Learning objectives
On completion of this topic you should be able to:

- Understand the relative merits of different marketing methods
- Understand carcase feedback
- Understand the importance of receiving feedback in meeting a target market
- Understand the different marketing systems used to sell finished, store or live export sheep or lambs
- Understand the language which is used to describe sheep or lambs both live and in carcase form
- Have an appreciation of industry development of value–based marketing
- Understand the components of live assessment of sheep and lambs for sale
- Understand why live assessment of sheep and lambs is necessary

Introduction
Meat sheep may be marketed in Australia as stud, store or finished stock. This topic deals with both store and finished meat sheep. Until the mid 1970s there was little change to the method of selling or marketing meat sheep. Since then descriptive language has been implemented for live sheep and carcases though AUS-MEAT. The industry has adopted methods to transfer carcase description from farm to retail and back again –eg carcase tickets with information including carcase weight and fatness.

During the 1990s the industry began to develop systems for value-based marketing- ie payment on the relative quality of the product received, often based on a grid for carcase weight and fat score. To allow the consistent sourcing and supply of quality product to end-users the industry also developed supply chains or alliances between sectors. Many of these developments occurred because of producer dissatisfaction with the uncertainty and fluctuation of prices and the common lack of relationship between price and quality associated with the traditional auction system.

10.1 Types of meat sheep marketed

Store stock
Store sheep are usually sold for finishing for ultimate slaughter. They include: cull-for-age flock sheep; cull flock sheep and store lambs. Generally store stock are either too light or too lean for slaughter.

Finished stock
Finished meat sheep for slaughter include: cull sheep of any age, finished lambs and live export sheep and lambs.

Live sheep
Details of the live sheep markets and live sheep export are dealt with in other chapters. Live sheep are sourced predominantly from Western Australia and to a lesser extent from South Australia and Victoria. Normally less than 10% would be sourced from NSW and few from Qld. Specifications for live sheep are available and producers can consign their sheep to export port feedlots or sheep can be sourced on property provided health requirements are met.
10.2 Description systems for live sheep, lamb and carcases

Description of either live sheep or lambs or carcases is governed by the Authority for the Uniform Specification of Meat and Livestock (AUS-MEAT) language. The language encompasses: description, carcase weight ranges, fat scores and the ovine standard carcase.

Sheep descriptions

The main sheepmeat category descriptors that are used to describe carcases or components of are:

Lamb- “L”- female, castrate or entire male ovine has no permanent incisors. Milk fed (MF) lambs can be included in the same definition as a lamb that has not been weaned and is younger than 8 weeks. Grain fed (GF) refer AUS-MEAT Information Manual 1 for details.

Hogget- “H”- (or yearling mutton) - female or castrate male ovine that in males shows no secondary sexual characteristics (SSC) 10 to 18 months approximately. Grain fed hogget (GF)

Mutton- “M”- Female or castrate male ovine that: In males shows no SSC; has at least 1 permanent incisor tooth and is over 10 months. Ovine: optional generic description. Conditions exist for use. Manufacturing boneless: Lamb and Ram may be packed in the same carton with mutton and described as mutton.

Ram- “R”- Entire or castrate male ovine that:

Shows SSC has at least 1 permanent incisor tooth. There are alternative descriptors for Young Lamb (YL), Ewe Mutton (E) and wether Mutton (W)

Figure 10.1 A permanent incisor is defined as one that has broken through the gum surface (AusMeat 2003).

Standard carcase

A sheepmeat carcase is the body of a slaughtered ovine animal after bleeding, skinning, removal of internal organs and a minimum amount of trimming. For further detail on this definition refer to AUS-MEAT Limited Sheepmeat Language brochure (http://www.ausmeat.com.au/media/1779/sheep%20meat%20language%20brochure.pdf).

Fat Classes

There are 5 fat classes used to describe both live sheep and carcases. How these are assessed in live animals is described later in this chapter.
On carcases fat score is either measured or assessed. Measurement is taken at the GR site, 110mm from the centre of the midline on either side of the carcase on the 12th rib. The measure is of total tissue depth including fat mainly and some muscle. This site gives the best estimate of overall carcase fat distribution and carcase composition. Either fat score or GR in mm may be measured. Some markets, particularly some domestic retail markets require carcases within a specified range (eg 8 to 12 mm) to exclude those that are too lean (reduced keeping time) or too fat (too much fat trimming needed). Assessment is by palpation over the long ribs.

Weight classes
Carcase weight is classified in 2 kg intervals, usually in a range from 8 to 30 kg. For example an 18 kg category carcase would be over 16kg and up to 18kg. Categories such as these would be used in price grids for example. Carcases are normally measured in fifths of a kg ie 0.2kg increments.
10.3 How meat sheep are sold
An ABARES survey in 2012 showed that for all sheep and lambs about 52% were sold by auction, 30% over-the-hooks (OTH) and about 18% in the paddock by private treaty. These figures included sheep that were sold for wool production on another property. Figure 10.4 and 10.5 outline the change in selling methods for adult sheep and lambs (respectively) over time.
10.4 Marketing systems for slaughter sheep

In the early 1980s cost pressures on meat sheep producers, intense competition between meat industries and changing consumer preferences sparked a number for efforts to improve marketing methods for slaughter sheep. The main system was open auction at saleyards which accounted for over two thirds of slaughter sheep and lambs. Private treaty sales – ie paddock sales on a dollars per head basis, were the next most popular method with almost no over-the-hooks marketing.

The development of telephone tender systems, auction by description systems such New England Livestock Computer Marketing and in the mid 1980s Computer Aided Livestock Marketing (CALM, now AuctionsPlus) heralded a gradual change to systems based on assessment and offer or delivery to specifications.

Various trials were held of OTH grid trading. To support this and other systems aimed at payment on carcase merit, training was developed for producers and agents in live sheep and lamb assessment for estimated carcase weight and fat score. However it was not until the early 1990s that a number of major developments in the industry stimulated the continued development and implementation of OTH.

One of these was the Trim Lamb campaign of the mid 1990s which aimed to re-position lamb as a leaner, boneless product with improved versatility and lower plate waste. Another was the implementation of the Livestock Identification and Description System (LIDS) which supported the implementation of tickets on carcases which displayed carcase weight and fat score (and possibly GR in mm).

Choosing a marketing system

Producers should choose a marketing system that rewards them best for the effort they have put into producing lambs to meet a specification. Not all marketing systems are capable of this. The cost of
using that system should also be considered—eg saleyard fees, agent fees, transport costs etc. Skills that are needed to assess sheep or lambs to meet a specification and how to meet a market are dealt with later in this chapter.

**Saleyard auction**

As stated above around half of all sheep and lambs are sold through saleyard auction. This method has some advantages. It is a fast, simple method of selling large numbers of stock of all descriptions and varying lot size. Competition is usually strong with the majority of processors and other meat buyers buying through the system. Supply and demand factors are usually reflected well in prices achieved. Major sales are covered by the National Livestock Reporting System (NLRS) and price reporting via the media is usually within hours or days. Saleyards are commonly a clearing house for small lots.

On the other hand the degree of handling and transporting of animals can have an adverse effect on bruising, carcase damage, eating and keeping quality of meat products. Carcase weight is lost with increased time off feed before slaughter at the rate of about 3 – 4% after 24 hours, 6 – 7% after 84 hours and 8% after 72 hours. Although sellers can apply reserve prices there is very little opportunity for bargaining or exchange of objective information between sellers and buyers. The live auction system is a costly system in terms of freight, capital invested in saleyards, labour and in terms of possible damage to and loss of product value.

**Paddock sale – private treaty.**

This involves buyers agreeing to pay a dollars per head price and ownership changing on the sellers property. As delivery would be direct to the new owner there is limited transport and stress on the sheep. Bargaining and exchange of objective information, such as liveweight and estimated fat score, can occur.

Disadvantages include the lack of competition between buyers, difficulty in reporting and time involved in the transaction for the buyer if a processor of large numbers of lots.

**Auction-by-description**

‘AuctionsPlus’, formerly known as ‘CALM’, computer aided livestock marketing, also offers an auction type system where buyers and sellers bid on previously assessed lambs. Sheep or lambs can be sold on a $/head or c/kg basis. This method of selling involves an accredited assessor weighing and fat scoring a random percentage of the lambs. The assessment sheet is available to buyers who bid without seeing the lambs. The lambs do not leave the farm if the reserve price is not reached. Feedback is available in this system when the lambs are sold on a c/kg basis.

The system offers the opportunity for large numbers of buyers to participate remotely. Producers have greater bargaining power and can set reserve prices without any prior transport cost. Because of the interchange of objective information prices can reflect price premiums and discounts. A disadvantage is the fear of mis-description.

**Telephone tender**

Vendors contact buyers direct and negotiate price, usually for delivery to the abattoir on a dollars per head basis. Meat quality is protected because of direct consignment and communication and information exchange are enhanced. More than one buyer can be contacted. Deliveries can be forward planned and costs minimised due to less handling, transport and carcase loss. A disadvantage is that public price reporting is unlikely.

**Over-the-hooks – Trading**

Over the hooks marketing involves the supply of sheep or lambs to a processor at an agreed time and to an agreed specification for carcase weight and fat score (or range in mm GR). Payment is on a cents/kg basis against a grid of carcase weight and fat score. Ownership changes at the carcase weighing scales. Condemned lambs are rare but payment is not received for these. OTH involves direct transport to the abattoir which minimises handling, stress and reduces the risk of problems with eating quality or carcase damage. A reputable trucking company that is committed to quality assurance should be used. Most processors will buy sheep or lambs OTH. Skin value may be included in per kg price, paid separately or tendered on the producer’s behalf. The advantage of this system is that you are paid for what you produce.
Each carcase is weighed and fat scored and you should receive feedback on carcase weight and fat score for each animal as well as a summary for the mob. This will assist greatly in meeting specifications on future mobs. Most domestic processors and wholesalers will provide you with a price over the phone so you know what price you will receive before your lambs leave the property.

Variations when selling lambs ‘over the hooks’ are:
- OTH cents/kg (flat price with no penalties)
- OTH grids (cents/kg penalties for outside of specification)
- Forward contracts (usually based on grids)

A disadvantage of this system is that processors often do not pay high prices to new producers until they know that they can deliver to specification.

**OTH price grids**

Price grids (Table 10.1) provide a differentiation in price for sheep, but more commonly lambs, based on carcase weight and fatness. They show the value to the processor of each carcase according to the weight and fat specifications preferred by the processor or other end-user. Some producers are discouraged by the lower price for missing the specifications although the price for meeting specification is generally higher than other marketing methods. By developing good live lamb assessment skills it is possible to only send those lambs that meet the preferred specifications. Lambs that fall outside the specification can then be further fed or sold through another marketing method.

It is worth comparing grids between processors to check which one gives the best return. Information needed from each includes:
- Carcase weight preference
- Fat score (or mm GR) preference
- Price (cents/kg)
- Carcase trim used. Is it AUS-MEAT hot standard carcase weight trim (kidney fats, channel fats and thick skirts out) or fats in domestic trim
- Hot or cold carcase weight. It should normally be hot carcase weight
- Level of shrink expected if payment is made on cold weight. Carcases will dry out and lose weight in the chiller. Usually this is around 3% of hot carcase weight.
- When delivery is preferred
- Estimated skin value or how skin value will be paid
- Who pays transport to the abattoir
- Payment time and method
- Guarantee of payment. If an agent is used non-payment will be covered by his del credere insurance. If no agent is used another system of insurance may be desired.

<table>
<thead>
<tr>
<th>Hot standard carcase weight</th>
<th>Fat score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>18.1-20 kg</td>
<td>2.50</td>
</tr>
<tr>
<td>20.1-22 kg</td>
<td>2.50</td>
</tr>
<tr>
<td>22.1-24 kg</td>
<td>2.50</td>
</tr>
<tr>
<td>24.1-26 kg</td>
<td>2.50</td>
</tr>
<tr>
<td>26.1-28 kg</td>
<td>2.50</td>
</tr>
<tr>
<td>28.1-30 kg</td>
<td>2.50</td>
</tr>
<tr>
<td>30.1+ kg</td>
<td>2.50</td>
</tr>
</tbody>
</table>
Research has shown that it costs processors in the form of lost profits for each fat score outside their specification. The cost of trimming and the waste it creates can be considerable. For retailers this loss is generally doubled. The losses are channelled back to producers through lower prices paid.

Forward Contracts
To secure a supply of suitable lambs for their markets progressive meat companies use forward contracts. Many processors are now offering forward contracts with an agreed price for supply at a future date. This method particularly helps exporters by ensuring that producers do not sell their lambs at lighter weights on the domestic trade market. Producers benefit by knowing what price they will receive for their lambs some months in advance. Processors benefit from a more controlled supply and less fluctuation in their purchase price. Most forward contracts are traded on a price grid based on carcase value for lambs of various weights and fat scores.

Marketing alliances
Since the early 1990s the sheepmeat industry has developed a number of marketing alliances or supply chains that aim to improve the consistency of supply of quality product to processors and onwards to end-users, both domestic and overseas. There are two common types of alliance – horizontal and vertical.

- Horizontal alliances are working relationships between a group of like minded people within the same industry sector – eg a group of producers aiming to supply lambs to a particular specification or specifications over an agreed time frame. Such a group would probably seek a purchaser based on comparative price.

- A vertical alliance in the sheepmeat industry would involve either a group of producers or even a single producer who agrees to supply an agreed number of stock to a specification at a specified time. A vertical alliance could involve a number of sectors – eg producers, processor and end-user. Experience suggests that the key ingredients of an alliance are trust, loyalty and good coordination.

An example of a marketing alliance would be Tooraweenah Prime Lamb which is a group of prime lamb producers in Central West NSW who work together to supply lambs that meet market specifications year round. They do this by responding to feedback from their buyers to continue to supply the desired product.

Carcase feedback
Feedback from the processor on carcase weight and fatness of lambs or sheep consigned is essential to the producer to improve assessment skills, understand market specifications passed back to the processor by his export or domestic clients and to allow consideration of changes in the genetics of rams or ewes used.

Feedback produced by the processor should include:
- The number of lambs processed
- Carcase weights
- Carcase fat scores ( or GR mm)
- Muscle grade (if recorded)
- Price for each lamb
- Skin price and value for the lot
- Details on lambs outside specifications
- Animal health status

New technologies
The sheepmeat industry continually strives to develop new technologies that will assist in improving payment systems for carcase and meat attributes. One such system is VIAscan. The VIAscan system uses video images of carcase shape, proportional dimensions and distribution of fat to estimate carcase lean meat yield. The yield is expressed as a percentage, with lean meat yields of 51% or better considered acceptable. In 2013 there are only two of these devices operating or being installed.
in abattoirs in Australia and eight in New Zealand. Higher yielding carcases improve efficiency for all sectors of the industry.

**10.5 Live assessment of lambs and sheep for sale**

Prior to sale through any of the above systems it is important to assess the sheep and lambs with the aim of selecting those animals within the required carcase weight and fat score specifications. More accurate appraisal of the live animal helps the producer and agent to target specific markets.

The traditional approach of visually assessing sheep as a mob or while they are running through the drafting race often results in drafts of lambs or sheep with a 5 – 8 kg carcase weight range and a wide variation in fat scores.

The successful marketing of even lots of sheep requires a professional approach. Being a good assessor means being able to accurately estimate the eventual carcase weight, fat score and skin quality. These skills can be improved by experience and regular abattoir feedback. It is also greatly aided by the use of live weight scales and a good fat scoring technique.

**10.6 Fat scoring sheep and lambs**

Fat scoring is a skill that is best learnt by practice and from feedback on the carcase performance of lambs. It is also of great benefit in managing the flock when feeding and managing sheep and lamb flocks.

Fat scores are based on actual soft tissue depth at the GR site. The GR Site is 110 mm from the midline over the 12th rib (Figure 10.3). The best site to feel when assessing fatness is over the long ribs where the GR site is measured on the carcase in the abattoir. Fat scores vary from score 1 (leanest) to score 5 (fattest) (Table 10.2).

<table>
<thead>
<tr>
<th>Fat Score</th>
<th>GR tissue Depth in mm</th>
<th>Long ribs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0-5</td>
<td>Individual ribs felt very easily. Cannot feel any tissue over the ribs.</td>
</tr>
<tr>
<td>2</td>
<td>6-10</td>
<td>Individual ribs easily felt but some tissue present.</td>
</tr>
<tr>
<td>3</td>
<td>11-15</td>
<td>Individual ribs can still be felt. Can feel more tissue over the rib.</td>
</tr>
<tr>
<td>4</td>
<td>15-20</td>
<td>Can only just feel ribs. There is fluid movement of tissue.</td>
</tr>
<tr>
<td>5</td>
<td>21 and over</td>
<td>Ribs can’t be felt. Tissue movement very fluid.</td>
</tr>
</tbody>
</table>

In WA this assessment method is known as ‘condition scoring’ and is different in that assessment is made over the short ribs and backbone of the animal as shown in Table 10.3.

<table>
<thead>
<tr>
<th>Score</th>
<th>Backbone</th>
<th>Short Ribs</th>
<th>Eye Muscle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prominent and sharp</td>
<td>Ends are sharp and easy to press between, over and around</td>
<td>Thin, the surface tending to feel hollow</td>
</tr>
<tr>
<td>2</td>
<td>Prominent but smooth</td>
<td>Smooth well-rounded ends, can feel between, over and around each smoothly</td>
<td>Reasonable depth with the surface tending to feel flat</td>
</tr>
<tr>
<td>3</td>
<td>Can be felt but smooth and rounded</td>
<td>Ends are smooth and well covered, firm pressure necessary to feel under and between short ribs</td>
<td>Full and rounded</td>
</tr>
<tr>
<td>4</td>
<td>Detectable with pressure on the thumb</td>
<td>Individual short ribs can only be felt with firm pressure</td>
<td>Full with a covering layer of fat</td>
</tr>
<tr>
<td>5</td>
<td>Can be felt with firm pressure</td>
<td>Cannot be felt even with firm pressure</td>
<td>Muscle cannot be felt due to a thick layer of fat</td>
</tr>
</tbody>
</table>
To achieve a reliable score, have the animal standing in a relaxed state, preferably in a race or liveweight scales. The sheep will not be bruised if assessed in the correct manner by gentle palpation with the fingertips and thumb. The assessor must work fingers through the wool to skin level before feeling for fat cover over the ribs. Generally, at the same weight ewe lambs will be fatter than wether lambs. In young lambs (suckers) on a steady plane of nutrition the fat distribution will be fairly even. In older lambs and sheep, fat distribution may not be as even.

10.7 Estimating carcase weight and dressing percentage
The guide to carcase weight is liveweight adjusted by an estimated dressing percentage. For example:
\[
\text{Carcase weight} = \text{live weight} \times \text{dressing percentage}
\]
\[
eg = 40 \, \text{kg} \times 46\% = 18.4 \, \text{kg}
\]
Liveweight can be accurately and quickly measured using a modern set of lamb weighing scales. Most people underestimate lamb weights by 10 to 25% when simply guessing.

Factors affecting dressing percentage
Although Australian lambs have an average dressing percentage of around 45 to 48%, they vary considerably, from as high as 54% to as low as 40% depending on a wide range of conditions including:
- Fatness
- Time off feed and water prior to live weighing
- Feed conditions
- Weaned or unweaned
- Sex
- Breed
- Skin weight - Length of wool
  - Wet or dry
- Carcase definition.

Dressing percentage guidelines
Table 10.4 outlines dressing percentage guidelines or lambs based on the following criteria:
- 2nd Cross Lamb (Dorset Ram x BL/Merino Ewe)
- 2 – 3 hours off feed
- 50mm (2”) wool
- Weaned.

Table 10.4: Dressing percentages of lambs and sheep (MLA Live Assessment Yard Book – Sheep and Lamb)

<table>
<thead>
<tr>
<th>Fat score</th>
<th>Lambs</th>
<th>Sheep</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unweaned</td>
<td>Weaned</td>
</tr>
<tr>
<td>1</td>
<td>41%</td>
<td>39%</td>
</tr>
<tr>
<td>2</td>
<td>43%</td>
<td>41%</td>
</tr>
<tr>
<td>3</td>
<td>45%</td>
<td>43%</td>
</tr>
<tr>
<td>4</td>
<td>47%</td>
<td>45%</td>
</tr>
<tr>
<td>5</td>
<td>49%</td>
<td>47%</td>
</tr>
</tbody>
</table>

Breed: The breeding of the sheep can affect fat cover and muscling and hence, dressing percentage. Merino cross and Merino lambs tend to have lower dressing percentages than second cross lambs by about 1.5 to 3.5%. Wether lambs dress out about 1.5% lower than ewe lambs.

Time off feed: Add to the dressing percentage figures above the values in Table 10.5 according to how long the lambs or sheep have been off feed.
Table 10.5: Effects of time off feed on dressing percentage (McLeod 2003).

<table>
<thead>
<tr>
<th>Time off feed</th>
<th>Addition to dressing %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 3 hrs</td>
<td>0</td>
</tr>
<tr>
<td>4 – 5 hrs</td>
<td>+ 1%</td>
</tr>
<tr>
<td>6 – 8 hrs</td>
<td>+ 2%</td>
</tr>
<tr>
<td>9 – 12 hrs</td>
<td>+ 2.5 – 3%</td>
</tr>
<tr>
<td>13 – 24 hrs</td>
<td>+ 3.5 – 4.5%</td>
</tr>
</tbody>
</table>

Seasonal variation: Fluctuation of up to + 3% can occur because of season.

Carcase definition: This varies with the carcases trimmed to the Aus-meat “standard trim” which is hot standard carcase weight by having removed the thick skirts, kidneys, kidney knob, channel, udder and cod fat. These will have a dressing percentage about 1.5 – 2% lower than if these trimmings are left in. Chilled ‘cold’ lamb carcase weights are around 2 – 3% less than hot carcase weight.

Try to weigh lambs 2 – 3 hours off feed each time to maintain consistency between consignments.
- For a non-standard trim (kidney/kidney knobs retained) add up to 4% to the dressed weight
- For domestic mutton add 3% for non standard carcase trim
- Chilled cold carcase weights are around 3% less than hot weights.

Skin weight adjustment: This varies according to wool length with short wool and freshly shorn lambs and sheep have a higher dressing percentage than woolly sheep.

Readings
There are no readings provided on web learning management systems but further readings include.

Revision Questions
1. Describe the main methods of marketing sheep for slaughter.
2. Why is live assessment of sheep and lambs important and what does it include?
3. What factors can affect dressing percentage of sheep and lambs?

References