

Distribution of finished beef cattle for slaughter and sale in Scotland, UK

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Summary

The distance travelled by cattle from farm to either market or slaughter was investigated by administering a questionnaire to beef farmers throughout Scotland. In many instances, cattle were transported a greater distance, and for a longer time, than that required to get them to the geographically closest abattoir or market. This may not represent optimal practice from the point of view of minimising the risk of disease spread.

Introduction

Distance and duration of transport, as well as conditions in lairage at abattoirs, have been shown to be associated with the hygienic condition of cattle (Davies *et al.*, 2000) and also the degree of microbiological contamination of cattle hides (Small *et al.*, 2002) presented for slaughter in the UK. It is therefore of interest to determine the distribution of distances travelled by animals destined for market or slaughter.

Objectives

To investigate the distribution of distances travelled by cattle from farm to slaughter or market. These data will ultimately be used to parameterise a simulation model of cattle movement within Scotland.

Materials and methods

As part of an ongoing large-scale Wellcome Trust funded study of the epidemiology and evolution of *Enterobacteriaceae* infections in humans and domestic animals, visits were made to Scottish farms rearing beef cattle for human consumption stratified by region and season. Details of market(s) and/or abattoirs supplied by each farm were recorded, as well as information on the transport of cattle to these outlets.

The position of all farms, and of abattoirs and markets was entered into a graphical information system (MapInfo – MapInfo Corporation), and the euclidian distances that animals travel, both to market, and to slaughter, calculated.

Results

Analyses of data from all farms visited reveal an extensive and complex network of cattle movement, with animals frequently being transported long distances to markets or abattoirs other than those in closest proximity to the farm of origin (Figure 1).

Groups of cattle from 19 farms have been followed to slaughter in 8 Scottish abattoirs (128 animals). The median time in transit was 1 hour (range 0.5-18 hours) and the median actual distance travelled was 35 km (range 10-590 km) (Figure 2). A haulier was used to transport 45% of these groups of cattle to slaughter, collecting cattle from multiple farms before delivery to the abattoir. The farmer transported the remaining groups directly to abattoir, and there was then no mixing of cattle from different farms in the same vehicle. In the lairage, all but one group were penned as separate farm lots for a median of 2 hours (range 0-21 hours), and the overall median time from farm to slaughter was 4 hours (range 0.5-39 hours). Cattle travelling for longer distances and for longer times were more likely to be mixed in transit and were also more likely to be held in lairage for longer.

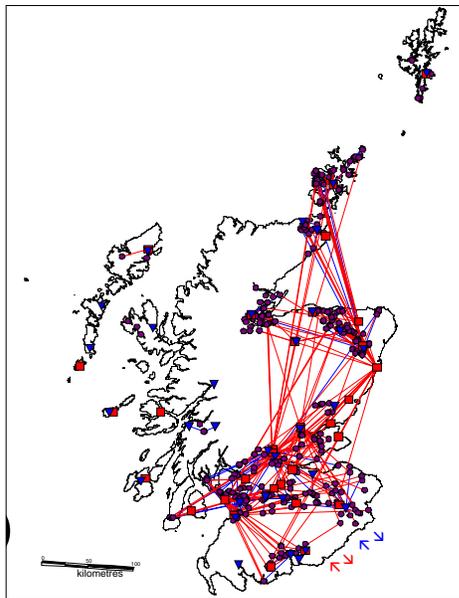


Figure 1. The network of cattle sale and slaughter in Scotland.

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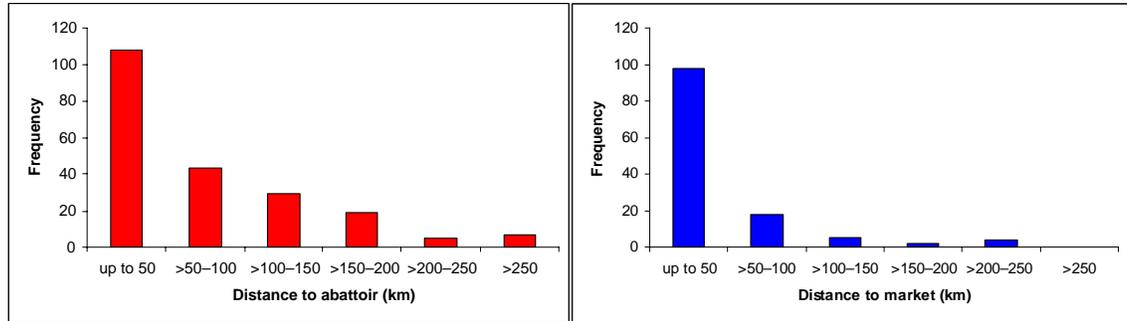


Figure 2. Distribution of the straight-line distance between farms and markets or abattoirs

Discussion

There was wide variation in distances travelled by cattle, with many animals travelling long distances, and therefore being in transit for long periods of time. In some instances, such conditions are unavoidable because of the remoteness of the farms in question. However, some cattle bypass several abattoirs on their way to slaughter in the chosen abattoir. This may be because of limited capacity in the closer abattoirs, although more often the driving factors are economics and contractual obligations.

These results identify widely varying conditions of sale, transport and slaughter of cattle in Scotland, which may not represent best practice in terms of minimising the spread of infectious and contagious agents between animals, and make the identification of critical control points difficult.

References

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