

BABY CALF HEALTH: Cold Stress & Newborn Calves

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Spring calving in beef herds will soon be underway. Weather conditions are unpredictable but we can usually count on at least some cold and wet weather during calving season. Below are a couple of topics to serve as reminders for beef producers to help prepare for inclement calving weather.

Cow Nutrition Pre-calving

Energy is probably the most important nutrient to be concerned about prior to calving. Energy status of the cow affects calving difficulty. Reducing energy supplementation in an attempt to decrease calf birth weight doesn't work. Research has shown that thin cows have more calving difficulties than well conditioned cows. Also, providing the cow with adequate energy prior to calving helps ensure that a large quantity of high quality colostrum will be available to the calf. This is critical for calf survival during cold stress and for disease resistance as the calf ages.

Remember that during the last month or so of gestation, rumen capacity of the cow decreases due to increased fetal growth. You may need to increase the energy density of the diet by feeding a few pounds of grain or grain by-products to overcome the potential decrease in hay intake.

Adequate protein is also necessary but protein is generally not as much of a concern in Missouri compared to western states that graze dormant range pastures during the winter. Protein supplementation may or may not be necessary, depending primarily upon hay quality.

Fat supplementation for the cow has been shown to improve the newborn calf's response to cold stress by increasing glucose concentration in its blood. It is believed that this increased substrate is available for heat generation. There is also some indication that serum immunoglobulins in calves of fat-supplemented cows are higher than non-supplemented cows. This helps the calf with disease resistance. Distiller's dried grains (DDG) are an excellent source of supplemental fat, protein and energy.

Newborn Calf Care

South Dakota State University has published a



Newborn sleeping on lee side of a bale feeder.

guide sheet (<http://agbiopubs.sdstate.edu/articles/ExEx2050.pdf>) which summarizes management strategies producers can use to warm newborn calves, should the need arise. The items below are taken from this publication.

Wet and cold conditions are the main environmental stressors causing hypothermia in newborn calves. Rectal temperature is the most accurate method of determining if a calf is experiencing hypothermia. Mild hypothermia is when core body temperature drops below 100 degrees F. Severe hypothermia is when core body temperature drops below 94 degrees F.

There are a variety of methods for warming calves, including warm water baths, blankets and hot boxes with warm air or heat lamps. Which ever method is chosen for warming the calf, it should not be so hot to cause skin burns. Hot boxes should be set for 105 to 108 degrees. Warm water baths should be gradually increased to 100 degrees and maintained at that temperature. It is important not to let the calf cool off after being warmed.

Hot boxes need to provide both warmth and ventilation. Venting is needed to prevent the buildup of moisture and carbon dioxide. Air movement in the box helps ensure thorough warming of the calf and prevents hot spots in the warming box. Thermostatic controls are useful to help maintain a consistent temperature in the box.

Sanitation of warming equipment is essential to prevent the spread of disease between calves. Warming boxes are a potential reservoir of calf diarrhea organisms and may make the spread of scours within a herd easier if attention is not paid to thorough cleaning and disinfection between calves.

Insuring newborn calves receive adequate colostrum in a timely manner has a dramatic and positive impact on calf health. Colostrum is the first line of defense against pathogenic challenges to the calf.