

## Lamb feeding – a simple and efficient system

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### Introduction

Outdated management and feeding practices contribute to an under-utilisation of both the weight gain and feed conversion efficiency potential inherent in intensively fed lambs. Those practices also contribute to inconsistencies in the quality and yield of marketable meat limiting the growth of premium markets for high quality lamb.

An average 40 kg prime lamb has the potential to gain 400+ grams of live-weight per day whilst consuming less than 1.6 kg of complete ration. It also has the potential to consistently deliver carcass yields in excess of 49 % of empty finished weight. In our experience a realistic assessment of performance in most existing intensive lamb feeding enterprises suggests that producers are achieving about half that level of weight gain and feed conversion efficiency (FCE):

Underpinning that loss of potential are a number of substantial misconceptions regarding the importance of macro and micro nutrient nutrition, feed and behavioural adaptation and feeding management on total feedlot performance. As a result of this, producers are often misinformed about the opportunities for sustainable long-term profitability offered by lamb feed-lotting.

Animal Logic Group's lamb feeding protocol is the result of a long term re-evaluation of those factors limiting the potential for high weight gain and FCE performance in intensively fed lambs.

It's purpose is to provide producers with a clear and systematic approach to optimising the nutritional, feeding and behavioural management of lambs throughout the feeding cycle.

### Induction

Most significant losses in potential productivity occur during the induction phase.

The impact of poor feed adaptation, handling

stress and poor attention to detail in drafting and mob size contribute significantly to increasing time on feed and therefore reduced average weight gain and feed conversion efficiency.

Under ideal circumstances lambs can be adapted to full intake of high performance grain diets in 4-7 days. For every day beyond this, overall time on feed to achieve the targeted weight is increased considerably. Rapid adaptation to high grain diets relies on recognising the profound impact of stress on the metabolic processes governing appetite, nutrient uptake and feeding behaviour. It is critical to employ strategic treatments during the induction phase to overcome this. It is also critical to understand and implement "phased" feeding techniques to accomplish consistency in grain intake and to encourage stabilisation of the physiological processes that determine feeding patterns & early growth performance. Ad lib access to a clean, quality roughage source during this period is also critical. However, for optimum results roughage should not be fed beyond the initial induction period.

Effective "buffering" in the feed ration is essential. Extreme care must be exercised in both the choice and combination of "buffering" compounds. Be careful in your choices! – there are only a small number of formulae that are sufficiently effective to deliver the performance levels required.

Pen size is less critical to optimum feedlot performance than mob size. "Many small pens rather than a few big pens" should be the guiding principle here. Mob size however, is critical and, lambs should not be fed in groups exceeding 350 lambs. Above this, feed competition will force the development of a "tail" regardless of the amount of feeder space available. Mob weight range is also exceptionally important and from induction forward lambs should be managed in mobs where the range of bodyweight is kept within a tightly controlled range which again minimise the development of a "tail".

## Rations

Lamb feedlot rations that promote high weight gain and feed conversion efficiency (FCE) need to be formulated to optimise both degradable and bypass starch and protein supply whilst minimising fibre levels. They must also contain a high quality buffer and an exceptionally well formulated vitamin and mineral supplement both of which are also critical to optimising weight gain and FCE performance.

In practice, this can be achieved using a combination of relatively simple and readily available ingredients which many producers already have a supply of on farm. Cereal grains particularly, wheat, triticale, and barley are an ideal basis upon which to formulate a diet. Corn is an exceptional lamb feed but should not be used as the sole cereal grain. Oats on the other hand are not a high performance feed.

Protein sources vary significantly in quality and cost. Of particular importance here are variations in the amino acid profile between protein sources. Hence, care needs to be exercised in the formulation of finisher diets to ensure the optimisation of amino acid supply for meat production. Lupins and Faba beans are an excellent start here, so to is canola or cottonseed meal.

Except in rare circumstances, high performance feed rations should be fed whole rather than milled or ground. Processing and particularly over processing of feed components reduces potential feed conversion efficiency and should be avoided. Never guess a diet for lambs- always have it properly formulated. Testing of ingredients is part of this process.

Mineral and vitamin nutrition is perhaps both the most sophisticated and neglected area of nutritional management in advanced lamb feedlot systems. Other than increasing requirements for calcium, sodium, potassium and magnesium, rapid induction, high FCE and weight gain systems also dramatically boost the demand for a range of critical micronutrients including copper, zinc, selenium, cobalt, vitamin A, vitamin D and B group Vitamins.

In our experience, inadequate vitamin and mineral supplementation is reflected in longer adaptation times, increased disease and mortality and lower levels of FCE and weight gain performance. Additional supplementation of magnesium,

zinc, vitamin A and B group vitamins during the induction phase is critical to maintaining performance during this high stress period. To our knowledge there are currently only 2 or 3 lamb feedlot supplements available that are sufficiently well formulated to adequately support a rapid induction, high FCE and weight gain performance level in feedlot lambs.

## Feeders

Lambs should never run out of feed. This means providing each lamb in the pen with ready access to a constant supply of fresh ration 24 hours a day throughout the feeding cycle. It also means that all feeders, regardless of type must be constantly cleaned to remove any spoilt, dirty or unpalatable residues.

The first limitation on feed access is available feeder space and lambs in the finishing phase must be provided with a minimum space allocation to maximise feed access and reduce the formation of a "tail".

The second limitation is feed supply. Restrictions and or interruptions to feed supply can significantly impair performance and because of this "Self Feeders" with automated feed delivery represent the most convenient and cost effective alternative for most producers. Some key points in relation to trough shape, depth and height above ground need to be considered when planning to purchase or modify feeders for a high performance feedlot operation.

Lick feeders, trail feeding and or infrequent open trough feeding are not appropriate in a performance feeding system.

## Water

Lambs must never run out of water. The water must also be of the highest possible quality, and be kept as clean, fresh and as cool as possible. Water testing is an ideal way to establish quality and should be performed as a matter of course if underground supplies are the primary source of feedlot drinking water.

Water intake in high performance lamb feedlots should be given the highest priority from management and may require cleaning more than once a day. Reduced water intake levels will have a significant impact on performance. Water troughs

and supply systems should be selected with the view to keep water cool and to limit the collection of dust and debris. High volume concrete troughs and low volume steel troughs are not ideal for this purpose.

Care must be exercised if lambs are being moved onto a feedlot where the water supply is from different source to that which they have had access prior to induction. Under these circumstances some pre adaptation to the new water supply should be seriously considered.

### **Drafting**

The handling, drafting and weighing of lambs during the feeding cycle should be kept at absolute minimum. Efficient, accurate and reliable weighing equipment is essential. Do not draft by eye. Errors of 8-10 kg in live-weight are common even amongst the experts.

Ideally, yards should be close to the feedlot in order to minimise time off feed and stress on animals. Where possible animals should be handled quietly and the use of dogs must be kept to a minimum.

Other than the initial handling, treatment and drafting at induction, lambs should not be disturbed until after approximately 3 weeks in to the feeding program. At that point a redraft to maintain mob weight range criteria should be undertaken. That process should be repeated approximately 14 days later (Day 35) at which point those animals likely to be ready for delivery within the following 14 days can be identified.

### **Climate**

Lambs do not perform as well under conditions of either excessive heat or cold and appear in our experience to thrive when prevailing temperatures are in the range of 8-34 degrees Celsius. Both wind and weather changes can have a significant impact on short term feeding behaviour and management of animals in advance of a warm or cold change will prevent a significant percentage of the performance losses associated with reduced feed intake during a change and subsequent overcompensation once the change has passed.

Wind protection in lamb feedlots is critical and other than siting the feedlot in a protected area, producers should consider erection of a simple wind barrier along the fence line most directly in the path of the prevailing wind. A range of options are possible here. Above all, maintaining good feedlot performance means keeping an eye on the weather map and acting to minimise the effect of a change before it hits.

Animal Logic Group are currently conducting Intensive Lamb Feeding training workshops throughout the country. If you are interested in attending a workshop or would like any further information regarding workshop scheduling, please contact David Horsnell 0439 954 208, Mathew Hallam 0427 613 931 or Rick White 0427 733 713