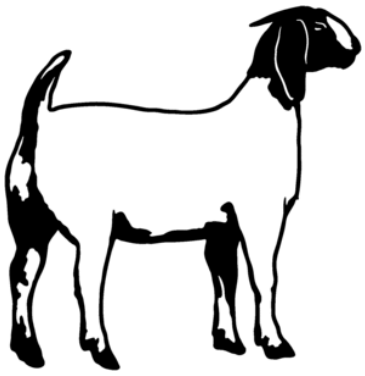
Oregon 4-H

BUCKET or BOTTLE LAMB & GOAT PROJECT GUIDE

Basic recommendations for bottle lamb and goat management. These are educational recommendations that should be adjusted according to animal size and veterinarian direction.



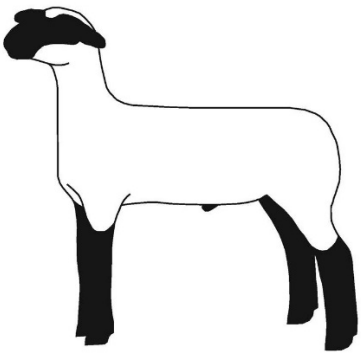


Table of Contents

Causes of Orphaned Lambs/Kids

For many reasons, newborn lambs/kids may be orphaned in many flocks during lambing/kidding. Orphaning may occur due to dam death, rejection, disability/health issues. In some cases, the dam may have a multiple birth resulting in insufficient milk production and subsequent removal of one or more lambs/kids. These removed lambs/kids require artificial raising by being provided milk replacer through other means in lieu of natural nursing.

Newborn Lamb & Kid Management

All lambs/kids are born without a functional immune system. Until lambs/kids are about 30 days old, they rely on anti-bodies from their dam (mother) to protect them from infections. During the first 24 hours of life, newborns are able to absorb anti-bodies through tiny openings (pores) in the walls of the intestinal tract. The newborn lamb/kid obtains these important anti-bodies from its mother through ingesting the first milk secreted after lambing/kidding. After the first 24 hours of life, the pores in the intestinal tract shrink significantly, no longer allowing the large anti-bodies to be absorbed. However, studies show that absorptive capability declines drastically after the first 12 hours, so the sooner the anti-body rich milk – **colostrum** -- is ingested, the better immune protection the lamb/kid will have. If the newborn does not receive colostrum in a timely manner, or at all, then it will have diminished immune function and will be susceptible to infections.

I. **Colostrum** – **Colostrum** is the first milk secreted by the mother's mammary gland; it contains anti-bodies called immunoglobulins. These anti-bodies are absorbed through the intestinal wall and provide immune protection for the newborn lamb/kid to aid them in preventing and fighting infection. Colostrum is typically yellow, sticky, and thicker than normal milk.

II. **Colostrum Sources** – The best and highest quality source of colostrum is the newborn's own mother. In this case, you may milk the dam and bottle or tube feed the colostrum to the lamb/kid. If the mother's colostrum is unable to be obtained, another newly lambed ewe/doe may be used as a colostrum donor. When selecting a colostrum donor, typically older animals who have raised babies in previous years produce higher quality colostrum. Another thing to consider is health status of donors, as some diseases such as Johne's and mycoplasma can be transmitted through colostrum. Alternatively, some producers will keep a supply of colostrum frozen. The next best substitutes are powdered colostrum or colostrum from another species.

III. **Colostrum Storage** – Colostrum can be stored in a refrigerator if it will be used within 24 hours. If it is going to be more than 24 hours, it is recommended to store colostrum frozen. Once frozen colostrum can be stored in a standard freezer for up to 1 year.

IV. **Feeding Colostrum** – If colostrum has been cooled or frozen, it will need to be warmed to body temperature prior to feeding. It is recommended to thaw or warm colostrum by placing bags/bottles into a warm water bath. Do not heat in the microwave or use hot water, as these methods will damage the important anti-bodies contained in the colostrum. Colostrum should be fed for the first 16-24 hours. Newborn lambs/kids should receive 2-3 ounces of colostrum per pound of body weight in the first 24 hours of life spread across several feedings. Typically, the amount is divided equally into four feedings (birth, 6 hours, 12 hours, and 18 hours).

   i. For example, a lamb/kid weighing 10 pounds should receive ~20-30 ounces of colostrum in the first 16-24 hours of life.

If a lamb/kid has not taken any colostrum within 2-3 hours of birth, it is recommended to tube feed (via esophageal tube) colostrum, and offer the bottle again at subsequent feedings. For more information on tube feeding lambs, see your *Sheep or Goat Resource Handbook*.

V. **Failure of Passive Transfer (FPT)** – If an animal did not receive enough high quality colostrum, it will suffer from reduced immune function and increased susceptibility to infection. This condition is known as **Failure of Passive Transfer**, or FPT. Failure of Passive Transfer commonly causes chronic infections and death in neonates. If survived to adulthood, these animals usually sustain reduced immune function for life. In some cases, a serum immunoglobulin test (IgG test) may be performed within a few days of life to confirm passive transfer of anti-bodies.

VI. **Milk Replacer** – After the first 24 hours of life, the lamb/kid should be transitioned to a milk replacer product. Lambs and kids may do well when receiving milk replacers or milk from other species, but do best if they are provided a species-specific milk replacer. It is ideal to use only milk replacer especially made for lambs or goats, as fat and protein content of milk replacers of other species may be insufficient.

Species	Dry Matter (%)	Protein (%)	Fat (%)	Lactose (%)	Ash (%)
Bovine (Cow)	12.8	27.3	28.9	38.3	5.5
Caprine (Doe)	13.5	26.7	29.6	37.8	5.9
Ovine (Ewe)	18.2	24.7	39.0	26.5	4.7

Milk replacer is sold by most feed dealers under several brand names and comes in bags varying from 10-50 pounds. Follow label and mixing directions closely. Listed below are some recommendations for preparing milk replacers:

a. Best results have been obtained with milk replacers containing a minimum of 30 percent fat and 25 percent milk protein.

b. Fat can be added to milk replacers in the form of choice white grease (lard) or butterfat. Vegetable oils should be avoided as a fat source.
c. Mix replacers thoroughly before feeding.
d. Thoroughly disinfect bottles/buckets between feedings.

It is essential to mix powdered milk replacer properly as lumps may contribute to abomasal bloat. Yogurt may be added to the reconstituted milk replacer to reduce the incidence of abomasal bloat.

Milk should be fed relatively cold (~40-60°F) as studies show that this decreases the lamb/kids tendency to over eat, thus preventing diarrhea, bloat, and other digestive upsets.

There are several different types of bottles/nipples available for purchase if feeding from a bottle. If offering one type of nipple is unsuccessful, you may consider trying an alternative nipple type. Nipple buckets may also be used, or lambs/kids can be transitioned to drinking directly from the bucket.

VII. **Feeding Schedule** – Feeding schedules should be adjusted according to lamb/kid size. For the first few days of life, lambs/kids should be fed frequently. After they are a few days old, frequency of feedings may be reduced. Lambs/kids generally need to consume 10-15% of their body weight each day. The table below indicates an example feeding schedule – remember that feeding amounts and frequencies should be adjusted according to animal size and veterinarian recommendations.

Days of Age	Amount of Milk (Ounces)	Frequency (# times daily)	Total Daily Intake (Ounces)
1-2	2-4	6	12-24
3-4	3-5	4-6	12-24
5-14	4-6	3-4	18-28
15-21	6-8	3-4	24-32
22-35	16	2-3	28-36
35-weaning	16	2	28-36

Begin offering a free fed concentrate/pelleted lamb or kid starter at 1-2 weeks of age. Be sure to make changes in feeds and amounts of feed gradually over several days. Hay may be offered for lambs/kids to nibble on at 2 weeks of age. Avoid offering leafy alfalfa until after lambs are weaned. Fresh clean water and access to a salt/mineral source should be available at all times. Lambs/kids may be weaned after they are 4-6 weeks of age and are eating starter and hay well. Some prefer to delay weaning until 8-10 weeks of age.

VIII. **Housing** – Orphaned lambs/kids need to be kept warm, dry, in a well ventilated and draft free area. They will need enough space to move around freely, so it is recommended to provide at least 6-7 square feet of space per animal in the early days of life. This enclosure

size should increase with the size of your animal. You may need to provide supplemental heat with a heat lamp suspended away from walls until the lambs/kids are nursing well. Research shows that lambs raised at ~70°F grow faster than those raised at below 50°F.

IX. Health

a. Naval Management – The newborn lamb/kids naval (umbilical) site should be inspected for umbilical hernia. This area should also be kept clean and dry to prevent infection. In some cases, it is recommended that the naval be dipped or sprayed with an Iodine Tincture. Check with your veterinarian for specific recommendations.

b. Vaccines & Deworming – Artificially reared lambs/kids should be vaccinated for enterotoxaemia (*Clostridium perfringens types C and D*) shortly after starting milk replacer (~1 week), again at 4-5 weeks, and at 8 weeks of age. Tetanus is sometimes included in this vaccination (purchased as a CD&T vaccine). Some veterinarians may recommend a mineral injection (Selenium or MultiMin) based on your geographic location to reduce the risk of White Muscle Disease. As your animal gets older, you will need to establish a regular deworming schedule. Be sure to check with your local veterinarian for their lamb/kid specific vaccine and deworming recommendations.

c. Tail docking – Lambs typically will need to have their tails docked within the first few days of life. This may be done in multiple methods, banding being the most popular and least invasive. See your *Sheep or Goat Resource Handbook* for more detailed information.

d. Castration – Male lambs/goats will need to be castrated. Many producers will castrate using a band method at only a few days old, while others wait until the lambs/kids are a few weeks old. Check with your veterinarian or leader for their specific recommendations. More information can be found in your *Sheep or Goat Resource Handbook*.

e. Disbudding/Dehorning – Horns can pose a safety risk for the handler and other animals as horns are used to establish dominance and a "pecking order" among herd mates. This can cause bruising, udder tearing, and can also pose risk to the animal itself as they are frequently caught in fences. If your animal is of a horned breed, it is recommended that they are disbudded (dehorned) between 7 and 10 days of age. The earlier an animal is disbudded, the less likely regrowth is to occur. As animals get older, it becomes more difficult to remove horns and can put the animal at health risk when horns must be removed by saw.

    i. To determine if your animal is horned, you can observe the pattern of hair growth on the top of the forehead. Horned animals typically have a "swirl" pattern of hair, while polled (un-horned) animals typically have straight hair growth over this area. The skin can also be moved back and forth over the area—

polled animals skin will move freely over the skull, while horned animals skin will be tight and immovable.

ii. Disbudding Methods – Disbudding may be accomplished using a variety of methods. Always ensure that the animal is restrained sufficiently during any disbudding procedure, and return lambs or kids to their mothers as soon as possible following disbudding as this reduces the amount of stress caused by the event. The most common include use of caustic paste or electric iron. Caustic paste is applied directly to the area of the horn or scur. This paste "burns" the tissue preventing growth of horns. This method is easy to apply but can provide variable results as paste may be rubbed off. The easiest and most common disbudding method is by electric iron. Irons can be purchased at your local feed store or in other locations. After the iron is sufficiently heated, it is centered on the horn bud and applied in a circular motion with light pressure for 6-10 seconds. A brown or copper colored ring should appear around the bud if sufficiently burned. Check with your veterinarian or leader for their specific recommendations. See your *Sheep or Goat Resource Handbook* for more detailed information.

X. References

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