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Starting Off on the Right Hoof: Newborn Beef Calf Management

Calving seasons and calf management vary greatly between farm to farm. Here in southwestern Ontario calving season for our cow-calf producers has started and is in full swing this time of year. Even within our practice area we see a variety of cow-calf operations, but the same goal persists to raise a healthy calf that can be raised as a feeder or join a herd as breeding stock. That being said, reducing early calfhood mortality is an important common goal among all producers so in this month's newsletter we will discuss some interventions that producers can easily do on farm to set calves off on a healthy start.

Calf Resuscitation: Once a calf is born, especially after a prolonged calving, it may need assistance taking its first breath and adapting to using its own lungs for oxygenation. This involves positioning the calf in the recovery position (Figure 1), helping clear its airways (mouth and nostrils) of mucus and other birthing fluids and stimulating the calf. Stimulating the calf once it is in the recovery position can include putting a small amount of cold water down its ear, poking a piece of straw between or into a nostril and vigorously rubbing the calf with dry bedding material or towel. These techniques should help the calf gasp and start a more normal breathing pattern. It is never recommended to hang a calf upside down to clear its lungs of fluids, this method only makes breathing harder for the calf as the weight of its abdominal organs push down on its lungs making it close to impossible for the calf to take a deep breath.

Figure 1: Resuscitation Position for calves

Colostrum Management: Once the calf is breathing on its own the next important step is ensuring it consumes enough colostrum from its dam within the first 4 hours of its life. In the cow-calf setting this is not always something that can be readily monitored but in an ideal scenario the calf would stand and nurse from its dam within the first 2 hours of its life. Adequate intake of good quality colostrum is the most influential factor for the success of the calf in the first two weeks of its life as colostrum is where it acquires all of its immunity to all pathogens present in its environment, the calf is born with none of its own immunity. In addition to antibodies in colostrum, the first feeding of colostrum provides calories, protein and minerals that are essential to the well-

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being of the newborn calf. While colostrum management could be an entire topic of itself some key points to remember are:

- Calves should consume at least 2 liters of colostrum from the dam in the first 2-4 hours of life and then another feeding of 2 liters in the next 8-12 hours.
- Knowing when to intervene and provide colostrum to the calf:
    - Is the calf standing and moving around its mother? If not, it may have not nursed yet and producers should test the calves suckle reflex to assess the calves vigor. If the suckle is weak or the calf itself is weak or cold, it is time to intervene.
    - Poor maternal instinct can also warrant human intervention.
    - Poor udder health or confirmation in the dam might prevent the calf from adequately nursing and colostrum should be provided.
    - Calf factors: Twins, calves that have limb deformities (flexed tendons) or had difficult calvings (tongue or facial swelling) should be provided with colostrum.

Feeding Colostrum to Calves: When producers are feeding colostrum to calves using the dam's own colostrum is ideal but sometimes this is not realistic. Using a colostrum replacer is a viable option. When using colostrum replacer, it is essential that the calf gets a minimum of 150 grams of IgG antibodies in the first feeding. This often means that one bag of standard replacer does not have enough grams of IgG in it. At Heartland we sell First Start 100 brand with 100 grams of IgG per bag therefore when using this product 2 bags must be used for the first feeding. In addition, when buying colostrum replacer make sure the package says "replacer" and not "supplement". This is because colostrum supplement is designed to be used to augment the quality of dam produced colostrum and it's not a complete replacement product. When making up colostrum replacers ensure to follow the label instructions and it is a good idea to use a thermometer to make sure water is the correct temperature for mixing and feeding replacer (Around 38-39 degrees Celsius)

Using an Esophageal Feeder: Having a tube feeder on farm and learning how to properly use it to provide colostrum to calves with a weak suckle is a great idea. Not only can it be used to tube colostrum but also used to potentially treat sick calves that may need oral electrolyte feedings (after it has been properly cleaned with a detergent and hot water between calves). While bottle feeding is always preferred to help stimulate the suckle reflex which then optimizes antibody absorption, sometimes tubing a calf is the only option for weak calves and getting colostrum into the calf should be a priority.

The process of tubing a calf with an esophageal feeder is as follows:

- Restrain the calf and keep the calf's head in a neutral position (don't overextend or flex)
- If the calf is lying down, get it up to stand or if unable to stand keep the calf in a sternal position.
- Gently begin to pass the rounded end of the tube into the corner of the mouth and over the base of the back of the tongue, apply gentle pressure and allow the calf to swallow the tube.
- Once the calf has swallowed there should be less resistance in the esophagus when passing down to the stomach. Palpate along the left side of the neck for two distinct tubes (one being the trachea and the other being the esophagus with the plastic tube in it).

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- Once the tube is placed in the stomach the colostrum can then be allowed to flow from the bottle or bag feeder. Once the bag is emptied kink the tube and pull out the hard plastic feeder portion from the calf's mouth.
- Make sure to clean the tube with detergent and hot water and allow it to dry after each use and between all calves.

Newborn Calf Processing Protocols: When new calves start hitting the ground there are a few items all farms in our area should process newborn calves with. Firstly, it's well known that soils in Ontario and much of Eastern Canada are deficient in selenium. This trace mineral with Vitamin E would ideally be passed from dam to offspring in colostrum and milk but due to the low levels in forages locally all calves should be supplemented with an injectable form at birth. Not only are these both important antioxidants for prevention of white muscle disease but they are essential for immune system function. Secondly, dipping the naval (umbilical cord remnant) of the newborn calf within its first day of life has been shown to help reduce ascending umbilical infections and the risk for development of septicemia or liver abscesses. We recommend that navels be dipped with tincture of iodide at a concentration level of at least 7%. This is because we want the alcohol in the tincture to dry out the navel and the concentration of iodide to be high enough to act as an antimicrobial in a very wet environment of the newborn navel. Lastly, if male calves are born and intended to be raised as feeders it is advisable to castrate as newborns using the banding method and to provide pain control at time of banding (meloxicam). Extensive research has shown that banding younger calves has led to less stress for both calf and operator, better animal welfare and no losses in daily gains. In fact, studies have shown that liveweight gain is more impacted when bulls are castrated at older ages as compared to newborns.

Calf Environment: No discussion of calf health is complete without managing the environment the calf is born and reared in. The biggest goal of environmental management is reducing the exposure risk calves have to diseases, primarily we are concerned with bugs that cause scours and respiratory infections. Firstly, calving areas need to be clean and dry between each cow and calf pair. If calving inside this takes more consistent monitoring between cow-calf pairs to ensure that pairs are not being exposed to manure from other cows. Most disease management comes from preventing fecal-oral contamination in calves, so manure management becomes very critical during calving and when young calves are inside. If feasible, using separate areas for wintering cows prior to calving and then moving cows to a new calving area to prevent calves from being exposed to a buildup of manure. Additionally try to keep pairs in groups with calves of the same age cohorts (recommended 3 week cohorts). This limits the exposure newborn calves have to older calves that may be shedding disease causing pathogens.

As always if more questions should arise, we are happy to help your farm come up with more specific protocols that fit the needs of your operation.

Zara Silberberg

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Upcoming Stat Holidays

The clinic will be closed Easter Weekend, March 29-31. We are OPEN Monday April 1st. As always, veterinarians will be available 24-7 for emergency service. The Saturday fee schedule will remain unchanged from non-stat weekends.

For those of you with Horse Friends :)