Safely Feeding Grain to Lambs

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Summary

- **High-grain diets for lambs allow faster growth, but can compromise health and performance if not managed properly**
- **Management should include pre-conditioning, a health regime, and a well-designed ration**
- **Depressed rumen function and low rumen pH are major risks that need to be proactively managed**
- **Mitigating risk of rumen pH issues requires appropriate buffering with Acidbuf**
- **Promote animal health, rumen function and animal performance through the use of Diamond V**

Lambs are fed grain to increase growth rate and carcass quality. The main risk when grain feeding lambs is rumen disfunction which can lead to sickness and death. To avoid problems the goal of rapid growth-rate should be balanced with robust heath and diet management and a disciplined feeding regime.

There are many causes of rumen disfunction. Most common is a too-rapid change in diet and fluctuations in rumen pH. The result of rumen disfunction is always reduced appetite and depressed performance. Sub-acute ruminal acidosis (SARA) is a common problem. Fortunately, rumen function can be proactively managed with a combination of animal husbandry, disciplined feed routines and a well-designed ration.

Animal & Feed Management

Usually, high-gain diets are fed to lambs in pens. There are 3 actions to follow before a lamb is placed into a pen feeding system. First, and most important, is preparation. A pre-conditioning program should start while the lamb is with the ewe. The other 2 are vaccination and drenching. It is sensible to follow a health plan prepared by an animal health professional.

Best practice, when introducing lambs to a high-grain ration, is to do it slowly. Start with high fibre and low grain, and over 10 - 14 days, reduce the proportion of fibre and increase grain. Adaptation achieves 3 things, all of which require time.

1. It sets the lamb's daily feeding behaviour. This is important to reduce the risk of engorgement and shy feeders.

2. It allows the rumen microbiota to adapt to the increase in starch.

3. The mucosal tissue responsible for shifting nutrients from the rumen and intestine to the blood will change to accommodate the higher rate of fermentation.

Ration Management

The lamb's diet must satisfy the lamb's requirements for growth with consideration of health and welfare. With correct ration design a diet can be up to 90% grain and be safe for the lamb. Considerations include:

- grain type; usually wheat, barley, maize, or sorghum
- grain processing; whole, cracked or ground and in a meal or a pellet
- protein supply; can be vegetable proteins, pulses, non-protein nitrogen or alternative co-products
- fibre: essential for proper rumen function, but should also be palatable
- trace nutrients: both macro and micro minerals should be balanced, and vitamins included
- other additives: careful selection of additives to manage gut health and improve performance is advised

Rumen Stability for Grain-Fed Lambs

Rapid fermentation of starch increases rumen acidity. A well-managed animal on a balanced diet will cope with small fluctuations of rumen pH. A range of 6.6 down to 6.0 is considered normal and safe. Unmanageable influences, like erratic weather, affect lamb feeding behaviour and can undermine good husbandry. When rumen acidity unavoidably drops and SARA develops it will cause problems. Fortunately, there are 4 tools to manage rumen pH and all can be used together.

1. Intake management

As already mentioned, pre-conditioning lambs to a pen system with high grain ration with a considered adaptation regime is key to reducing animal stress. Reducing stress avoids opportunistic pathogen infections and stabilises flock hierarchy. These things offer consistency in feed intake through the growing phase and make unavoidable environmental challenges, like storms and heat, more manageable.

2. Ration design

Successful ration design is underpinned by knowing the ingredients and how to feed them when blended into a ration. Whole grain and processed grain ferment at different rates. Whole grain gives better performance, so processing is not always an advantage. The type of fibre used how it is processed, and fed is important; most important though is palatability. Long fibre is less palatable than short fibre and legume hay is more palatable than cereal straw. Legume hay also contributes soluble protein to the diet. However, many successful lamb rations are based on cereal hay.

3. Rumen Buffering

Poor performance and is usually a consequence of SARA. A good rumen pH buffer will add stability by reducing amplitude of pH changes and will not allow pH to drop below 5.5. The characteristics of the buffering agent should be research proven, both fast acting, and long acting, and importantly not contribute to other animal health challenges. As such, Acidbuf has proven to be a highly effective buffer that promotes rumen health but does not add to the risk of health disorders such as urinary calculi, which can be a risk with sodium bicarbonate. It has the buffering characteristics that adds resilience to the rumen, promotes rumen health and is a source of highly available calcium and magnesium.

Where grain is being home mixed, we would suggest the following inclusion rates of Acidbuf:

- Wheat: 1 – 1.25% of the grain diet
- Barley: 0.8 – 1% of the grain diet

4. Compounds for added stability and performance

Lambs born to healthy ewes and raised under careful husbandry perform better than those that are not. When lambs are healthy, they eat well and convert nutrients to live-weight very efficiently. Therefore, it makes sense to apply additives that promote health, both to the ewe, and the lamb. A good additive will also allow better gains for lambs that are already at peak performance. A known trait of healthy lambs is a resilient rumen microbe population and strong immunity.

The bio-actives in Diamond V products stimulate metabolic processes that promote cellular activity to the benefit of the animal. Those cells can be the microbes that inhabit the gut, or host cells involved in immune function. In high-grain diets the rumen pH of animals fed Diamond V products stayed above 5.5 and displayed a better microbiome for managing a fast fermenting ration. Diamond V supplemented animals also grow more efficiently.

Conclusion

Grain feeding lambs can be a profitable undertaking, provided appropriate care and focus is given to animal health. A key facet of animal health in these intensive situations is to maintain rumen health. Key tools in maintaining rumen health are high quality buffers such as Acidbuf, and rumen modifiers such as Diamond V.

If you have any questions please forward them to hugh.archibald@feedworks.com.au