

Setting directions

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 natural pastures and grazing system to achieve growth targets and successful market outcomes.
- 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 pastoral grazing business makes a sustained profit by growing and converting native pasture into beef products that consistently meet market specifications. Every producer should strive to:

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

There is a range of potential markets available to beef producers in the arid pastoral zone of Australia. These include:

- backgrounding cattle for feedlots
- culled breeding animals
- pregnancy-tested in-calf heifers and cows
- unjoined/maiden heifers
- animals for live export and niche markets like organically certified.

Each market has defined specifications for animals to return the highest price.

Many pastoral properties in the arid zone of Australia have land types and climate suited to breeding herds, which turn off lighter feeder steers for live export markets.

The absence of large scale processing works in close proximity means pastoral enterprises may face logistical challenges and high transport costs for slaughter cattle, such as bullocks and cull cows that they produce. However, properties in areas with more productive arid zone land types, such as floodplains, and with easier access to markets may have the opportunity to produce finished cattle for slaughter markets.

The biggest hurdle for pastoral beef producers is meeting the market requirements for a consistent animal or beef product, both in terms of quality and quantity, because of the natural of highly variable seasons.

Production averages are significantly affected by drought. Similarly, rate of sales are also affected by drought, although some of this is masked by the averaging process. Sales generally increase significantly towards the end of a drought with an accelerated reduction in stocking rates but then decline again after the drought and restocking occurs.

There is also a growing trend for pastoral producers to market the 'natural' and, in some cases, organic attributes of their cattle and/or beef. However this may require modification of their existing animal husbandry and land management practices, as well as certification, which may take considerable investment in terms of effort and resources.

Like all beef producers, those in the arid zone are constantly faced with decisions about the:

- type of cattle to produce or acquire
- best management system to optimise production while maintaining the vegetation and feedbase
- relevant market.

These decisions are based on their experience and knowledge of their cattle's performance, seasonal conditions and their effect on the 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 identify the best 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 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 the condition and nutritional status of your native pastures will not enable your stock to meet certain target market specifications. When these circumstances arise, maximum profitability may be achieved by selling animals in other markets.

Clearly, there is a balance between maintaining long-term relationships with 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 supply chain management may also involve entering into forward contracts or similar undertakings to ensure your cattle are marketed to achieve a profit, while enabling maintenance and long term sustainability of your feedbase.

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. Regular evaluation of new market opportunities and alternative selling options (see **Tool 7.04**) 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 and the ongoing monitoring of land and vegetation (ie. your feedbase) condition.

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.

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. 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.

Table 1 illustrates the price variations observed for different muscle and fat scores within the yearling steer 330-400kg category. This category 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 the B3 (muscle score B and fat score 3), which averaged 8c/kg above the B2. However, these animals only represented 1% of total numbers. D-muscled cattle received the greatest discounts, averaging up to 29c/kg (\$0.29) lower than the C-muscled cattle. 85% of medium weight yearling steers were C-muscled, while 74% had a fat score of 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).

Fat score	Muscle score			
		B	C	D
2		184.1	169.5	140.3
3		192.1	176.0	152.9
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 native pasture growth and condition 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: Managing your feedbase**) and livestock responses (see **Module 3: Managing your natural resources**, 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: Maximising 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 and your natural resources and feedbase to achieve livestock performance targets and successful market outcomes.

Procedures for meeting market specifications

- Procedure 1 - Know your market specifications
- Procedure 2 - Manage the nutrition, health and welfare of sale animals to meet target market specifications on time
- Procedure 3 - Manage cattle before sale and during mustering and transport to achieve best carcass dressing percentage and avoid downgraded meat and carcasses
- Procedure 4 - Regularly evaluate market opportunities as feed supply, financial situation or market prices change and select markets to maximise enterprise profit

Setting directions

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

Well-defined specifications have existed for many years for Australian cattle targeted at particular market endpoints with values outside these ranges attracting discounts from processors. The primary carcass parameters have been hot carcass weight (HCW), age (teeth) and P8 fat depth.

Other carcass parameters include meat and fat colour, bruising and butt profile. Meat quality is becoming an increasingly important 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 are able to 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 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, IMF, or both.

Use market intelligence to understand market specifications

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

The **National Livestock Reporting Service (NLRS)** independently collects market data from the key auction and direct markets, in addition to slaughter statistics, wholesale, skin and hide prices. NLRS produces reports including:

- 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

- Meat Standards Australia
- NSW Department of Primary Industries provides online information on **Beef gross margins**.

Setting directions

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 your beef enterprise. Retail yield is affected by muscling (principally due to genetics) and fatness (partly due to genetics and partly due to quantity and nutritional 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 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. Refer to Tools 7.01 and 7.02 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.

The main contributor to growth rate is how the supply and nutritional quality of feed on offer is managed. For arid zone pastoral enterprises there are significant limitations as you are working with a predominantly natural vegetation system. Growth rate will affect:

- **weight for age** - faster growth rate results in heavier and fatter animals of the same age, or younger animals of the same weight.
- **fatness and marbling** - a higher growth rate within a herd sale group results in increased fat thickness and intra-muscular fat (marbling) at the same weight and are influenced by how feed quality and supply is managed.
- **ossification score** - increases as animals get older, also, at the same age, heifers have higher ossification scores than steers. Ensuring a whole-of-life growth rate of more than 0.6kg/day will allow animals to retain ossification scores below the maximum allowable for Meat Standards Australia quality grading (less than 300 or as low as 200 in some markets).

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 changes in native pasture (see **Module 1: Setting directions**).

Avoid feed and nutritional 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. The benefits will be greater precision in marketing, a higher proportion of your cattle meeting market specifications and a higher price. The focus needs to be on the relationship between cattle nutrient requirements, pasture availability and nutritional quality and how these interact to affect rate of growth, composition of growth and product quality.

Manage the feedbase and grazing system to meet target market outcomes and use flexible management to meet stock performance targets

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 and to maintain the feedbase and vegetation/natural resources.

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 future 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 the current genetic composition of the herd is unable to deliver to the specifications required. It is important to assess whether this will be profitable and feasible for the business, and recognise that it 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.
- The percentage of your animals that met target market specifications, when they were sold. Collect 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 for marketing purposes. 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 Australia.

Further information

- Meat Standards Australia (MSA)
- BeefSpecs

Manage cattle before sale and during mustering and transport to achieve best carcass 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 carcass contains bruising. This can reduce the total weight of carcass 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) carcass may also be reduced.

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 weeks before sale
- handling of animals immediately before and during transport
- handling and slaughter procedures on arrival at the abattoir.

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.

Good presale management maximises returns

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 and if they are also handled using low stress stock handling techniques (see **Module 6: Herd health and welfare**).

Use feedback to fine-tune management of the production system

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

- only feed high energy supplements during the last three weeks before sale when it can be managed carefully to avoid nutritional disorders and competition for feed
- sell cattle before pasture quality falls below 11 MJ ME/kg DM. Very few native pastures would consistently meet the 11MJ ME/kg DM required to achieve growth and productivity required for this market, hence the focus on feedlots and/or finishing in higher rainfall pastures.
- avoid stressing animals during droving and transport to the abattoirs
- use appropriate 'cattle moving' practices
- 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.

Tips for better cattle handling

Cattle have wide angle vision in excess of 300 degrees. To move cattle more easily, understand the 'flight zone' outlined in Figure 1 and become familiar with the following 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 (i.e. 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 of 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.

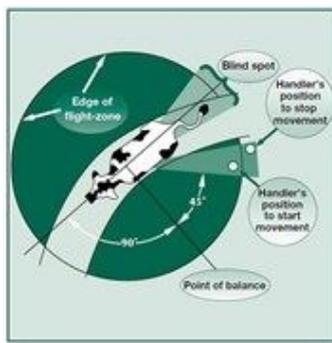


Figure 1: The flight zone surrounding cattle.

What to measure and when

- Use Meat Standards Australia (MSA) guidelines as standard operating procedure.
- 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 (2001) *Agnote series on dark cutting*.
- NSW Department of Primary Industries *Primefacts* no. 340 (2007), *Dressing percentages for cattle*.

Setting directions

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. Tools 7.01, 7.02 and 7.04 will assist you in evaluating 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 also 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 thought out before a final decision is taken.

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 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.

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.
- Market information is available from MLA, including the National Livestock Reporting Service (NLRS), which can assist in providing accurate and timely market data.

Setting directions

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 on-property efficiencies.

Access examples of animal carcass specifications for common prime beef markets, feedlot entry, feedlot exit, breeding and store stock and a compilation of grids across Australia demonstrating average market requirements and discounts.

Organic and other premium markets for the arid pastoral zone

- Premiums for organic product exist in both domestic and international (USA, Japan, Taiwan, China, EU) meat markets.
- Premiums exist for both grass fed and organic product (other niches may also exist including animal welfare and low carbon emission products).
- The levels of certification required for access to organic markets differ markedly between countries.
- Certification is required at different stages of production (growers, finishers, abattoirs) which will add to the administrative burden were you to market internationally as an independent group.
- Price premiums can differ according to the level of certification (e.g. best premium in US from USDA NOP certification at all stages, giving a premium of around 20-25%).

There is definite market potential in building a brand around the concepts of naturalness, exclusivity, authenticity and region.

- Initially, it would be advisable to link players in the value chain. It may be:
 - possible to tap into local existing markets (e.g. small organic/ premium butchers)
 - possible to tap into existing suppliers to international markets (e.g. processors, marketers)
 - more advantageous to use organic certification rather than a regional brand to access premium markets.
- An alternative would be to develop your own brand and conduct your own marketing campaign to promote the brand. This would require significant time and financial investment - some support is available from **Austrade** if looking to access the export market. An alternative is to focus on the domestic market, in particular high-end restaurants, up-market pub and club chains and gourmet food outlets - this would also be extremely time and resource consuming.



Setting directions

Access graphs that indicate liveweight and fat score ranges over which specifications for most prime beef markets are likely to be achieved.



Setting directions

The *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.

Current market specifications for beef cattle are primarily based on carcass 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 is available on the NSW Department of Primary Industries website.



Setting directions

Access information on hormone growth promotants.

Setting directions

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 (e.g. producer) and a buyer (e.g. 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 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.



Setting directions

Access information on obtaining market information.

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