carried out, which included campylobacter and salmonella.
3. A range of critical controls have been suggested based on available data.

Results

In 2006, this review found little scientific data to support the (then) new restrictions on the age of the meat used to make minced meat. The review found that there were no specific scientific publications that look at the safety and quality of mince produced from cuts and carcasses that have been stored for different periods of time post-slaughter.

The review also found that there were no publications that show that the safety (ie pathogen levels) of mince produced from older meat is compromised or vice versa and that there is a lack of data on the storage-life of chilled meat carcasses and bone-in-cuts.

The data that does exist shows that initial bacterial numbers and storage atmosphere and temperature are the main factors governing storage life.

It was concluded that predicting microbial growth from surface temperature data has potential.

However, current models tend to predict growth during the chilling process while measurements show either no growth or death.

The authors recommend that further research is carried out to specifically look at the influence of post-slaughter storage times and conditions on the safety and quality of mince produced. Work is also required on poultry to fill the total gap in published scientific literature in this area.

Research report

England, Northern Ireland and Wales

PDF

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