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Tools for Diagnosing Nutritional Problems in Dairy Herds ~ Part II

In the last issue we considered several tools that can help diagnose nutritional problems in dairy herds, like examining milk records; observing cows and feeding facilities; re-measuring dry matter intake; and considering ration particle size. This month we conclude the list of possibilities, as we seek to optimize nutrition and its impact on productivity and profitability.

MILK UREA NITROGEN ~ Milk urea nitrogen (MUN) is one way to assess the protein status of dairy cows. When cows consume a ration, the microbes within the rumen degrade the protein to ammonia. These microbes, in turn, use ammonia and fermentable carbohydrates to make amino acids and microbial protein, which then are degraded by the cow in her small intestine. Excess ammonia is absorbed across the rumen wall and passes to the liver via the portal vein where it is converted to urea. Urea can either be recycled back to the rumen by the saliva or excreted in the urine. Cows can expend 2 Mcal or more of energy to excrete the excess urea through the urine. Thus, excretion of excess urea is an energy-requiring process. Excess concentrations of urea in the blood are believed to have detrimental effects on milk production, reproductive efficiency, embryo survivability, and immune function. Additionally, excess urea excreted in the urine has to be dealt with from an environmental standpoint. The MUN value is a tool to help evaluate the success of ration formulation and utilization of that ration by a group of cows.

BODY CONDITION SCORING ~ Body condition can influence milk production, reproduction, health and longevity of cows. Cows which are excessively thin at calving will not peak as high in production as cows in good body condition. On the other hand, cows which calve with too much condition and/or are not managed properly can have calving problems, metabolic disease or other post-calving problems and will not milk as well. High-producing cows cannot consume enough feed during the early part of their lactation to support the large amount of milk they produce. To obtain the necessary amount of energy, they rely on their fat stores as a readily available energy source. Cows should not drop more than 0.5 to 1.0 point over a 30-40 day period in early lactation. When fresh cows consistently drop a point in the first 2-3 weeks into lactation, a major feeding or management problem is indicated. Cows should be fed to regain body condition in later lactation. A typical mature cow will gain 4-5 pounds of body weight weekly. To increase by one body condition score, a mature cow will need to gain 120 lbs of body stores, taking approximately six months. First-calf heifers require 160 lbs of added body weight to regain one body condition score. The body condition a cow is carrying needs to be related to the stage of lactation of the group of cows.

URINE pH OF CLOSE-UP DRY COWS ~ Beede (1996) has suggested that monitoring the urine pH of close-up dry cows is an effective diagnostic tool to decide if anionic salts should be added and a practical means to adjust the amount of anionic salts necessary to achieve a beneficial response. Urine pH can be measured on-farm using standard pH paper or a portable pH meter. The target urine pH for close-up dry cows (Holsteins) is between 6.8 and 6.0. If the pH of the urine is 6.8 or greater, the addition of anionic salts to the close-up dry cow diet may be indicated. The next step would be to rebalance the close up dry cow diet to supply a negative dietary cation-anion difference.

PUTTING THESE TOOLS INTO PRACTICE ~ When trying to diagnose the cause(s) of a suspected nutritional problem, it is important to use a combination of [these] tools. At least 10% of cows should be evaluated. Once a problem area is determined, the ration and/or feeding management should be changed to correct the suspected problem. Once changes are made it is imperative to continue to monitor the situation even after the desired results are obtained. Fine-tuning feeding programs for the milking herd and dry cows is a dynamic process, which must be changed and fine-tuned frequently to obtain the desired results.

(edited from an article by Donna M. Amaral-Phillips, U of Kentucky)

Interested in discussing topics in this newsletter, or want to do a better job feeding and managing your cows? Call me! My goal is to help you. That's Renaissance's commitment!

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RENAISSANCE… *for RESULTS!*

AROUND THE FARM… It isn't too soon to think about summer, along with the heat and humidity it brings! Heat stress can have a lasting impact on your dairy cows, affecting production, health, reproduction, and bottom line profitability. If we recall the hot weather we endured last summer ('06) and the effect it had on livestock, it is important to work proactively to help prevent a similar (or worse) reoccurrence this coming summer. Take time to review ideas and plans on dealing with these concerns: fans/air exchange and/or sprinkler systems, additional shade areas, cleaning vents and fans; ration adjustments, and other options. Don't forget about calves, replacement heifers and dry cows! Heat stress can impact all livestock on your farm. Your goal should be to keep the entire herd as comfortable as possible… a comfortable cow is usually a good producing cow. Plan ahead and ensure your livestock are going to be cool this summer. You'll be pleased at the results. Check it out… ask me today.

A POINT TO PONDER... Yes! Spring is here and with it a lot of work that needs to be accomplished in a short amount of time. With the volume of work and the speed with which it must be completed, it is important to keep in mind basic farm and equipment safety. A slight lapse in safety precautions can have dire consequences. Be sure to review safety measures with anyone who works around the farm… and have a safe, productive and enjoyable spring!

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