The Ohio State University / College of Food, Agriculture, and Environmental Sciences / Department of Animal Sciences

Why Ewe Should Control Feed Intake

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Introduction

- Feeding strategies vary depending on a producer and animal's needs.
  - Ad libitum feeding: Animals eat as much as they want.
  - Controlled feeding: Controlled amounts of feed at regular intervals (lbs./hd./day).[8]
- Ad libitum feeding is convenient, however, the use of controlled feeding has been shown to increase dry matter intake (DMI) leading to an increase in average daily gain and decreased feed to gain ratio.
- Feed bunk management, (4 point scoring system) will maximize animal performance, minimize digestive problems, and ensure animals are eating consistently.[3]

How do we Attain and Maintain Controlled Intake?

4 steps to controlling feed intake

1. Measure and record how much feed is given. Measure feed by weight rather than volume.[3]
2. Observe how much feed is left before the next feeding. Use a scoring method as shown in Table 1[2].
3. Adjust how much feed is given to animals based on how much feed has been consumed measured over a set number of days.[5]
4. Be consistent with your feeding: feed a consistent amount at the same time each day.[3,5]

Table1, SDSU Feedbunk Scoring System

Score	Description
0	No Feed remaining in bunk.
0.5	Scattered feed remaining. Most of the bottom of the bunk exposed.
1	Thin, uniform layer of feed remaining. About 1 corn kernel deep.
2	25 to 50% of feed remaining.
3	More than 50% of feed remaining. Crown is thoroughly disturbed.
4	Feed is virtually untouched. Crown of feed still noticeable.

This figure illustrates an example of a feed bunk scoring system. For this figure the ideal feed bunk score is 1/2 [2].

Figure 1, Feedbunk Score Examples

Figure 1 (right) demonstrates a feed score ½, meaning that amount of feed provided should remain the same. Figure 1 (left) is an example of a feed score of 0, meaning that feed should be increased by about 1-2%.

Benefits of Controlled Intake

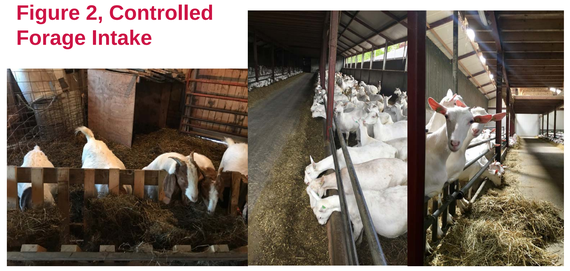
Controlled intake creates competition, increases efficiency, and improves performance:

- Feed scores >1 mean no competition.[3]
- Controlled intake, grain-based diets, required 76% less feed per unit gain than ad libitum diets.[3,5]
- Increases average daily gain, decreases feed to gain, and decreases feed costs.[3,5]
- Creates less waste and saves time clearing out refusal.
- Reduces the percentage of energy wasted on chewing forage.
- Digestibility of forages decreases with increased DMI.[1]

Consistent feed intake results from controlled intake:

- Scores >½ allow an animal to overeat and then undereat the next day (sub-acute acidosis).
- Undereating fails to meet maintenance requirements, resulting in decreased growth.[3]
- Controlled intake consistently exceeds maintenance requirements, allowing for growth and less intake fluctuation.[3,5]
- Restricted feeding prevents weather patterns from impacting intake (hot vs. cold weather).[3]

Figure 2, Controlled Forage Intake



Here we see goats eating forage (left, and right) and TMR (middle) in controlled intake systems.

Table 2, Effects of Controlled Intake on Performance

Lot	DMI (lb./d)	ADG (lb./d)	Feed/Gain (lb./lb.)
A (controlled intake)	20.3	3.8	5.38 (76% less)
B (Ad libitum intake)	19.6	2.1	9.47

This table was adapted from Pritchard and Fluharty. It demonstrates the benefits of controlled intake in increasing average daily gain and decreasing feed/gain.

Health, Carcass Quality, and Cost:

- Erratic feed intake leads to risk of acidosis and bloat.[6]
  - Large starch loads kill protozoa, but bacterial populations increase and produce more lactic acid, lowering the pH of the rumen (acidosis).
    - May see decreased rumination and excessive gas buildup (bloat).
  - Additional input cost for treatment, or loss of income from death.
  - Treatment costs $25/hd. - $150/hd.
    - Surviving animals not likely to eat maintenance levels the next day - loss of productivity and daily weight gain.[3]
- Feed waste and digestive issues increase feed to gain, thus increasing cost.
  - Feeding for appetite decreases waste.[6]
- Muscle requires lower energy intake than fat.
- Restricted feeding increases muscle building efficiency, decreases fat deposition.
  - Carcass increases in value.[4]
- Utilizing controlled intake allows you to feed less, avoid digestive issues, and produce a more valuable product contributing to a larger return on investment.

Figure 3, Lamb Carcasses

On the right are goat carcasses, which are lean due to controlled intake. On the left, lamb carcasses are being ribbed to view the ribeye.

Considerations when Building a Controlled Feeding System

- Feed quantity depends on weight, health, quality, genetics, and targeted market weight.
- Risks are always present; include lamb deaths, shy feeders, poor weight gain, and unexpected changes in market prices.
- Sites should be well drained for the feed bunk, grain storage, and shelter.[7]
- Clean, high quality water impacts intake and weight gain. Lack of fresh water can decrease feed intake as 1 lb. of DMI requires 7 lbs. of water.[3,7]
- Utilization of a scoring system will increase weight gain leading to greater efficiency and decreasing digestive problems.
- Minimum requirement for trough length is 6-12 in. per lamb with a width of 12 in., depth of 8-10 in. and a height of 12 in. above ground.
- Starter rations acclimate lambs to the high grain of finishing diets. Diets should be balanced, high in energy and protein.[7]

Figure 4, Troughs

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ACKNOWLEDGEMENTS

We would like to thank Brady Campbell, Dr. Liz Parker, and Dr. Francis Fluharty for their contributions to this poster project.