

Colostrum Management for Small Ruminants

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Colostrum is the thick and yellow first milk produced by female mammals when they give birth. It is vital to the newborn calf, as it contains antibodies and is rich in essential nutrients to provide energy, maintenance of body temperature, water balance and growth.

Kids/lambs are born without a functional immune system. It takes about 30 days for their immune system to become fully functional. During this time, they rely on the maternal antibodies received through ingestion of colostrum to protect them against diseases caused by pathogens during the first few weeks of life.

Other Colostrum Sources

Colostrum replacers can be used to increase the amount of IgG fed when no other source of colostrum is available, but they cannot replace high quality colostrum. They are bovine serum based and contain at least 100g of IgG per liter, plus fat, protein, vitamins and minerals needed by the newborn.

***Milk replacer should never be a substitute for colostrum and should not be fed until kids are over 24 hours old*.**

***Only colostrum from healthy does/ewes should be stored!
If the doe/ewe's healthy status is unknown, colostrum should be pasteurized to avoid expose large number of kids/lambs to diseases from infected dams/ewes.**

Colostrum Quality

The primary antibody in colostrum is the immunoglobulin G (IgG). The concentration of IgG varies in colostrum and can be measure with a colostrometer to determine colostrum quality. High quality colostrum contains 50 mg or more of IgG, however, IgG concentrations decrease after parturition at approximately 3.3 mg/ml per hour, diminishing to zero by about 24 hours post-kidding/lambing. Colostrum should be fed within 1-2 hours of collection or refrigerated immediately. Do not leave colostrum at room temperature as bacterial counts double every 20 minutes.

Timing of Feeding

Feeding colostrum soon after birth is extremely important for the survival and growth of newborn kids/lambs. Ideally, kids/lambs should receive 4 equal doses of colostrum during the first 18 hours of life. At birth, at 6 hours, at 12 hours and at 18 hours. The immunoglobulins present in colostrum are absorbed by the kids/lamb's small intestines. The capability of absorption starts to decline after about 12 hours of birth and after the initial 24 hours, the intestinal tract no longer allows absorption of antibodies. Failure of passive transfer of immunity (FPT) is the term given to a newborn animal that has not received adequate immunity from colostrum.

Quantity and How to Feed

The newborn kid/lamb needs to receive 10 to 20 percent of its body weight (about 3 ounces of colostrum per pound of body weight) of colostrum during the first 18 hours of life. If the kid/lamb is too weak to drink from the doe/ewe, use an esophageal tube or a bottle. When colostrum is fed to kids/lambs, it should be warmed to body temperature (100- 102 °F) for feeding. Excess colostrum can be refrigerated and fed later.

Collecting Colostrum

Collect colostrum within 15 minutes of kidding/lambing. Use standard clean milking practices: wear gloves, clean the udder and ensure all milking equipment is sanitized before collecting colostrum. Bottles, buckets and nipples should be washed using soap and hot water. After collection, all the equipment used should be rinsed with a 10 per cent bleach solution. Let the equipment dry before using again.

Storage, Defrosting and Heating

Refrigerated colostrum should be used withing 24-48 hours. If not used, it should be frozen in small quantities for use within 6 months. Ice-cube trays work well to freeze small quantities and the cubes can be stored in labeled (donor's ID and date of collection) zip lock bags. Colostrum must be thawed carefully so that the antibodies are not destroyed. Place frozen bags in a lukewarm water bath. Do not heat colostrum in the microwave or use hot water.

