



Optimising Lamb Meat Quality



AN UPDATED BLUEPRINT FOR QUALITY LAMB



Introduction

This publication is a simple to read guide on the practices that are recommended by EBLEX to optimise lamb quality. It is based on the Original MLC Blueprint, updated with the latest scientific literature. The full literature review is available on the EBLEX website.

Farm issues

Sex

Whilst eating quality differences between ram lambs, wethers and ewe lambs are generally small, it has been found that older ram lambs can produce an abnormal flavour. Aim to finish ram lambs by 5-6 months of age.

Age

A stronger lamb flavour, generally preferred by British consumers, develops with age, although older lambs can become tougher. Age/weight specifications may be useful to reduce eating quality variation. Care should be taken to optimise the post-slaughter handling of older lambs to improve tenderness.



Growth

Aim for a consistent growth rate, especially in the lead up to slaughter.

Breed and genetics

Breed only has a small effect on eating quality. Where differences between more traditional breeds have been suggested, separating the effect of the diet from the effect of the breed is difficult.

Improving genetic potential within breeds, particularly for muscle depth and reduced fatness, should be exploited where there is no detrimental effect on meat quality.

Feed

Diet has little effect on tenderness but a large influence on flavour. Lambs fed on pasture diets are preferred by British consumers. Supplementation of forage diets with concentrates does not negatively affect taste but concentrates can produce undesirable fat characteristics.

Forage legumes, in particular lucerne, can impart off flavours. Where these are used in the diet ensure lambs are grazed on grass for a period of at least 7 days prior to slaughter to restore normal flavour.

Vitamin E supplementation at 300 IU/kg DM, should be considered where lambs are fed concentrates in order to reduce lipid oxidation and prolong shelf life.



Carcase fatness

Consumers perceive lamb as a fatty product. Whilst a level of fat has small benefits in terms of juiciness and tenderness this should be balanced against the consumer demand for lean meat. Aim for a minimum fat class of 2 and a maximum fat class of 3H.

Transport, loading/unloading and lairage

Whilst sheep appear to be fairly resilient to stress, good handling and creating minimal stress should always be paramount. Incorrect stocking densities, extended travelling times, loading, unloading and general handling are all potential stressors.

Careful handling is essential to avoid bruising and carcass damage.



Abattoir

Stunning and sticking

Stun to stick times should be less than 15 seconds but a time of less than 10 seconds is recommended to reduce blood splash.



Carcass defects

Carcasses must be free of bruises and blemishes with no bone dust.

Carcass suspension

Hip suspension optimises the tenderness of the hind leg and loin muscles.

Some supply chains prefer traditional achilles suspension because of the change in shape associated with hip suspension.



Electrical stimulation

Electrical stimulation (ES) can improve lamb tenderness, especially where hip suspension is not used. It can enable faster chilling without the risk of cold shortening and accelerate ageing tenderisation. Care should be taken to ensure hot shortening does not occur. Regularly monitor pH fall and temperature.

Processing

Chilling

Chilling needs to be considerate to minimise the risk of either cold or hot shortening. Regularly monitor pH fall and temperature in order to prevent toughness due to shortening. Where ES is not used, avoid chilling to 10°C and below within the first 10 hours post slaughter. Where ES is used aim to achieve a pH of 6 at 18-35°C.

Take into account variable carcass sizes as larger carcasses will be less prone to cold shortening.

Monitor ultimate pH. If this falls outside the normal range (5.4-5.7) review the handling procedure.

Maturation

Ageing lamb, either in carcass form or in vacuum packs for a minimum period of 7 days or an optimum of 10 days improves lamb tenderness.



Packaging

Avoid high oxygen packaging wherever possible, it toughens meat and may have a negative impact on flavour on prolonged retail display so time should be kept to a minimum or alternative packing methods used.



For more information contact:

Better Returns Programme

EBLEX

Agriculture and Horticulture Development Board

Stoneleigh Park, Kenilworth

Warwickshire CV8 2TL

Tel: 0870 241 8829

Fax: 0844 774 6253

Email: brp@eblex.ahdb.org.uk

www.eblex.org.uk



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