

Beef Briefs



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performance can vary widely. While some of the differences can be attributed to genetics and other reasons, disease is also a primary culprit. One study reported calves from 7 different farms subjected to the same stresses after leaving the farm varied in morbidity rates from 26 to 87%.

One reason for this result is the nutritional management prior to sale. A Tennessee study found calves that were either weaned and fed at the farm before sale or were allowed concentrate feeds at the auction barn at the time of sale had lower morbidity rates than those shipped directly to the feedlot with no access to concentrate feeds. Daily gains for the first 70 days on feed were also greater.

The largest economic loss to the feeder from the point of sale to the feedlot is weight shrink. Shrink results from loss of gut fill, but almost 1/2 of the loss is accounted for by tissue losses of water, protein, minerals, and energy. The reduction in weight is almost linear for the first 3 hours in transit, and can go as high as 8-9% for calves shipped over 15 hours. Consequently, they enter the lot at a lower value than at purchase and require 15-20 days on feed to return to their original sale weight.

Another factor related to disease

is mixing of calves. The same pattern of treatment for mixed and unmixed groups has been observed with peaks at 7 and 14 days after arrival. However, 3-4% more of the mixed group were treated at each time. A second factor is animal concentration. A Canadian study showed there was a direct, positive correlation between the number of calves in a pen and the percentage of calves requiring treatment or dying.

Nutrition and

Feeding Environment

Unload the calves into small, shallow pens. In confined lots this would be about 10 sq. feet per calf. This provides an easier way to watch the calves for eating habits and for signs of disease. It also helps the calf find the feed and water more easily. Plenty of bunk space is necessary while being sure all of the calves can reach the bunk. During the introductory phase about 10-12 in. of space per calf will be needed. Water should be provided immediately as dehydration is not only one of the first results of transit, but also a predisposing factor in disease. Some operators routinely provide extra sources of water for the first few days. Others will allow water to run continuously to attract them to the sound. No additives should be added to the water until a regular drinking pattern has been established.

Fresh feed should be provided as soon as possible. Initial eating patterns will vary among calves, so it is entirely possible some will not eat anything for a few days. Therefore, it is reasonable to provide smaller amounts of feed in several locations on a frequent basis. A 500-lb calf requires more than 10 pounds of feed dry matter daily to gain any weight, so recovery of shrink losses and positive gains are dependent on the calf eating as soon as possible.

The interaction of the nutritional status and the environment of the

calf plays an important role in the possible onset of disease. There is considerably less rumen function in the stressed calf. Even if the animal eats regularly, the upset of digestive action prevents the calf from making use of feed to provide needed resistance to disease, as well as grow and gain weight. The return of optimal rumen function is a slow process; thus, even when good eating patterns have been established, it may still take 2 weeks to regain the shrink and begin making positive gains. Secondly, a Texas study has shown that not all animals eat every day after arrival. They reported only 22% of their calves ate the first day, and this value had only increased to 57% by the third day. The obvious result of this pattern is a lack of nutrients being available for growth and production. While most rations will be balanced for protein, vitamins, energy, and minerals, they are generally based on optimum intake levels. When intake is restricted, as in the case of the stressed calf, poor nutrition results. Therefore, it is advisable to provide smaller portions of feed highly concentrated with protein, minerals, and vitamins. Neither should the feed contain antibiotics as this will further depress rumen function.

Stressed calves show a reversal in eating habits compared to the unstressed calf. When offered diets varying in energy concentration, the stressed calf will consume one containing about 72% concentrates, while the unstressed calf will eat one that is only about 63% concentrates according to one study. However, these studies and others have also shown that, as the percentage of concentrates in the diet goes up from 50 to 90%, so does the incidence of disease. When comparing the cost of treatment versus increased production from the higher energy diets, most reports have found the added gains

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ENVIRONMENTAL AND NUTRITIONAL CONSIDERATIONS FOR STRESSED FEEDER CATTLE

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Introduction

The feeder calf experiences very little stress while just following Mom around the pasture. However, soon after weaning there are several abrupt and disruptive changes in his life. Separation from the cow, transportation, mingling with strange cattle, more transportation, and finally, arrival at a feedlot to be pushed around, stuck with a needle, and forced to eat and drink strange feed and water easily leads to a stressed calf. The result is all too often one

which also becomes sick. Morbidity and mortality of stressed feeder cattle is a \$330 million loss to the industry, and the feedlot operator must seek ways to reduce or eliminate disease in the lot to maximize returns.

However, no single cause and effect relationship has been determined between husbandry practices and the incidence of disease. The search for the answer has frustrated veterinarians, researchers, and feeders. Certain management practices have been identified, though, that influence the health of the calf.

Transportation and Marketing

One important variable associated with stress is the farm of origin. Research has shown that, even when calves are treated in the same way on neighboring farms, feedlot

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