

Utilizing Non-Fat Dried Milk in Sheep Rations During Times of Drought

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Physical Characteristics & Storage Considerations

Non-fat dried milk (NDM) is a nutrient-dense feed which can be used effectively in sheep rations to supplement other available feedstuffs, or to meet the nutritional needs of ewes when poor quality feed is being fed. Non-fat dried milk is a dairy product derived by drying defatted milk with only the cream and water removed. It is a free-flowing powder product, and this is one factor of how it is used in animal rations. It contains the same calcium and other minerals, vitamins, natural sugars and high quality protein as liquid milk. Ordinarily, its primary use is as a replacement for fluid skim milk in cooking and baking.

The typical nutrient analysis for NDM is listed below:

Crude Protein	36.0%
TDN	93.0%
Crude Fat	1.0%
Crude Fiber	0.0%
Lactose	52.0%
Calcium	1.3%
Phosphorus	2.6%
Moisture	4.5%

This product is very palatable and, as stated earlier, is very dense in nutrients. Since it is so high in total digestible nutrients, and due to the high sugar (lactose) content of this feed, it is critical that producers exercise great care to ensure that animals are not allowed to consume more than the recommended daily amount which is one-half pound per head per day. Failure to do this will result in ewes experiencing acidosis and, in severe cases, could also lead to the death of the animal.

The product should be stored in a relatively cool place (under 80° F) with a relative humidity of less than 65%. High temperatures, coupled with humidity above 65%, can cause the product to become rock hard and greatly impedes its use as a livestock feed.

Feeding Recommendations and Cautions

Feed NDM as part of a Total Mixed Ration. Due to the physical nature of NDM and the need for it to be consumed at levels which are relatively low, NDM should be fed as part of a totally mixed ration. Some have wondered about top dressing NDM over hay or mixing it as part of a grain mix. This can be done, however, the list below contains some cautions if a producer is planning to feed it in this way:

- Top dressing allows for the possibility of over-consumption by more aggressive ewes.
- If top-dressed, begin at .1 pounds per head per day. Then increase the NDM .1 pounds per head per day every 3rd day until the desired level or the maximum allowed per head per day (one-half pound) is reached.
- If feeding more than .25 lbs./head/day, divide into two feedings.
- Due to its' powdery nature, top-dressed NDM may fall through the hay or not remain mixed with the grain and fall into the bottom of the manger, which could greatly increase the possibility of over-consumption.
- Most ewes, especially range ewes who have not been accustomed to grain or other starch/sugar containing feed, may experience acidosis if great care in following the above cautions does not occur.
- **Do not feed more than .5 lbs./head/day**
- Do not treat NDM as milk replacer or mix it with milk replacer. Feeding this to baby lambs will lead to scours, dehydration and death of the lamb due to the high lactose content of the NDM.

Below is a sample ration which utilizes the NDM product along with other common feedstuffs. The ration is calculated for a 160 pound ewe, nursing twin lambs during the first eight weeks of lactation.

Feed	As Fed	DM
Alfalfa Hay	4.2	3.78
Whole Corn	1.5	1.35
NDM	.4	.38
TOTAL FED	6.1	5.52

Conclusion

Non-fat dried milk is a very nutritive feedstuff that can be effectively utilized in sheep rations provided sheep producers have the facilities and equipment to feed the product. Failure to follow strict feeding guidelines and to introduce ewes to the product slowly can lead to acidosis and in severe cases the death of animals.

Further information or answers to specific questions regarding this can be directed to C. Kim Chapman, Extension Sheep Specialist, at 435-893-0474 or e-mail at kimc@ext.usu.edu.