

Impacts of nutrition on health of newly received calves

Dr. Brandi B. Karisch – Extension Beef Cattle Specialist, Mississippi State University

Most beef producers are well aware that if growing calves don't eat or don't have enough to eat that they won't gain, and won't make a profit. However, most producers don't realize that what that calf eats, or doesn't eat, also has a big impact on the health status of that calf. Every year, the beef industry loses a large amount of money due to death (mortality) and sickness (morbidity) of growing calves. Often the cost of treatment and lost production due to respiratory disease is greater than actual death loss. A good nutrition program is vital to the success of a good health program.

Lightweight, newly received calves often face nutritional deficiencies due to either an ongoing deficiency pre-weaning, or simply the fact that those calves eat less or not at all due to the stress of the weaning, processing, and transportation. When these two nutritional deficiencies are combined, the low intake of new calves makes correcting any previous problems impossible, and this further makes these calves more susceptible to infections. Typically older, heavier cattle don't see as drastic a reduction of in intake as lightweight calves.

Beef producers are well aware of how important nutrition of the cowherd is for breeding purposes. Producers are also well aware of how important it is to give calves a good start in life, but often it is easy to forget the impact that a good (or bad) start in life may have on that calf's health and performance after leaving his dam. It is well known that the transfer of immunoglobulins from colostrum is important to the short term health and survival of calves, but it also can have a long term impact on health and performance. Calves that don't have successful passive transfer

The nutritional status of the dam, and its effect of the future performance and health of that calf has become a popular topic for research in recent years. Human medicine has realized the impact that malnutrition of the mother can have on her children for years, and recognizes that low birth weight is a major risk factor for many diseases later in life. This only serves to reemphasize the importance of proper nutrition for the cowherd, as it may impact the performance and health of calves years down the road. Many previous publications have covered nutrition for the cowherd in depth and can be found at msucare.com/livestock/beef/beefpubs.html.

The stress of weaning, processing, and transportation can have a negative impact on feed intake, performance, and in turn health of calves. Typically, unstressed calves will consume enough feed to meet their energy needs, and increasing roughage or bulky feeds will increase their intake to the point where fill becomes limiting. The opposite is seen with stressed calves. When given the choice, lightweight stressed calves will select high-concentrate diets over high-roughage diets. Often this results in increased intakes and gains during the initial receiving period. It is recommended that a diet that is 60% concentrate and highly palatable be offered during the initial receiving period. One important thing to remember is that feeding, mixing, and storage facilities must be adequate to accommodate a high concentrate receiving diet as compared to more traditional feeding systems.

Another problem faced with naïve, stressed calves, is that those calves are not broke to the feed and water trough or have not been exposed to a grain type (concentrate) feed. These calves may

benefit most from feeding a high quality hay as they are typically accustomed to a purely forage based diet. An important thing to remember with feeding only high quality hay to these calves is that weight gains will typically be lower than when calves are offered a higher concentrate supplement. Providing a supplement that is highly palatable is also important to these calves who have never encountered a feed bunk. It is important to have adequate amounts of bunk space so that more timid calves do not get crowded out from the feed bunk.

A good mineral supplement is important for all types of cattle, but is of particular importance with stressed calves. It is important that mineral concentrations in receiving diets account for the reduced intake of these calves. Numerous minerals and vitamins play a big part in supporting proper immune function. Offering a complete, well balanced mineral supplement to stressed calves that are at particular risk of developing an infection is of vital importance.

Many challenges are faced with managing newly received calves. These calves present unique challenges from both a nutritional and health standpoint that are often inter-related. The majority of these issues are associated with the stress of weaning, processing, and transportation, which all have negative impacts on feed intake (and in turn nutrient deficiencies) and immune function. Often little is known about the previous management of these calves, and they may have existing nutrient deficiencies that are further compounded with a decrease in feed intake. Great care should be taken in the management of these calves to account for these issues. It is always important to develop a good relationship with your local veterinarian to tailor your health management program for your cattle's needs. Remember that laying the groundwork with a good nutrition program is vital to the success of each group of calves.

For more information about beef cattle production, contact an office of the Mississippi State University Extension Service, and visit msucares.com/livestock/beef.

References:

Galyean, M. L., L. J. Perino, and G. C. Duff. 1999. Interaction of cattle health/immunity and nutrition. *J. Anim. Sci.* 77:1120–1134.

Duff, G. C., and M. L. Galyean. 2007. Recent advances in management of highly stressed, newly received feedlot cattle. *J. Anim. Sci.* 85:823–840.