

Artificial rearing of lambs on milk replacer diets

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For many reasons, extra or orphaned lambs occur in nearly every flock at lambing time. These lambs result from ewes that die after giving birth to a live lamb or ewes that fail to have sufficient milk for the number of lambs produced. This occurs often in flocks with ewes that have a high incidence of triplets and quadruplets.

Extra lambs should be grafted to another ewe whenever possible. Our goal is for ewes to raise the extra lambs if the ewes have the available milk. If you have three lambs in any combination of adopted or natural, leave the two closest in size with the ewe and remove the odd one, whether it is the largest or smallest. Lambs not grafted to another ewe can be raised on milk replacer.

With multiple births, the weakest lamb usually is selected for artificial rearing on milk replacer because it is less capable of competing at the udder. Make the decision to remove the lamb from the ewe as soon as possible after birth. This eases the lamb's training period and enhances lamb survival.

Feeding the newborn lamb

All lambs need to receive colostrum soon after birth. Colostrum is the source of antibodies for newborn lambs and serves as a source of nutrients, especially energy, which is important in preventing hypothermia. Pay close attention to the amount of colostrum newborn lambs receive.



Figure 1.—A complete lamb milk replacer feeder.

Research indicates a newborn lamb should receive 3 ounces of colostrum per pound of body weight. Give this during the first 18 hours of life to build up sufficient antibody levels and nutrients.

A 10-pound lamb would receive 30 ounces of colostrum divided into four equal doses (at birth, 6 hours, 12 hours, and 18 hours). If no colostrum is available from the mother or another ewe, use colostrum from goats or cows. We recommend that you keep a supply of frozen colostrum available.

If you cannot provide the indicated amount of colostrum, give as much as you have and make certain that the lambs receive it as early in life as possible.

Frozen colostrum

Periodically freezing high quality colostrum is a good management practice. This ensures that colostrum is available the next time a newborn lamb needs it. We recommend freezing colostrum in single feeding sizes (8 ounces). This amount can be rapidly frozen and thawed. Thaw frozen colostrum and feed it at body temperature.

The best method for thawing is at room temperature, but this probably will take too long. Be careful when thawing; do not use high heat. High heat destroys the antibodies, which is the reason for feeding colostrum to newborn lambs. Avoid thawing colostrum in micro-waves as it is difficult to prevent "hot" areas while thawing or warming.

Colostrum supplements

Special "home brew" recipes for colostrum are not effective and should not be used. They do not contain antibodies, so it is advisable to start the lamb on milk replacer rather than to use a "home brew" concoction that is less digestible to the lamb.

Synthetic colostrum substitutes are available, but more research is

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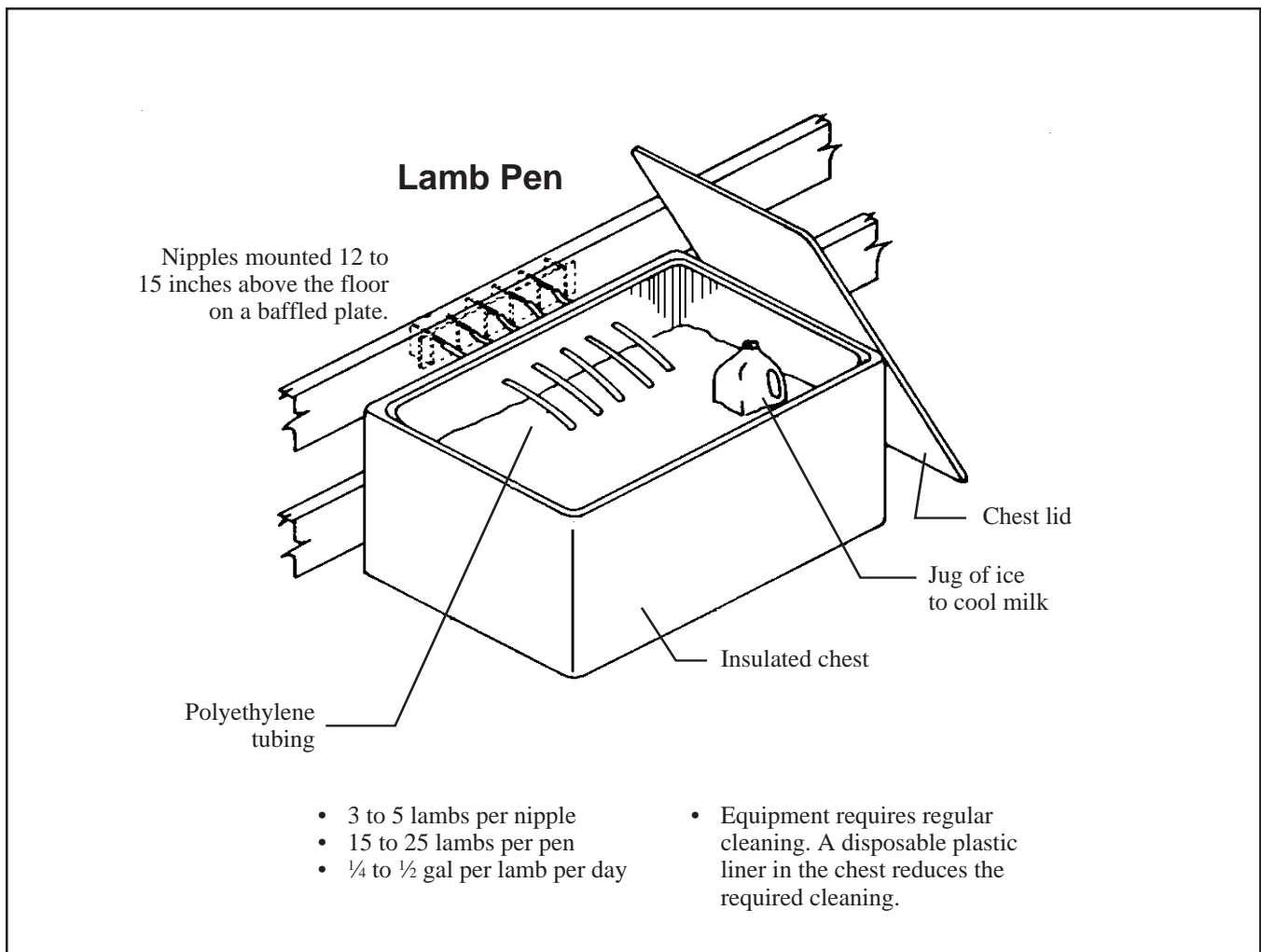


Figure 2.—An example of a milk reservoir setup.

necessary to evaluate their effectiveness. Some synthetics may be more satisfactory than no colostrum, but they probably will not provide the levels of antibodies needed by the lamb. It is difficult to raise orphan lambs successfully on milk replacer if they do not receive colostrum.

Feeding lambs

After lambs receive three feedings of colostrum over the first 12 to 18 hours of life, wait 4 to 5 hours before feeding them liquid milk replacer. Lambs may either be self fed or hand fed milk replacer. Self feeding requires less labor and allows the lamb to suckle as often as it desires and to set its own level of consumption. Self feeding also helps prevent digestive upsets.

To train lambs to suckle on self feeders, start them on cold formula and help the

lambs feed every 6 hours until they learn to nurse from the nipple feeder. One or two nipple-trained lambs in the same pen will help lead untrained lambs to the nipples.

Feed the lambs colostrum that is the same temperature you plan to use throughout the feeding period. Lambs may reject the colostrum if you change temperature.

If you feed milk replacer by free choice, make sure it is cold to prevent over consumption at a single feeding. Lambs consume 1 to 2 quarts of milk replacer daily on self feeders. This equals ½ to 1 pound of dry milk replacer a day. Remember these amounts if you hand feed artificially reared lambs.

Offer hand-fed formula at body temperature four to six times daily for

the first 3 days. Then feed at least twice daily and gradually increase the amount to coincide with the intake level of self-fed lambs.

Milk replacers

Use a milk replacer designed for lambs and follow the manufacturer's directions. It should contain 30 to 32 percent fat, 22 to 24 percent protein, and 22 to 25 percent lactose (dry matter basis). Protein should come from milk protein, and fat should come from an animal source.

Do not use milk replacers made for calves and pigs on lambs as they do not contain enough protein and fat. Fresh cow's milk also is not suitable for orphan lambs for the same reason. You can use fresh goat's milk to raise orphan lambs successfully.

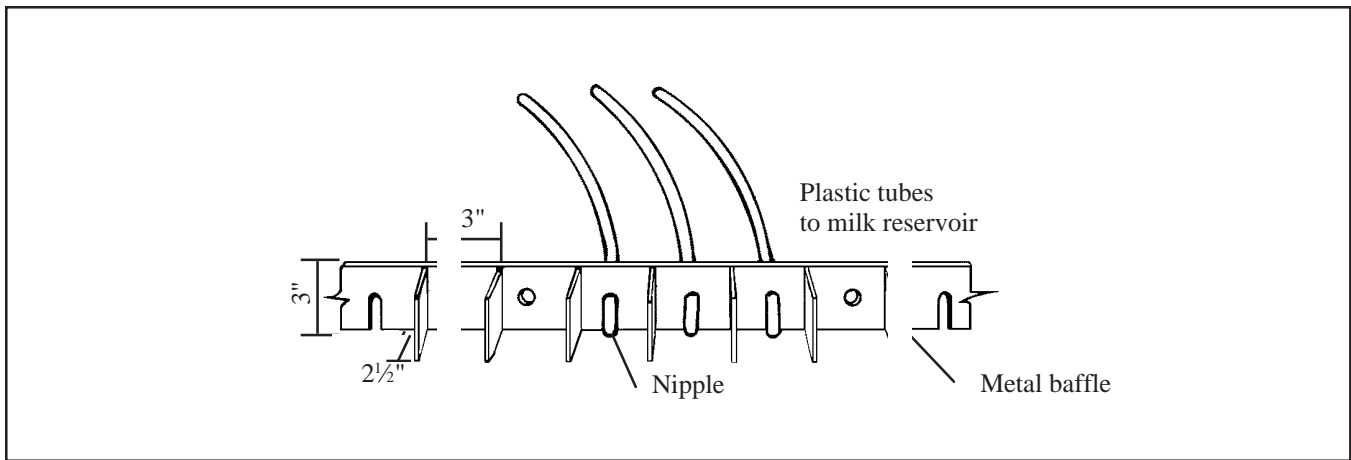


Figure 3.—An example of a nipple bar. The metal baffle prevents lambs from chewing holes in nipples. Modify the length by the number of lambs being fed.

Feeding equipment

If you plan to feed lambs by free choice, you will need a feeder. Size depends on the number of lambs you are handling. A feeder for liquid milk replacer also should keep the milk clean. You also may need to cool the milk to prevent spoilage. Figures 1, 2, and 5 show examples of feeders. On self feeding systems, allow 3 to 5 lambs per nipple in groups of 15 lambs or less.

Three nipple types are available. The self-primed type has a valve and is attached to a plastic tube. Lambs can suckle these with minimum effort, and it may best be suited for weak lambs. This type of nipple tends to clog easily and is difficult to clean. Another type of nipple (Figure 4) is attached to a plastic tube, and the lamb has to be able to suck so it will pull the milk replacer through the tube and nipple. The third, newer type, is the bottom feeding nipple. The milk flows by gravity. Train lambs on the type of nipple you plan to use during the entire feeding period.

Keep feeding utensils as germ-free as possible. Infectious diarrhea easily spreads from dirty equipment and the environment.

Facilities

Place lambs to be raised on milk replacer in a draft-free, well-ventilated area. Use a heat lamp suspended away from walls (this prevents lambs from crowding on top of one another) to

provide supplemental heat until the lambs are nursing well. Research indicates that lambs raised at 68°F gain weight faster than those raised at 46°F.

Lambs may be raised on gravel, dirt, or concrete floors bedded with straw or wood shavings.

Raising lambs on a slotted or expanded metal floor may be the easiest way to keep an area clean and dry. Provide about 2 square feet per lamb on expanded metal and 6 to 7 square feet per lamb on bedded solid floors.

Creep feeding

Offer creep feed to lambs once they start on the milk replacer. The feed should be palatable and contain at least 20 percent crude protein. Many shepherds use soybean meal or a creep feed that is at least 50 percent soybean meal to start

artificially reared lambs on dry feed. Do not feed hay or oats to start lambs on dry feed as these feeds tend to cause bloat. Avoid leafy alfalfa hay for up to 2 weeks after weaning since it also can result in bloat problems. Provide fresh, clean water at all times.

Locate containers for feed and water outside the pen area with the lambs having access to these through a panel. This type of arrangement allows lambs to eat but not be able to contaminate feed and water with fecal matter. Keep feed fresh by offering just slightly more than they will consume in a 24-hour period.

Weaning

Wean lambs at about 4 weeks of age or when the lambs have consumed 20 to 25 pounds of dry milk powder. Feeding milk replacer longer than this is not cost effective. Before weaning, make sure lambs are eating some solid



Figure 4.—An example of a Lam-Bar type nipple and tube.

food.

Research at the U.S. Sheep Experiment Station at Dubois, ID, indicates that weaning lambs abruptly from milk at 4 to 5 weeks works better than offering a diluted milk replacer the last week.

Keep lambs healthy

All artificially reared lambs should be vaccinated for enterotoxemia (*Clostridium perfringens*, types C and D) shortly after starting them on milk replacer and again 3 weeks later. Lambs that do not receive colostrum should be vaccinated immediately with clostridium type C and D antitoxin.

If scours occur, check the environment for contamination, drafts, and proper temperature. Evaluate your sanitation procedures, and if scours persist, treat the lambs with antibiotics recommended by your veterinarian.



Figure 5.—An example of a milk replacer feeder attached to the outside of a pen. This feeder uses a Lam-Bar nipple and tube.

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