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Ag Health News

January 2010

Are there Lessons Dairies can Learn from a Beef Cattle Feedlot Nutritionist?

Feeding beef cattle to finish for slaughter is a lot different than feeding lactating dairy cattle. Even so, are some of the concepts and practices used for feeding feedlot cattle applicable or adaptable to feeding lactating dairy cattle? Dr. Josh Szasz (Ph.D. Feedlot Cattle Nutritionist and WSU Veterinary student) addressed this topic at a dinner meeting hosted by Ag Health Labs and Elanco in December 2009. Below are several of the main points discussed.

Consistency is a key component to success in feeding feedlot cattle to slaughter. Some of the areas closely monitored are; 1) The ration is mixed for the same amount of time each day, 2) Deliver feed within +/- 5 minutes of the standard time of feeding each day, 3) Feed only a few rations to the entire feed yard to reduce mistakes being made by the feeder, 4) Monitor dry matter content of wet feeds daily and adjust rations for moisture accordingly.

Feed Mineral Analysis Update!



Atomic Absorption Spectrophotometer

- Fume Hood Installed
- Atomic Absorption Spectrophotometer Installed
- Quality Testing Analysis Procedures
- In-house Mineral Analysis on Feeds to be Available Soon!

Is there a routine established and implemented on your dairy to maintain consistent feeding on a day to day basis, or are there areas that need to be improved upon? Is the TMR being fed at the beginning of the mixer wagon load similar in appearance to the TMR being fed at the end of the mixer wagon load? Is each mixer wagon load of TMR mixed for the right amount of time every time (no under or over mixing)? Do you monitor what time each pen of cows is being fed each day? Is each pen fed within +/- 5 minutes of the standard feeding time each day? How many different dietary formulations are you feed-

ing on your dairy? What are the pros and cons associated with the number of different rations? Do you monitor dry matter content on your wet feeds on a regular basis and adjust the ration as they change?

**Update on
Mineral Analysis
at Ag Health Labs
Included in this Issue!**

**NFTA Certified for
2009**

Ag Health Feed Lab
certified by
the National Forage
Testing Association

**Meet Dr. Lynn
VanWieringen**

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Feed Efficiency is monitored very closely on feedlots. Monitoring how much feed is fed per pound of gain is very important to the financial success of the feedlot. Rumensin is one tool that is used by the majority of feedlots because it improves feed efficiency by shifting the volatile fatty acid production in the rumen from acetate to propionate. This shift improves energy efficiency. Are you monitoring feed efficiency on your dairy (dry matter intake per pound of milk produced)? Better yet, are you monitoring income over feed costs? Are you adjusting your rations to maximize or improve feed efficiency?



Feed Refusals are common in the dairy industry. However, feedlots closely monitor feed bunks to make sure there are no feed refusals. Feed bunks in many feed yards are rounded on the bottom so there is no place for feed to sit for extended periods of time and mold. There are evaluation systems in place to closely monitor cattle to make sure there is zero feed refusal, yet the cattle aren't overly hungry. One guideline Dr. Szasz mentioned is that a third of the cattle should get up and walk toward the bunk when the feed truck comes by, a third should be standing, and a third should be laying down chewing their cud. The feedbunk should be "slick" (no feed refusals). If the cows are acting aggressive or come running to the feedbunk it indicates that the cattle are overly hungry. It is not economical to have feed refusals on a feedlot, therefore it is very closely monitored. Is feeding to zero feed refusal an option in the dairy industry? Would it work on your dairy? Could a system be put in place where feedbunks and cattle are monitored throughout the day to make sure they are fed close to zero feed refusal yet are not overly hungry? Who is making feeding adjustments on your dairy? Feedlots usually have their best person in charge of feeding; it's that important.

Starch Utilization is important in feeding feedlot cattle because the diet primarily consists of grain. Some of the factors that affect starch utilization include; 1) Processing method used to disrupt the grain kernel, 2) Type of starch within the grain kernel, 3) Rate of digestion in the rumen, and 4) Rate of passage through the rumen. The type of processing method used on corn grain can vary (steam flaked, steam rolled, ground, etc.). Processing the corn grain improves starch availability, therefore improving the amount of energy available to the cow. What processing method of corn grain do you use on your dairy? Why? Is the product that is being delivered to the dairy consistent from load to load? How much are you paying for the processing method? Is the benefit you are receiving from improved starch availability worth the cost, or is another processing method a better choice?



A kernel of corn has 2 types of starch that are referred to as floury endosperm and vitreous (horny) endosperm. These 2 types of starch are embedded in different types of matrices. Vitreous starch tends to have a more structured matrix. This structured matrix of starch granules makes it more difficult for rumen microbes to access the starch, therefore reducing starch utilization by the microbes, and reducing ruminal

starch digestibility. The floury starch has a less structured matrix, therefore making it easier for rumen microbes to access and utilize the starch thus improving starch digestibility. Hybrids of corn silage have different amounts of vitreous and floury endosperm. Therefore, it is important to work with your corn seed sales person as well as the person selecting and planting the corn silage for your dairy to make sure you are choosing hybrids that contain a higher proportion of floury endosperm versus vitreous endosperm to help maximize ruminal starch digestibility of the corn grain.

Rate of digestion in the rumen and rate of passage through the rumen of feed particles have a large impact on the availability of nutrients (such as fiber and starch) to rumen microbes. The rumen microbes use these nutrients to grow and reproduce, and then the microbes become an energy source for the cow to utilize. If starch is passing from the rumen before it has a chance to be digested by rumen microbes it has to be absorbed by the small intestine or utilized in the lower bowel (large intestine and cecum), which is less efficient. It will end up in the manure as fecal starch if it is not utilized. This can be observed a number of ways, such as a noticeable amount of whole or partial digested kernels showing up in the manure, increased fecal starch content (above 5%), and decreased pH of the manure. Dr. Szasz stated that feedlots like to see fecal starch content below 4%. If the fecal starch content in a lactating dairy cow ration gets up to 6 or 7% is this a time to look at the rations closely, or is this acceptable? Many dairies were found to have fecal starch above 15%. Is it a regular practice to monitor and evaluate the manure on your dairy? Are rations being adjusted to maximize starch digestion in the rumen?

The intent of Dr. Szasz's talk was to get people to think about the way they feed dairy cattle. His perspective is from a feedlot nutritionist's point of view. Are there things that feedlots do that make sense to consider and maybe implement on your dairy? Hopefully it will make you think about how, when, and the reason why you feed cattle the way you do on your dairy. If there are areas that could use improvement or be changed maybe now would be a good time to do it.

Lynn VanWieringen



We are pleased to introduce the newest member of our feed lab staff, Dr. Lynn VanWieringen. Lynn earned her Bachelors of Science in Animal Sciences from WSU in 1994 and continued on to earn a PhD in Ruminant Nutrition in 2000. Lynn performed extensive research in feed quality, including kernel processing and starch availability. She has co-authored many studies related to nutrient management with Dr. Joe Harrison at the WSU Puyallup research station where she continued to work with Dr. Harrison for several years after completing her PhD. At Ag Health Labs, Lynn will be spear-heading development of additional feed assays as well as overseeing the daily quality control of our testing procedures.

Please take the time to introduce yourself when you come by our facility. We hope you will find Lynn as a valuable resource for maintaining feed quality and improving productivity on your operation!

Dr. Fred J. Muller