

# Calving Preparations

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It is a perfect sunny January day and your first calf heifer has just given birth. The bouncing calf gets up in minutes and begins to nurse. The calf is obtaining high quality colostrum because you have an excellent vaccination and nutrition program. The dam licks the calf off, pass her placenta and begins to eat. Life on the ranch couldn't get any better! Unfortunately, it doesn't always work this way.



Why do calves die? Most studies estimate the average mortality from birth to weaning is about 10 percent. Interestingly, more than half of calves die within the first 24 hours after birth and three-quarters die within the first three days. Clearly the first three days after birth are a critical time and demand producer vigilance to avoid preventable death of calves.

In a USDA study, producers reported about one-third of calf deaths were related to calving problems, but interestingly, almost one-quarter of calf deaths were related to weather problems. Digestive (13 percent), respiratory (11 percent) and unknown causes (15 percent) were the other major causes of death. Thirty percent of cow deaths were related to weather and calving difficulties.

So what does this tell us? Calving difficulties and weather can be big problems for both the calf and the cow. The single most important cause of calving difficulties (dystocia) is a mismatch between the size of the calf and the pelvic size of the dam. Consequently, to decrease the risk of dystocia, it is suggested that EPDs be used to identify low birth weight bulls and that adequate pelvic size for replacement heifers be determined by pelvic measurements. While this is useful information for next year, it won't help you much with today's pregnant cows!

It goes without saying heifers are more likely to have problems calving. While almost 98 percent of cows calve unassisted, only 80 percent of heifers calve unassisted. Calves requiring assistance at birth are more likely to require added attention to survive.

Although it seems pretty straightforward, all these factors interact and any problem with any one of these factors can be the straw that breaks the camel's back. Calves affected by

dystocia or other maternal health problems adapt poorly to life outside the uterus and succumb to environmental problems more easily. Early and aggressive intervention and supportive care can prevent calf losses. Calves should be warmed, dried, sheltered and provided high quality colostrum. Supplemental feeding may be required. Maternal bonding and attention should be encouraged and the pair should be penned together until it is clear that all is well. So what can you do to maximize the chances calves will survive?

## **COLOSTRUM**

Colostrum is the first milk the cow produces. It is rich in antibodies, protein and other nutrients. Good colostrum is thicker and a darker color than milk. Calves depend on antibodies in colostrum for their initial immunity. The intestines of the calf are designed to allow big molecules (antibodies) to pass through and into the blood stream for the first 24 hours after birth. After that time, the passageways are closed and antibodies are not absorbed. Thus, it is incredibly important to make sure the calf gets colostrum in the first day of life. Ideally, the calf gets up, nurses and ingests the colostrum. Colostrum not only provides antibodies, but also energy, nutrition, glucose and warmth. Calves who do not receive adequate colostrum are at increased risk for other problems including infectious diseases.

There are other factors that decrease the absorption of colostrum, including cold weather and poor maternal nutrition. Calves having survived a difficult birth have poorer absorption of colostrum than calves born without difficulty. Even if a calf receives the right amount of colostrum at the right time, a calf surviving a difficult birth is at risk for other problems.

## **WARM AND DRY**

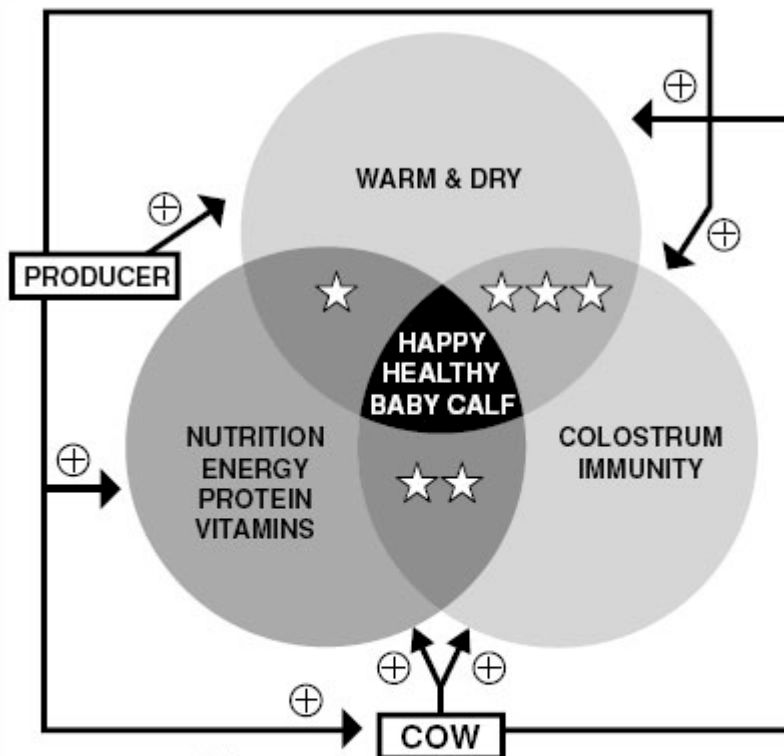
When calves are born they are dumped rather abruptly from a warm, temperature controlled environment into whatever Mother Nature has created at the time. Ten degrees with a 40 mph wind is quite a shock for a wet calf with no body fat! In addition to the environmental shock, calves do not have the ability to regulate their temperature like adult cows do, so it is up to us to help them maintain their body temperature. Keeping them warm means they are more likely to be up and moving around and more likely to nurse, which provides not only a warm liquid, but also energy, so they can stay warm. There are several options for warming your calf: calf coats; warming boxes; calf hutches with deep straw; or taking the calf to the house. Getting the calf warm and dry goes a long way towards improving their chances of survival.

Let's say you go out one morning and find a new calf lying flat in the snow. The calf doesn't look like it is breathing, in fact, it looks frozen, so what do you do? Remember the old adage "it ain't dead until it's warm and dead".

Basically, at real cold temperatures, the body slows down so much the calf may look dead, but really isn't. Don't dump it in the dead pile, warm it up. How? Well, that

depends a bit on your set-up and whether it is acceptable to put a calf in your bathtub! A garbage can filled with warm water will also work. Warm water is better than heated air. The water should be warm (not hot) and you can gently massage the calf. Of course keep its head above water level. Once you get the calf warmed up and find it is alive remember it needs to be dry, stay warm and get enough to eat.

At Kaiser Cattle, every calf born in the winter gets a polar fleece coat. Although some consider it a bovine fashion statement, a warm calf can use the energy they obtain from colostrum or milk to grow, develop, enhance immunity and fight infection instead of using that energy to stay warm. There are many calf coats on the market or you can even make them. Polar fleece has the advantage of keeping the calf warm even if it isn't entirely dry. Calf coats are good in cold weather and in a covered area, but a calf in a polar fleece coat in the rain is a soggy mess!



**one, two and three stars:**

\*warm, dry calf with adequate nutrition but no colostrum is at risk for infection (scours, pneumonia, naval ill, sepsis, etc.)

\*\* calf with adequate colostrum and nutrition, but wet and cold is at risk for infection

\*\*\*warm, dry calf with adequate colostrum, but not enough to eat is at risk for infection

**NUTRITION - FOOD AND DRINK, VITAMINS, MINERALS AND MEDICINE**

Just like the quality of the colostrum is the result of the nutritional status of the dam, so is the quality of the milk. Cows in poor condition, without adequate energy, vitamins and minerals cannot be expected to provide quality colostrum and milk for their calves.

Calves need adequate nutrition to maintain body temperature and normal body functions, develop their immunities, grow and thrive. The calf must receive enough calories to support normal “maintenance” functions and enough calories to grow. Anything increasing the energy expenditure will increase caloric requirements. Common things that increase energy expenditure in calves include cold weather and walking through mud or deep snow. (Think of humans who work out at the gym — they burn enough calories working out that they can eat more cake! Calves who “work out” in the cold and mud need more food!) If the calf is cold or dragging itself through deep mud, it needs more calories to grow and thrive. Also, the colder it gets, the more calories the calf needs, so the more it needs to eat. A calf not receiving adequate nutrition is at increased risk for infection. Incredibly, starvation is not an uncommon cause of death in dairy calves kept in hutches in cold weather. If the amount of milk replacer is not increased to compensate for the decreased temperature, calves will not grow or even worse, they can die.

In selenium deficient areas, calves should receive selenium soon after birth. Some veterinarians also recommend an injection of vitamins A, D and E at birth. Talk to your veterinarian about selenium and vitamin supplementation. Most veterinarians recommend dipping the navel in iodine. This not only decreases the risk of navel ill, but also helps to dry up the cord. If you use oral scour prevention, make sure you follow label instructions.

If you are feeding or supplementing the calf, remember caloric requirements go up as the temperature goes down. Mix the milk replacer or electrolytes as directed — adding too much or too little water can wreak havoc on a calves’ ability to keep things under control.

What’s the bottom line? If your cows are in good condition, you have a good mineral and vaccination program and you have appropriate shelter, most calves will do just fine. Calves that are cold, wet or who have survived a difficult calving are at greater risk for problems and may require a little extra TLC.

## **COLOSTRUM**

- Provides antibodies (immunity) for the calf
- Cow colostrum is generally better quality than heifers
- Good quality colostrum requires
  - adequate cow nutrition
  - adequate mineral intake • adequate cow body condition
  - adequate vaccinations (to stimulate the antibodies)
  - Colostrum from the dam is generally best
- Colostrum from high milking cows can be frozen for later use

- Because of Johne's disease (and other pathogens) be cautious using colostrum from dairy cows
- If you don't have any colostrum, colostrum supplements are a better choice than milk replacers in the first 24 hours after birth

### **THINGS TO HAVE & SKILLS TO ACQUIRE BEFORE THE CALVES ARRIVE**

- Colostrum supplement
- Milk replacer
- Calf coat or other way to warm a calf
- Esophageal feeder (get the one with the bag and the shut off valve — not the milk bottle with the short hard tube; that is a great way to drown a calf!)
- Calf electrolyte solutions
- Vitamins A,D,E and selenium (if recommended)
- Learn how to tube a calf!
- Depending on where you are, how close the nearest vet is and how good your skills are you may want to learn how to give IV (intravenous) or subQ (subcutaneous) fluids to your calves.