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Taking service to another level

Forage Digestibility Impacts Protein Needs

The typical dairy ration contains a mixture of forages and concentrates. The concentrate portion contains carbohydrate sources such as corn and a mixture of protein ingredients, along with minerals and vitamins. Nutritionists try to formulate a protein source to maximize milk production. In general, a protein supplement is the most expensive ingredient in a ration. It is important to understand how the forage program and rumen function help meet the protein needs of the dairy cow. There are two types of feed proteins. One type of protein is utilized by rumen microorganisms and is termed *degradable intake protein* (DIP). The other type of feed protein passes through the rumen without being degraded and is termed *undegradable intake protein* (UIP). Dairy cows require both DIP and UIP.

Proteins are made up of chains of amino acids. Research has found that cows have requirements for amino acids that include Methionine (MET) and Lysine (LYS), which are thought to be the two most limiting. Nutritionists formulate protein sources to meet the DIP and UIP needs of the dairy cow. Research shows when MET and LYS are provided in UIP sources in approximately the same proportion as what is found in milk, then milk production and milk components are maximized. Nutritionists must try to blend a variety of protein sources with differing amino acid contents to try and mimic the needs of the cow.

Within the rumen, DIP is broken down into amino acids by the rumen microbes. The rumen microbes further break down the amino acids into more basic nitrogen components. The nitrogen is used by the rumen microbes to help them grow in numbers. Once the rumen microbes die, they pass from the rumen and are digested by the cow. Rumen microbes are approximately 50% protein and contain a near-perfect balance of amino acids needed by the cow. Essentially, rumen microbes are the perfect UIP protein source.

One of the best ways to maximize rumen function economically is to feed highly digestible forage. Digestibility also improves the rumen function of the cow, resulting in an increased population of rumen microbes. It is estimated that up to 3 kg of crude protein are supplied daily to the dairy cow by rumen microbial protein production. A rule of thumb suggests each kilo of crude protein will support 4.5

kg of milk. If 3 kg of microbial protein are produced, rumen function itself can support 27 kg of milk.

Nutritionists strive to maximize rumen function while also meeting the nutritional needs of the cow. Feeding highly digestible forages will feed the rumen microbes and allow for maximum growth. Not only do the highly digestible [corn] hybrids impact overall performance of the cow, they also indirectly improve the protein status of the nitrogen program. It is critical in a dairy ration to maximize rumen function. Forages can impact the amount of microbial protein produced by the cow. However, forages that are not digestible will actually increase the ration cost because more UIP protein will need to be supplemented. It is critical to the performance of the cow and the economics of the feeding program to build the nutritional program around highly digestible forages. For additional information on forage digestibility and the impact of specific hybrids, contact me. I can help you review your entire forage and ration program with the goal of improved results in productivity and bottom line profitability. *(Edited from an article by Dr. Karl Nestor, Mycogen)*



*Interested in discussing topics in this newsletter, or want to do a better job feeding and managing your cows Call W-S Feed & Supplies!
Our goal is to help you. That's the W-S commitment!*

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THE TEAM FOR RESULTS!

Thinkin' Ahead!

It is still winter, with cold and snowy weather likely to continue for a few more weeks. This is a good time to think (or rethink) about the consequences of summer heat/humidity, and the impact it can have on your livestock. While we cannot accurately predict weather, it is more than likely to be hot this summer! It helps to be prepared. Whether we will experience record-breaking heat or not, we know there will be a few hot and humid "dog-days" of summer, which inevitably can take a toll on the health and productivity of livestock. What about fans/sprinkler systems you've considered in the past and have not been able to install? Is there sufficient water in the barn for your cows? What about heat abatement strategies for calves, heifers and dry cows? Be proactive in developing plans to deal with heat/humidity *before* it happens ~ and help to safeguard livestock from the impact these can have on their productivity and your profitability.

THE IMPORTANCE OF WATER...

Cold temperatures can make things difficult around the farm... frozen pipes and equipment that refuses to budge; a dangerous obstacle course in alleyways and loafing areas with slippery and often snow-covered areas; watering cups and tanks in (and out of) the barn that resemble blocks of ice, rather than a water source. It is critical that cows (and all livestock) receive sufficient water in cold weather, just like during the summer months of heat and humidity. Water is important to digestion and feed utilization, as well as aiding a cow's ability to make milk, which is comprised of 87% water.

Make sure your cattle have access to fresh clean water at all times, including calves, heifers, dry and transition cows. Waterers need to be free from ice and easily accessible any time. It is also important to keep waterers free of manure and mud. Check waterers regularly to ensure there is sufficient water and that the equipment is functioning properly. Cows depend on water for many things... and they depend on you to ensure they get what they need, when they need it. It makes a difference throughout winter and all year long!



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CHECK IT OUT!