Factsheet 8

MEAT & LIVESTOCK AUSTRALIA

Grow out options to meet market specifications

Maximising return is a key objective in growing out stock but to be successful, it's important that all costs and the likely return be identified and understood.

This factsheet discusses the factors that need to be considered when looking to grow out goats to meet market specifications and introduces decision making processes to assist producers identify their most profitable production alternatives.

Maximising return

A producer's return is generally maximised by selling goats at the highest rate available and at the heaviest weight achievable for that particular rate.

In most markets, the highest rate is governed by specifications (i.e. a lower and upper weight limit), so it's important to understand what these specifications are. Returns are typically maximised by growing the goats out toward the upper weight limit without exceeding this limit. This process sometimes incurs additional costs, such as the cost of supplementary feed, and it's crucial to understand what these costs are in deciding what to sell and when.

Opportunity cost should also be considered; that is, what other opportunities would be foregone to grow the goats out to meet a particular specification.

Understanding market specifications

When establishing a goat production enterprise, one of the first steps should be to identify a target market that suits the production environment. This should include consideration of the personalities and capabilities of the management staff as well as the resources available to the enterprise including year-round supplies of feed and water. Other aspects such as the anticipated goat growth rates should also be considered.

Once a market has been identified, the specifications for that market need to be clearly understood. Questions that need to be addressed include:

- Are there any breed or gender specifications for the particular market?
- What are the weight limits that apply to the market?
- What are the penalties for not meeting these weight limits?

Key points

- A producer's return is generally maximised by selling goats at the highest rate available and at the heaviest weight achievable for that particular rate.
- Optimising the profitability of a goat production enterprise requires an understanding of the target market and production environment.
- The consideration of how and when market specifications will be reached by young, actively growing goats requires an understanding of growth rates.
- Growing goats incurs a 'cost of production' and it's important that the cost of production, sale price and margin be understood for each of the options available when considering growing out goats.
- Once market specifications, productive capacity (including growth rates) and cost of production are understood, various production alternatives can be assessed.

Relating market specifications to your production environment

While goats breed throughout the year, there is a natural peak in autumn joining in response to shortening day length, which results in most kids being delivered in spring. Out-of-season kidding can be planned in set joining enterprises; however, reproductive rates are often lower in these circumstances. If an assessment of market opportunities and specifications indicates that the most profitable market can be accessed through out-of-season kidding even after decreased production is allowed for, this may well present an opportunity.

Understand market specifications and how these relate to your production environment.

Understanding growth rates

The consideration of how and when market specifications will be reached by young, actively growing goats requires an understanding of growth rates.

Growth rates for kids will vary depending on breed type or cross, season of birth, birth status (single or multiple), maternal ability and pasture availability and quality.

Growth rates for rangeland kids can vary between 70–150g/head/day (average 100g/day) while Boer and Boer-cross kids can grow at 150–250g/head/day (average 200g/day).

Growth rate performance will impact on age and weight at turn-off. For example, a rangeland kid from a multiple birth grazing low digestibility pastures may only average 70g/day growth rate and may take 10 months to reach a minimum saleable weight of 22–24kg, whereas a Boer-cross kid on highly productive pasture growing at 250g/day may reach the same weight in about three months. If this Boer-cross kid had been kept for the 10 months required to bring the low growth rate kid to market weight, it may well exceed market specifications for weight and fat and incur a discount. On the other hand, had the lighter kid been turned-off when the Boer-cross goat achieved the minimum weight at three months, it would likely be deemed to have no commercial value by the processor and the producer would not be paid. While this is a hypothetical example, it does illustrate the importance of understanding the market specifications and physiological factors, such as growth rates, that influence an enterprise's ability to meet specifications.

Growth rates for kids will vary depending on a number of factors and growth rate performance will impact on age and weight at turn-off.

Cost of production

Fundamental to understanding the profitability of an enterprise is knowing the difference between the cost of production and the sale price, otherwise known as the margin. Maximising the margin is generally a sound basis upon which to make business decisions.

Once a target market that appears to offer the greatest return and is compatible with the environment has been identified, a detailed assessment of the cost of production can be undertaken to determine the actual or projected margin associated with the enterprise.

Such an analysis can also allow the cost associated with not meeting market specifications to be determined. Understanding the cost of not meeting market specifications allows an informed decision to be made.

While the market specifications of an enterprise's target market should be achievable in the majority of seasons, there may be times (such as during drought) when the target market cannot be supplied through the usual production methods. In this case, a decision needs to be made to incur additional costs to meet market specifications or sell into an alternative market.

The MLA Cost of Production tool (mla.com.au/cop) can help identify your cost of production which can in turn be used to develop strategies to minimise costs and maximise profitability.

MLA Cost of production calculator

Weighing up the options

Once market specifications, productive capacity including growth rates and cost of production are understood, various production alternatives can be assessed.

Bringing it together

The following example is based on a controlled production system (rather than free range) in Queensland where rangeland goats are managed within secure paddocks and demonstrates the kind of decisions which need to be made. While this example relates to a rangeland enterprise, similar principles apply in more intensive farmed operations in higher rainfall areas.

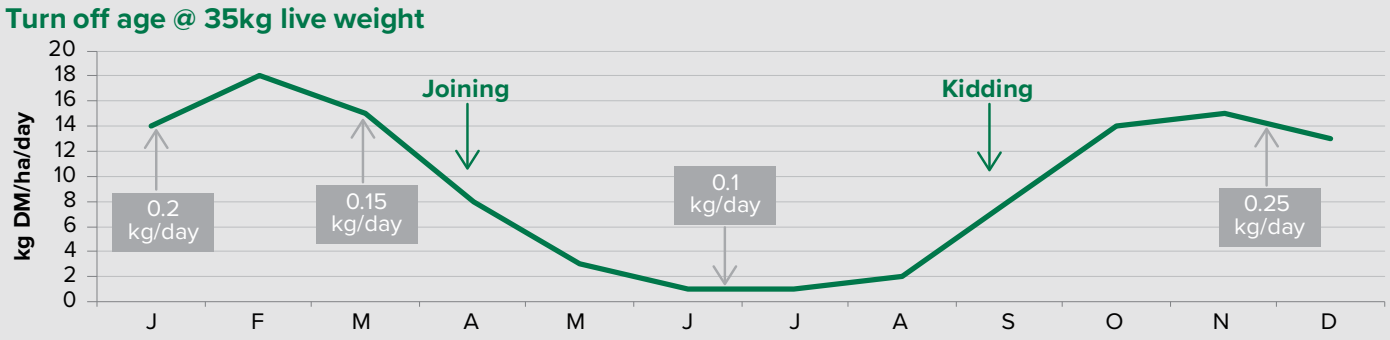
Setting the scene

The operators have determined the most profitable enterprise to involve breeding replacement females and selling surplus and cull stock at the maximum achievable weight, which has proven to be 32–35kg live weight (15–16kg carcase weight).

While goats can be sold for slaughter once they achieve a live weight of 22–24kg, the margin can generally be improved by allowing the goats to grow out. The pasture growth curve is well understood, as is the variation in pasture quality over the year along with a realistic idea of achievable growth rates. This is important in being able to predict production.

In the example, joining commences in March to optimise reproductive performance and allow for kidding in August when pasture growth and quality is improving (see Figure 1). This will deliver sufficient pasture production for most kids to achieve a growth rate of 0.25kg live weight/day. At this growth rate, most kids will achieve the target live weight of 32–35kg before their growth rate declines in response to declining pasture quality and production in January.

Figure 1: Native Pasture Growth curve, southern Queensland*



*Regional Pasture growth curves for NSW, Victoria, SA, WA and southern Queensland are available at evergraze.com.au under 'regional pasture growth rates'.

The decision has been made to class the does, sell the culls and cast for age animals at the same time as the kids are drafted for sale. This improves labour and freight efficiency by reducing the labour input and allowing larger and more economical trucks to be used.

Similarly, all kids weighing more than 24kg are also sold as these animals are saleable and it has been determined that the cost involved with increasing their weight to 32–34kg exceeds the benefit gained from doing so. This should be assessed on a case by case basis and will depend on variables such as labour, fencing and feed availability.

The kids weighing less than 24kg, however, have no commercial value if sent to a processor and an alternative management plan is required to maximise the value of these animals.

While the following examples are not exhaustive and other specific factors unique to each enterprise must be considered, particularly those associated with opportunity cost, they do provide an impression of the kind of alternatives that can be considered when determining what to do. In each example, weighing animals is critical to the outcome. Guessing live weights can result in very expensive mistakes.

For each example below, income and a range of costs have been estimated. These are hypothetical and indicative only, but do give an impression of what should be considered when making an economic assessment of different options. This includes assigning a reasonable value to opportunity cost; that is, the opportunities that are foregone in choosing one particular option.

1. On-sell to a grower to grow out to market weight.
2. Turn out with the flock and re-muster at the next round - hoping they have met market weight.
3. Retain pasture specifically to grow to meet market specifications.
4. Grow out on pasture to meet feedlot entry weights and then lot feed to meet market specifications.

Option 1

On-sell to grow out when heavier kids are sold to slaughter

This market typically exists for goats that are too light to slaughter. Other producers buy such goats with the aim of either growing them out to a marketable weight and possibly retaining the female portion as future breeders.

Pros

- On-selling is a simple option – it removes the need for further mustering as well as feed and labour inputs.
- It allows some value to be salvaged from underweight goats.
- This may appeal during dry conditions or when there is a significant opportunity cost to retaining the goats.
- On-selling may provide a satisfactory animal welfare and environmental management solution in times of drought and allow losses to be minimised.

Cons

- It provides minimal return, which impacts total return.

Table 1: Economics of Option 1 – On-sell to grow out

Sale return/head	$44	Sale price based on $2/kg live weight
Price sensitivity	$22–$44	Based on $2.50–$4.50/kg carcase weight
Net return/head	$44	

On-selling is a simple option – it removes the need for further mustering as well as feed and labour inputs.

Option 2

Turn out and re-muster in a managed rangeland system

Light goats may be drafted off from the heavier kids and turned back out with the general herd to grow out further. These will be sold at a later date once they have reached either a saleable weight or ideally the enterprise target weight of 32–35kg (although this target weight may vary for the second draft). The timing of the next muster for sale will be influenced by the weight gain requirement and probable growth rate.

In this example, two growth rate scenarios are considered. If pastures are poor and growth rates of only 70g/head/day are achievable, a 22kg live weight kid that is returned to the mob will take 143 days (5 months) to reach the target weight of 32kg live weight.

With better pastures and a growth rate of 100g/head/day, a 22kg live weight kid returned to the mob will take 100 days (3 months) to reach the target weight of 32kg live weight. This demonstrates the importance of understanding probable feed availability and growth rates.

Pros

- There is opportunity to add significant value to light weight goats and generate a higher enterprise return.
- Breeding costs have already been incurred, so there are no further "buy in" or breeding costs.
- In good seasons, this option allows stocking rate to be lifted and feed utilisation to be increased.

Cons

- Kids will be carried into a period of declining pasture quality and availability, causing growth rates to slow.
- Very light goats and poor 'doers' may never amount to much and higher mortalities may be experienced, particularly over winter.
- "Carry over" animals will place extra grazing pressure on the system by utilising feed resources which could be available to the kidding goat flock.
- If feed resources are scarce, younger goats may not compete well with older goats resulting in reduced growth rates and increased mortalities.
- Increased management may be required to adequately care for lighter goats in the herd.
- Additional cost associated with mustering and animal handling.

Light goats may be drafted off from the heavier kids and turned back out with the general herd to grow out further.

Table 2: Economics of Option 2 – Turn out and re-muster - rangeland system

Sale return/head	$60	15kg hot standard carcase weight (HSCW) at $4/kg
Cost of re-muster/head	$3	
Opportunity cost/head	$0.88	Sale price of $44 in Option 1 at 6%/year
Mortality loss/head	$4.40	10% of $44 (Option 1)
Net return/head	$51.72	($52 per head)

Option 3

Retain pasture specifically to grow out for target market

This option relies upon saving quality pasture for underweight kids. Deliberate planning and management is often required to ensure such pastures are set aside; however, even with such planning, environmental conditions and inadequate rainfall may not allow this option to be employed every year.

Assuming the retained pasture is of sufficient quality and abundance to sustain growth rates of 100–150g/head/day compared to normal rates of 70–100g/head/day in uncontrolled grazing systems, time to turn-off would take approximately 10 weeks at 150g/head/day compared with 20 weeks at 70g/head/day growth rate.

In high rainfall pasture-based systems, growth rates of 150–200g/head/day may be achievable provided feed quality and quantity are sufficient.

Pros

- Better growth rate performance is likely due to quality grazing combined with less competition from the adult flock.
- Faster rates of turn-off to market targets can be expected, lowering the grazing pressure on feed resources for the total flock.
- There is opportunity to monitor growth performance and manage accordingly.
- There are generally lower mortality rates in a rangeland system.
- Retaining surrounding pasture could mean lower mustering and drafting costs due to containment.

Cons

- There is a requirement for fencing and associated capital outlay.
- Opportunity costs associated with setting aside pastures and paddocks can be incurred.
- This option may not be possible in dry seasons.
- At high stocking rates, internal parasites may be a problem and can mean additional management and veterinary treatment costs.

Table 3: Economics of Option 3 - Rangeland production system

Sale return/head	$60	15kg carcase weight at $4.50/kg
Muster cost	$1.50	
Mortality loss	$1.76	4% of $44 (Option 1)
Opportunity cost	$0.89	6% of $44 (Option1)
Net return/head	$55.85	($56)

Deliberate planning and management is often required to ensure quality pastures are set aside.

Option 4

Lot feed to target weight

Lot feeding typically requires a significant investment in time and feed products, both of which come at a cost, and budgeting must be completed to establish the case for lot feeding before deciding to invest. The margin between what the lot feeding costs and probable return will be must be understood. This will be influenced by:

- entry live weight
- turn-off live weight or carcase weight
- feed conversion ratio – kg feed/kg gain
- cost per kg feed
- time on feed – influenced by growth rate
- percentage turn-off to market specification – including mortality rate
- pricing target
- labour and capital investment requirement.

Additional information on lot feeding of goats can be found at mla.com.au/goats.

Entry live weight and turn-off weight are key considerations before starting a feedlot program. If the primary motivation is to lift goat live weight from less than 22kg, at which they are considered by processors to have no commercial value, to more than 22kg prior to sale, a timeframe and strategy should be developed to achieve this goal cost effectively.

How much weight is added can be determined by calculating the cost of feed/day, the daily weight gain and the likely return. Goats can react poorly to confinement and it is generally advisable to limit the amount of time on feed to the minimum required to deliver a saleable item at a profitable margin. Confining goats for more than five weeks can result in animal health and productivity issues that will quickly erode profit margins.

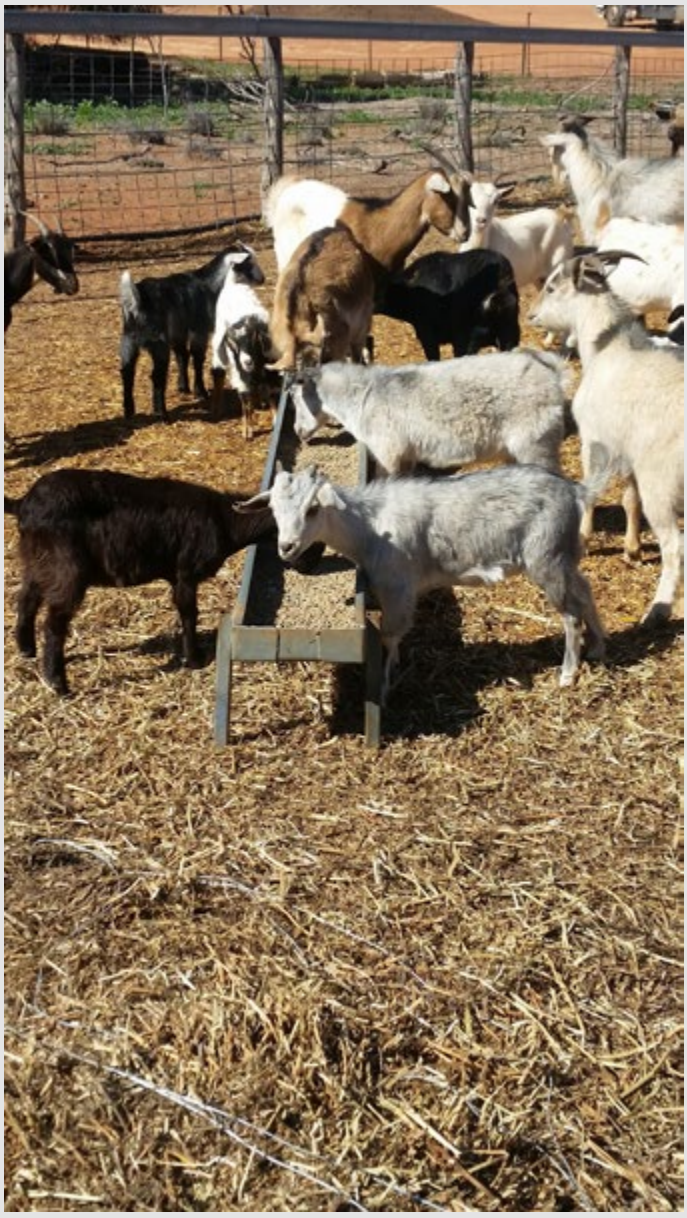
Animal health issues must be considered more generally prior to and while goats are on feed. Goats are ruminants and need to be introduced to grain carefully to avoid health issues such as acidosis. The provision of a balanced diet including roughage, energy and protein must be carefully planned and costed.

The feed conversion ratio should also be considered in developing a ration; it's advisable to consult a nutritionist or veterinarian when developing a ration that cost effectively meets the animal's requirements as well as production requirements.

Goats are susceptible to other issues when in confinement, such as infection with internal parasites. Signs of parasite infection must be monitored and interventions carefully planned with withholding periods and export slaughter intervals carefully considered.

Monitoring for stress is important with poor 'doers' identified and treated appropriately. This may involve moving affected animals to a separate pen where they can be monitored and cared for.

When lot feeding, the provision of a balanced diet including roughage, energy and protein must be carefully planned and costed.



Maximising return is a key objective in growing out stock but to be successful, it is important that all costs and the likely return be identified and understood.

More information

- Information on the growth rates of goat breeds can be found in *Going into Goats: Profitable producers' best practice guide, Module 6 – Husbandry, Tool 6.6 – Growth rate and mature weight tables*.
- Information on lot feeding goats can be found in *Going into Goats: Profitable producers' best practice guide, Module 7 – Nutrition*.

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January 2018