

## The Importance of Colostrum

Getting the proper colostrum into the newborn cria is the most important step for overall good health.

Colostrum is the cria's only protection from disease until their own immune system develops.

Colostrum is the milk produced by the mother when a cria is born. It's thick and kinda syrupy and is packed with the necessary ingredients for life. Colostrum contains high nutrients and concentrations of immunoglobulins, otherwise known as antibodies. Antibodies are proteins which can destroy disease in livestock. The major role of colostrum is to passively transfer immunity from the dam to her cria. Failure of passive transfer (FTP) occurs when the cria does not receive this passive immunity.

When born, a cria has no immune system to protect them from disease because antibodies do not pass across the llama's placenta to the fetus. Therefore the antibodies in the colostrum provide crias with the ability to fight off infections for the first few weeks of life. This is accomplished by the absorption of antibodies through the wall of the newborn cria's small intestine. This process from mother to cria by way of the colostrum is called passive transfer.

Crias must receive colostrum very soon after birth. Timing is very important and often makes the difference between life and death. The timing of colostrum intake, the amount fed, and the antibody concentration of the colostrum determines the success of absorption of antibodies by the cria. Preferably we want to see the cria nursing well within the first six hours of birth. Transfer of the antibodies gets less and less as time passes and after 24 hours, the stomach begins to close and not absorb the antibodies in the colostrum. It's estimated that at six hours after birth, crias absorb about two-thirds of the immunoglobulins in the colostrum, but at 36 hours after birth, they only absorb a very small percent. As you see, timing is critical for survival of the newborn.

When the llama mom has read the birthing book and everything goes as planned, the newborn cria will get up, wobble around and find the udder, and drink a full dose of colostrum on his own. But sometimes there are problems such as the mother's milk has not come in yet, it may be a difficult or premature birth and the cria is not able to stand and nurse, or the mother will not allow the cria to nurse for some reason. In these instances, our first preference would be to try to get milk from the mother and feed with a bottle or tube feeding. However, if the mother is not producing any milk yet, we sometimes have to turn to alternate colostrums.

If you have colostrum on hand from another source, it must be refrigerated. Quality declines after about one week. If you have frozen colostrum on hand for emergency situations, it can be stored for 1-2 years. It must be thawed using only warm water so the immune proteins are not destroyed. Do not microwave to thaw colostrum.

There are also colostrum replacers and colostrum supplements that can be used.

1. Colostrum replacers. Colostrum replacers are excellent tools to have handy in case of emergencies. These are powdered mixes that contain a full dose of antibodies for the cria (100 to 125 grams per dose). While they do not contain the white blood cells and immune substances that "real" colostrum does, they also do not carry the possibility of infectious disease. Colostrum replacers need to be mixed completely according to label directions, and tend to be expensive compared to colostrum supplements (below). (Kid Colostrum from MannaPro is a colostrum replacer but labeled as a supplement - from TSC. Use only the 1st day or 48 hours)
2. Colostrum supplements. In contrast to colostrum replacers, supplements do not contain a full dose of antibodies for the cria, often only 40 to 50 grams. As such, these products should be used in cases when it's questionable whether a cria consumed his full dose of colostrum. These products are less expensive than colostrum replacers. Many products that are marketed as "colostrum supplements" contain no antibodies at all. Look for the level of "globulin protein" or "IgG" on the label to tell you.