

Meeting market specifications

Key actions

- Know the specifications and customer requirements of your target markets.
- Know how to assess and monitor the progress of live animals towards target markets.
- Manage the grazing system to achieve growth targets and successful market outcomes.
- Use high nutritional quality finishing systems to ensure cattle keep growing to slaughter.
- Seek feedback and implement practices to improve the management of your production system.
- Regularly evaluate new marketing options and implement those more profitable to the beef enterprise.

Why is meeting market specifications important?

A successful grazing business makes a sustained profit by growing and converting pasture and conserved feed into beef products that consistently meet market specifications. Every producer strives to:

- gain a reputation as a reliable supplier of quality beef
- maintain market access to as many markets as possible
- be financially rewarded when a high proportion of stock consistently meets customers' requirements.

This is a 'win-win' situation for both you and your customers.

A wide range of potential markets are available to beef producers in southern Australia, including the sale of weaners, vealers, feeder steers, backgrounding cattle for feedlots, bull beef, cull cows, pregnancy-tested in-calf heifers and cows, unjoined heifers, domestic and/or export trade finished cattle, animals for live export and niche market cattle. Each market has defined specifications for animals to return the highest price.

Beef producers are constantly faced with decisions on the type of cattle to produce or acquire, the management system employed to optimise their production, and the relevant market end point. These decisions are based on their experience and knowledge of their cattle's performance, seasonal situation and potential to grow cattle, and the specifications of the various markets available to them.

This module concentrates on the short-term management decisions needed to meet product specifications, and is designed to help you identify the best priced market you can target and ensure you deliver a quality product to its requirements. The longer term options of changing your cattle genetics to better meet market specifications is more fully addressed in **Module 4: Cattle genetics**.

While genetics is important, you need to maintain the flexibility to diversify and realign your target markets and options depending on opportunities and changing production circumstances. There will be times when your pastures will not allow stock to meet target market specifications, or when alternative markets become more profitable. When these circumstances arise, maximum profitability may be achieved by selling animals in other markets, or by moving to alternative feeding strategies.

Clearly, there is a balance between maintaining long-term relationships with your regular customers and exploring new market opportunities. As specifications can vary between buyers and change over time, it is important that you review the specifications of targeted markets with your regular buyers as a matter of routine. This personal approach to market development may also involve entering into forward contracts or similar undertakings to ensure your cattle are marketed to achieve maximum profit.

How does this module assist you?

This module covers the period from the time calves are weaned to the point of sale, and includes the management of trading stock and culled breeding animals. It aims to help you increase financial returns by better meeting target market specifications, exploiting market opportunities and managing the risks.

A key aim is to apply recommended best practice to the nutrition, health and welfare of sale stock to meet the target market specifications at the predetermined time of sale. Regular evaluation of new market opportunities and alternative selling options (see **Tool 7.5**) also assist in sustaining the profitability of your beef enterprise. Managing the marketing system needs careful implementation based on previous experience, the anticipated rainfall pattern and seasonal outlook.

Achieving the highest price is not necessarily the best business option. The most profitable strategy is usually a combination of the best margin per kilogram with the maximum kilograms of beef produced/ha. Price and cost of production need to be considered along with the stocking rate (DSE/ha).



The value of meeting market specifications

Beef producers are continually making management decisions that influence how well their cattle meet market specifications. Achieving consistently high compliance rates in high value markets is an important profit driver for beef businesses. The number of animals failing to meet market specifications in Australia can be high, which results in lower dollar returns.

The cost of failing to meet market specifications

A study of 40,000 feedlot cattle records (Slack-Smith, 2009) reported how the extent that cattle not meeting market specifications impacted on the final quality, costs and delivery of the product.

The details and consequences of failure to meet specifications in short-fed situations (20,000 head studied) were:

- 28% missed weight specifications, estimated to cost the feedlot \$31,000 or \$5.50/head
- 16% missed P8 fat specifications, costing \$54,000 or \$17.50/head.

In long-fed situations (20,000 head studied):

- 29% missed weight specifications, costing \$62,000 or \$11.00/head
- 70% missed the marbling specification of marble score 3 or better, costing an estimated \$1.5 million or \$105.00/head.

Information collected from the live cattle marketplace by the National Livestock Reporting Service (NLRS) contains detail of price differences payable due to the variation and degree of muscle and fat. The key message is that meat processors and livestock buyers pay according to the degree of muscularity of a beast and, therefore, the potential yield in all cattle market categories (McKiernan, 2002).

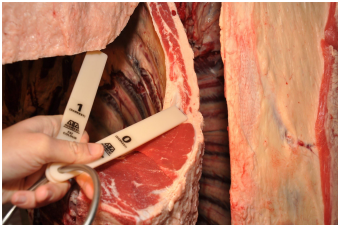


Table 1 illustrates the price variations observed for different muscle and fat scores within the yearling steer 330–400kg category, which typically represents domestic trade steers. The table demonstrates the price advantage achieved for finished animals meeting preferred market specifications.

In this example, the optimum grade is clearly B3 (muscle score B and fat score 3), which averaged 8¢ above B2. However, these animals only represented 1% of total numbers. D muscled cattle received the greatest discounts, averaging up to 29¢/kg lower than C muscled cattle. 85% of medium weight yearling steers were C muscled, while 74% had fat score 3. More importantly, when the market shows a negative trend, the variation between the C and D muscled cattle widens as buyers apply larger discounts on the plainer muscled cattle.

Table 1: Price variation (cents/kg liveweight) with muscle and fat score (yearling steer, 330–400kg)

	Muscle score B	Muscle score C	Muscle score D
Fat score 2	184.1	169.5	140.3
Fat score 3	192.1	176.0	152.9
Fat score 4	–	178.9	–

Linkages to other modules

Module 1: Setting directions discusses identifying the most profitable target markets and times of sale in relation to pasture growth and other resources available to the beef enterprise, an essential step in planning and setting the direction of your beef enterprise.

Managing the grazing system to meet market specifications is about fitting together the livestock requirements (see Module 4: Cattle genetics, and Module 2: Pasture growth) and livestock responses (see Module 3: Pasture utilisation, and Module 6: Herd health and welfare) to satisfy market needs. Maximising the number of weaners available and appropriate for growing to meet target market/s is the focus of Module 5: Weaner throughput.

Principles of meeting market specifications

- Know the specifications and customer requirements of your target markets.
- Know your production system.
- Implement a plan to market cattle to specification on time (as opposed to producing cattle for sale and then finding a buyer who wants those specifications).
- Manage the grazing system to achieve livestock performance targets and successful market outcomes.

Procedures for meeting market specifications

- Procedure 1 – Know your market specifications
- Procedure 2 – Meet market specifications on time
- Procedure 3 – Achieve best carcass dressing percentage
- Procedure 4 – Evaluate market opportunities

Procedure 1

Know your market specifications

A sound knowledge of the specification requirements for particular markets is fundamental to the development of production pathways for your own herd type or genetics.

Well-defined specifications have existed for many years for Australian cattle targeted at particular market endpoints. The primary carcass parameters have been hot carcass weight, age (teeth) and P8 fat depth, with values outside preferred ranges attracting discounts from processors. Carcass grids containing the discounts can be obtained from meat processors.

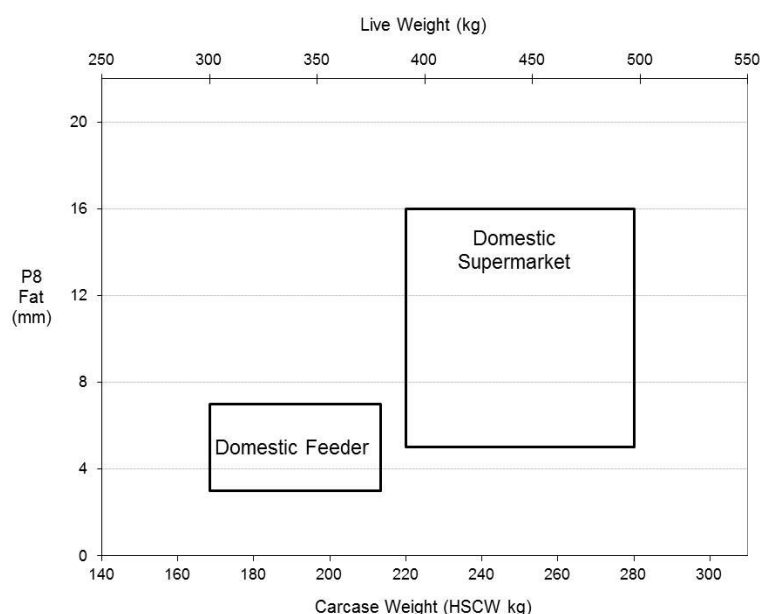
Other carcass parameters include meat and fat colour, bruising and butt profile. Meat quality is becoming increasingly important as an issue for Australian beef producers in meeting more stringent and changing market specifications.

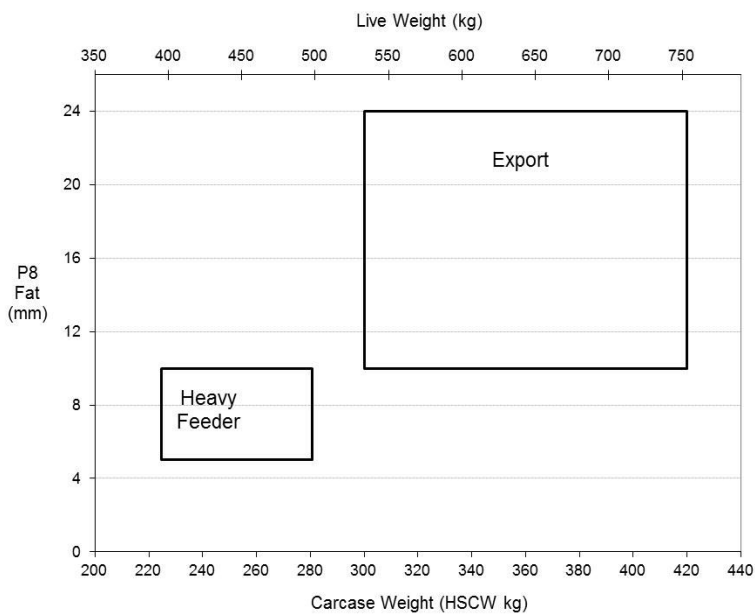
The development of the Meat Standards Australia (MSA) grading system has shown that domestic consumers can discriminate between beef of differing eating qualities, and that they are willing to pay a premium for higher quality beef.

Intramuscular fat (IMF) has been shown to be positively correlated with improved eating quality (Egan et al., 2001) and minimum IMF% (as assessed by marbling) is now included in some high quality domestic markets. Therefore, producers now have options to produce cattle with a focus on carcass yield, intramuscular fat, or both.

The two charts in Figure 1 show typical store/feeder specifications and final slaughter specifications.

Figure 1: (a) Typical store/feeder specifications for steers and heifers, and (b) final slaughter specifications





Source: NSW Department of Primary Industries, Forbes.

The tools in this module further define beef cattle market specifications and marketing options, and the MLA More Beef from Pastures Confident livestock marketing is a practical workshop designed to assist producers examine the various marketing options.

Use market intelligence to understand market specifications

The only way to understand market specifications and the most cost-effective marketing options for your beef enterprise is by being well informed. Use market intelligence to implement a continuous improvement system by responding to short- and long-term price and market signals.

The National Livestock Reporting Service (NLRS) is an independent market intelligence agency that offers:

- up-to-date livestock market data collected from major prime and store markets
- direct sales and wholesale meat market data
- regular weekly summaries
- slaughter statistics
- skin and hide prices.

By following markets and keeping good records of your sales, you may discern gradual trends and market shifts, thus enabling long-term planning to maximise returns from livestock production.

You should track the factors influencing prices over time, not just current prices, to identify long-term trends and aid decision-making.

Further information

- Information about market specifications on the MLA website
- Information on Meat Standards Australia (MSA) on the MLA website
- Information on National Livestock Reporting Service (NLRS) on the MLA website
- NSW Department of Primary Industries provides information on beef gross margins at www.dpi.nsw.gov.au/agriculture/farm-business/budgets/livestock

Procedure 2

Manage the nutrition, health and welfare of sale animals to meet target market specifications on time.

Guidelines for managing the grazing system to achieve livestock performance targets

The stocking rate (DSE/ha) and total number of cattle sold each year has a major impact on the profitability of southern beef enterprises. Retail yield is affected by muscling (principally due to genetics) and fatness (partly due to genetics and partly due to quantity and quality of feed consumed). It is important to know your herd capability (genetics) in regard to muscularity, yield and fatness.

Ensure market specifications are met at the point of sale

Sale animals typically include weaners, cull breeding stock and traded stock. The predicted sale liveweight, carcass weight and any other characteristic required for the target market need to be within the specified range to ensure market specifications are met at the point of sale. The liveweights at different ages are well known for most prime beef markets. So are the minimum and maximum backfat requirements for different cattle liveweights. See [Tool 7.1](#) and [Tool 7.2](#) for a range of market specifications.

Manage the production system to meet target market specifications

A goal is to have no more than 10% of animals fall outside the target market specifications for age, sex, dentition, weight (live or carcass), muscle and fat. To achieve this, manage the grazing and husbandry system to reach the desired target performance and market outcomes.

Growth rate will affect the weight for age, fatness, marbling and ossification score:

- **Weight for age** is influenced by growth rate. A faster growth rate results in heavier and fatter animals of the same age, or younger animals of the same weight (Wilkins et al., 2009). The main contributor to growth rate is how the supply and quality of feed on offer is managed.
- **Fatness and marbling** are mainly affected by growth rate. A higher growth rate within a herd sale group results in increased fat thickness and intra-muscular (marbling) fat content at the same weight (McKiernan et al., 2009). These are influenced by how you manage feed quality and supply.
- **Ossification score** increases as animals get older. Also, at the same age, heifers have higher ossification scores than steers. You can ensure animals retain ossification scores below the maximum allowable for Meat Standards Australia (MSA – see [Tool 7.3](#)) quality grading (less than 300 or as low as 200 in some markets) by ensuring a whole-of-life growth rate of more than 0.6kg/day.

Module 2: Pasture growth and **Module 3: Pasture utilisation** discuss pasture growth and expected animal performance and should be read in conjunction with this module. Poor growth early in life (up to weaning) can result in smaller carcasses than from cattle grown rapidly to weaning when marketed at the same age or conversely they will be older when marketed at the same weight (which could affect market suitability). These slow grown animals will, however, show little or no difference in carcass composition or beef quality when finished. Take this into account when planning the beef breeding enterprise around the seasonal patterns of pasture growth – see [Module 1: Setting directions](#).

Avoid feed restrictions longer than two months in cattle up to 250kg liveweight

Animals fed to achieve target weights more quickly will eat less feed per kilogram gain. So plan carefully how your sale cattle need to grow to meet the market specifications:

Carefully plan the growth of sale cattle to market

- Calculating the daily growth rate required from your starting point (say weaning) to the expected sale date for the stock to achieve the necessary sale weight (see [Table 1](#), below).
- Providing the cattle with pastures of sufficient quantity and quality to achieve the predicted growth rate. Refer to [Module 3: Pasture utilisation](#) for more information about cattle performance on pasture, and [Tool 3.5](#) to assist with these calculations.
- Routinely weighing cattle from weaning up to point of sale to compare their actual liveweight with the predicted growth path to ensure that they reach the target weight at sale.

The benefits will be greater precision in marketing, a higher proportion of your cattle meeting market specifications and a higher price.

Table 1: Example of calculations for growth rate

Current liveweight (eg at weaning)	250kg
Desired sale weight	450kg

Weight gain required to meet sale weight	200kg (ie 450 – 250)
Time to sale	250kg (for example)
Average growth rate required to meet sale weight	0.80kg/day (ie 200/250)
Expected weight 100 days after weaning	330kg (ie 250 + 100 × 0.8)
Actual weight 100 days after weaning	310kg (at weighing after 100 days)
Time left to sale	150 days (ie 250 dash; 100)
Average growth rate required to meet sale weight	0.93kg/day (ie [450 – 310]/150)

In this example, better nutrition will be needed from here to achieve a higher growth rate. It is important also to ensure growth rate is sufficient for fat lay down for the particular target market.

Manage the grazing system to meet target market outcomes

The focus needs to be on the relationship between cattle nutrient requirements, pasture availability and quality and how these interact to affect rate of growth, composition of growth and product quality. The basic principles of animal to meet target nutrition, their relationship to animal performance and the conversion of pastures to animal product are discussed in Chapter 9: Growth pathways to successful market outcomes of the MLA publication, *Towards Sustainable Grazing: The Professional Producer's Guide*.

Managing cattle to meet weight and fat specifications

A tool is available to assist producers make nutritional decisions that impact market specifications – the MLA *BeefSpecs* calculator (see Tool 7.3).

BeefSpecs is a simple computer tool on the MLA website at www.mla.com.au/beefspecs. *BeefSpecs* will calculate growth rate (demonstrated in Figure 1 above), as well as final fat based on the expected growth rate and other inputs. It reports final live and carcass weights and predicts P8 fat thickness, using inputs of initial liveweight, frame score, breed type, current P8 fat depth, expected average daily gain, feed type (grain or pasture), time on feed and use (or not) of growth promotants.

BeefSpecs data can be used to make critical management decisions. For example, forage crops or supplementary feeding may be used to make animals grow faster, or producers may opt to grow cattle out gradually so they don't get over fat.

1. *BeefSpecs* highlights critical short term factors that can be manipulated to achieve the desired outcomes:

- time on feed (simple impact of initial weight and fat).
- growth rate (interaction with maturity type and subsequent effect on fat).
- hormone growth promotants (HGP) (effect on fat)
- assessment skills.

1. *BeefSpecs* facilitates an assessment of long term factors that can be manipulated to achieve the desired outcomes:

- maturity type (genetics)
- pre-finishing treatment (starting fatness)
- feed planning.

At all times, it is important that costs associated with achieving the target growth path are considered together with returns from the expected outcomes.

Flexible management is required to incorporate both short- and long-term targets and multiple options for stock production. If you find that your cattle are:

Use flexible management to meet stock performance targets

- doing better than planned, consider new options such as an alternative market selling earlier, conserving excess pasture or purchasing additional stock.
- not meeting target, recalculate the growth rate and develop a new strategy such as an alternative market, alternative pasture sources, supplementary feeding, lot feeding or alternative pasture management.

The timing of these decisions needs to be early enough to allow the growth path to be adjusted to meet the timing of the revised point of sale. *BeefSpecs* can assist here also.

Use feedback from the marketplace to inform future marketing decisions

Other corrective actions may be based on market feedback. Although this is received after the current sale event it can be used to improve the planning and management of the nutrition and health of your cattle to meet future market specifications.

An additional option is to change the genetic characteristics of the animals selected for mating, if you are unable to deliver to the specifications required in your environment with the current genetics. You need to ensure that this will be profitable and feasible and recognise that this is a longer-term solution as discussed in **Module 1: Setting directions** and **Module 4: Cattle genetics**.

What to measure and when

- Ongoing measurements need to be taken for liveweight and any other characteristics included in the target market specifications that can be monitored for live animals. This may involve one or a combination of:
 - Real-time ultrasound measurements of fat depth, marbling score and eye-muscle area
 - Visual appraisal of muscle and fat score
 - Dentition
 - Pregnancy testing of females.
- For liveweight and growth rate, measurement of growing stock should begin at weaning and be repeated at least every three months (more frequently with rapidly changing pasture conditions) until two months before sale, from which point cattle should be monitored according to feed conditions and target market/s.
 - The percentage of your animals that met target market specifications, when they were sold. Collect carcass feedback when available.
 - The timing of stock health treatments should be planned to ensure there is no restriction to market access. Comply with the manufacturer's instructions for use.

Good live animal assessment skills should be obtained or honed by all producers to adequately allow them to assess stock at critical times pre finishing and for marketing purposes.

Quite often, the failure of animals to meet specifications is due to poor assessment prior to sale where decisions could have been made to either keep animals longer, sell earlier or simply draft into specific mobs targeted at alternative markets. These skills should be an essential part of a cattle producer's 'kit' similar to pasture assessment skills.

The skills can be acquired at a number of live animal assessment skills workshops generally conducted by various state departments of primary industries and agriculture across southern Australia and also at More Beef from Pastures workshops.

Further information

- Information about selecting livestock for markets and supplying markets on the MLA website
- Information on **Meat Standards Australia (MSA)** on the MLA website
- Information on **BeefSpecs** on the MLA website
- *MLA Tips & Tools* factsheet, **BeefSpecs** – a tool to assist in meeting market specifications
- NSW Department of Primary Industries information about live animal assessment.

Procedure 3

Manage cattle two to three weeks before sale and during mustering and transport to achieve best carcase dressing percentage and avoid downgraded meat and carcasses

Guidelines for managing cattle two to three weeks before sale and during mustering and transport

The total price received for your cattle can suffer if the carcase contains dark cutting meat or bruising. This can reduce the total weight of carcase receiving payment due to trimming of bruised meat from those parts not included in the AUS-MEAT bruise scoring areas. The price for the remaining (trimmed) carcase may also be reduced.

Practise good presale management to maximise returns

The causes of dark cutting meat and bruising can be controlled by managing the:

- yard weaning to accustom cattle to human contact in yard situations
- nutrition of animals over the last two to three weeks before sale
- handling of animals immediately before and during transport
- handling and slaughter procedures on arrival at the abattoir.

Finish cattle for market on high quality pasture or feed supplements

The content of glycogen stored within the muscles of the animals at slaughter has a major influence on ultimate pH and eating quality of the meat. Eating quality is affected when there is too little glycogen present.

When glycogen stores are depleted the pH of meat may exceed 5.7 and a darker, unacceptable meat colour develops. Muscle glycogen can be maintained by ensuring cattle keep growing for at least two weeks (preferably four weeks) before slaughter and are not unduly stressed before slaughter. The susceptibility of cattle to stress during handling and transport can also be reduced if they have been accustomed to contact with humans, particularly at weaning as described in **Module 5: Weaner throughput** and if they are also handled using low stress stock handling techniques (see **Module 6: Herd health and welfare**)

Manage on-farm factors that influence dressing percentage

The carcase dressing percentage declines rapidly when the nutritional quality of feed declines. Dressing percentage can also be affected by:

- total time off feed before slaughter
- animal's genetic make-up
- animal's fat cover and muscle score
- 'shrinkage' or trim percentage applied by the processor.

The breed of your cattle is also an important component of maximising the dressing percentage, for example the production of lightly muscled dairy breeds and their crosses is likely to result in lower than average dressing percentages. A working knowledge of the procedures used by the purchaser to assess shrinkage when determining the weight of cattle delivered to an abattoir is also essential if animals are to be managed effectively before slaughter to receive the best price per head.

Use feedback to finetune management of the production system

When available, abattoir feedback will inform you of the corrective actions to be taken to reduce dark cutting and bruising. If problems are identified, you need to consider the following corrective actions.

- Move stock to an appropriate pasture with a nutritional quality of more than 11MJ ME/kg DM and preferably at least 1,500kg green DM/ha, or feed high-energy supplements during the last three weeks before sale.
- Only feed high energy supplements during the last three weeks before sale when it can be managed carefully to avoid nutritional disorders and competition/jostling for feed.
- Sell cattle before pasture quality falls below 11MJ ME/kg DM.
- Avoid stressing animals during droving and transport to the abattoirs.
- Use appropriate 'cattle moving' practices (see 'Tips for better cattle handling' box, below).
- Maintain regular contact between humans and cattle throughout their life.
- Avoid mixing mobs of cattle during droving, transport to and at the abattoirs.
- Use polled breeds or ensure horned animals are dehorned appropriately.
- Change yard and transport structures and systems to avoid bruising by ensuring that yards and loading facilities do not have sharp

corners or areas where animals can form a crush. Ensure adequate constraint, no sharp edges and correct numbers of animals per compartment during transport.

- Ensure time off feed is most appropriate for the particular market outlet.

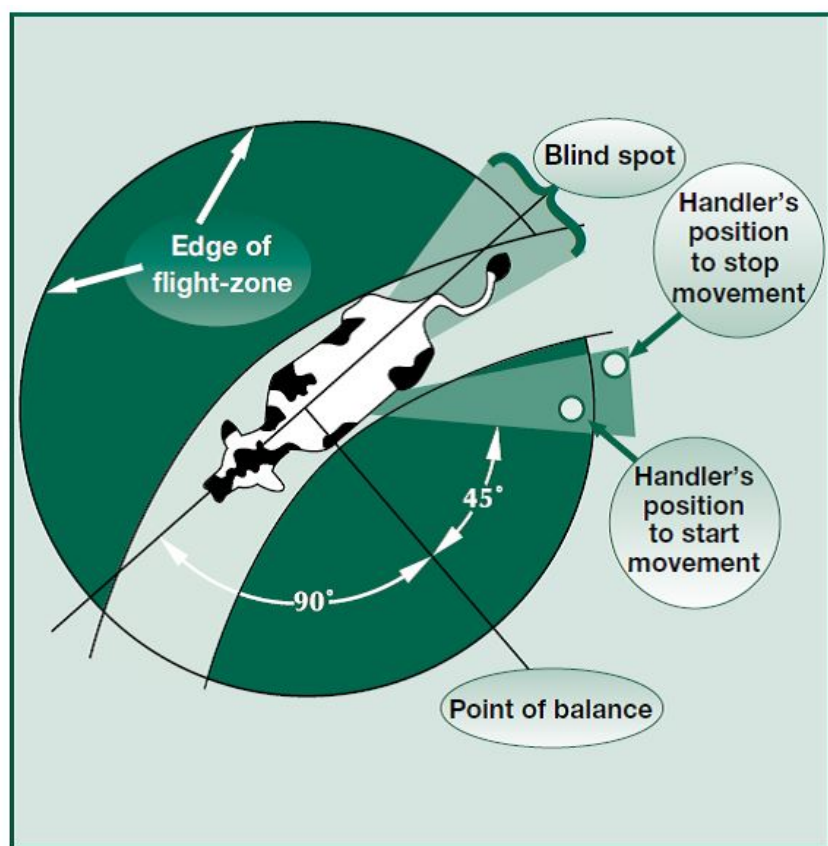
If you are not confident that an animal will meet a tight market specification, such as Meat Standards Australia (MSA) (see **Tool 7.3**), put it into a market with different specifications.

Tips for better cattle handling

Cattle have wide angle vision in excess of 300°. To move cattle more easily, understand the 'flight zone' outlined in Figure 1 and associated behavioural patterns.

- Work with the lead animal; the others will follow.
- Position yourself adjacent to the head of the lead animal and at about 90° to the direction the mob is to be moved.
- Be at a distance appropriate for the particular mob (ie where your presence is recognised but the lead animal does not attempt to move away from you).
- Be on the side of the lead animal that you wish the mob to turn away from (cattle are uncomfortable losing eye contact with you and are reluctant to turn with their back towards you).
- Moving forward 90° will cause the lead animal to slow down, and moving behind 90° will either speed the animal or encourage it to turn towards you.

Figure 1: The flight zone surrounding cattle



What to measure and when

- Use Meat Standards Australia (MSA) guidelines as standard operating procedure.
- Measure pasture quality and availability over the three weeks immediately before sale.
- Check compliance reports from the abattoir on carcass downgrades due to high ultimate pH, dark cutting meat and bruising. The location of bruising may indicate the possible cause so that appropriate action can be taken.
- Monitor the time cattle are off feed in relation to the target market.
- Weigh and assess cattle for fatness, then draft into sale mobs, preferably two to three weeks before sale to minimise stress and bruising.

Further information

- NSW Department of Primary Industries *Agnote* series on dark cutting (2001)
- MLA has produced a range of publications to assist producers understand and meet MSA specifications.
- NSW Department of Primary Industries *Primefacts* no. 340 (2007), *Dressing percentages for cattle*.

Procedure 4

Regularly evaluate market opportunities as feed supply, financial situation, or market prices change and select markets to maximise enterprise profit

Guidelines for regularly evaluating market opportunities

New markets are continually emerging and prices change frequently. Revisiting your decisions about preferred markets on a regular basis and the method and timing of sales puts you in a good position to take up opportunities arising from changes in market specifications, market prices or selling options. Use [Tool 7.1](#), [Tool 7.5](#) and [Tool 7.6](#) to evaluate market opportunities.

Regularly assess and develop new marketing options

Look for alternative marketing opportunities that may better match the range of product specifications you can supply. A particular market opportunity may justify an increase in inputs to the production system, to enhance your capacity to deliver to specifications. In this case, complete a partial budget to confirm the option and examine the risks. The [MLA Cost of Production Calculator](#) may be a valuable aid when considering the costs of inputs versus the improved value of product.

Maintain key customer and supplier relationships

While looking into new market options, consider building alliances and developing long-term relationships with regular customers. If switching to an alternative selling system, ensure the pros and cons of a change are carefully considered before a final decision is taken. See [Tool 7.5](#) for a range of selling options currently available across southern Australia, or consider attending MLA's [Confident livestock marketing](#) workshop.

Forward contracts offer efficiency and consistency to some enterprises. A forward contract is a contractual agreement between a seller (producer) and a buyer (processor) to supply a given product at a future date for a given price. In some cases, the price is fixed, thereby reducing the producer's exposure to a fall in market price.

What to measure and when

- Monitor the predicted net returns and best time of sale for each group of animals destined for the target market/s, and all potentially available buyers. This may need to be conducted frequently as sale groups approach the projected sale date, or if the market prices are irregular.
- Obtain market information from MLA, including the National Livestock Reporting Service (NLRS) for accurate and timely market data (see [Tool 7.6](#)).

Beef cattle market specifications

There is an ever-increasing number of markets available to southern Australia beef producers. Each of these has particular specifications that must be met to attract the highest price. A sound knowledge of the specification requirements is fundamental to the development of production pathways and to the decision to target certain markets in line with global demands and regional onfarm efficiencies.

Examples of animal and carcass specifications for several markets available to the southern Australian beef industry

Owner and managers should consult with their potential customers to determine precise specifications as these can change over time.

Table 1: Specifications for common prime beef markets

Characteristic	Market		
	Japan	EU	Local trade MSA
HSCW (kg)	300–420	320–420	160–220
Dentition (adult teeth)	0–6	0–4	0
P8 fat depth (mm)	7–22	6–22	3–10
Butt/muscle shape score	A–C	A–C	A–C
Bruising	Nil	Nil	–
Sex	Steer and female	Steer and female	Steer and female
Ossification score	–	–	< 180
Marbling score	–	–	> 0.5
Fat colour score	0–3	0–3	0
Meat colour grade	–	1b–3	1a–2
Eye muscle area (cm ²)	–	> 85	70
Ultimate muscle pH	–	–	< 5.71
Loin temperature (°C)	–	–	< 9
Retail meat yield (%)	–	–	70
HGP status	–	Free	Yes
Acceptable compliance (%)	–	90	85

Table 2: Feedlot entry specifications for long-fed, mid-fed, short-fed and trade feedlot targets

Characteristic	Long-fed 220+ days	Mid-fed 120–150 days	Short-fed 100 days	Trade 70 days
Sex	Steer	Steer	Steer	Steer and female
Dentition (adult teeth)	0–4	0–2	0–2	0
Breed	Angus, Murray Grey, Shorthorn	British breeds and crosses	British breeds, <i>Bos indicus</i> crosses, European crosses	British breeds, <i>Bos indicus</i> crosses, European crosses
Empty entry weight (kg)	400–600	420–480	440–480	250–350
HGP status	Free	Free	Any	Any
Frame score	> 4.5	> 4.5	> 4.5	–
Muscle score	C+	C+	C+	D+

Condition score	1–2	1–2	1–2	1–2
Temperament	Quiet	Quiet	Quiet	Quiet, weaned, yard broken

Table 3: Feedlot cattle exit specifications

Characteristics	Long-fed 220+ days	Mid-fed 150 days	Mid-fed 120 days	Short-fed 100 days
HSCW (kg)	380–450	300–420	300–450	300–40
Dentition (adult teeth)	0–6	0–6	0–6	0–4
P8 fat depth (mm)	10–40	10–27	10–27	6–22
Marbling score	3 up	2 up 50% 2 up	1 up	Any
Fat colour score	0	0	0	0
Meat colour score	1	1	1	1
Eye muscle area (cm ²)	–	> 85	> 85	> 85
Antibiotic status	Free	Free	Free	–
Retail meat yield (%)	67–69	68–70	65–70	–
HGP status	Free	Free	Free	Any
Liveweight equivalents (kg)				
• minimum	670	550	550	540
• maximum	800	750	800	720
Acceptable compliance (%)	70	90	90	96

Table 4: Examples of breeding and store stock specifications

Characteristic	Breeding females	Store weaners
Breed	Angus	Hereford
No. head required	25	200
Liveweight	480	220
Frame score	4.5	5
Dentition (adult teeth)	2	0
Age (months)	24	7
Condition score	2.5	1
Butt/muscle shape	A–C	A–C
Bloodlines	Te Mania	–
Sex	Female	Steer and female
Pregnancy status	Pregnancy-tested, in-calf (PTIC)	–
Calving date	25 July 03	–
Breedplan EBVs	Yes	–
Marbling (%)	2.1	0.5
Feed conversion efficiency	8:1	–

Eye muscle area (cm ²)	–	–
Structural soundness	Yes	Yes
Temperament	Quiet	–
Health treatments	7 in 1	–
HGP status	Free	Free

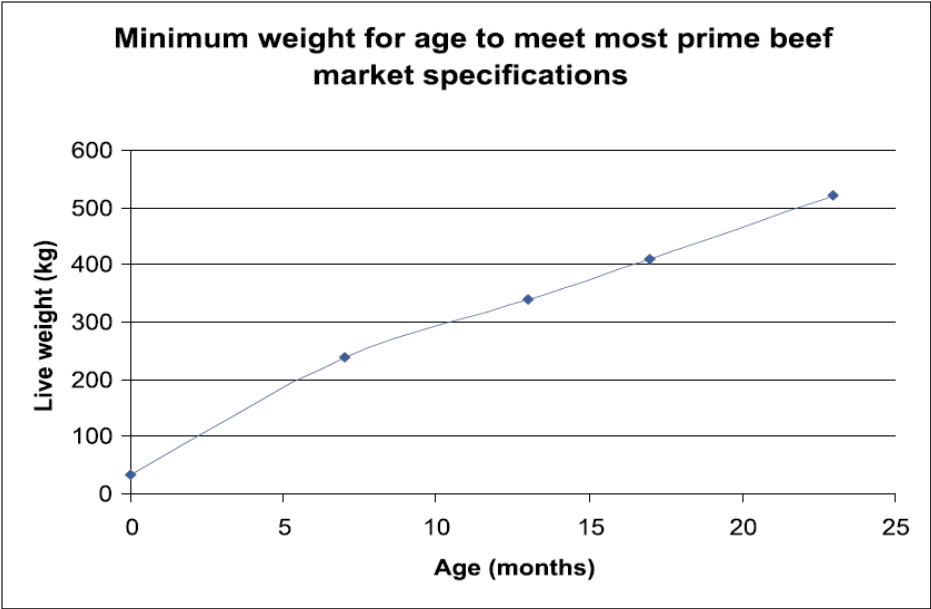
Table 5: Compilation of grids across Australia to demonstrate average market requirements and discounts

Open PDF

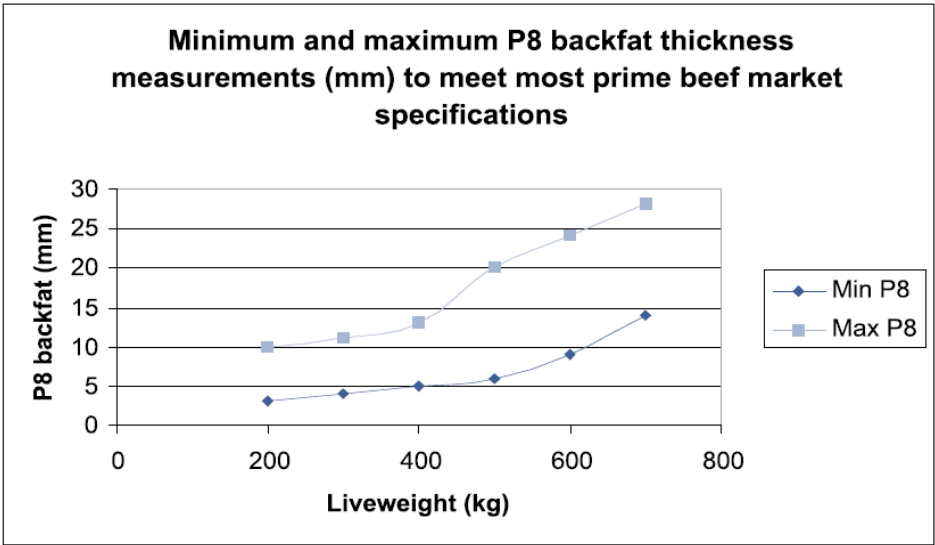
Lightweight Yearling	HSCW			P8 Fat			Bruising		Dentition		Sex		Butt Shape	
	Kg range	c/kg		Mm range	c/kg		Score	c/kg	Teeth	c/kg		c/kg	Score	c/kg
200-270kg	180.1	200	-15	0	3	-40	0	0	0	0	S	0	A	0
5-17mm	200.1	270	0	4		-10	1	0	2	0	H	-5	B	0
	270.1	300	-15	5	17	0	2	0	4	-60			C	0
	300.1	330	-30	18	20	-10	3	0					D	-10
	330.1	>	-45	21	>	-30	4	0						
							5	-30						
							6	-30						
							7	-30						
							8	-30						
							9	-30						
Middleweight Yearling	HSCW			P8 Fat			Bruising		Dentition		Sex		Butt Shape	
	Kg range	c/kg		Mm range	c/kg		Score	c/kg	Teeth	c/kg		c/kg	Score	c/kg
260-320kg	180.1	200	-50	0	3	-45	0	0	0	0	S	0	A	0
5-20mm	200.1	220	-20	4		-15	1	0	2	0	H	-5	B	0
	220.1	240	-15	5	20	0	2	0	4	-20			C	0
	240.1	260	-10	21	22	-10	3	0	6	-30			D	-15
	260	320	0	23	32	-15	4	0						
	320.1	340	-5	33	42	-30	5	-15						
	340.1	>	-40	43	>	-50	6	-25						
							7	-30						
							8	-40						
							9	-50						
Heavy Yearling	HSCW			P8 Fat			Bruising		Dentition		Sex		Butt Shape	
	Kg range	c/kg		Mm range	c/kg		Score	c/kg	Teeth	c/kg		c/kg	Score	c/kg
320-360kg	200.1	220	-35	0	2	-45	0	0	0	0	S	0	A	0
5-22mm	220.1	240	-25	3	4	-15	1	0	2	0	H	-5	B	0
	240.1	260	-20	5	22	0	2	0	4	-5			C	0
	260.1	280	-15	23	32	-5	3	0	6	-10			D	-10
	280.1	300	-10	33	42	-30	4	0	8	-15			E	-45
	300.1	320	-5	43	>	-50	5	-15						

Liveweight and fat score ranges

Graphs indicating liveweight and fat score ranges over which specifications for most prime beef markets are likely to be achieved



Graph 1: Minimum weight for age to meet most prime beef market specifications

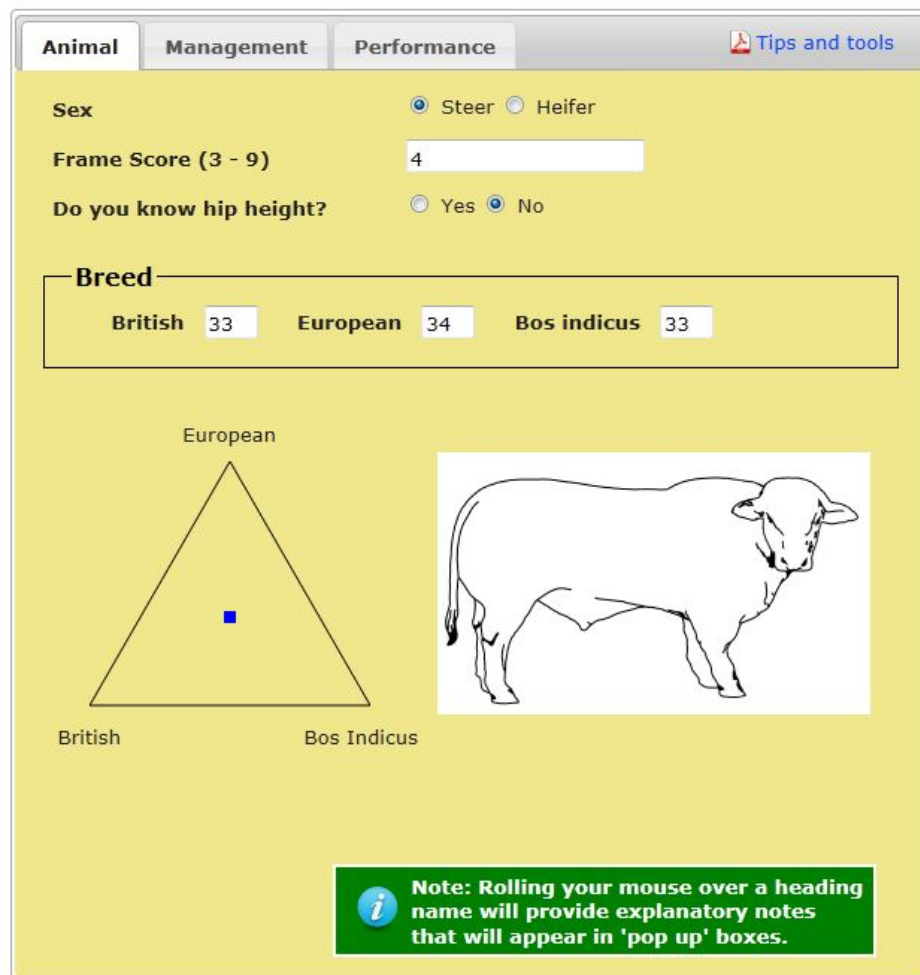


Graph 2: Minimum and maximum P8 backfat thickness measurements (mm) to meet most prime beef market specifications

BeefSpecs

The MLA *BeefSpecs* calculator is an electronic tool that assists producers to meet target market specifications on time.

The keys to meeting market specifications are to understand the specifications and customer requirements, to assess and monitor the progress of your animals, to manage the grazing system or use high quality finishing systems, to seek feedback and to evaluate marketing options regularly.



The screenshot shows the 'Animal' tab of the BeefSpecs calculator. It includes fields for Sex (Steer selected), Frame Score (3-9) set to 4, and Do you know hip height? (No selected). The Breed section shows a triangle diagram with vertices labeled European, British, and Bos Indicus, and a blue dot indicating a specific breed mix. A line drawing of a cow is also present. A green note box at the bottom states: 'Note: Rolling your mouse over a heading name will provide explanatory notes that will appear in 'pop up' boxes.'

Figure 1: Screenshot of BeefSpecs

Current market specifications for beef cattle are primarily based on carcase weight and rump (or P8) fat thickness.

BeefSpecs allows you to easily explore the factors that affect fat deposition (and therefore fat thickness) at a future point in an animal's growth path. You can use this information to determine if and what management changes are needed to alter that growth path, thereby assisting a greater proportion of your animals to meet market specifications.

The BeefSpecs calculator can be downloaded onto your computer from the MLA website: www.mla.com.au/beefspecs or you can use it online.

Acknowledgements

MLA acknowledges the matching funds provided by the Australian Government to support the research and development of this tool.

BeefSpecs was developed by the CRC for Beef Genetic Technologies and made available to producers by MLA.

Hormonal growth promotants

Hormonal growth promotants (HGP) are supplements of the hormones that naturally occur in all animals.

HGPs are contained in silicone or compressed powder and implanted under the skin on the back of the animals ear, releasing a low dose of hormone to the animal over the life of the implant. They are used to improve growth rates and feed efficiency.

HGPs cause no harm to the animal being implanted and research has shown meat treated with HGPs is safe for human consumption.

HGPs have been used in Australia since 1979 and are used in most major beef producing countries around the world including the United States.

The use of HGPs is strictly regulated and all HGP products must go through a rigorous accreditation process which is administered by the **Australian Pesticides and Veterinary Medicines Authority (APVMA)**.

Research trials have shown that animals treated with an HGP have increased weight gain of 10–30% over untreated animals depending on the HGP used and the quality of feed available to the animal. Although feed intake also increases, treated animals gain weight more efficiently. Being able to produce more beef from less feed means that producers can increase productivity and minimise environmental impacts.

HGPs are available to all beef producers at many rural retail outlets. Producers who use them must identify treated animals with an ear mark and maintain purchase and use records in the event of a producer audit.

It is important to have an accurate record system that traces all HGP use. Losses and damaged HGP implants must be recorded. Grazing cattle treated with a trenbolone acetate (TBA) or androgen compound implant should receive minimal handling for two months after treatment. These compounds are known as 'aggressive' implants.

Current over the hooks selling pays on a carcass weight/P8 fatness grid. Subsequent adjustments are for pH or meat colour. Of these, HGPs impact on fatness and tenderness. It is now known that HGP application has a negative effect on meat eating quality. However, few meat markets adjust prices for specific meat quality attributes.

The MSA grading model now includes an HGP treatment effect. It will have the one penalty for all HGP products. Research has shown that HGPs will reduce marbling (intramuscular fat) so this impacts on the MSA score. The same research also found that the HGP effect varied across different cuts (muscles). The main grilling cuts (higher priced) show the greatest effect.

Processors can use tenderstretch hanging and/or extended ageing (eg cryovac) to offset the negative eating effects.

The European Union has banned the use of HGPs and also the import of products from treated cattle since 1998. Some other domestic markets have also banned their use (eg Coles supermarkets) and producers are cautioned to determine their market requirements for HGPs.

Further information

- The Beef CRC publication: *HGPs - Good for profit, not so good for meat quality* is available for download online: www.beefcrc.com.au/beefcrfactsheets.
- The NSW Department of Primary Industries Primefacts No 790: Understanding hormonal growth promotants is available online: www.dpi.nsw.gov.au/
- The MLA Tip & Tool: *The effect of growth promotants on beef eating quality* can be downloaded from the MLA publications database: www.mla.com.au/publications
- The SAFEMEAT publication *Cattle and HGPs*, available for download from: www.safemeat.com.au

Selling options

The ability to optimise returns from the sale of livestock depends on the selling method you choose and the sale process you follow.

Livestock selling systems vary in their overall efficiency and suitability for individual enterprises or circumstances. The methods available are outlined below.

Selling method	Description
Saleyard auction	Livestock are transported to central saleyards and sold to the highest bidder, fetching prices that reflect the supply and demand of the market place on the day. No individual feedback.
Paddock sale	Stock are inspected on the vendor's property by the buyer or agent and sold straight out of the paddock. Feedback sometimes on request.
Stockyard sale	Stock are weighed and graded, then priced for sale.
Over the hooks	Stock are delivered directly to the abattoir, with change of ownership taking place at abattoir scales. The terms of sale will vary between abattoirs. Generally good feedback.
AuctionsPlus	Provides electronic online auctions for the sale of livestock by description (formerly called CALM). AuctionsPlus combines the best features of the saleyard system while allowing direct consignment to the abattoir or buyer. Feedback by arrangement.
Forward contracts	A contractual agreement between a seller (eg producer) and a buyer (eg processor) to supply a given product at a future point in time for a given price. In some cases, the price is fixed, thereby reducing the producer's exposure to a fall in market price. Feedback by arrangement.
Producer alliances	A group of producers working together in groups to properly service market place requirements to the benefit of themselves, their customers, and others in the beef marketing chain. Very good feedback
Value based	Refers to the principle of being paid for the inherent value (quality and quantity) of the product to the buyer and end user. Any selling system that provides clear signals from the retailer or consumer back to the producer and has a pricing system supporting those signals is a value based marketing system. Best feedback.

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Obtaining market information

MLA provides a range of publications, latest news, analysis, information and statistics for the Australian livestock and red meat industry.

MLA's National Livestock Reporting Service (NLRS) provides industry statistics and detailed reporting for major cattle and sheep markets including both physical and direct sales.

In addition, MLA's expert analysts examine and interpret developments in, and prospects for, the Australian domestic market, key export markets and major competitors.

Information on Australia's livestock and red meat industry can be accessed by:

1. reading MLA's relevant and timely publications for the latest news and statistics;
2. talking one-on-one with MLA's specialised market analysts; and
3. viewing the latest information on MLA's website: www.mla.com.au

1. PUBLICATIONS

Latest news, analysis and information

- Meat & Livestock Weekly (weekly)

Access the very latest news, analysis and trends for domestic and key export markets in an easy-to-read and concise format. Includes information on buyer and competitor activity and trends.

Market analysis and forecasting

- Australian Cattle and Sheep Industry Projections and Updates (annual)

A must-have for red meat industry participants interested in the prospects for the cattle and sheep industries over the next five years. Provides forecasts for supply and demand in both domestic and export markets and examines likely threats and opportunities facing the industry. Individual cattle forecast updates are provided mid-year.

- Industry Overview (monthly)

Obtain monthly analysis of the factors currently influencing prices, supply and demand in the Australian cattle industry. Includes a look at major competitor activity and changes in export markets.

- Market briefs

Keep up to date with in-depth reports on the latest relevant issues in individual red meat markets or sectors. Each set includes a minimum of four publications per year, and briefs can be bought individually.

Livestock market reporting

NLRS physical market reports (weekly)

Ideal for those looking for detailed reporting of prices and yardings for individual stock categories sold at major cattle physical markets. Includes on-the-ground commentary explaining local market trends.

- NLRS state over the hooks reports (weekly)

Access the latest over the hooks rates generated each Monday directly from processors, agents and producers.

- NLRS state slaughter reports (weekly)

Provides slaughter totals for cattle generated each Monday from data collected from registered abattoirs in each state.

- NLRS state summary reports (weekly)

Suitable for those looking for a general overview of price trends, indicators and major influences on all markets in individual states over the past week.

- NLRS hide reports (weekly)

Suitable for processors and hide traders requiring a general, weekly overview of price trends for green, brine cured and wet blue hides.

Industry information and structure

- Statistical Review (annual)

All the livestock and meat statistics you've ever wanted for Australia and other major red meat producing and trading countries.

- Industry Insights (five-year publication)

Using simple graphs, this provides a comprehensive outline of the structure of the Australian red meat industry from farm gate to plate. Includes information on individual sectors and major competitors.

2. SPECIALISED MARKET ANALYSTS

MLA has a dedicated team of market analysts covering overseas market access issues and the following markets:

- Australian cattle and beef
- Australian skins and hides
- North America
- South America
- Japan
- Korea
- South Asia
- Europe
- Middle East and Africa.

The MLA team of market analysts is available to answer queries on a wide range of topics including:

- contact details for Australian-based exporters and overseas-based importers
- overseas market access conditions and status
- export market developments (eg US quota, Japanese safeguard, BSE in export markets)
- Australian export performance in key markets
- live export destination updates
- price trends for Australian and overseas markets
- saleyard prices, yardings and levels of interest
- slaughter statistics and trends
- state over the hooks prices
- weather outlook.

3. WEBSITE

MLA also provides the latest news and a comprehensive range of red meat data on the MLA website, www.mla.com.au

From this site you can access the following:

Domestic market information:

National Livestock Reporting Service:
www.mla.com.au/nlrs

Latest market news:
www.mla.com.au/marketnews

Overseas market information

Japan:
www.mla.com.au/japan

Korea:
www.mla.com.au/korea

South America:
www.mla.com.au/southamerica

United States:
www.mla.com.au/unitedstates

Europe:
www.mla.com.au/europe

Middle East:
www.mla.com.au/middleeast

South Asia:
www.mla.com.au/southasia

4. OTHER SOURCES

Rural newspapers

The rural newspapers, such as *The Land*, *Queensland Country Life*, *Stock and Land*, *The Weekly Times*, *Stock Journal* and *Countryman*, often rely on NLRS information to form the basis of their markets pages supported by producer, agent and buyer comments.

Independent market reports

Aside from the newspapers, other companies also provide market reports for the various cattle markets. These independent reports usually use the NLRS indicators, along with their own understanding of the markets, to form a view on the current market. These are often available on a subscription basis.

- www.theland.farmonline.com.au
- www.qcl.farmonline.com.au
- www.sl.farmonline.com.au
- www.sj.farmonline.com.au
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