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COLOSTRUM: Is It Needed by the Newborn Lamb?

KURT WOHLGEMUTH
Extension Veterinarian

WHAT IS COLOSTRUM

Colostrum could be defined as "the very first milk" given by a ewe immediately after lambing. However, this is an incomplete definition because colostrum is a lot more than just plain milk. As a matter of fact, colostrum is a **very specialized secretion of the ewe's mammary gland** and it is different from typical milk.

Colostrum indeed meets the nutritional requirements of the newborn lamb, but it does much more. Colostrum is rich in antibodies and globulins. As early as 6-8 weeks before lambing the ewe starts forming colostrum and at the same time she concentrates in her udder antibodies (disease-fighting proteins) which circulate in her blood. The greater the immunity the sheep possesses, the richer her colostrum is in antibodies. Colostrum is the equivalent of a massive vaccination, packed with protection against diseases. The only reason we vaccinate ewes before lambing (against diseases such as tetanus, overeating C and D, sore mouth, etc.) is to increase the quality and quantity of antibodies concentrated in her colostrum.

DOES THE NEWBORN LAMB NEED COLOSTRUM?

1.3 The answer is an emphatic YES! The newborn lamb is born without significant protection against costly infectious diseases. Regardless how much antibodies are present in the ewe's blood, these antibodies do not cross the placental barrier; in other words, the ewe's antibodies cannot be passed onto the lamb when the lamb is still growing inside her uterus. The lamb, and other domestic animals, are different in this respect from newborn human babies. The human fetus gets antibodies from the pregnant mother before birth; this is why no doctor makes a fuss when a mother chooses not to breast feed her newborn baby.

How does the lamb acquire this required protection? By ingesting several pints of colostrum **early** in life. **Early** must be emphasized; as soon as possible after birth. As the newborn lamb grows older by the hour, it steadily loses its ability to absorb the antibodies present in the ewe's colostrum. The intestines of the newborn lamb are lined by some-unique cells which permit antibodies to pass from the intestinal contents into the lamb's blood and from the blood to other organs. These special cells, which are present only at birth, become replaced by normal epithelial cells within 24-48 hours after birth. Normal epithelial cells can not absorb colostrum antibodies.

Let's visualize the intestines of the newborn lamb as a long tunnel. At birth, this tunnel has numerous window-like openings. These openings permit the passage of antibodies into the lamb's blood. One-problem, though; as minutes and hours pass by, these windows close, one after the other, in rapid succession. At the end of 24 to 48 hours after birth they are all closed and the lamb is no longer able to absorb antibodies.

An obvious conclusion from this physiologic fact is the need to make sure that the newborn lamb nurses colostrum before it loses its ability to absorb antibodies. Otherwise we end up with a lamb which has acquired very little immunity, if any at all. We call this lamb 'hypoglobulinemic'. This lack of protection makes the lamb easy prey for lethal diseases, such as scours, pneumonia, tetanus, etc.

A good rule of thumb to follow is: **make sure that a lamb nurses its dam no later than 6 to 12 hours immediately after birth.** How much colostrum should the lamb nurse? **At least** a quart within 24 hours, preferably divided into two nursings of one pint each. This is a minimum requirement, and many healthy lambs will definitely ingest more.

The fact remains that, "A lamb without colostrum usually equals a dead lamb, or at least a darn sick one."

COLOSTRUM "REPLACERS"

Wouldn't it be nice to have some kind of little bottle or bag of powder to replace the ewe's colostrum? Many times we have lambs reluctant to nurse, or ewes (often ewe-lambs) with "hot" bags, or cases of frank mastitis and we wonder what to do. Unfortunately we do not have synthetic colostrum or any commercial product which comes even close to duplicating the chemical composition of colostrum. However, we can still help the newborn lamb.

Let's remember that the ewe still "pumps" significant amounts of antibodies into her milk for 3 to 5 days after lambing, although her lamb cannot absorb antibodies once it is 1 to 2 days old. Should we have a ewe with mastitis at lambing, we can always allow her lamb to nurse another ewe which lambed a day or two ago to provide the lamb with a good deal of immunity **before** putting the lamb in the "orphans" pen.

FREEZING COLOSTRUM

Many a successful sheep producer keeps an adequate supply of frozen colostrum just in case. We can freeze colostrum and store it frozen for many years without destroying its protective antibodies. It is best to freeze it in small containers; freezer bags, about 1 pint in volume, are ideal. If needed, thaw it at room temperature or place the bag in hot water but **do not boil** the colostrum; boiling will denature the antibodies and most of the immunizing ability of colostrum will be lost. If a microwave oven is used to thaw it, use only the slow thawing cycle and make sure it does not boil.

Administer warm--about body temperature--thawed out colostrum to the lamb at the rate of at least 1/2 to 1

pint, twice, during the first 12 to 24 hours immediately after birth.

It is best to freeze colostrum from the oldest ewes in the flock. These older ewes have been exposed to many diseases throughout their life span and have a broader immunity than the young ewe lambs. Colostrum from older ewes will be more likely to contain a more diversified array of antibodies and consequently will protect the newborn lamb against many diseases.

If ewe's colostrum is not available for freezing, a second best would be to freeze cow's colostrum. Many diseases which affect newborn lambs also affect young calves. Conversely, the immunity given by the cow's colostrum to her calf could be acquired by the newborn lamb. Again, freeze in small containers, and obtain colostrum only from the oldest cows in a given herd. Handle and administer cow's colostrum as stated above for frozen colostrum from ewes.

THE BOTTOM LINE

Efforts to assure that our newborn lambs ingest sufficient colostrum early in life is a reflection of sound husbandry. Yet we cannot overlook the need for a broader program. Early ingestion of colostrum is part of, but not a replacement for, a total flock health program. No one can deny the importance of adequate and balanced nutrition of our ewes before and after lambing, or the need for clean, dry, draft-free lambing pens...or the importance of TLC (yes! tender loving care) reflected in the personal attention given to each lamb at birth. Lambing time is "harvest time." Let's be there when the lamb is born; it may need attention. Finally, the judicious use of vaccines in ewes before lambing ought to increase the quality of the colostrum. However, vaccinations will be completely wasted if the lamb does not get colostrum early in life.