Calving: What to look for and when to intervene

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A successful calving event will determine the future performance of both the calf – our future replacement cow – and the cow throughout lactation. Producing a healthy calf while retaining the cow’s future performance can pose a challenge if there is a lack of proper management practices, inappropriate environment (hygiene and heat abatement) and nutrition. In some cases, heifers and cows may experience difficult calving (dystocia) and require assistance. In this article, the three stages of a normal calving event will be described in detail for a better understanding of what employees should look for and when it may be appropriate to intervene.

Stage 1: Dilation

The first stage of calving will typically last around six hours (range two to 24 hours, Noakes, 2001). During this stage, the cow’s body will begin to prepare for expulsion of the calf with the dilation of the cervix, contractions of the uterus and repositioning of the fetus for birth. Visible signs during this stage include a thick vaginal discharge (cervical plug that seals the cervical canal during pregnancy), sunken tailhead (relaxation of ligaments from the base of the tail to the pins), and behavioral changes. Behavioral changes include isolation from the rest of the herd, restlessness, increased walking, decreased feeding and rumination, raised tail, arched back, frequent urination and defecation, sniffing the ground (nesting behavior), and licking the hind legs and stomach. At the end of this stage the cervix should be fully dilated to facilitate a smooth calving. The end of Stage 1 and beginning of Stage 2 will be indicated by the presence of abdominal contractions.
**Stage 2: Expulsion of the Calf**

Stage 2 begins with abdominal contractions and is characterized by the presence of the intact amniotic sac (a fluid filled sac, Figure 1), or fetal parts protruding outside of the vulva. Stage 2 ends with the delivery of the calf. In a few cases of faulty fetal disposition, neither the amniotic sac nor fetal parts will be observed, only abdominal contractions (e.g., flexed neck and shoulders, breech position, dorsal presentation). Three important criteria should be considered together to determine if intervention is needed: total time on Stage 2, progress through the birth canal, and signs that suggest a normal delivery will not be possible (e.g., calf faulty disposition).

The time from the appearance of the feet or amniotic sac through the vulva to the expulsion of the calf takes on average 65 or 70 minutes, (Schuenemann et al., 2011). However, there can be a large variation, and normal delivery in heifers may take much longer. Maternity employees should walk fresh pens with a frequency that allows them to check all cows and heifers at least every hour to record these symptoms.

Determining the exact start of Stage 2 is rather difficult; a second criterion is evaluating the progress of the calf through the birth canal. During abdominal contractions, which coordinate with uterine contractions increasing the expulsive forces, the calf should progress through the birth canal and outside the vulva. Typically, the first appearance of the calf during normal parturition will begin with two front hooves and the calf’s nose in between the two front legs in a “diving position.” When the calf is observed coming out of the vulva, normal calving with the calf exiting the birth canal will have visual progress every 15-20 minutes. Therefore, once employees find a cow in labor (Stage 2), they should check her more frequently, at least every 15-30 minutes, to make sure progress is being made. However, if a calf has an evident faulty disposition that would impede the expulsion, intervention would be needed immediately. In addition, if employees notice that after one hour a cow is no longer straining, intervention may be required.
Stage 3: Expulsion of the Fetal Membranes (“Placenta”)

After the expulsion of the calf, the placenta is typically expelled within eight hours (van Werven et al., 1992; Figure 2). If the placenta is not expelled within 24 hours after birth, the cow is defined as having retained placenta. This disease should be appropriately recorded as it increases the risks for other uterine diseases (e.g., metritis) and managerial changes might be needed to decrease the prevalence of cases. Changes in ration formulation and management practices prior to calving to control metabolic diseases might prevent this disease. Employees should never manually pull out the placenta since it can injure the uterus.

Conclusion

Training your employees to understand the calving process, the duration of each stage as well as what signs to look for will allow them to understand when intervention is needed. Diligent record keeping – such as the time when the expulsion stage of calving started/finished, calving ease scores, singletons/twins and when colostrum was fed– can be used to assess employees and cow performance. These records can be used to troubleshoot issues and plan retraining programs for employees.

References


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