Thoughts on Winter Feeding

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Even though fall has barely felt like fall this year, it is time to begin thinking about winter feeding. Soon the pastures will stop growing, and stored forage will need to be fed to cows for a few months. A concern that some organic dairy farmers have expressed is the high cost of organic grain right now. What can you do that will help keep the cost as low as possible?

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Forage testing is one place to start, for a couple of reasons. First, it will help you determine how much forage your cows can eat, based on the fiber levels. If your cows can eat a higher forage diet, you can feed a lower rate of grain. Second, it will give you an idea of how much protein is in your forage, and from there you can determine how much protein you want or need to buy. Last, it will give you an estimate of how much energy you might need to supplement. Unfortunately, forage analysis is one of those tasks that either isn't on the priority list, or is done infrequently on many farms. However, it has the potential to bring better returns than you would expect.

The cost to have your forages tested should be less than $20 per sample, unless you decide to have additional nutrients analyzed that are not part of a "standard" analysis package. The most important forages to sample are those that will be fed to your milking cows, and those should be the forages you think will be the highest in quality. This may mean conducting an inventory of everything you have stored on the farm first, and then identifying where your sampling will pay back the most.

When you sample your forages, make sure it is a representative sample. This means sampling from more than one round bale, bale of baleage, or small square bale if you are having these types of forages tested, and then mixing and subsampling. Likewise, if you use an upright or bunker silo for fermented feeds, you should take a bigger sample as it is being fed out, and then mix and subsample to obtain a representative sample.

Since many organic dairies don't utilize the services of a nutritionist, the information from the forage tests can help you to formulate a basic ration based on a few key nutrients. Although it is still a good idea to make sure your ration is balanced for many other nutrients, you can be generally correct by running through the following types of calculations. It can also be helpful for planning and pricing anything you may need to consider buying.

Once you have the results back, the first two nutrients

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you should look at are NDF (neutral detergent fiber) and protein. NDF is a measurement of fiber in the forage, and less NDF is better than more. Lactating dairy cows can eat approximately 1.1% of their body weight in NDF, although with higher quality, more digestible forages like pasture they can eat 1.3 to 1.4% of body weight. Thus, if you are going to feed mostly baleage to your 1200 lb cows and it tests 50% NDF, they should be able to eat 13.2 lbs of NDF (1200 x 1.1%), or 26.4 lbs of baleage (13.2 lbs/50%) on a dry matter basis. However, if the baleage tests 45% NDF, the cows could eat 29.3 lbs of baleage (13.2 lbs/45%), or 2.9 lbs more. That extra 2.9 lbs of forage intake means you could feed 2.9 lbs less grain to meet their total intake requirements.

The bottom line to all this thinking and calculating is that if you want to minimize your grain costs this winter, you should sample your forages now to determine what you have to work with.

On the protein side, milking cows need between 16 and 18% protein in their diet, depending upon milk and component production. The 16 to 18% protein is approximately equivalent to 7 to 9 lbs of protein. If we assume the baleage above that is 45% NDF is also 14% protein, we need higher protein coming from grain to meet their needs. The 29 lbs of baleage they could eat (based on NDF) would provide 4 lbs of protein (29 x 14%). The remaining 3 to 5 lbs of protein would need to come from grain or another, higher protein forage. A grain mix of 18% protein, fed at a rate of 17 lbs per cow would provide 3 lbs of protein. Higher quality forage would mean less protein in the grain mix, and less total grain that would need to be fed to meet their requirements.

Energy supplementation is usually the least expensive nutrient to purchase, but this year it is more expensive due to a number of factors. The forage test will also give you an estimate of the energy content of your forages, which can help you determine how much high-energy grain you might need to feed. On the forage test, energy is expressed as Net Energy for lactation, maintenance, and growth (NE_L, NE_M, and NE_G). For milking cows, the only value you need to work with is NE_L, as it includes the maintenance needs. The NE_L values are not measured directly in the forage analysis, but it is predicted from other components of the forage such as NDF, NFC's, protein, and fat. A low fiber, high NFC, high protein forage will generally have more energy. Since cows will eat more of these types of forages as well, there is less need for energy supplementation with them.

Milking cows need a ration that is approximately .72 to .78 Mcals/lb of NE_L, again depending on milk production, breed, stage of lactation, and so forth. This equates to between 20 and 35 Mcals/day, with lower producing cows having the lower requirement. Using the same baleage above, and assuming it is .52 Mcals/lb NE_L, the cows would get 15 Mcals/day from the baleage (29 lbs x .52). If they are lower producing cows, the remaining 5 to 10 Mcals needed could be supplied by 5.5 to 10.5 pounds of corn meal (.95 Mcals/lb). Higher producing cows would need to be fed 10.5 to 21 pounds of corn meal to meet their needs with this quality of baleage. Other options for providing energy from forages include annuals such as corn silage or small grain silages, and other grain options include the small grains or molasses.

The bottom line to all this thinking and calculating is that if you want to minimize your grain costs this winter, you should sample your forages now to determine what you have to work with. From there, you can work through how much forage they are capable of eating, and how much protein that would provide. You may discover that you need to purchase some higher quality forage, or that you really don't need to spend much on grain this winter. With costs being what they are, simply shooting in the dark with no information is probably not the most profitable strategy. ◆