



# Feeding Management for Backgrounders

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*Backgrounding feeder cattle is a common practice in North Dakota. The practice is used to add value to home raised feeds and calves by marketing feeds through the cattle. Feed efficiency and feed cost are the two most important factors which determine cost of gain.*

*This publication addresses feeding management guidelines which can improve the success of backgrounding operations and practices which can lower cost of gain in backgrounding operations.*

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A8  
no.  
1158

## Starting Calves on Feed

Bunk breaking or training cattle to eat from a feed bunk can be a difficult process, especially if calves have never eaten processed feed before. Also, calves that have only drunk from streams or ponds may not know what a commercial waterer is. Here are some suggestions for bunk breaking calves:

- Allow waterers to run over for a few days following calf entry into the lot. The sound of running water will help attract calves to the waterer.
- Place waterers along the fence line. Newly weaned calves will walk back and

forth along the fence line for the first few days after weaning. Placing the waterer along the fence line will help them find fresh water quickly.

- Feed long-stem, grass hay in the bunks for four to seven days. Long-stemmed forage is the type of feed that the calves are most used to.
- Calves which were creep fed tend to adapt to bunk feeding more rapidly than calves which have not been creep fed.
- Commercial starter feeds can work well. Be sure that the starter feed you select is palatable. Low levels of fiber or high levels of starch in some products can lead to overconsumption and



**NDSU EXTENSION SERVICE**

North Dakota State University, Fargo, ND 58105

JANUARY 1999

problems with digestive disturbances. Limiting the availability of these feeds for the first few days, until all calves are bunk broke, may help alleviate overconsumption problems.

- When calves have become accustomed to eating out of bunks (usually less than seven to 10 days, but this can vary), begin to feed your backgrounding diets. Diet changes should be made gradually. If high amounts of grain will be fed, cattle should be acclimated to high concentrate diets slowly using 'step-up' diets.
- Avoid excessive processing of grains and hays. Excess processing tends to make a dry, dusty, unpalatable ration. Coarsely crack or roll grains for best results. Grains such as corn or oats can be fed whole to lighter weight calves with little or no problem.
- Avoid starting calves on fermented or wet feeds such as silages, high moisture grains, or wet byproducts. These feeds can have odors and tastes which may limit intake during the first week or two of bunk breaking.

S 544.3 .N9 A8 no. 1158  
Lardy, Greg 1969-  
Feeding management for  
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## Management Practices Which Can Improve Feed Efficiency

### Avoid Muddy Pen Conditions

Muddy lot conditions can cause decreases in feed efficiencies of up to 30%. Muddy conditions are generally not a problem in North Dakota until late spring. Producers backgrounding cattle during the spring of the year should take steps to reduce problems with mud. Pens should have adequate drainage and slope which helps move water out of the pen. Pens should be built with mounds that allow the cattle a place to get out of the mud.

Design pens so that water drains away from the feeding area. Muddy conditions near the feed bunks will keep cattle away from the bunks, reduce feed intakes, and depress performance. In cattle fed higher concentrate diets, severe mud problems near the bunks can increase the incidence of acidosis and other digestive problems by making cattle meal-eaters rather than nibblers (cattle are less likely to come to the bunk multiple times per day in heavy mud conditions).

### Provide Adequate Wind Protection

Cattle can generally withstand low ambient temperatures provided they are given adequate wind protection and kept dry. The companion circular on Backgrounding Facilities, AS-1153, details the kind and type of wind protection which is most effective.

### Use Proper Grain Processing

Feed grain processing is an important component of successful backgrounding. Proper grain processing can improve feed conversions, while improper grain processing can lead to increased incidence of digestive disturbances (founder, laminitis, acidosis), reduced performance, and increased cost of gain.

### Corn

Corn can be fed whole with no processing. Efficiency can be improved by cracking or rolling corn. Gains in feed efficiencies attained by dry rolling corn are generally cost effective. Fine grinding is discouraged.

### Barley

Barley should be coarsely rolled, cracking the hull while minimizing fines. Barley is rapidly fermented and should not be finely ground or finely rolled. Fine grinding or fine rolling which results in high levels of fines will increase the incidence of digestive problems and decrease palatability of rations due to dustiness.

## **Oats**

Oats can be fed whole with no processing. Slight improvements in utilization may occur when oats are rolled. Oats are one of the easier grains to feed because the oat hull helps buffer digestion of the starch and minimizes the risk of digestive disturbances. Processing oats is generally not cost effective.

## **Hull-less Oats**

Hull-less or naked oats requires minimal processing. Research conducted at NDSU indicates that processing hull-less oats too finely will result in poor conversions and digestive disturbances.

## **Wheat**

Wheat is rapidly fermented. Wheat should be coarsely rolled but not ground. Steam rolling wheat helps reduce the amount of fines and reduces digestive problems associated with acidosis.

## **Field Peas**

Little information is available regarding processing of field peas for cattle. However, due to the relatively hard nature of the seed, coarsely cracking or rolling field peas is recommended for optimum utilization.

## **Grain Screenings**

If pigeongrass screenings are fed, they should be ground for the highest utilization. Pigeongrass seed coats should be cracked or seeds will pass through the animal largely undigested. If the screenings are largely made up of light test weight grain, processing procedures for the respective grains should be followed.

## **Light Test Weight Grain**

Properly processing light test weight grain is more difficult than processing grains with normal test weights because light test weight grains generally have a larger degree of variation in kernel size. This variation in kernel size makes it more difficult to properly set grinding or rolling equipment.

## **Controlling Feed Wastage – A Management Practice Which Can Lower Feed Costs**

In many backgrounding operations, the amount of feed offered is not weighed. This makes it difficult to estimate the degree of feed waste which occurs in a particular operation. However, certain management practices should be followed to minimize the amount of feed wasted.

## **Feed Hays in Feeders, Bunks, or Tubs**

Feeding round bales on the ground can result in excessive losses of feed material as animals tend to use a portion of the feed for bedding rather than eating it. In addition, cattle will refuse to consume hay contaminated with animal wastes. Contamination commonly occurs when hays are fed on the ground. There are many different type of feeders which will work adequately and reduce hay waste. The Beef Housing and Equipment Handbook (MWPS-6; available separately or as part of the Beef Cattle Handbook) offers many different plans and ideas for round bale feeders which can be built on the farm.

When round bales are fed, bale feeders should be used to reduce waste. In some cases, 30% to 45% waste has been reported when bales are fed without feeders.

## **Use Proper Forage Processing**

Grinding forages does not typically increase digestibility, but forage intake is usually increased with grinding or chopping. However, producers should carefully weigh the cost of processing before deciding on a forage processing system. Chopping or grinding forages can help reduce waste compared to long stem forages. Grinding forages decreases

the animals ability to sort or select a diet. This can reduce feed costs by decreasing feed waste.

If rations are fed in a TMR (total mixed ration) feeding system, chopping or grinding is necessary to facilitate mixing with other ration ingredients. Long stem forages do not mix well in most commercial systems without some chopping or grinding. Several commercial systems that grind and mix forages with other ration ingredients are available. Forages should only be processed enough to allow thorough feed mixing with other ration ingredients.

## **Bunk Management**

Bunk management is a critical component for successfully backgrounding cattle on high concentrate (grain or byproduct) diets. Bunk management can be defined as determining and delivering, in an acceptable and consistent manner, the amount of feed an animal can consume in a given period of time.

Cattle fed diets high in roughage generally limit their intake due to ruminal fill. However, cattle fed concentrates can and do overeat. This can result in a wide variety of nutritional disturbances such as acidosis, founder, and bloat. It can also be costly because of reductions in performance of the cattle

(reduced average daily gain and poorer feed conversions). Underfeeding cattle on high concentrate diets can also result in problems. Hungry cattle are more aggressive at the feed bunk, which leads to over-consumption and related digestive problems in some cattle, while timid cattle remain underfed.

## **The Feed Call (Determining Amounts of Feed to Offer)**

Producers should develop a feed call record keeping system that provides historical data on each pen, so that feed amounts can be adjusted based on the previous days feed call. Feed amounts are typically recorded on a pounds per head per day basis, rather than on a pounds per pen basis.

The goal is to provide the exact amount of feed which the animal's will consume in a 24 hour period. On high concentrated diets, use the 10% rule for calling feed. Never increase the cattle more than 10% of their average consumption (this will be about two pounds of feed per head, in most cases). Increases larger than 10% can result in feed wastage or spoilage, increased digestive disturbances, and poor performance. It may also be indicative of missed feed calls on previous days and that you are behind the cattle.

Decreasing feed calls by 10% may be warranted to ensure that cattle clean up feed in the bunk before it spoils.

On high forage diets, do not increase feed calls by more than 4 to 6 pounds per head per day. On high concentrate diets, feed calls should not be increased more than 2 pounds per head per day.

A bunk scoring system may be developed as a way of judging the amount of feed left in the bunk. Table 1 gives an example bunk scoring system. Bunk reading is as much an art as it is a science.

Wet, moldy feed should be removed from the bunk and fresh feed offered as needed. Stale feeds generally limit consumption.

When bunks are read, the manager should examine the bunks and pens to evaluate the following items: 1) uniformity of feed mixing, 2) uniformity of feed delivery to the bunk, 3) the amount of carryover feed, 4) the amount of fines present in the bunk (as a measure of feed processing as well as a measure of the degree to which cattle are sorting the ration), 5) the amount of ice or snow which may have accumulated in the bunks and pens, 6) the consistency of the stools, and 7) the condition of the feed apron (is it covered with mud, snow, or ice?).

**Table 1. South Dakota State University 4-Point Bunk Scoring System<sup>1</sup>.**

<b>Score</b>	<b>Bunk Description</b>
0	No feed remaining in the bunk.
½	Scattered feed present. Most of the bottom of the bunk exposed.
1	Thin uniform layer of feed across the bottom of the bunk. Typically one kernel deep.
2	25-50% of previous feed remaining.
3	Crown of feed is thoroughly disturbed. >50% of the feed remaining.
4	Feed is virtually untouched. Crown of feed still noticeable.

<sup>1</sup> Adapted from R. Pritchard, 1993. Delivering the Difference. Land O' Lakes Conference.

When making the feed call, take into account the following items: 1) the previous four days feed deliveries, 2) the previous four days bunk conditions (what have the feed calls been the last four days), 3) the number of days the cattle have been on feed, and 4) any other information which may be pertinent such as implanting or processing schedules.

## **Step-Up Rations (Moving Cattle up on Feed)**

Step-up rations refers to rations which are fed to cattle to acclimate them to consumption of high grain diets. There are several systems of stepping cattle up on feed. The system which fits your management style, facilities, and equipment the best should be used. In large feeding operations it is common

to feed decreasing levels of roughage as cattle are being acclimated to high concentrate diets. Calves are commonly started on a 45% roughage diet, then roughage levels are decreased to 35%, 25%, 15%, and for finishing to 7.5%. Each of these step-up diets are fed for approximately seven to 10 days. Cattle should not be stepped onto the next diet if intakes are increasing or decreasing erratically.

Cattle can also be stepped up on feed by increasing the amount of grain which is offered. As a rule of thumb, grain or concentrate should be increased 1.5-2.5 pounds every seven to 10 days. This will give cattle a chance to acclimate to higher grain levels in a gradual manner. Increases greater than this can result in digestive disturbances and increase the incidence of acidosis.

Cattle can also be stepped up on feed by initially feeding grain at 1.0 to 1.25% of body weight with free choice hay. Every seven to 10 days, the amount of grain can be increased by 0.5% of body weight until your target diet is reached.

Cattle can also be acclimated to high grain diets by limit feeding a high concentrate (85% or greater) diet. This type of acclimation requires a high level of management. It is generally not effective in pen fed situations since the aggressive cattle get more than their share of feed. This system should not be used unless you are feeding a total mixed ration (TMR). Provide enough bunk space so all cattle in the pen have access to the bunk when using this system.

You should expect that cattle will experience some degree of sub-acute acidosis during the step up period. The time (or ration that the cattle are on) when this occurs varies with each pen of cattle, but it will occur sooner on diets which are more rapidly fermented such as barley, wheat, and high-moisture corn.



AS-1158

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3M-1-99

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