Understanding lambs & carcases for better returns
Many in the sheep industry are talking about consistency. Returns can be improved by delivering a product that fits the needs of the customer. This means deciding which market to target, researching it, and making breeding, feeding and production decisions with those market requirements in mind. This booklet highlights the good and the bad in terms of carcase quality, fat levels and conformation. Its aim is to help producers understand the specifications of the market and to illustrate some of the factors that can effect carcase value and therefore producer returns.

Steve Powdrill
National Selection Specialist
Selecting animals for slaughter

Weight and visual appraisal are general guides to an animal’s readiness for market, but to ensure accurate selection, handling the live animal is essential.

Five key handling points give the best indication of level of finish and fat class.

To assess conformation feel the animal at the shoulder and loin. To assess fat level, feel the animal at the dock, loin, rib, and breast.

Handling lambs

Assessing conformation

Skeletal structure of loin

Transverse process

Spinous process

Conformation

E Spinous processes undetectable, flesh creating a very convex profile, very broad shoulder area

U Spinous processes just detectable, flesh beginning to create a convex profile

R Spinous processes less prominent with flesh creating a straight profile under the hand

O Spinous processes still prominent, less concave with some evidence of flesh beginning to fill the hand

P Very prominent spinous processes evident. Very concave profile to the centre of the hand.
Assessing Fatness

Dock
1. Individual bones very easy to detect
2. Individual bones easy to detect with light pressure
3. Moderate pressure to detect individual bones
4. Firm pressure to detect individual bones
5. Individual bones cannot be detected

Loin
1. Very easy to feel between processes which are very prominent
2. Prominent spinous and transverse processes felt easily
3. Tips of processes rounded. Individual bones felt as corrugations with light pressure
4. Spinous processes felt with moderate pressure. Transverse processes felt with firm pressure
5. Individual processes cannot be felt

Rib
1. Individual ribs feel very bare, prominent and easy to detect
2. Individual ribs show slight cover but still easy to detect
3. Individual ribs have softer feel, with fat cover becoming more evident in between and over ribs, which are now less easy to detect
4. Individual ribs are only detectable with firm pressure
5. Individual ribs are undetectable, soft, rolling, spongy feel
U3L and R4H wastage comparison

Lamb A has a higher retail value than Lamb B. Lamb B has also incurred additional costs in feed on the farm and processing time at the abattoir.

<table>
<thead>
<tr>
<th></th>
<th>Kg / Whole Lamb A - U3L</th>
<th>Kg / Whole Lamb B - R4H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total carcase weight</td>
<td>19.00</td>
<td>19.00</td>
</tr>
<tr>
<td>Leg</td>
<td>4.76</td>
<td>4.40</td>
</tr>
<tr>
<td>Shoulder</td>
<td>4.14</td>
<td>3.56</td>
</tr>
<tr>
<td>Chops</td>
<td>2.86</td>
<td>2.86</td>
</tr>
<tr>
<td>Chump</td>
<td>1.44</td>
<td>1.02</td>
</tr>
<tr>
<td>Lap neck</td>
<td>2.06</td>
<td>2.40</td>
</tr>
<tr>
<td>Total meat</td>
<td>15.24</td>
<td>14.24</td>
</tr>
<tr>
<td>Trim and fat</td>
<td>3.76</td>
<td>4.76</td>
</tr>
</tbody>
</table>
The current grading system for carcases in the UK and Europe uses the EUROP classification for conformation and a numeric assessment for fatness (classes 1-5). Combining scores for conformation and fat determines the market most suited for each type of carcase. Aim for most animals to fall within the green shaded area where there is greatest demand and highest prices.

### Conformation class

Conformation is determined by a visual appraisal of shape, taking into account carcase profile and fullness of legs. No adjustment is made for influence of fat on overall shape.

### Fat class

<table>
<thead>
<tr>
<th>Fat class</th>
<th>1</th>
<th>2</th>
<th>3L</th>
<th>3H</th>
</tr>
</thead>
<tbody>
<tr>
<td>% saleable cuts</td>
<td>94.87</td>
<td>92.95</td>
<td>91.52</td>
<td>90.56</td>
</tr>
<tr>
<td>% fat trim</td>
<td>3.91</td>
<td>5.92</td>
<td>7.44</td>
<td>8.46</td>
</tr>
<tr>
<td>% bone and waste</td>
<td>1.22</td>
<td>1.12</td>
<td>1.04</td>
<td>0.98</td>
</tr>
</tbody>
</table>

**Clean Sheep (NSL/OSL)**

**Commercial Cutting Data**
Fat is determined by visual assessment of external fat cover. There are five main classes. Class 3 and 4 are subdivided into L (leaner) and H (fatter).

<table>
<thead>
<tr>
<th>Fat class</th>
<th>1</th>
<th>2</th>
<th>3L</th>
<th>3H</th>
<th>4L</th>
<th>4H</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>% saleable cuts</td>
<td>94.87</td>
<td>92.95</td>
<td>91.52</td>
<td>90.56</td>
<td>89.61</td>
<td>88.65</td>
<td>87.22</td>
</tr>
<tr>
<td>% fat trim</td>
<td>3.91</td>
<td>5.92</td>
<td>7.44</td>
<td>8.46</td>
<td>9.47</td>
<td>10.49</td>
<td>12.02</td>
</tr>
<tr>
<td>% bone and waste</td>
<td>1.22</td>
<td>1.12</td>
<td>1.04</td>
<td>0.98</td>
<td>0.92</td>
<td>0.86</td>
<td>0.77</td>
</tr>
</tbody>
</table>

**Market signals**

- Little or no demand
- Discount prices
- Poorest returns
- Medium demand
- Average prices
- Moderate returns
- High UK demand
- Premium prices
- Best returns
Conformation differences

- P2: Poor
- R3L: Good
- E3L: Excellent
Cut through and fat levels

R2
LEAN

R3L
IDEAL

R4H
TOO FAT
Bruising and wool pull

Sensitive handling is vital for animal welfare and avoids damage that shows up after slaughter.
Sheep bruise easily, particularly young lambs. Bruising and abscesses lead to wasteful trimming and even partial condemnation of the carcase, which in turns reduces saleability and the amount paid to the producer.

Do not:

❌ handle and move sheep by grabbing wool. This creates a bruise which will require trimming at the processing plant
❌ allow sheep to be trampled during transport
❌ allow sheep to trample over each other in races during handling or selection
❌ leave any sharp objects in races, trailers or on gates etc

Always:

✔ use clean injection needles to avoid infection in the skin
✔ choose injection site with care (neck wherever possible)
Does weight pay?

Additional weight may pay but not if only putting on fat. If looking to add weight consider the following:
- Increasing fat levels beyond optimum will have price penalties
- Increasing weight for no return
- Increase feed costs per kg produced
- Reduced feed availability for sheep remaining

**R3L versus R4H**

- **R3L** = base price/kg
- **R4H** = - 30p/kg

21kg x 30p = £6.30 loss by getting the carcase to a R4H

Remember most abattoirs only pay up to 21kgs deadweight.
Check with your outlet to find out their upper limit.
Conformation
Profiles straight to concave, average muscle development.
Legs profiles tending to be slightly concave.
Loin lacking width and fullness.
Shoulder tending to be narrow, lacking fullness.

Fat
None up to very low fat cover.
External Traces of or no fat cover.
Internal Abdominal: traces of or no fat visible on the kidneys.
Thoracic: traces of or no fat visible between the ribs.
Conformation

Profiles straight to concave, average muscle development.

Legs profiles tending to be slightly concave.
Loin lacking width and fullness.
Shoulder tending to be narrow, lacking fullness.

Fat

Slight fat cover, flesh visible almost everywhere.

External A slight layer of fat covers part of the carcase but may be less evident on the loin and shoulders. There maybe a lack of firmness in the flank area.

Internal Abdominal: traces of fat or a slight layer of fat envelops part of the kidneys.
Thoracic: muscle clearly visible between the ribs.
Conformation

Profiles on the whole straight, good muscle development.
Legs profiles mainly straight.
Loin full but less width to the shoulder.
Shoulder good development, but less full.

Fat

Flesh, with the exception of the leg and shoulder, almost entirely covered with a thin fat cover, slight deposits in the thoracic cavity.
External A layer of fat covering most or the entire carcase; slightly thickened fat zones at the base of the tail.
Internal Abdominal: light layer of fat envelops the kidneys. Thoracic: muscle still visible between the ribs.
Conformation

Profiles on the whole straight, good muscle development.

Legs profiles mainly straight.
Loin full but less width to the shoulder.
Shoulder good development, but less full.

Fat

Flesh, with the exception of the leg and shoulder, almost entirely covered with thickening fat cover, increasing deposits in the thoracic cavity.

External A light layer of fat covering most or the entire carcase, thickened fat zones at the base of the tail, over the chump loin and shoulder.

Internal Abdominal: thicker layer of fat envelops part or all of the kidneys.
Thoracic: slight fat deposits may be visible between the ribs.
Conformation

Profiles on the whole straight, good muscle development.

- **Legs**: profiles mainly straight.
- **Loin**: full but less width to the shoulder.
- **Shoulder**: good development, but less full.

Fat

Flesh covered with fat, but still partly visible on the legs and shoulder, some distinctive fat deposits in the thoracic cavity.

- **External**: A thick layer of fat covering most or all of the carcase but may be thinner on limbs and thickening on shoulders.
- **Internal**:
  - **Abdominal**: kidney is enveloped in fat.
  - **Thoracic**: muscle between the ribs may be slightly infiltrated with fat, fat deposits may be visible on the ribs.
Conformation

Profiles on the whole straight, good muscle development.

Legs profiles mainly straight.
Loin full but less width to the shoulder.
Shoulder good development, but less full.

Fat

Carcase thickly covered with fat, heavy fat deposits in the thoracic cavity.

External Very thick fat cover, patches of fat sometimes visible. The flank will be very thick, firm to the touch with very heavy flank fat deposits.

Internal Abdominal: kidneys enveloped in thick layer of fat. Thoracic: muscle between the ribs infiltrated with fat, fat deposits visible on the ribs.
Conformation

Profiles on the whole convex, very good muscle development.

Legs full, profiles convex.
Loin wide and full to the shoulder.
Shoulder convex and full.

Fat

Flesh, with the exception of the leg and shoulder, almost entirely covered with thickening fat cover, increasing deposits in the thoracic cavity.

External A light layer of fat covering most or the entire carcase, thickened fat zones at the base of the tail, over the chump loin and shoulder.

Internal **Abdominal**: thicker layer of fat envelopes part or all of the kidneys.
**Thoracic**: slight fat deposits may be visible between the ribs.
Conformation

Profiles on the whole convex, very good muscle development.

Legs-full, profiles convex.
Loin-wide and full to the shoulder.
Shoulder-convex and full.

Fat

Flesh covered with fat, distinctive fat deposits in the thoracic cavity.

External-A thick layer of fat covering most or the entire carcase. The flank will be thick, firm to the touch with heavy flank fat deposits.

Internal-Abdominal: kidneys enveloped in fat.
Thoracic: muscle between the ribs infiltrated with fat, fat deposits may be visible on the ribs.
For more information contact:
Better Returns Programme
EBLEX
Stoneleigh Park
Kenilworth
Warwickshire CV8 2TL
Tel: 0870 241 8829
Fax: 0844 774 6253
Email: brp@eblex.ahdb.org.uk

EBLEX is a division of the Agriculture and Horticulture Development Board (AHDB).

www.eblex.org.uk

©Agriculture and Horticulture Development Board 2012. All rights reserved