A new Wyoming calf greets the world after being tagged and doctored in the pasture. A calf that stands and seems alert and active is an indicator they have received colostrum and are off to a good start. Photo courtesy of the Little Jennie Ranch, Bondurant, Wyoming.

Colostrum key to calf care

Here in the Cowboy State, calving season will be coming up before we know it. Though this past spring was relatively mild, we don't have to think too far back to remember a bitter cold, snowy calving season.

Even in the mild years, newborn calves face many challenges when they hit the ground. As livestock managers, what can we do to improve the survival chances of our herd's newest members? Understanding colostrum and its importance to calf health is one way to help increase a calf's chance of survival.

What's colostrum?

Colostrum is the first milk produced by the cow following birth. Colostrum is extremely nutrient dense and contains antibodies that are critical for initial resistance to disease. Unlike in humans and many other mammals, where antibodies can be passed through the placenta during pregnancy, the bovine reproductive tract doesn't allow for immunological transfer from mother to calf, leaving the newborn vulnerable.

According to the USDA Agricultural Research Service Center in Clay Center, Nebraska, calves that don't receive colostrum are more than 50 times more likely to die within their first three weeks. Calves that don't receive enough colostrum but still manage to survive to weaning are at a significantly higher risk of developing diseases later in life compared to calves that receive enough colostrum.

When to intervene

The timing of colostrum intake is crucial to ensuring calf health. In general, calves should receive roughly 2 quarts or about 5% of their body weight in the first half hour after birth. They should then receive at least 1 gallon within 12 hours. This is because the calf's digestive tract only allows antibodies to pass directly to the bloodstream for the first 24 hours of life before the intestine becomes impermeable.

The most efficient way for the calf to receive colostrum is for it to stand and suckle from its mother without human interference. However, sometimes the process doesn't go so easily. Whether it's due to problems with the cow or calf, extreme weather, or other issues, there are occasions when the calf is unable to nurse directly from its mother during this critical period.

If the calf is extremely weak due to cold, a difficult birth, or other factors, it may not be able to stand up to reach the cow's teat. There are also occasions when the cow refuses to stand still to allow itself to be nursed, or sometimes completely abandons a new calf, as we sometimes see in first-calf heifers. It is important to recognize when a calf may be unable to receive colostrum in the usual way and be prepared to step in.

Collection and storage

Ideally, colostrum is collected directly from the mother and given to the calf, but if this is not possible, colostrum will need to come from other sources. If colostrum cannot be collected from a particular calf's mother, colostrum from other cows can be stored and used as needed.

When colostrum is collected for future use, it is best to select healthy, mature cows as donors. Research suggests colostrum from cows in at least their third lactation or later is higher quality than that of heifers. If the donor cow also has a calf to nurse, allow her calf to receive its fill before collecting.

Colostrum collection should take place within 12 to 24 hours of calving. Note that colostrum should be a thick, rich, yellow liquid. If it comes out more like regular milk, you may have missed the colostrum window, and will need to collect from a different cow.

Struggling with bottle feeding?

Hopefully, the calf will be able to suckle from a bottle, but in some cases the calf may be too weak or will refuse to accept being hand fed. In this instance, a tube feeder can be used. However, this can be tricky and is dangerous to the calf if used incorrectly. A veterinarian should be consulted first, especially for those who have not attempted this method before.

Colostrum can be stored by freezing it in milk jugs or, better yet, in 1-gallon plastic baggies. Baggies can be stored more easily and are easier and faster to thaw. If using baggies, fill them halfway and squeeze the air out.

When prepping frozen colostrum for use, do not place it in boiling water to thaw. Studies show this can destroy a portion of the antibodies the calf needs. Microwaves can also damage these antibodies and should not be used for warming frozen colostrum. Instead, frozen colostrum should be thawed slowly in a 110°F water bath until it reaches ~104°F throughout.

If natural colostrum is not a practical choice or is unavailable, commercial colostrum replacers can be used instead. However, replacers are more effective as supplements for a calf that has already received some natural colostrum. Natural colostrum is always the superior choice when available.

Long-term success

Colostrum is a vital element of a calf's survival and therefore impacts the success of any cattle producer, whether you're a large-scale rancher or just own one or two backyard cows. Its high nutrient content and immediate natural disease resistance make colostrum one of the most important considerations not only in ensuring a good calf crop, but in guaranteeing an animal's lifelong productivity. Next calving season, be prepared to monitor for calves not receiving colostrum from their mother and have a plan to get it to them using alternate methods.

Dagan Montgomery is the UW Extension agriculture and natural resources educator serving Sublette County. He can be reached at dmontgo8@uwyo.edu or (307) 367-4380.