

WHEN TO INTERVENE IN THE DELIVERY OF A CALF

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Perinatal Mortality (PM) is a veterinary phrase referring to death of a full-term calf shortly before, during, or within 24-48 hours after birth.

This includes "stillbirth", when a newborn calf never takes the first breath. Many genetic and non-genetic factors have been identified but dystocia (a difficult or abnormal calving) is consistently identified as the primary cause of perinatal mortality. In addition, dystocia may contribute to death of an older calf due to internal injuries sustained at birth, lack of oxygen to the brain during delivery, or failure of passive transfer of antibodies from colostrum.

Dystocia rates vary among cattle populations; considerable differences exist among the cattle breeds as well as among individual herds. Maternal, fetal, environmental, and management factors influence the mortality rate during calving season.

Many of these factors are beyond the control of a producer such as parity (number of calves the cow has already had), presence of twins, and abnormal fetal presentation such as a backwards or breech calf.

However, many risk factors can be controlled by the farm manager to decrease the incidence of weak or stillborn calves.

One of the most critical factors to prevent difficult calving occurs long before the

due date. Good nutrition for the pregnant female, especially adequate energy and protein in her diet, are essential for newborn vitality. A cow that loses weight in the last 1-2 months prior to calving will be slow to deliver her calf and produce colostrum of poor quality and quantity. If the calf is not strong at birth, it may be unable or unwilling to get up and suckle colostrum in a timely manner.

A normal calf should be standing within 30 minutes of calving and nursing within 30 minutes of standing.

Early colostrum intake (within 6 hours of birth) is essential for efficient transfer of immunoglobulins (antibodies), energy, and regulation of body temperature. Not receiving enough colostrum shortly after birth will also affect a calf's long term health status (greater risk of disease and death) and lifetime productivity (decreased overall average daily gain). A weak calf is at much higher risk for infections the longer it is lying down with its navel in contact with the ground, especially in wet or muddy conditions.

Calving management, including supervision and intervention, is critical to minimize or prevent calf losses. Do not intervene during Stage 2 (active labor) of calving when the feet of the fetus have been visible for two hours ("two feet two hours rule") but the cow is making no progress.

However, some experts have challenged this rule because of the uncertainty or confusion of when to start the clock ticking. The onset of Stage 2 labor has multiple definitions including: 1) appearance of the amniotic sac ("water bag") at the vulva, 2) rupture of the allantoic/amniotic sac (the water bag breaks), or 3) appearance of feet at the vulva. Numerous studies have proven that the total time allowed for Stage 2 should be 2 hours or less provided the

fetus is in a normal position.

A recent (2011) study demonstrated that Assisting cows at 80 minutes after the Appearance of the water bag clearly decreased the risk of stillbirth.

The recommendation to intervene in calf delivery from the specialists at the University of Kentucky is:

1. In the case of mature cows, intervene if either the water bag or feet have been evident for 2 hours with little or no progress. Or, if the cow has pushed hard for 30 minutes but the calf has not moved, assistance is needed.
2. In the case of heifers, intervene one hour after appearance of the water bag.
3. If a cow or heifer has been in Stage 1 (restless, kicking at belly, wringing tail, seeking isolation) for 2-6 hours but does not progress to active straining, intervention is indicated.

Cows should progress to Stage 2 more quickly than heifers.

After the cow or heifer is checked vaginally, then a decision for further action such as forced extraction or caesarean section can be made with a reasonable chance of delivering a live calf.

NOTE: According to the NAHMS 2007-2008 beef study, nearly 50 percent of operations allowed cows to labor 3 or more hours before assistance was given, and almost 40 percent of operations allowed heifers to labor an average of 3 or more hours. Interestingly, the same study reported calves born dead accounted for 44% of all calf death loss during the first 6 months of 2008. An additional 13% died in the first 24 hours after birth. This information highlights how critical the birthing process and early post-partum

period are for calf survival.

Frequent monitoring of the calving process is important in order to identify calving problems early.

Since the time from appearance/rupture of the sac to appearance of the feet is variable and sometimes may not even occur, it is essential to check cows frequently to identify those experiencing extended or difficult labor.

Checking cows every 3 hours is recommended to help early identification of dystocia.

Realistically, checking cows at least twice daily and three times per day for heifers may be a more workable schedule.

One simple way to make this task easier is to feed cows daily at dusk. A study in Iowa found that 85% of the calves were born during daylight hours when cows were fed in the evening rather than morning.

In addition to length of time in labor, the quality of contractions should also be monitored as it may indicate malposition of the fetus, a twin birth, or a metabolic problem. Poor contractions are due to primary or secondary uterine inertia, which simply means her uterus is no longer working to push the calf out. Primary causes include conditions such as low blood concentrations of calcium and magnesium, old age, or preterm delivery. Secondary uterine inertia is seen with fatigue of the uterine muscles such as in a prolonged attempt to deliver a malpositioned calf or twins.

When a calf is presenting correctly, you should observe two hooves facing down and a nose on top of the legs. If the nose is not visible (head turned back) or a nose

with one or no hooves (leg or legs back), immediate intervention is necessary.

If the calf is presenting backwards (two hooves with the pads up), pulling the calf will increase its chances of survival as these calves take a longer time to be delivered naturally.

A breech birth (tail first) or uterine torsion is difficult to visually diagnose; if there are no active contractions or no visualization of the feet, she should be checked for a problem. Many calf losses are attributed to a delay in receiving assistance or the amount of difficulty and time required to remove the calf.

Knowing when intervention is required and when to call for professional veterinary assistance can greatly increase the calf's chance of survival. If you don't know what the problem is call a veterinarian. If you know the problem but

you have been unsuccessful correcting it after 30 minutes of trying, call a veterinarian.

Losses can be prevented by good supervision and quick intervention when needed.

Signs of reduced vitality in the neonate include peripheral edema (swelling of the head and tongue), scleral hemorrhages (bloodshot eyes), yellow staining of the hair coat, cyanosis of the mucous membranes (blue color to gums), or reduced responsiveness to stimulation. When observed, these are strong indicators that intervention is required.

Early intervention is the key; not only does it increase the chance of survival for the calf, but it also greatly increases the chance for the cow to rebreed period are for calf survival.