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Hand Rearing Orphan Lambs & Kids: *Can It Be Done Successfully?*

Dr. Beth Johnson, DVM

Every year sheep and goat producers must raise lambs or kids on supplemental milk because of multiple births (i.e. triplets), death of the dam, weak newborns, or rejected offspring. At times we really question whether it is worth the effort involving time, energy, emotional trauma and cost into raising these orphans. With market prices high and the increased price for show animals, it does seem more cost effective now than it used to be, but how do we raise these little ones so that they turn out to be a productive animal?

It is extremely important that we start them off on the right hoof. On day 1, be sure they get adequate colostrum either from their dam or a “colostrum bank” which is frozen colostrum that you or another producer have saved from another source. Fresh colostrum can be stored in the refrigerator for several days or frozen for at least one year. If freezing be sure to freeze in small quantities since frozen colostrum should not be thawed and then refrozen.

Colostrum is the “first milk” that all female mammals produce after birth (parturition). It has a high level of several nutrients that are important for the newborn health and performance, contains a high concentration of antibodies against a variety of infectious agents and also the first source of Vitamin E. The iron content of colostrum is 10 to 17 times higher in colostrum than normal milk and also because of its laxative properties, colostrum helps to eliminate fecal matter in the newborn’s digestive tract. If you have to thaw out frozen colostrum it should be thawed slowly in a warm water bath (feeding temperature: 102-103°F, 39-40°C) because direct heat destroys the precious antibodies contained within colostrum.

Lambs and kids should receive 10% of their weight in colostrum within 24 hours after birth. To accomplish this, give 2 to 4 ounces at 3- to 4-hour intervals for the

Figure 1. Commercially available Colostrum Replacer



first 24 hours of life. A Pritchard nipple or lambar nipple works great on a 24 oz. pop bottle or use a tube feeder if suck reflex is poor. Be sure and provide a warm, draft free area for the lamb/kid to prevent chilling. If colostrum is not available, there are colostrum replacers available commercially. Just be sure to utilize a “Replacer” and not “supplement”. In Figure 1., there are some commercial products which are available commercially in the United States. The Saskatoon Colostrum Company in Canada also has a commercially available colostrum replacer.

If you find a newborn that is unable to suck due to hypothermia, trauma, selenium deficiency, or other physical or medical reason, tube feeding the newborn is a must to save the kid or lamb. Although it sounds difficult, tube feeding with the right tools can be performed with minimal skill. Use a 14 gauge catheter tube and measure the distance from the tip of the nose to the last rib of the kid or lamb. Place a mark on the tube that marks the distance. Start passing the tube through the mouth and if the newborn is alert enough allow it to chew on the tube while passing it down the throat. If you are able to pass the tube all the way to the mark you should be in the stomach. Also if the kid/lamb is able to vocalize, the tube should be in the esophagus. Once the tube is in the stomach dispense the milk/colostrum through the tube. I usually do

Figure 2. 14 Gauge tube feeder/syringe used for tube feeding newborn lambs/kids.



not tube feed more than 2-4 oz at one time. A tube feeder and syringe are exhibited in Figure 2.

I recommend feeding straight goat milk (lambs perform very well on goat milk) for 2-3 days and offer all they want to drink every 6 hours up to 24 ounces. After the third day, the kids or lambs can be slowly introduced to a commercial kid or lamb milk replacer. The list below gives some guidelines to think about when selecting a milk replacer to use:

1. **More doesn't always mean better.** Be aware when comparing products that more of a nutrient does not mean that the product is necessarily better. Certain fat soluble vitamins in a milk replacer may approach toxic levels, so just because one product has an acceptable level of Vitamin A, for example, doesn't mean that another product which has a much higher level of Vitamin A is better. This is also true for fat content as explained below.
2. **Analyze the research.** Ask to see the research behind the product. Look for research that has been conducted on the animal you are looking to feed. Highly reputable companies will invest in animal-specific research, giving you confidence that the positive results are repeatable in your herd or flock.
3. **Identify the supplier.** Identify the milk

replacer supplier. Are technical staff members available to assist if challenges occur? Also be sure the milk replacer has not been sitting on the shelf for a long period of time.

4. Is the milk replacer made for lambs or kids? Make sure that the milk replacer purchased has been specifically formulated for the animals that you raise.

- Milk replacer formulated for kids will mimic the composition of doe's milk and is better for the kid. At a minimum, goat milk replacer should have 25 percent protein and 28 percent fat.
- Milk replacer formulated for lambs will mimic the composition of ewe's milk and is better for the lamb. At a minimum, lamb milk replacer should have 25 percent protein and 30 percent fat.

5. How does the milk replacer mix? This is especially true if you are using a self-feeding protocol. Examine how the milk replacer mixes in warm water to shed additional light on the quality of product. If the product disappears right away in the water, there is the possibility that the product will separate, that is fat molecules will float to the top and protein will settle to the bottom. The separation of the fat and protein molecules is problematic because it prevents kids and lambs from receiving consistent nutrition at each feeding. Minimal fluid separation is a good indicator of a quality product.

6. Does the milk replacer have a preservative system? Inquire if the milk replacer has a preservative system. This is especially important if you use self-feeding/free-choice because the milk replacer needs to stay fresh throughout the day.

7. What is the copper content? Examine the copper level in the milk replacer. For sheep producers, the copper level is important, but not just because of the toxicity; the lamb actually needs 8 to 11 parts per million of copper for normal growth. Milk ingredients often are deficient in copper for lambs so, milk replacer actually needs a small amount added to provide for proper growth. If the milk replacer has added copper, it is

Table 1. Recipe for kid milk replacer Free-Choice System:

Resource: Denise Martin/
Martin Meadow Farms

1 gallon Vitamin D Whole Milk

1 cup Buttermilk

One can evaporated milk

Kid milk replacer

One empty gallon jug

- Pour half of the whole milk into the empty gallon.
- Add 1/2 cup of buttermilk to both half gallons.
- Add 1/2 can of evaporated milk to both halves.
- Top off gallons with mixed, as directed, kid's milk replacer.
- Refrigerate.
- After feeding, completely break down the bucket and thoroughly clean all the valves and nipples every day.

This formula can be used for individual feeding or free-choice systems.

Premier One® has the buckets, nipples and valves and a good video on this process.

Note: In the summer time, you can use gallons of frozen formula with holes punched in the bottom to keep the milk cold. As it melts it refills the bucket.

not necessarily bad, and in fact, may be better than products without the added copper, as long as it is at proper level.

8. Look for milk replacers that consist mainly of dairy ingredients like skim or whey as these are the best sources of protein in milk replacers because they contain a higher level of essential amino acids and can be highly digestible.

When transitioning over to milk replacer, mix the goat milk with the milk replacer slowly increasing the amount of milk replacer being fed to half and half by the end of the second week.

- Lambs do much better if fed four times daily and worked up to 16 ounces every 6 hours until they are 3-4 weeks old. At this time they can be adjusted to feeding twice daily approximately 48oz daily.
- Goat kids can be worked up to twice a day feeding by two weeks of age at 24 ounces twice daily.

Also try to minimize the amount of air they ingest while feeding and be sure your nipple holes are not too big in order to prevent aspiration pneumonia. If you are feeding orphans on a lambar (bucket with nipples around the outside), be sure to remove lambar after they have emptied the bucket to minimize sucking air.

If a producer has a large number of orphans or if time is an issue, lambs and kids can be raised on a self-feeding protocol. The milk is offered cold and they are provided enough milk to consume throughout the day in frequent small feedings as they desire. It is important that the milk remains cold, especially as the environmental temperature increases. This can be accomplished by dropping a frozen, water filled 2-liter pop bottle into the milk.

Self-feeding system

A word of warning to producers who are using dairy goats or ewes as their source of milk to feed their orphan lambs/kids: Be sure to have your goats/sheep tested for Caprine Arthritis Encephalitis (CAE) or OPP. CAE is a viral disease which is in the same family as the virus that causes Ovine Progressive Pneumonia (OPP). One of the major routes of transmission is through ingestion of milk from a CAE positive doe. The viral particles for CAE and OPP

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are extremely high in colostrum, therefore be sure that the colostrum you use is from a negative doe/ewe. Consult with your veterinarian to have your sheep/goat tested. To test a doe/ewe, send a blood sample to a diagnostic laboratory. If a goat is positive for CAE or sheep positive for OPP, the milk should not be used and any animals that may have been fed milk from an infected doe/ewe should be tested after 9 months of age. Nothing is more frustrating than raising an orphan kid/lamb and then find out it is positive to these diseases.

When bottle babies are 1-2 weeks of age, start offering a creep feed designed for young lambs or kids which is medicated with a coccidiostat (Decoquinate (Deccox[®]) for kids, Lasalocid (Bovatec[®]) for lambs). My experience is that by 8 weeks of age, kids can be reduced to once a day feeding in order to increase concentrate consumption, which in turn reduces the risk of bloat. The concentrate being offered should be 16-18% Crude Protein.

Kids and lambs should also have free choice access to hay and clean fresh water. If there is a history of coccidiosis on the farm, be sure to treat all young kids or



Self-feeding system

lambs at 4 weeks of age for coccidiosis. When the young animals are ingesting approximately 4-8 ounces of grain daily they can be weaned from milk. This usually occurs after 8 weeks of age. Grain amounts can be increased if restricted amounts are fed. Otherwise utilize a creep feeder for young kids and lambs.

Vaccinations against enterotoxemia and tetanus are extremely important in young lambs and kids. An antitoxin can be

given at birth if there has been a problem with either of these diseases on the farm. An initial CD&T toxoid vaccination should be given at 4 weeks and a booster given at 8 weeks of age. Contact your local veterinarian if you are not sure about available vaccines in your area.

Summary

Artificially raising lambs and kids is a task that can reap benefits for producers who are willing to take the time and effort to raise them properly. With proper management and feeding, orphans can create a return on the investment. Hopefully this article will help in developing your bottle babies into productive animals that you are proud of!

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