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Dealing with Hypothermia in Newborns

Anyone who has followed my writing knows that I'm not a fan of winter calving. One way to avoid today's topic is to calve on green grass in spring, but I realize that doesn't work for every operation and frankly isn't every a "sure bet" in Kansas weather. At the recent calving school issues following parturition, such as hypothermia, were discussed. Hopefully the brutal arctic blast we just experienced is the only one of the season, but please keep in mind that it doesn't take temperatures as extreme as that to create hypothermia. Let's take a look and see if this is a topic to warm up to.

Dr. Tarpoff went into many of the issues effecting the newborn calf that stems from difficulty during birth, also known as dystocia. Contractions from the dam create periods of limited oxygen as the calf moves through the birth canal. When the delivery process is prolonged, calves will be born with critically low levels of blood oxygen. These low levels will be corrected when lung function and breathing begins. However, severe dystocia calves have such low levels that the respiratory system is stifled, potentially leading to a series of negative events.

The increase of blood carbon dioxide levels and the lack of oxygen lead to a condition called acidosis. The acidosis will depress the central nervous system and lead to weak calf syndrome. In these situations, calves are unable to stand and likely have a decreased shivering response, making them more susceptible to hypothermia. Hypothermic calves lack a suckle reflex, causing a failure to ingest necessary colostrum, which will delay the absorption of antibodies and essential nutrients needed for survival. Even if dystocia has not been a problem, when calves are delivered into severely cold, wet and exposed conditions, hypothermia can rapidly set in.

All is not lost and even severely hypothermic calves can be saved with timely intervention. Step one is understanding when to mediate. The normal rectal temperature of a newborn calf is 101.5-102.5 degrees F. Carrying a simple thermometer in your calving kit, will help to identify when a calf is at risk. Once the temperature drops below 101 degrees F, steps should be taken to prevent hypothermia. Another tip is to place two fingers into the mouth of the calf. The inside of the mouth of a healthy calf will be warm and moist and calves should attempt to chew or suck on fingers by instinct. If suckle reflex is absent, it's time to get involved.

There are two basic approaches to warming the newborn, internal and external. Colostrum is the first line of defense for warming a calf internally. Colostrum is made of up to 10% fat and acts as a heat source by converting the fat into energy and maintains body temperature. Calves that can be set sternal and hold their head up need colostrum to begin the warming process. The best source will be from the dam, but other sources such as prepared colostrum replacers may be used as well.

External warming can be accomplished with a variety of sources, but basically boil down to forced warm air or warm water bath. Physical stimulation through rubbing and drying with towels, blankets or similar materials, goes a long way into helping rewarm. There are commercial warming huts designed for calves that work very well and which might need to be considered if calving season typically overlaps with cold, wet conditions. However, if you are cheap like me, the floorboard of your truck works equally well. That is, if you don't mind sharing the cab with a calf who can really come to life and make a mess in doing so. Never leave a calf unattended while using a heat source, as you can potentially "cook" or overheat the calf. Typically, an hour or so is sufficient enough time to rewarm the calf.

While warming units are a handy option, but they can also serve as breeding grounds for some negative impactful pathogens. Carefully clean and disinfect the entire unit between calves. If a bath is utilized, make sure to increase water temperature gradually and ensure the calf is completely dry before returning them to an outdoor environment.

Understanding the risk factors for hypothermia and having a plan prepared to deal with these situations, will aid in preparing a strategy to prevent loss. Managing dystocia and knowing when/how to assist chilled calves should be an essential part of your calving planning and preparation.