

# Conformation and meat eating quality in sheep

## Background

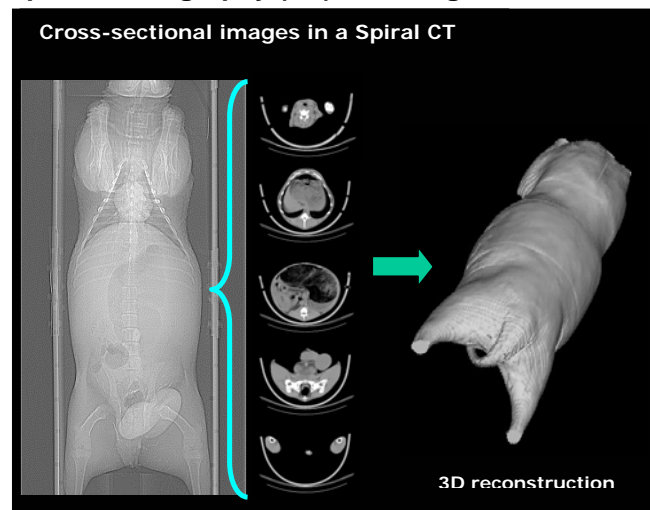
Both body and carcass conformation are important for sheep breeders and meat traders. As part of the carcass classification system in the UK, conformation directly influences the carcass price.

Although the economic relevance of meat quality is rising, due to its increasing importance to consumers, it has received little emphasis in breeding programmes.

## Assessing muscularity using Computer Tomography (CT) scanning

Muscularity, one of the main components of conformation, can be measured in live animals using CT. A comprehensive assessment can be obtained by a spiral CT scan, which allows 3 dimensional image analysis.

As well as aiming to increase carcass quality by improved muscularity, we also need a better understanding of the association between carcass quality and meat quality to ensure improvements in meat quality in future.



Spiral CT allows the reconstruction of images in 3 dimensions

## Objectives of the study

- Defining objective methods for describing conformation and muscularity of sheep using CT scanning.
- Developing other simpler methods to assess conformation of sheep for use on-farm.
- Investigating the relationship between measures of carcass quality made in sheep and subsequent meat quality.
- Exploring the opportunities to improve meat quality through breeding programmes using assessment by CT.

### **Progress on the project**

- Measures of conformation and muscularity, and carcass shape and composition were recorded on 60 lambs of breeds with divergent conformation (Texel and Scottish Blackface). The objective of this trial was to develop methods for assessing carcass shape in the live animal.
- Automatic procedures for image analysis of the spiral CT are being developed by Biomathematics and Statistics Scotland and SAC. The first results suggest these image analysis procedures are very accurate.
- A two-year trial, involving 500 lambs with divergent conformation within each breed is underway. It is investigating the association between body and carcass shape and meat quality during growth, and measuring the extent to which these are under genetic control.
- This research will help to develop efficient selection programmes focused on improving product quality.

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**Research Partners:** SAC, Biomathematics and Statistics Scotland, University of Bristol and Silsoe Research Institute

**Research Sponsors:** Department for Environment, Food and Rural Affairs and Scottish Executive Environment and Rural Affairs Department

**SAC Reference Numbers:** 521139, 621034

