

Lamb Nutrition
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Lifetime milk production starts at birth

Feed your lambs properly from day one to increase milk production potential.

MANY DIFFERENCES EXIST BETWEEN dairy sheep and dairy cows, but there are also remarkable similarities between the two species. Both species have evolved to produce high levels of milk through genetic advancements and improved management practices. Because of these similarities, we can often learn lessons from the dairy cattle industry and apply them to improving the dairy sheep industry.



Tom Earleywine,
director of nutritional services for
Land O'Lakes Animal Milk Products

"We know that if lambs do not receive enough high quality colostrum shortly after birth, they will not achieve passive transfer," says Tom Earleywine, director of nutritional services for Land O'Lakes Animal Milk Products.

Like calves, lambs that do not achieve passive transfer are less able to fight off disease challenges because they do not have adequate antibodies. Research shows that calves with failure of passive transfer also have 50 percent less feed efficiency, delayed time to first calving and decreased milk and fat production during the first lactation.

One of the biggest lessons we've learned from studying both dairy sheep and dairy cattle is that the nutrients provided from the start can have a large impact on the long-term production potential and the amount of milk that enters the bulk tank. On the dairy cow side, it has been well-documented that there are long-term benefits to feeding high quality colostrum and feeding to a higher plane of nutrition from the start.

Feeding high quality colostrum

The first step in raising successful dairy replacements is to feed high quality colostrum.



Young lambs are the future of the dairy sheep industry and must be fed high-quality nutrients to help your flock – and the industry – move forward. After feeding colostrum or a colostrum replacement, a lamb-specific milk replacer can help lambs reach their full potential in the milking string.

"Knowing this, it is very important to make sure that newborn lambs receive high quality colostrum as soon as possible after birth," notes Earleywine. "The first feeding of colostrum to the newborn lamb should be within the first hour of life."

A higher plane of nutrition

Following the first feeding of colostrum, lambs should be fed high-quality milk or milk replacer to get them off to the right start. This early growth has been shown to have significant results in future production on the dairy calf side.

Researchers have found that calves fed to a higher plane of nutrition calve 22 days earlier on average and produce 1,700 pounds more milk in the first lactation. In fact, eight university trials show that calves fed a higher plane of nutrition from birth to weaning had higher milk production in their first lactation than those that were not.

Recent work from Cornell University further examined the long-term benefits of feeding to a higher plane of nutrition in two herds. One herd showed that for every pound of pre-weaning average daily gain (ADG), heifers produced 1,874 pounds more milk during their first lactation. In the second herd, for every pound of pre-weaning ADG, milk yield increased by 2,456 pounds of milk in the first

Lifetime milk production • continued on p. 5

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Lifetime milk production • continued from p. 4

lactation. Researchers concluded that the relationship between pre-weaning nutrition and higher lactation milk yield is consistent but the magnitude of the response might be different between herds.

The Cornell study also examined the relationship between pre-weaning ADG and milk yield in subsequent lactations. Researchers found that there was a positive correlation between second and third lactation milk yield and pre-weaning nutrition. They concluded, that “the effect of early life nutrition and management previously attributed only to the first lactation can now be discussed in terms of lifetime productivity.”

“Though this research was conducted on dairy cattle, it may be applicable to the dairy sheep industry as well,” Earleywine says. “In addition to greater growth potential, this research shows that calves fed properly were able to produce more milk when they entered the milking parlor. Additional pounds in the tank may be possible for dairy shepherds when sheep are fed to a higher plane of nutrition.”

A winning combination

The benefits of high quality colostrum and feeding to a higher plane of nutrition are well documented, but it’s the combination of the two that may provide the best benefit to the flock. The University of Illinois shows that the results from pairing these two programs trump either as a standalone practice.

In the University of Illinois study, calves were classified by their immunoglobulin (IgG) status as having successful passive transfer or failure of passive transfer from colostrum. Calves were then offered a conventional feeding program or fed to a higher plane of nutrition. Results showed that all calves fed to a higher plane of nutrition, regardless of IgG status, had better ADG. Calves with a higher IgG status and a higher plane of nutrition had the greatest ADG and outshined all of the other calves.

The University of Illinois researchers conclude, “growth factors or other components in the colostrum may enable calves to more efficiently use the greater nutrient supply for rapid body growth.”

“Take care to hygienically collect the colostrum from the ewe to avoid bacterial contamination, if hand-feeding colostrum,” notes Earleywine, explaining that a colostrum meter can be used to measure the quality of the colostrum. “If OPP is a concern, a colostrum replacer should be used.”

Next, manage for an average daily gain greater than 0.75 pound during the first 30 days of life. One way to work towards achieving this goal is to feed a high quality milk replacer that has been specially formulated for lambs.

Begin planning for weaning well in advance of when milk replacer is removed from the lamb’s diet by always having free choice water

Achieve the results

To harvest these long-term milk production benefits, start with a sound colostrum management program. If hand feeding colostrum/colostrum replacer, the following guidelines are recommended.

- Colostrum/Colostrum Replacer should be fed with a nipple bottle if lambs are capable of nursing.
- Lambs should be given a minimum 4 ounces of colostrum at 3 to 4 hour intervals.
- Lambs that have lost their mothers or are born to ewes that have inadequate colostrum should be fed the entire 16 ounces of colostrum/colostrum replacer within the first 24 hours.
- If colostrum replacer is used it should be made from dried colostrum and USDA licensed for use in lambs.

available and granting grain access to young sheep early in life. Starter feeds should be high quality, palatable grain mixtures that are offered free choice to young livestock while they are still on milk. Lambs should be consuming an equivalent of 1 percent of body weight of a high quality starter feed along with adequate water before becoming a candidate for weaning. (For example, a 25 pound lamb should consume approximately 0.25 pounds of grain per day before becoming a candidate for weaning.)

“Achieving this early growth is essential to a profitable flock,” Earleywine says. “Feeding and managing lambs properly from day one can pay significant dividends as they grow and enter lactation – helping production in the dairy sheep industry continue to grow. ■

For more information on lamb nutrition and management, contact Dr. Tom Earleywine at (800) 618-6455 or email: TJEarleywine@landolakes.com or visit www.lolmilkreplacer.com.

RESOURCES

- ¹ Effect of early calfhood nutrition on first lactation production, Calf College Course Notes, Land O’Lakes Animal Milk Products, <http://bit.ly/U4bMry>
- ² Van Amburgh, M. 2008. Early Life Management and Long-term Productivity of Dairy Calves. Proc. 2008 Southwest Nutrition and Management Conference. <http://bit.ly/S3nq8e>
- ³ F. Soberon, E. Raffrenato, R.W. Everett and M.E. Van Amburgh, Dept of Animal Science, Cornell University, Ithaca, N.Y., J. Dairy Sci. 95:783-793, Prewaning milk replacer intake and effects on long-term productivity of dairy calves
- ⁴ F. Soberon, E. Raffrenato, R.W. Everett and M.E. Van Amburgh, Dept of Animal Science, Cornell University, Ithaca, N.Y., J. Dairy Sci. 95:783-793, Prewaning milk replacer intake and effects on long-term productivity of dairy calves
- ⁵ J. Osorio and J. Drackley, University of Illinois, August 2011, Inadequate colostrum intake decreases growth of calves on intensified feeding programs, <http://bit.ly/Oxbz9E>